OCTOBER 22, 2024, 7:00 PM
CITY COUNCIL/SUCCESSOR AGENCY AGENDA
CITY COUNCIL CHAMBERS, 150 CITY PARK WAY

IMPORTANT NOTICE ABOUT PUBLIC COMMENTS AND MEETING PARTICIPATION

City Council Members will be participating from the Council Chamber. Members of the public are invited to attend and participate at: the **Council Chambers, 150 City Park Way, Brentwood CA**

As a courtesy and technology permitting, members of the public may provide remote public comment during public hearings and on business items via the City's Zoom Platform. However, the City cannot guarantee that the public's access to teleconferencing technology will be uninterrupted, and technical difficulties may occur from time to time. In those instances, so long as the public may still attend the meeting in person, the meeting will continue. In addition, the Zoom participation option is provided to the public as a courtesy in order to facilitate participation. If Zoom participation is not enabled, the meeting will continue with public attendance in person only. Members of the public desiring to provide comments as a part of the meeting are encouraged to either submit written comments by 3:00 p.m. prior to the meeting or to attend the meeting in person.

HOW PARTICIPATE

The public is invited to participate in the City Council meeting using any of the following methods:

1. IN PERSON:

a. Members of the public can provide in-person comments in the Council Chambers. Members of the public are encouraged, but not required, to fill out a speaker card. The Council Chambers will have seating available for members of the public to attend in person up to full seating capacity.

2. REMOTE (if enabled): Remarks by members of the public participating via Zoom are limited to speaking on items listed under public hearings; business items; and requests for future agendas items, existing requests. Zoom participation during the general public comment period will not be accepted, except in the event a City Council Member is participating remotely under the provisions of Government Code § 54953 (f).

a. **Zoom**: www.brentwoodca.gov/vcc or **Zoom Webinar ID:** 760 1397 0037

b. **Zoom Phone Numbers**. Dial Toll Free: (833) 548-0276 or (833) 548-0282 or (877) 853-5247.

c. During the meeting, each period for public comment will be announced, and participants may use the "Raise Hand" feature on Zoom to request to speak. ***(If you need instructions on how to use this feature, please contact the City Clerk by noon of the meeting date at cityclerk@brentwoodca.gov or 925.516.5182.)***

3. E-MAIL

a. Public comments can also be submitted via e-mail to cityclerk@brentwoodca.gov. Any public comments received up until 3:00 p.m. of the meeting date will be:

1. distributed to the Council via email before the meeting,
2. posted online for public inspection at www.brentwoodca.gov/meetings and
3. later summarized in the meeting minutes.

b. As e-mails containing public meeting comments are part of the official record, note that personal contact information may be published if it is included with your e-mail.

4. TO WATCH OR LISTEN ONLY:

a. The public may view the meeting via one-way video feed by selecting the video option at the City Council Agendas' link on the City webpage at www.brentwoodca.gov or via the City's YouTube Channel: https://www.youtube.com/c/cityofbrentwoodca

CITY COUNCIL/SUCCESSOR AGENCY AGENDA
Zoom Webinar ID: 760 1397 0037

October 22, 2024, 7:00 p.m.
City Council Chambers
150 City Park Way
Brentwood, CA 94513

City Council Zoom Link

A. CALL TO ORDER & ROLL CALL

B. PLEDGE OF ALLEGIANCE

C. PUBLIC COMMENTS
Pursuant to Council/Administrative Policy, Meeting Rules and Procedures section 5.2 (Decorum Generally – Public), comments by members of the public are generally limited to five minutes, or less time if a large number of speakers is anticipated, or if approved by the Mayor. Speakers desiring answers to questions should direct them to the Council/Successor Agency and, if relevant, they may direct them to the appropriate staff member. Speakers can also follow up directly with staff during regular City business hours.

Please file a speaker's card with the City Clerk on the form provided on the counter at the back of the Chambers.

During this portion of the meeting those present in the Council Chambers are permitted to speak on items that are listed under Presentations; Informational Reports; Consent Calendar; Requests for Future Agenda Items- New Items; or items not on the agenda during this portion of the meeting. Public comments for scheduled agenda items should wait until that time.

Zoom participation during this general public comment period will not be accepted.

D. INFORMATIONAL REPORTS FROM COUNCIL MEMBERS, COMMITTEES, LIAISONS, AND STAFF
This portion of the agenda is to provide an opportunity for Council Members to report on attendance at events, subcommittee meetings, and entities on which the Council Member has been appointed as a liaison and for staff to provide brief updates and/or information to the City Council.

E. CONSENT CALENDAR
All matters listed on the consent calendar are considered routine in nature and will be enacted by one motion. If discussion is required, that particular item will be removed from the consent calendar and will be considered separately.

E.1 A Proclamation Proclaiming October as All Abilities Month

E.2 A Proclamation Proclaiming October 24, 2024, as World Polio Day

E.3 A Proclamation Proclaiming November as Pancreatic Cancer Awareness Month

E.4 A Proclamation Proclaiming November as American Diabetes Month

E.5 A Proclamation Proclaiming November as Native American Heritage Month

E.6 A Proclamation Proclaiming November 6, 2024, as Shelter in Place Education Day

E.7 A Proclamation Proclaiming November 11, 2024, as Veterans Day

E.8 Notice of Completion for work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No.

352-52440

Title/Recommendation

Adopt a Resolution accepting the work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440 and File a Notice of Completion with the County Recorder.

E.9 Second Reading of a Zoning Text Amendment (RZ24-007) to the Brentwood Municipal Code to update Section 17.800.009(A)(2) to increase the notification radius for public hearing items from 300 feet to 1,000 feet

Title/Recommendation

Waive the second reading of and adopt Ordinance No. 1076, approving an amendment (Rezone No. 24-007) to the Brentwood Municipal Code amending Section 17.800.009(A)(2) of the Brentwood Municipal Code to increase the notification radius for public hearing items from 300 feet to 1,000 feet.

These text amendments are exempt from the California Environmental Quality Act (CEQA), pursuant to Section 15378 as it is not a project under CEQA, and further if it was considered a project, it is exempt pursuant to CEQA Guidelines Section 15061(b)(3) of the CEQA Guidelines, as it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment.

E.10 Informational Report on Final Map of Subdivision No. 9610, Trumark Trailside, developed by TH Apricot Way Brentwood, LLC

Title/Recommendation

Receive and file an Informational Report on Final Map approval by the City Manager of Subdivision No. 9610, Trumark Trailside, developed by TH Apricot Way Brentwood, LLC located at 1777 Apricot Way (APN's 019-092-013 and 019-092-034).

E.11 Purchase one new replacement Street Sweeper, and authorize the City Manager or designee to execute any necessary documents in a total amount not to exceed $431,520 and amend the 2024/25 Operating Budget

Title/Recommendation

Adopt a Resolution approving the purchase of one new replacement Schwarze A9 Monsoon street sweeper for the Streets Maintenance Division from Municipal Maintenance Equipment, Inc. in Sacramento, CA; authorizing the City Manager or designee to execute any necessary documents in an amount not to exceed $431,520; and amending the 2024/25 Vehicle and Equipment Replacement Fund budget by $96,033.

E.12 2025 Public Art and Design Academy Project

Title/Recommendation

Adopt a Resolution 1) approving a Memorandum of Understanding ("MOU") between the City of Brentwood ("City") and Liberty Union High School District ("District") regarding the Public Art and Design Academy ("PADA") in the amount of $18,630 2) amending FY 2024/25 or the

FY 2025/26 Operating Budget, by increasing the Public Art Acquisition Fund by $23,630 for the cost to build the artwork and for transportation and installation of the project and 3) authorizing the City Manager or designee to execute the MOU and make minor non-substantive revisions to it, in consultation with the City Attorney.

F. PUBLIC HEARINGS

Persons addressing the City Council using Zoom are asked to raise their hands using the Zoom feature. Those attending in person and wishing to address the Council may do so from the podium. The Council may adopt reasonable regulations at the onset of the public hearing to facilitate public testimony. These regulations may include time limits. In the absence of such regulations, the public hearing shall follow the protocol for Public Comments.

F.1 Adoption of Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the Solid Waste Organics Diversion Project

Title/Recommendation

Adopt a Resolution adopting a Mitigated Negative Declaration and Mitigation Monitoring

and Reporting Program for the Solid Waste Organics Diversion Project, CIP Project No. 542-54021

F.2 An amendment to the Brentwood Municipal Code to update Chapter 5.68 (Mobile Vending) to establish new mobile vending regulations and an amendment to Chapter 17.850 (Temporary Use Permits) to add regulations related to Long-Term Mobile Vending Facilities

Title/Recommendation
Waive the first reading and introduce:

1. An ordinance approving an amendment (Rezone No. 24-004) to (Temporary Use Permits) to add regulations related to Long-Term Mobile Vending Facilities and Commissaries.

https://ecode360.com/43627337?highlight=&searchId=9677390842428726

2. An ordinance approving an amendment to (Mobile Vending) to establish new mobile vending regulations.

https://ecode360.com/43612832?highlight=&searchId=9677443535054775

These two ordinances and text amendments are exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines, as they are not a "project" and have no potential to result in a direct or reasonably foreseeable indirect physical change to the environment. 14 Cal. Code Regs. § 15378(a). Further, the Ordinances are exempt from CEQA as there is no possibility that either Ordinance or their implementation would have a significant negative effect on the environment. 14 Cal. Code Regs. § 15061(b)(3).

G. BUSINESS ITEMS

Persons addressing the City Council using Zoom are asked to raise their hands using the Zoom feature. Those attending in person and wishing to address the Council may do so from the podium. The Council may adopt reasonable regulations at the onset of each business item to facilitate public testimony. These regulations may include time limits. In the absence of such regulations, the item shall follow the protocol for Public Comments. Public comment on each of the following items is limited to what is described in the specific agenda item.

G.1 Second Reading of an Ordinance Implementing a Modification to the Brentwood Municipal Code to allow Pad-Mounted Transformers within Development Projects

Title/Recommendation
Staff recommends that the City Council waive the second reading and adopt Ordinance No. 1077 of the City Council of the City of Brentwood, approving a modification to Brentwood Municipal Code Section 16.120.120, allowing Permittees to install pad-mounted transformers within development projects in certain circumstances, while the City monitors the nationwide supply chain issues related to underground transformers.

The proposed permanent ordinance is not an action subject to the California Environmental Quality Act (CEQA), as the action has no potential for resulting in physical change to the environment. (14 Cal. Code. Regs. § 15358.) Further, adoption of the permanent ordinance is exempt under CEQA because it will not cause a change in any of the physical conditions within the area affected by the ordinances. (14 Cal. Code Regs. § 15061(b)(3).)

G.2 Receive update and provide direction on ongoing implementation of action items from the General Plan's Conservation and Open Space Element

Title/Recommendation
Receive update and provide direction on implementation of action items from the General Plan's Conservation and Open Space Element that were previously identified as priorities.

H. REQUEST FOR FUTURE AGENDA ITEMS - NEW REQUEST(S)

Council Members wishing to have an agenda item placed on a future agenda shall make a request under this section of the agenda. These items will be included on the agenda for the next Council

meeting

I. REQUESTED FUTURE AGENDA ITEM(S)

I.1 Planning Commission request regarding establishment of pervious surface requirements or guidelines for new projects

Title/Recommendation

Provide staff direction on whether to spend time and resources on the Planning Commission's request.

I.2 Planning Commission request regarding standards and methodology for Vehicle Miles Traveled (VMT)

Title/Recommendation

Provide staff direction on whether to spend time and resources on the Planning Commission's request.

I.3 A request from Council Member Mendoza to remove 2001 Shady Willow Lane from the list of surplus land to become a park

Title/Recommendation

That the City Council consider and discuss the request from Council Member Mendoza to remove 2001 Shady Willow Lane from the list of surplus land to become a park.

I.4 A request from Council Member Mendoza requesting the City Council consider an objective design standard regarding shade ratios at new parks

Title/Recommendation

That the City Council consider and discuss the request from Council Member Mendoza requesting consideration of creating objective design standards in the Brentwood Municipal Code related to shade ratios in new parks.

I.5 A request from Council Member Mendoza requesting the City Council consider adding additional shade at existing parks

Title/Recommendation

That the City Council consider and discuss the request from Council Member Mendoza regarding solutions for potential shade improvements at existing parks.

I.6 A request from Vice Mayor Meyer requesting the consideration of using Ag-Enterprise and/or Art Enterprise funds for John Marsh House

Title/Recommendation

That the City Council consider and discuss the request from Vice Mayor Meyer requesting the consideration of using Ag-Enterprise and/ or Art Enterprise funds towards the Interpretive Center at the John Marsh House.

J. ADJOURNMENT

Any disclosable public records related to an agenda item for the open session of this meeting distributed to all or a majority of the City Council less than 72 hours before this meeting is available for inspection at City Hall, located at 150 City Park Way, during normal business hours. These writings will also be available for review at the City Council meeting in the public access binder in the entrance of the City Council Chambers.

Public comments received after 3:00 p.m. of the meeting date, but prior to the start of the meeting, will be emailed to the City Council, posted online at www.brentwoodca.gov/councilmeetingonline within one day following the meeting, and will be summarized in the meeting minutes.

The Closed Captioning provided via Zoom is auto generated. It is not the official record and is provided as a convenience.

If you challenge the any of the matters listed under 'Public Hearings' in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Brentwood City Council at, or prior to, the public hearing

NOTICE

In compliance with the Americans with Disabilities Act, the meeting room is wheelchair accessible and disabled parking is available at the City Hall parking lot. If you are a person with a disability and you need disability-related modifications or accommodations to participate in this meeting, please contact the City Clerk's Office at (925) 516-5440 or fax (925) 516-5441. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting. {28 CFR 35.102-35, 104 ADA Title II}

POSTING STATEMENT

On October 17, 2024, a true and correct copy of this agenda was posted on the City Hall Bulletin Board, outside City Hall, 150 City Park Way, Brentwood, CA 94513 and at our website www.brentwoodca.gov

A complete packet of information is available for public review at City Hall or on our website at www.brentwoodca.gov

PROCLAMATION

WHEREAS, the United States of America recognizes the inherent worth and dignity of every individual, regardless of their physical or cognitive abilities; and

WHEREAS, the diversity of abilities enriches our society, fostering a sense of unity, empathy, and compassion among all citizens; and

WHEREAS, the month of October provides an opportunity for us to celebrate All Abilities Month and raise awareness about the challenges and triumphs faced by individuals with disabilities; and

WHEREAS, we acknowledge the achievements, talents, and contributions of people with disabilities in every facet of life, from education and employment to arts, sports, and public service; and

WHEREAS, by honoring All Abilities Month, we reaffirm our commitment to creating a society that is inclusive, accessible, and equitable for everyone, regardless of their abilities.

NOW THEREFORE, BE IT PROCLAIMED, that the City Council of the City of Brentwood does hereby recognize October as

ALL ABILITIES MONTH

and encourage all residents come together to celebrate the incredible diversity of abilities in our community, promote understanding, and work towards a more inclusive and accessible future for all.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, Rotary is a global network of neighbors, friends, leaders, and problem-solvers who unite and take action to create lasting change in communities across the globe; and

WHEREAS, the Rotary motto, Service Above Self, inspires members to provide humanitarian service, follow high ethical standards, and promote goodwill and peace in the world; and

WHEREAS, Rotary in 1985 launched PolioPlus and in 1988 helped establish the Global Polio Eradication Initiative, which today includes the World Health Organization, U.S. Centers for Disease Control and Prevention, UNICEF, the Bill & Melinda Gates Foundation, and Gavi, the Vaccine Alliance, to immunize the children of the world against polio; and

WHEREAS, polio cases have dropped by 99.9 percent and the world stands on the threshold of eradicating the disease; and

WHEREAS, to date, Rotary has contributed more than US$2.6 billion and countless volunteer hours to protecting 3 billion children; and

WHEREAS, Rotary is working to raise an additional $50 million per year, which is leveraged for maximum impact by 2-to-1 match from the Bill & Melinda Gates Foundation; and

WHEREAS, these efforts are providing much-needed operational support, medical staff, laboratory equipment, disease surveillance and educational materials; and

WHEREAS, there are over 1.4 million Rotary members in 46,000 clubs throughout the world that sponsor service projects to address such critical issues as poverty, disease, hunger, illiteracy, and the environment in their local communities and abroad.

NOW THEREFORE, BE IT PROCLAIMED, that the City Council of the City of Brentwood does hereby recognize October 24, 2024 as

WORLD POLIO DAY

and encourage all residents to join in the fight for a polio-free world.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, pancreatic cancer is a formidable adversary that has touched the lives of countless individuals and their families; and

WHEREAS, raising awareness about pancreatic cancer is critical in our ongoing efforts to improve prevention, early detection, treatment, and support for those affected by this devastating disease; and

WHEREAS, November serves as a pivotal time to unite communities, healthcare professionals, and advocates to join forces in the fight against pancreatic cancer; and

WHEREAS, we must pay tribute to the patients, caregivers, and healthcare professionals who confront pancreatic cancer with resilience and dedication every day; and

WHEREAS, knowledge is the most powerful tool in the fight against pancreatic cancer, empowering individuals to make informed decisions and fostering support and compassion for those affected; and

WHEREAS, this month serves as a call to action for all residents to raise awareness, support research, and honor the memory of those who have battled or continue to battle this disease.

NOW, THEREFORE, BE IT PROCLAIMED that the City Council of the City of Brentwood does hereby recognize the month of November as

Pancreatic Cancer Awareness Month

and encourage community members, healthcare providers, and organizations to participate in events and initiatives that promote early detection, research, and patient care. Let us stand together to improve the outcomes for those impacted by pancreatic cancer and strive for a future where this disease no longer claims the lives of our loved ones.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, diabetes is a chronic and widespread health condition that affects millions of Americans; and

WHEREAS, raising awareness about diabetes is essential in our mission to prevent, manage, and find a cure for this disease; and

WHEREAS, November provides an opportunity for communities, healthcare professionals, and advocates to unite and educate the public about diabetes, its impact, and the importance of early detection and management; and

WHEREAS, the burden of diabetes reaches far and wide, touching the lives of individuals and their families; and

WHEREAS, this month is a time to honor those living with diabetes, acknowledge the caregivers and healthcare providers who support them, and celebrate the progress made in diabetes prevention and management; and

WHEREAS, knowledge is the most potent tool in our fight against diabetes, empowering individuals to lead healthier lives and fostering compassion for those affected; and

WHEREAS, this month serves as an urgent call to action for all citizens to learn, prevent, and manage diabetes. It is also a time to recognize the remarkable resilience and strength of those living with diabetes.

NOW, THEREFORE, BE IT PROCLAIMED that the City Council of the City of Brentwood does hereby recognize the month of November as

AMERICAN DIABETES AWARENESS MONTH

and encourage community members, healthcare providers, and organizations to participate in initiatives and activities that promote diabetes awareness, early detection, and management. Together, let us work toward a future where diabetes is better understood, effectively managed, and ultimately cured.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, Native American Heritage Month is a time to honor the rich traditions, cultures, and history of Indigenous peoples who have shaped the United States long before its founding; and

WHEREAS, Native Americans have made invaluable contributions in fields such as government, arts, science, and defense, while preserving languages, customs, and wisdom that enrich our nation's diverse heritage; and

WHEREAS, the City of Brentwood is committed to recognizing the resilience, achievements, and cultural significance of Native American communities past and; and

WHEREAS, this month serves as an opportunity to educate and reflect on the injustices Native Americans have faced, and to reaffirm our dedication to respecting their sovereignty and rights.

NOW, THEREFORE, BE IT PROCLAIMED that the City Council of the City of Brentwood does hereby recognize November 2024 as

NATIVE AMERICAN HERITAGE MONTH

and encourage all residents to celebrate and learn from the enduring legacies of Indigenous peoples.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, public and private schools and childcare centers throughout Contra Costa County will be participating in the Shelter-in-Place Drill on November 6, 2024; and

WHEREAS, Contra Costa Community Awareness Emergency Response Group – CAER – is sponsoring the 23nd Annual Shelter-in-Place Drill and assisting schools and childcare centers with their emergency preparedness; and

WHEREAS, emergency response agencies including fire, sheriff and health officials all recommend Shelter-in-Place as the immediate action to take in case of a hazardous release; and

WHEREAS, the Shelter-in-Place Drill increases public awareness about Shelter-in-Place as a protective action and gives students and teachers practice in implementing this important procedure; and

WHEREAS, the County Office of Education has endorsed the Shelter-in-Place Drill and encouraged all sites to participate.

NOW, THEREFORE, BE IT PROCLAIMED that the City Council of the City of Brentwood does hereby recognize the importance of preparing for emergencies and encourages participation in the Contra Costa CAER Group's public education efforts. In support of the parents, teachers, students and staff that will be participating with hundreds of other schools and childcare centers in the Shelter-in-Place Drill, we proclaim November 6, 2024, as

SHELTER IN PLACE EDUCATION DAY

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

PROCLAMATION

WHEREAS, Veterans Day is a time to honor the brave men and women who have served in the United States Armed Forces, defending the freedoms and values we cherish; and

WHEREAS, we recognize the sacrifices made by veterans and their families, who have shown immense courage, dedication, and resilience in the face of great challenges; and

WHEREAS, the strength of our nation depends on the valor of those who have worn the uniform, serving both in times of war and peace, and whose contributions continue to safeguard our democracy and protect our way of life; and

WHEREAS, the veterans of our community are a source of pride and inspiration, deserving our deepest gratitude for their service and their ongoing commitment to our country; and

WHEREAS, it is fitting that we come together as a community to express our appreciation for the heroes among us, and to honor the legacy of those who have given their lives in service to our nation.

NOW, THEREFORE, BE IT PROCLAIMED that the City Council of the City of Brentwood does hereby proclaim November 11, 2024, as

VETERANS DAY

and encourage all residents to join in recognizing the contributions and sacrifices of our veterans and to extend our heartfelt thanks for their unwavering service.

Dated this 22nd day of October, 2024

CITY OF BRENTWOOD, CALIFORNIA
THE CITY OF BRENTWOOD
INCORPORATED JANUARY 21, 1948

Joel R. Bryant, Mayor

SUBJECT: Notice of Completion for work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440.

DEPARTMENT: Parks and Recreation Department

STAFF: Bruce Mulder, Director of Parks and Recreation
Aaron Wanden, Parks Maintenance Manager

TITLE/RECOMMENDATION

Adopt a Resolution accepting the work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440 and File a Notice of Completion with the County Recorder.

FISCAL IMPACT

The total contract amount for the work performed by National Aquatic Services, Inc. is as follows:

Contractor	Final Amount	Council Approved Amount
National Aquatic Services, Inc.	$120,798.00	$121,851.40

The final amount spent for the services was $1,053 below the authorized amount for this contract.

BACKGROUND

Installation of landscaping for Sites 2-14 for the Deer Ridge Frontage Landscaping Improvements Project (the "Project") was completed in late 2022.

The final work to complete the Project was for the retrofit of the two fountains to City standards on Site 1. In accordance with the City's Purchasing Policy, and in anticipation that the cost would be less than $60,000 (the bidding threshold under the California Uniform Public Construction Cost Accounting Act ("CUPCCAA")), staff solicited quotes from multiple contractors to complete this work. The request for

quotes included a mandatory site visit, which only one contractor attended, and thereafter submitted a quote for almost $90,000, which was much higher than anticipated, and beyond the legal threshold of soliciting quotes. Because the one quote received exceeded $60,000, staff was required to put the Project out to bid in accordance with CUPCCAA.

Formal bid documents were made available to the public on February 28, 2023 and the bid opening occurred on March 23, 2023. One bid was received on the bid date from National Aquatic Services ("NAS") in the amount of $110,774. In conformance with the Public Contract Code, staff awarded the construction of the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440 to NAS as being a responsible and responsive bidder for a contract amount of $110,774, plus a 10% contingency of $11,077.40, for a total not to exceed amount of $121,851.40.

The Notice to Proceed was issued to NAS to start work on June 19, 2023. After an on-site pre-construction meeting with PG&E on June 29, 2023, a formal Notice of Suspension of work was issued on July 13, 2023. This suspension was due to power service work to be completed by the City and PG&E on the Project before NAS was able to proceed with its Work.

Staff prepared the site for PG&E inspection and after a lengthy wait to be scheduled, PG&E did not approve the initial work done by staff. To proceed with the Project, staff applied for a variance; however, PG&E denied the request. Staff found an alternative solution to establish electricity to the site that did not require the approval of PG&E. On May 29, 2024, the Notice of Resumption of Work was issued to NAS with the resume date of June 17, 2024 for the fountains.

The work was completed September 12, 2024. Below are photos of the completed Project.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

Alternative Options to the Staff Recommendation:

1. If the City Council does not approve staff's recommendation, staff will not be able to close out this Project.
2. Modify staff's recommendation based on legally defensible findings.
3. Continue item with direction for staff to return with additional information.

ATTACHMENT(S)

1. Previous Action
2. Resolution
3. Notice of Completion

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.

On June 9, 2020, by Resolution 2020-73, City Council adopted the 2020/21 - 2024/25 Capital Improvement Program.

On January 12, 2021, by Resolution No. 2021-07, City Council approved a new capital improvement project in the amount of $102,600 for the design phase of the water fountain retrofit of Deer Ridge Frontage Landscaping Improvements, amending the FY 2020/21 - FY 2024/25 Capital Improvement Program, and amending the FY 2020-21 Operating Budget.

On June 22, 2021, by Resolution No. 2021-75, City Council declared its intention to 1) order the formation of, 2) levy and collect assessments for, and 3) identify improvements to be maintained by, LLAD No. 21-1 (Deer Ridge Landscape Improvements) ("LLAD No. 21-1") for Fiscal Year 2022-23, and 4) set August 24, 2021, as the Public Hearing date pursuant to the Landscaping and Lighting Act of 1972 and Proposition No. 218.

On September 14, 2021, by Resolution 2021-112, City Council declared the Results of the Property Owner Protest Ballot Proceedings Conducted for Landscape and Lighting Assessment District No. 21-1 (Deer Ridge Landscape Improvements), approving the Final Engineer's Report, Ordering the Formation of Landscape and Lighting Assessment District No. 21-1 (Deer Ridge Landscape Improvements), and Confirming Diagrams and Levy of Assessments for Fiscal Year 2022/23.

On January 25, 2022, by Resolution 2022-10, City Council (1) approved the construction phase of the capital improvement project consisting of the Deer Ridge Frontage Landscaping Improvements, CIP No. 352-52440, per the attached CIP sheet; (2) amended the FY 2021/22 - FY 2025/26 CIP to add to the Project; (3) amended the FY 2021/22 Operating Budget to allow for funding transfers; and (4) approved a long-term interfund loan in the amount of $722,476, per the Council's Budget and Fiscal Policy, to provide capital funding for the portion of this construction cost that is the responsibility of LLAD No. 21-1 (Deer Ridge Landscape Improvements).

On April 26, 2022, by Resolution 2022-51, City Council approved the contract documents, awarded the bid and authorized the City Manager or designee to execute a construction contract and necessary documents for the Deer Ridge Frontage Landscaping Improvements Project, CIP No. 352-52440 with Clean Cut Landscaping, Inc. in the amount of $948,593, plus a 10% contingency of $94,860, for a total not

to exceed amount of $1,043,453, and amended the FY 2021/22 – 2025/26 CIP and the 2021/22 Operating Budget for the associated project funding transfers.

On January 24, 2023, by Resolution 2023-09, City Council accepted the work performed by Clean Cut Landscaping, Inc. for the Deer Ridge Frontage Landscaping Improvements Project, CIP No. 352-52440 and requested the City Clerk to file a Notice of Completion with the County Recorder.

On April 11, 2023, by Resolution 2023-44, City Council 1) approved and authorized the City Manager or designee to execute a contract with PG&E in the amount of $89,932.29, plus a contingency of $13,489.84 for unanticipated additional services, for a total not to exceed amount of $103,422.13, 2) approved and authorized the City Manager or designee to execute a contract with National Aquatic Services, Inc. in the amount of $110,774, plus a contingency of $11,077.40 for a total not to exceed amount of $121,851.40 for retrofit of the fountains, and 3) authorized staff to amend the 2022/23 – 2026/27 Capital Improvement Program by $108,819 for the Deer Ridge Frontage Landscaping Improvements Project, CIP Project No. 352-52440 and the FY 2022/23 Operating Budget for the associated project funding transfers.

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD ACCEPTING THE WORK PERFORMED BY NATIONAL AQUATIC SERVICES, INC. FOR THE DEER RIDGE FRONTAGE LANDSCAPING IMPROVEMENTS PROJECT – FOUNTAIN RETROFIT, CIP PROJECT NO. 352-52440 AND FILE A NOTICE OF COMPLETION WITH THE COUNTY RECORDER.

WHEREAS, on June 9, 2020, by Resolution 2020-73, City Council adopted the 2020/21 - 2024/25 Capital Improvement Program; and

WHEREAS, on January 12, 2021, by Resolution No. 2021-07, City Council approved a new capital improvement project in the amount of $102,600 for the design phase of the water fountain retrofit of Deer Ridge Frontage Landscaping Improvements ("Project"), amending the FY 2020/21 - FY 2024/25 Capital Improvement Program, and amending the FY 2020-21 Operating Budget; and

WHEREAS, on June 22, 2021, City Council approved paying for the upfront Project costs including the initial design of the improvements, development of the cost estimate to construct and maintain the improvements, the legal and assessment engineering costs to form the proposed Deer Ridge LLAD 21-1, and the preparation and mailing of the notices and ballots to affected property owners; and

WHEREAS, on September 14, 2021, by Resolution 2021-112, City Council declared the Results of the Property Owner Protest Ballot Proceedings Conducted for Landscape and Lighting Assessment District No. 21-1 (Deer Ridge Landscape Improvements), approving the Final Engineer's Report, Ordering the Formation of Landscape and Lighting Assessment District No. 21-1 (Deer Ridge Landscape Improvements), and Confirming Diagrams and Levy of Assessments for Fiscal Year 2022/23; and

WHEREAS, on January 25, 2022, by Resolution 2022-10, City Council (1) approved the construction phase of the capital improvement project consisting of the Deer Ridge Frontage Landscaping Improvements, CIP No. 352-52440, per the attached CIP sheet; (2) amended the FY 2021/22 - FY 2025/26 CIP to add to the Project; (3) amended the FY 2021/22 Operating Budget to allow for funding transfers; and (4) approved a long-term interfund loan in the amount of $722,476, per the Council's Budget and Fiscal Policy, to provide capital funding for the portion of this construction cost that is the responsibility of LLAD No. 21-1 (Deer Ridge Landscape Improvements); and

WHEREAS, on April 26, 2022, by Resolution 2022-51, City Council approved the contract documents, awarded the bid and authorized the City Manager or designee to execute a construction contract and necessary documents for the Deer Ridge Frontage Landscaping Improvements Project, CIP No. 352-52440 with Clean Cut Landscaping, Inc. in the amount of $948,593, plus a 10% contingency of $94,860, for a total not to exceed amount of $1,043,453, and amended the FY 2021/22 – 2025/26 CIP and the 2021/22 Operating Budget for the associated project funding transfers; and

WHEREAS, on January 24, 2023, by Resolution 2023-09, City Council accepted the work performed by Clean Cut Landscaping, Inc. for the Deer Ridge Frontage Landscaping

Improvements Project, CIP No. 352-52440 and requested the City Clerk to file a Notice of Completion with the County Recorder; and

WHEREAS, on April 11, 2023, by Resolution 2023-44, City Council 1) approved and authorized the City Manager or designee to execute a contract with PG&E in the amount of $89,932.29, plus a contingency of $13,489.84 for unanticipated additional services, for a total not to exceed amount of $103,422.13, 2) approved and authorized the City Manager or designee to execute a contract with National Aquatic Services, Inc. in the amount of $110,774, plus a contingency of $11,077.40 for a total not to exceed amount of $121,851.40 for retrofit of the fountains, and 3) authorized staff to amend the 2022/23 – 2026/27 Capital Improvement Program by $108,819 for the Deer Ridge Frontage Landscaping Improvements Project, CIP Project No. 352-52440 and the FY 2022/23 Operating Budget for the associated project funding transfers.

WHEREAS, National Aquatic Services, Inc. has met its contractual obligation and staff has recommended that the work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440 be accepted and the Notice of Completion filed with the County Recorder.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Brentwood hereby approves a Resolution accepting the work performed by National Aquatic Services, Inc. for the Deer Ridge Frontage Landscaping Improvements Project – Fountain Retrofit, CIP Project No. 352-52440 and directs the Notice of Completion be filed with the County Recorder.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Brentwood at a regular meeting held on October 22, 2024 by the following vote:

Recording Requested By:
City of Brentwood

When Recorded Mail To:
City Clerk
City of Brentwood
150 City Park Way
Brentwood, CA 94513

SPACE ABOVE THIS LINE IS FOR RECORDER'S USE

NOTICE OF COMPLETION
Civil Code §§ 8182, 8184, 9204, and 9208

NOTICE IS HEREBY GIVEN THAT:

1. The undersigned is the agent of the owner of the Project described below.

2. City's full name is the City of Brentwood.

3. City's address is 150 City Park Way, Brentwood, CA 94513.

4. The nature of City's interest in the Project is:
_X_ Fee ownership __ Lessee __ Other:_____

5. Construction work on the Project performed on City's behalf is generally described as follows: Deer Ridge Frontage Landscaping Improvements Project: Retrofit of the fountain

6. The name of the original Contractor for the Project is: National Aquatic Services, Inc.

7. The Project was completed on: September 12, 2024

8. The Project is located at: Deer Ridge Frontage Landscaping (Foothill Drive/Balfour Road)

Verification: In signing this document, I, the undersigned, declare under penalty of perjury under the laws of the State of California that I have read this notice, and I know and understand the contents of this notice, and that the facts stated in this notice are true and correct.

_____ _____
Date Signature of Person Signing on Behalf of City

City of Brentwood, CA

_____
Amanda McVey, Interim City Clerk

SUBJECT: Second Reading of a Zoning Text Amendment (RZ24-007) to the Brentwood Municipal Code to update Section 17.800.009(A)(2) to increase the notification radius for public hearing items from 300 feet to 1,000 feet.

DEPARTMENT: Community Development Department

STAFF: Alexis Morris, Director of Community Development
Erik Nolthenius, Planning Manager
Jennifer Hagen, Senior Planner

TITLE/RECOMMENDATION

Waive the second reading of and adopt Ordinance No. 1076, approving an amendment (Rezone No. 24-007) to the Brentwood Municipal Code amending Section 17.800.009(A)(2) of the Brentwood Municipal Code to increase the notification radius for public hearing items from 300 feet to 1,000 feet.

These text amendments are exempt from the California Environmental Quality Act (CEQA), pursuant to Section 15378 as it is not a project under CEQA, and further if it was considered a project, it is exempt pursuant to CEQA Guidelines Section 15061(b)(3) of the CEQA Guidelines, as it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment.

FISCAL IMPACT

Adoption of the ordinance may result in a minimal fiscal impact to the City related to City initiated public hearing items only. Cost associated with additional notices for non-City initiated projects would be passed to project applicants as part of the application and review process, which includes the collection of fees in accordance with the City's Cost Allocation Plan.

The increase in the number of notifications will also lead to an increase in overall cost of notifications. Since the Community Development Department operates on a deposit account basis where time and materials are charged to the applicant against the established account as the project is processed, the additional fee would be passed along to the applicants who would be responsible for paying postage. Currently it costs approximately $1 per notice mailed to each address, which includes

the postage and supplies. In the event the City was the applicant on a project requiring such a public notice to be mailed, such costs would be paid from the General Fund.

BACKGROUND

On May 21, 2024, Vice Chairperson Sparling requested a future agenda item to discuss possible changes to the 300-foot notification requirement for public hearing items. At the June 4, 2024, Planning Commission meeting, Vice Chairperson Sparling explained the request in more detail. After taking public comment, the Planning Commission deliberated and voted unanimously to move forward requesting that the City Council direct staff to update Brentwood Municipal Code Section 17.800.009(A)(2) to increase the notification radius from 300 feet to 1,000 feet.

On July 23, 2024, the City Council considered the Planning Commission's request and directed staff to move forward with the requested change as soon as possible.

PLANNING COMMISSION ACTION

The Planning Commission considered this item at a public hearing at its regular meeting of September 17, 2024, and was supportive of the requested text amendments. The Planning Commission agreed that the amendments would help to provide greater public awareness while processing applications and communicating potential project impacts to a larger number of residents. The Planning Commission unanimously adopted Resolution No. 24-040, recommending that the City Council approve the amendments (Rezone No. 24-007), modifying Section 17.800.009(A)(2) of the Brentwood Municipal Code to increase the notification radius for public hearing items from 300 feet to 1,000 feet.

CITY COUNCIL MEETING OF OCTOBER 8, 2024

On October 8, 2024, the City Council considered the proposed amendments to the Brentwood Municipal Code. After deliberation, the City Council, with a vote of 4-0 (Pierson was absent), introduced and waived the first reading of the proposed ordinance for RZ24-007.

Expanding the notification radius will significantly increase the number of property owners receiving notification, and thereby potentially increase the overall citizen involvement in the decision-making process, which can lead to more informed decisions by the Planning Commission and/or City Council and projects that are more mindful of and/or harmonious with the surrounding area.

The change of the noticing distance requirement from 300 to 1,000 feet is shown below and is found in Chapter 17.800.009(A)(2):

A. Through mailing of a public hearing notice to the following:

1. The applicant and/or property owner/s or their duly authorized agent,
2. The owners of all property within ~~three hundred~~ one thousand feet of the subject site as shown on the latest equalized assessment rolls,
3. Any person who has filed a written request with either the city clerk or the city council

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

The City of Brentwood published a public hearing notice in the Brentwood Press on September 27, 2024, for the October 8, 2024 public hearing held on the ordinance.

ENVIRONMENTAL DETERMINATION

The proposed ordinance is not a project under the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15378 because there is no potential that the ordinance will result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because it would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. Further, even if it was considered a project, it is exempt pursuant to CEQA Guidelines section 15061(b)(3) because it can be seen with certainty that there is no possibility that the ordinance will result in either a direct physical change to the environment or a reasonably foreseeable indirect physical change to the environment. None of the circumstances described in CEQA Guidelines Section 15300.2 applies.

ATTACHMENT(S)

1. Previous Action
2. City Council Ordinance No. 1076 for RZ 24-007

ATTACHMENT 1

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On September 16, 1987, the City Council adopted Ordinance No. 408, establishing Chapter 17.800 (Administrative Procedures and Permits) of the Brentwood Municipal Code.

On May 8, 2000, the City Council adopted Ordinance No. 665, modifying Chapter 17.800.009 (Public Hearing Notice) in order to add requirements related to erecting on-site signage for related to proposed projections requiring a public hearing.

On July 23, 2024, the City Council considered a request from the Planning Commission to increase the notification radius for public hearings and directed staff to move forward with the requested changes as soon as possible.

On September 17, 2024, the Planning Commission held a public hearing to consider an Ordinance to increase the notification radius for public hearings in Brentwood Municipal Code Section 17.800.009(A)(2) from 300 feet to 1,000 feet. Following the public hearing, the Planning Commission adopted Resolution No. 2024-____, recommending that the City Council adopt the proposed Ordinance.

On October 8, 2024, following a public hearing, the City Council voted to waive the first reading of and introduce Ordinance No. 1076 to increase the notification radius for public hearings in Brentwood Municipal Code Section 17.800.009(A)(2) from 300 feet to 1,000 feet.

ORDINANCE NO. 1076

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD APPROVING A ZONING TEXT AMENDMENT TO THE BRENTWOOD MUNICIPAL CODE (RZ 24-007), WHICH WOULD AMEND SECTION 17.800.009(A)(2) TO INCREASE THE NOTIFICATION RADIUS FOR PUBLIC HEARING ITEMS FROM 300 FEET TO 1,000 FEET

WHEREAS, City staff prepared a zoning text amendment ("the Ordinance") that would amend Brentwood Municipal Code Section 17.800.009(A)(2) to increase the notification radius for public hearing items from 300-feet to 1,000-feet; and

WHEREAS, the Ordinance would amend Title 17 (Zoning) of the Brentwood Municipal Code, and the Planning Commission is charged with reviewing amendments to said title prior to their consideration by the City Council; and

WHEREAS, state law and the City's Zoning Ordinance require that notice of public hearings before the Planning Commission or City Council on certain discretionary land use applications including, but not limited to, conditional use permits and modifications thereto, variances, rezones and zoning text amendments, and general plan amendments be mailed to all property owners located within 300 feet of the project parcel; and

WHEREAS, because of the wide-ranging potential impacts of some projects, a 300-foot radius does not always capture property owners that may be potentially impacted by a proposed project; and

WHEREAS, both the Planning Commission and City Council have heard an increase in concerns expressed by residents regarding the extent of public notice provided on projects subject to Planning Commission and/or City Council review; and

WHEREAS, expanding the noticing radius will allow those property owners most likely to be impacted by a project to have an opportunity to participate in the process; and

WHEREAS, citizen involvement in the public hearing process can lead to better decisions by the Planning Commission and/or City Council, as well as projects that are more harmonious with the surrounding area; and

WHEREAS, on September 6, 2024, the City gave public notice of a Planning Commission public hearing to be held to consider this Ordinance by advertisement in the Brentwood Press, a newspaper of general circulation; and

WHEREAS, on September 17, 2024, the Planning Commission held a duly-noticed public hearing to consider the staff report, recommendation by staff, and public testimony concerning this Ordinance. Following the public hearing, the

Planning Commission voted to recommend that the City Council adopt the proposed Ordinance by a vote of 5-0; and

WHEREAS, the City published a notice of public hearing in the Brentwood Press on September 27, 2024, in accordance with City policies and Government Code Section 65090; and

WHEREAS, on October 8, 2024, the City Council held a duly-noticed public hearing to consider the Ordinance, including: (1) the public testimony and agenda reports prepared in connection with the Ordinance, (2) the policy considerations discussed therein, and (3) the consideration by the City's Planning Commission; and

WHEREAS, this amendment is exempt from the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines Section 15378 because there is no potential that the ordinance will result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because it would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities, and even if it was a project, it would be exempt pursuant to CEQA Guidelines section 15061(b)(3) of the CEQA Guidelines because it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment and none of the circumstances in CEQA Guidelines section 15300.2 are present; and

WHEREAS, all legal prerequisites to the adoption of the Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BRENTWOOD DOES ORDAIN AS FOLLOWS:

SECTION 1. Recitals. The above recitals are incorporated into this Ordinance as though fully set forth herein.

SECTION 2. CEQA. Pursuant to California Environmental Quality Act ("CEQA") Section 15378 of the CEQA Guidelines, is not a project because there is no potential that the ordinance will result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because it would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities, and even if it was a project, it would be exempt pursuant to CEQA Guidelines section 15061(b)(3) of the CEQA Guidelines because it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment and none of the circumstances in CEQA Guidelines section 15300.2 are present.

SECTION 3. Rezoning. Brentwood Municipal Code Section 17.870.008 provides:

> *No rezoning of property or text amendment shall occur which is inconsistent with the city's community development plan. In making a decision, the planning commission and council shall consider the*

consistency of the proposed action to the community development plan and other applicable city plans, and shall consider whether the proposed action is inappropriate or otherwise contrary to the public interest.

General Plan Policy CSF 5-12 provides, "Encourage citizen participation at City government meetings, hearings, and workshops." In addition, General Plan Policy CSF 5-14 provides, "Solicit feedback from residents and citizens regarding City-initiated projects, programs, and outreach efforts." The zoning text amendment is consistent with these General Plan policies, insomuch as it provides notification of upcoming meetings of the City government to a broader range of residents. The amendment would also assist in soliciting feedback from residents and citizens regarding potential development projects in the City.

SECTION 4. Amendment. The Brentwood Municipal Code is hereby amended (added text underlined, deleted text ~~stricken~~)as follows:

Chapter 17.800.009(A)(2)

A. Through mailing of a public hearing notice to the following:
   1. The applicant and/or property owner/s or their duly authorized agent,
   2. The owners of all property within ~~three hundred~~ one thousand feet of the subject site as shown on the latest equalized assessment rolls,
   3. Any person who has filed a written request with either the city clerk or the city council,
   4. Each local agency expected to provide water, sewage, streets, roads, schools or other essential facilities or services to the property which is the subject of the application, whose ability to provide those facilities and services may be significantly affected;

SECTION 5. Effective Date; Publication Date. This ordinance shall be published in accordance with Government Code Section 36933. This ordinance shall take effect 30 days after its adoption. The City Clerk is directed to cause the Municipal Code text to be entered in the Brentwood Municipal Code of the City of Brentwood to be modified accordingly.

THE FOREGOING ORDINANCE was introduced with the first reading waived at a regular meeting of the City Council of the City of Brentwood on the 8th day of October 2024 by the following vote:

AYES: Mendoza, Oerlemans, Meyer, and Mayor Bryant
NOES: None
ABSENT: Pierson
RECUSE: None

THE FOREGOING ORDINANCE was adopted with the second reading waived at a regular meeting of the City Council of the City of Brentwood on the 22nd day of October 2024 by the following vote:

AYES:
NOES:
ABSENT:
RECUSE:

APPROVED

_____
Joel R. Bryant
Mayor

ATTEST:

_____
Amanda McVey
Interim City Clerk

SUBJECT: Informational Report on Final Map of Subdivision No. 9610, Trumark Trailside, developed by TH Apricot Way Brentwood, LLC

DEPARTMENT: Engineering

STAFF: Allen Baquilar, Director of Engineering/City Engineer
Heather Silfies, Engineering Services Specialist

TITLE/RECOMMENDATION

Receive and file an Informational Report on Final Map approval by the City Manager of Subdivision No. 9610, Trumark Trailside, developed by TH Apricot Way Brentwood, LLC located at 1777 Apricot Way (APN's 019-092-013 and 019-092-034).

FISCAL IMPACT

This report is informational only and does not authorize expenditures.

BACKGROUND

In compliance with the State Subdivision Map Act (Government Code Section 66458 (d)) and Brentwood Municipal Code Section 16.165.030, please be advised that the above-referenced Final Map and associated Subdivision Improvement Agreement have been presented to the City Manager for approval.

Tentative Subdivision Map No. 9610, upon which this Final Map is based, was approved by the City Council Resolution No. 2023-99, on August 8, 2023 and subsequently amended by Resolution No. 2024-103 on September 24, 2024.

This Final Map has been checked for conformance with the approved Tentative Subdivision Map and all Conditions of Approval and dedications for the appropriate roadways, parcels and easements have been offered. This subdivision consists of 63 single-family residential units.

In order for this Final Map to be recorded, the City Manager needs to approve the Subdivision Map, Subdivision Improvement Agreement, and accept the offers of dedication as shown on the Subdivision Map.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable

ENVIRONMENTAL DETERMINATION

Not Applicable

ALTERNATIVE OPTION(S)

Not Applicable

ATTACHMENT(S)

1. Previous Action
2. Site Map
3. Approved Final Map

PREVIOUS ACTION

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.

- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

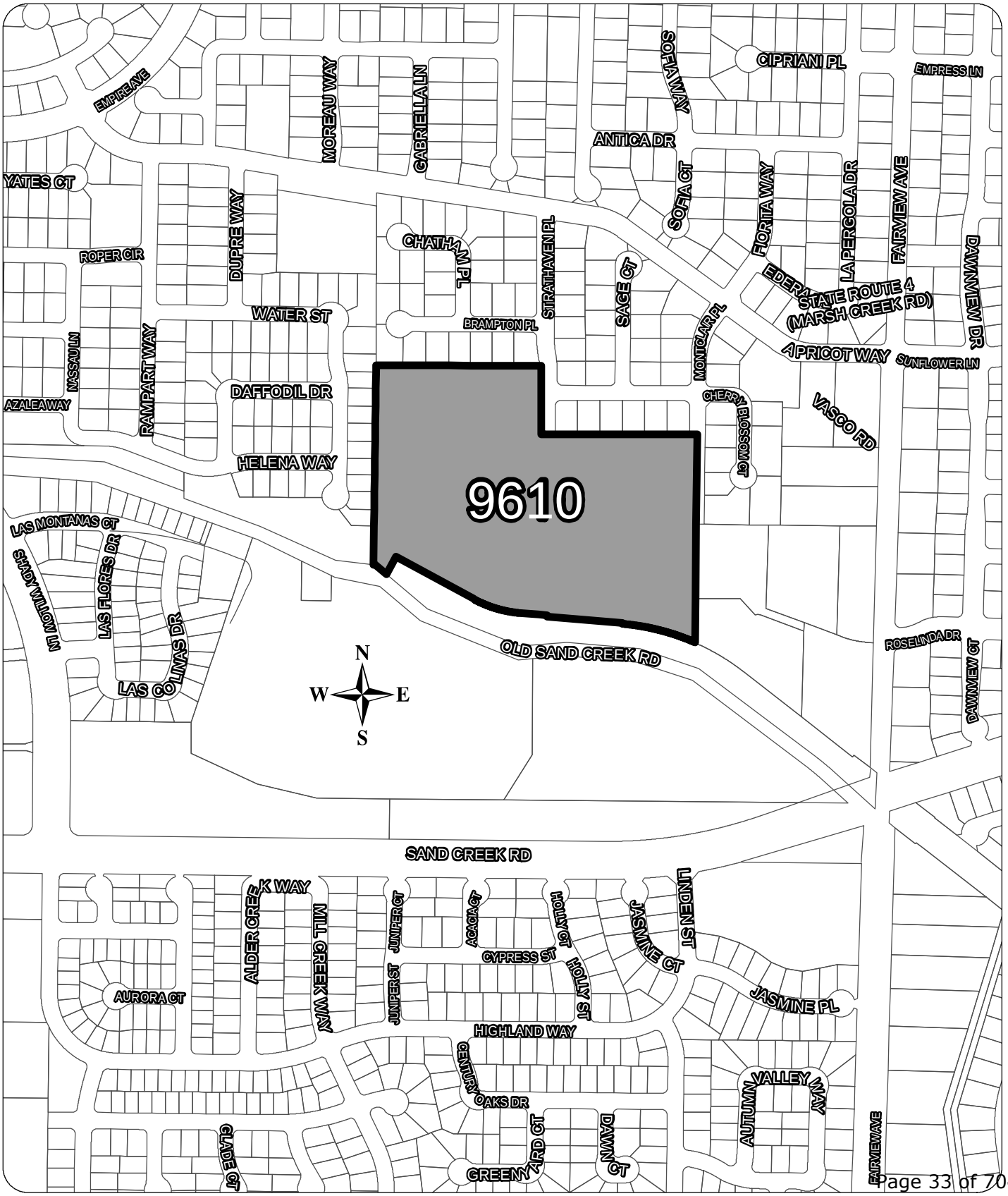
On September 9, 2003, the City Council adopted Ordinance No. 759, authorizing the City Manager to approve final subdivision maps and execute subdivision improvement agreements.

On June 20, 2023, by Resolution No. 23-024, the Planning Commission recommended City Council approve vesting tentative Subdivision Map No. 9610.

On August 8, 2023, by Resolution No. 2023-99, the City Council approved vesting tentative Subdivision No. 9610.

On September 24, 2024, by Resolution No. 2024-___, the City Council approved an amendment to Subdivision No. 9610.

Final Map
Trumark Trailside Subdivision No. 9610
Developed by TH Apricot Way Brentwood LLC



Document Path: W:\mxd\Staff Report Maps\9610 Final Map.mxd

SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

AUGUST 2024

OWNER'S STATEMENT

THE UNDERSIGNED, BEING THE ONLY PARTIES HAVING A RECORD TITLE INTEREST IN THE LANDS DELINEATED AND EMBRACED WITHIN THE HEAVY BLACK LINES UPON THIS MAP, DO HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THE SAME.

THE REAL PROPERTY BELOW IS DEDICATED TO THE CITY OF BRENTWOOD IN FEE FOR PUBLIC PURPOSES:

1. THE AREA OF LAND DESIGNATED AS SLEPPY STREET, PONZA CIRCLE, ARIONE STREET, STRATHAVEN PLACE AND MONTCLAIR PLACE FOR PUBLIC RIGHT OF WAY PURPOSES.
2. THE AREA OF LAND DESIGNATED AS PARCEL A FOR PUBLIC PARK AND STORM WATER QUALITY PURPOSES.
3. THE AREA OF LAND DESIGNATED AS PARCEL B FOR STORM WATER QUALITY PURPOSES.

THE UNDERSIGNED HEREBY STATES THAT THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

1. THE AREAS DESIGNATED AS "PUBLIC UTILITY EASEMENT" OR "PUE" AND/OR PUBLIC STREET ARE HEREBY DEDICATED TO THE CITY OF BRENTWOOD OR ITS DESIGNEE FOR UNDERGROUND ELECTRIC, GAS, CABLE TELEVISION, TELEPHONE, FIBER OPTIC, STREET LIGHT, SANITARY SEWER, STORM DRAIN, AND WATER USE AND ANY/ALL IMPROVEMENTS AND APPURTENANCES INSTALLED, INCLUDING CONSTRUCTION, ACCESS AND MAINTENANCE EASEMENT OF THESE IMPROVEMENTS AND APPURTENANCES.
2. THE AREAS DESIGNATED AS "STORM DRAIN EASEMENT" OR "SDE" ARE HEREBY DEDICATED TO THE CITY OF BRENTWOOD OR ITS DESIGNEE FOR LANDSCAPING AND MAINTENANCE USE AND ANY/ALL IMPROVEMENTS AND APPURTENANCES INSTALLED, INCLUDING CONSTRUCTION, ACCESS AND MAINTENANCE OF THESE IMPROVEMENTS AND APPURTENANCES.
3. THE AREAS DESIGNATED AS "EMERGENCY VEHICLE ACCESS EASEMENT" OR "EVAE" ARE HEREBY DEDICATED TO THE CITY OF BRENTWOOD OR ITS DESIGNEE FOR THE EMERGENCY VEHICLE PURPOSES.
4. THE UNDERSIGNED FURTHER RELINQUISHES TO THE CITY OF BRENTWOOD ALL ABUTTER'S RIGHTS OF ACCESS ALONG THE PROPERTY LINES IN THOSE AREAS DEPICTED HEREIN BY THE SYMBOL //////////

THE UNDERSIGNED FURTHER RELINQUISHES TO THE CITY OF BRENTWOOD ALL INTEREST IN SUB-SURFACE WATER RIGHTS BELOW 300 FEET THAT THEY MAY HAVE.

THIS MAP SHOWS ALL EASEMENTS ON THE PREMISES OR OF RECORD WITHIN THE BOUNDARY LINES OF THE HEREIN EMBODIED MAP SHOWN ON THE PRELIMINARY TITLE REPORT WITH AN ORDER NO. 0192-7075137, DATED MAY 6, 2024, PREPARED BY FIRST AMERICAN TITLE COMPANY.

AS OWNER: TH APRICOT WAY BRENTWOOD LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: _____

NAME (PRINT): _____

TITLE: _____

DATE: _____

OWNER'S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____ } SS.
COUNTY OF _____ }

ON _____, BEFORE ME, _____, A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NAME (PRINT): _____

PRINCIPAL COUNTY OF BUSINESS: _____

MY COMMISSION NUMBER: _____

MY COMMISSION EXPIRES: _____

SURVEYOR'S STATEMENT

THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF TRUMARK ON JANUARY 2024. I HEREBY STATE THAT ALL THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS BEFORE DECEMBER 31, 2027 AND THAT THE MONUMENTS ARE, OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED, AND THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE MAP.

_____
DATE

LICENSED LAND SURVEYOR
MARK H. WEHBER
7960
STATE OF CALIFORNIA

_____
MARK H. WEHBER, P.L.S.
L.S. NO. 7960

CLERK OF THE BOARD OF SUPERVISORS STATEMENT

I HEREBY STATE, AS CHECKED BELOW, THAT:

[ ] A TAX BOND ASSURING PAYMENT OF ALL TAXES WHICH ARE NOW A LIEN, BUT ARE NOT YET PAYABLE, HAS BEEN RECEIVED AND FILED WITH THE BOARD OF SUPERVISORS OF CONTRA COSTA COUNTY, STATE OF CALIFORNIA.

[ ] ALL TAXES DUE HAVE BEEN PAID, AS CERTIFIED BY THE COUNTY REDEMPTION OFFICER.

DATE: _____

_____
MONICA NINO
CLERK OF THE BOARD OF SUPERVISORS
AND COUNTY ADMINISTRATOR
COUNTY OF CONTRA COSTA
STATE OF CALIFORNIA

_____
DEPUTY CLERK

COUNTY RECORDER'S STATEMENT

THIS MAP, ENTITLED "SUBDIVISION 9610, TRUMARK TRAILSIDE", IS HEREBY ACCEPTED FOR RECORDATION, SHOWING A CLEAR TITLE AS PER LETTER OF TITLE WRITTEN BY FIRST AMERICAN TITLE COMPANY, DATED _____, AND AFTER EXAMINING THE SAME, I DEEM THAT SAID MAP COMPLIES IN ALL RESPECTS WITH THE PROVISIONS OF STATE LAWS AND LOCAL ORDINANCES GOVERNING THE FILING OF SUBDIVISION MAPS.

RECORDED AT THE REQUEST OF FIRST AMERICAN TITLE COMPANY AT_____.M., ON THE _____ DAY OF_____, 20_____, IN BOOK_____ OF MAPS, AT PAGE _____, IN THE OFFICE OF THE COUNTY RECORDER OF CONTRA COSTA COUNTY, STATE OF CALIFORNIA.

KRISTIN B. CONNELLY
COUNTY RECORDER
COUNTY OF CONTRA COSTA
STATE OF CALIFORNIA

BY: _____
DEPUTY COUNTY RECORDER

JOB NO. 1098-044

SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

AUGUST 2024

BENEFICIARY'S STATEMENT

WELLS FARGO BANK, NATIONAL ASSOCIATION, AS ADMINISTRATIVE AGENT ("ADMINISTRATIVE AGENT"), AS BENEFICIARY UNDER THAT CERTAIN CONSTRUCTION DEED OF TRUST WITH ABSOLUTE ASSIGNMENT OF LEASES AND RENTS, SECURITY AGREEMENT, AND FIXTURE FILING EXECUTED BY TH APRICOT WAY BRENTWOOD LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, IN FAVOR OF TRSTE, INC., A VIRGINIA CORPORATION, AS TRUSTEE, FOR THE BENEFIT OF ADMINISTRATIVE AGENT, RECORDED AUGUST 21, 2024, AS INSTRUMENT NUMBER 2024–0081666, OF OFFICIAL RECORDS OF CONTRA COSTA COUNTY, CALIFORNIA (AS AMENDED, RESTATED, SUPPLEMENTED OR OTHERWISE MODIFIED FROM TIME TO TIME, THE "DEED OF TRUST"), DOES HEREBY CONSENT TO THE MAKING AND RECORDING OF THIS TRACT MAP; PROVIDED, HOWEVER, ADMINISTRATIVE AGENT MAKES NO WARRANTY OR ANY REPRESENTATION OF ANY KIND OR NATURE CONCERNING THIS TRACT MAP OR ANY OF ITS ELEMENTS, TERMS OR PROVISIONS, OR THE LEGAL SUFFICIENCY THEREOF AND DISAVOWS ANY SUCH WARRANTY OR REPRESENTATION. NOTHING HEREIN CONTAINED CONSTITUTES A WAIVER OR MODIFICATION OF ANY OF THE TERMS OF THE DEED OF TRUST.

WELLS FARGO BANK, NATIONAL ASSOCIATION, AS ADMINISTRATIVE AGENT

BY: _____

NAME (PRINT): _____

TITLE: _____

DATE: _____

BENEFICIARY'S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____ } SS.
COUNTY OF _____ }

ON _____ , BEFORE ME, _____ , A

NOTARY PUBLIC, PERSONALLY APPEARED _____ , WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NAME (PRINT): _____

PRINCIPAL COUNTY OF BUSINESS: _____

MY COMMISSION NUMBER: _____

MY COMMISSION EXPIRES: _____

CITY COUNCIL STATEMENT

I, ALEXIS MORRIS, COMMUNITY DEVELOPMENT DIRECTOR OF THE CITY OF BRENTWOOD, HEREBY STATE THAT ON AUGUST 8, 2023, THE CITY COUNCIL APPROVED THE TENTATIVE MAP OF SUBDIVISION 9610 UPON WHICH THIS FINAL MAP IS BASED.

_____ _____
ALEXIS MORRIS DATE
COMMUNITY DEVELOPMENT DIRECTOR

SIGNATURE OMISSION NOTE:

PURSUANT TO THE GOVERNMENT CODE SECTION 66436 OF THE CALIFORNIA SUBDIVISION MAP ACT, THE FOLLOWING SIGNATURES HAVE BEEN OMITTED:

1. EAST CONTRA COSTA IRRIGATION DISTRICT, AN EASEMENT FOR CANALS, WATER CONDUITS, POWER LINE, PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED SEPTEMBER 25, 1917 IN BOOK 297 OF DEEDS, PAGE 257, CONTRA COSTA COUNTY OFFICIAL RECORDS.
2. THE BALFOUR–GUTHRIE INVESTMENT COMPANY, A ROAD EASEMENT IN THE DOCUMENT RECORDED IN BOOK 404 OF DEEDS, PAGE 322 CONTRA COSTA COUNTY OFFICIAL RECORDS.
3. CONTRA COSTA COUNTY FOOD CONTROL AND WATER CONSERVATION DISTRICT EASEMENT FOR VEHICULAR TURN AROUND RECORDED IN BOOK 5107, PAGE 641 OF CONTRA COSTA COUNTY OFFICAIAL RECORDS.

CERTIFICATE OF DEDICATION FOR SAME PUBLIC PURPOSE

TRUMARK HAS DEDICATED HEREON CERTAIN PUBLIC RIGHTS OF WAY FOR SLEPPY STREET, PONZA STREET, ARIONE STREET, STRATHAVEN PLACE AND MONTCLAIR PLACE EASEMENTS FOR PUBLIC UTILITIES (PUE). THE CITY OF BRENTWOOD SHALL RECONVEY THE PROPERTY TO TRUMARK, OR ITS SUCCESSOR IN INTEREST IF THE CITY OF BRENTWOOD SUBSEQUENTLY MAKES A DETERMINATION PURSUANT TO THE PROVISION OF SECTION 66477.5 OF THE SUBDIVISION MAP ACT THAT THE SAME PUBLIC PURPOSE FOR WHICH THE PROPERTY WAS DEDICATED DOES NOT EXIST OR THE PROPERTY OR ANY PORTION OF THE PROPERTY THEREOF IS NOT NEEDED FOR PUBLIC UTILITIES, EXCEPT FOR ALL OR ANY PORTION OF THE PROPERTY THAT IS REQUIRED FOR THAT SAME PUBLIC PURPOSE OR FOR PUBLIC UTILITIES.

SOILS REPORT

A SOILS REPORT ON WAS PREPARED BY ENGEO, INCORPORATED, DATED DECEMBER 10, 2021, PROJECT NO. 19684.000.001, SIGNED BY STEVE HARRIS AND HAS BEEN FILED AT THE OFFICE OF THE CITY ENGINEER OF THE CITY OF BRENTWOOD, COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA.

CITY SURVEYOR'S STATEMENT

I, SCOTT A. SHORTLIDGE, ACTING CITY SURVEYOR OF THE CITY OF BRENTWOOD, COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, HEREBY STATE THAT I HAVE EXAMINED THIS MAP ENTITLED "SUBDIVISION 9610, TRUMARK TRAILSIDE", AND THAT I AM SATISFIED THAT THE MAP IS TECHNICALLY CORRECT.

_____ _____
SCOTT A. SHORTLIDGE, ACTING CITY SURVEYOR DATE
L.S. NO. 6441

CITY ENGINEER'S STATEMENT

I, ALLEN S. BAQUILAR, CITY ENGINEER OF THE CITY OF BRENTWOOD, COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, HEREBY STATE THAT I HAVE EXAMINED THIS MAP ENTITLED "SUBDIVISION 9610, TRUMARK TRAILSIDE", THAT SAID SUBDIVISION IS SUBSTANTIALLY THE SAME AS IT APPEARED ON THE TENTATIVE MAPS AND ANY APPROVED ALTERATIONS THEREOF, AS APPROVED BY THE CITY OF BRENTWOOD CITY COUNCIL ON AUGUST 8, 2023, THAT ALL OF THE PROVISIONS OF SUBDIVISION MAP ACT AND LOCAL ORDINANCES APPLICABLE AT THE TIME OF APPROVAL OF THE TENTATIVE MAPS HAVE BEEN COMPLIED WITH, AND THAT I AM SATISFIED THAT THE MAP IS TECHNICALLY CORRECT.

_____ _____
ALLEN S. BAQUILAR, CITY ENGINEER DATE
R.C.E. NO. 85399

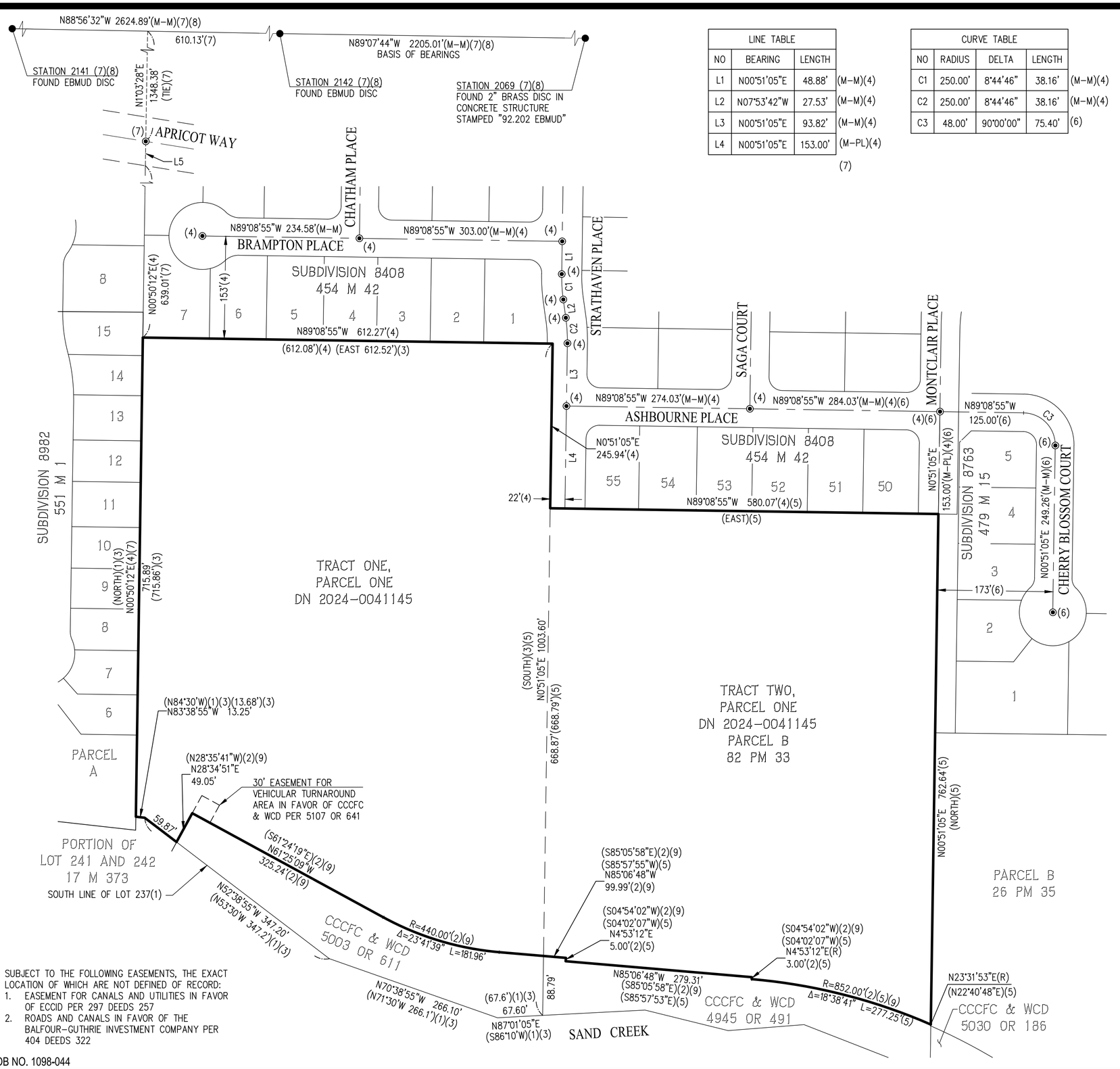
CITY MANAGER'S STATEMENT

I, TIM OGDEN, CITY MANAGER OF THE CITY OF BRENTWOOD, COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, DO HEREBY STATE THAT THIS MAP ENTITLED "SUBDIVISION 9610, TRUMARK TRAILSIDE", WAS PRESENTED TO ME, PURSUANT TO CITY OF BRENTWOOD MUNICIPAL CODE SECTION 16.165, AND I DID THEREUPON APPROVE SAID MAP AND ACCEPT ON BEHALF OF THE CITY OF BRENTWOOD, ALL STREETS AND PARCELS OF LAND IN FEE AS OFFERED FOR DEDICATION, EASEMENTS, ABUTTERS RIGHTS OF ACCESS AND SUBSURFACE WATER RIGHTS, IN CONFORMITY WITH THE TERMS OF OFFER OF DEDICATION.

I FURTHER STATE THAT PURSUANT TO THE CITY OF BRENTWOOD'S MUNICIPAL CODE SECTION 16.166, ALL AGREEMENTS AND BONDS REQUIRED BY LAW TO ACCOMPANY THE MAP HAVE BEEN EXECUTED AND ARE ON FILE IN THE OFFICE OF THE CITY CLERK.

IN WITNESS THEREOF I HAVE HEREUNTO SET MY HANDS THIS _____ DAY OF _____ 20__.

_____ _____
DATE TIM OGDEN
CITY MANAGER



LINE TABLE			
NO	BEARING	LENGTH	
L1	N00°51'05"E	48.88'	(M–M)(4)
L2	N07°53'42"W	27.53'	(M–M)(4)
L3	N00°51'05"E	93.82'	(M–M)(4)
L4	N00°51'05"E	153.00'	(M–PL)(4)
			(7)

CURVE TABLE				
NO	RADIUS	DELTA	LENGTH	
C1	250.00'	8°44'46"	38.16'	(M–M)(4)
C2	250.00'	8°44'46"	38.16'	(M–M)(4)
C3	48.00'	90°00'00"	75.40'	(6)

SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS

SCALE: 1" = 100' AUGUST 2024

100' 0' 50' 100' 200' 400'
GRAPHIC SCALE

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BASIS OF BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

LEGEND

———	SUBDIVISION BOUNDARY LINE
———	RIGHT OF WAY LINE
———	LOT LINE
– – – – –	EASEMENT LINE
----------	TIE LINE
——— – ———	CENTERLINE
———	ADJACENT PROPERTY LINE
//////////	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M–M)	MONUMENT TO MONUMENT
(M–PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14–79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED–114 SHEET 2 OF 2, DATED FEBRUARY 1965

SUBJECT TO THE FOLLOWING EASEMENTS, THE EXACT LOCATION OF WHICH ARE NOT DEFINED OF RECORD:
1. EASEMENT FOR CANALS AND UTILITIES IN FAVOR OF ECCID PER 297 DEEDS 257
2. ROADS AND CANALS IN FAVOR OF THE BALFOUR–GUTHRIE INVESTMENT COMPANY PER 404 DEEDS 322

JOB NO. 1098-044

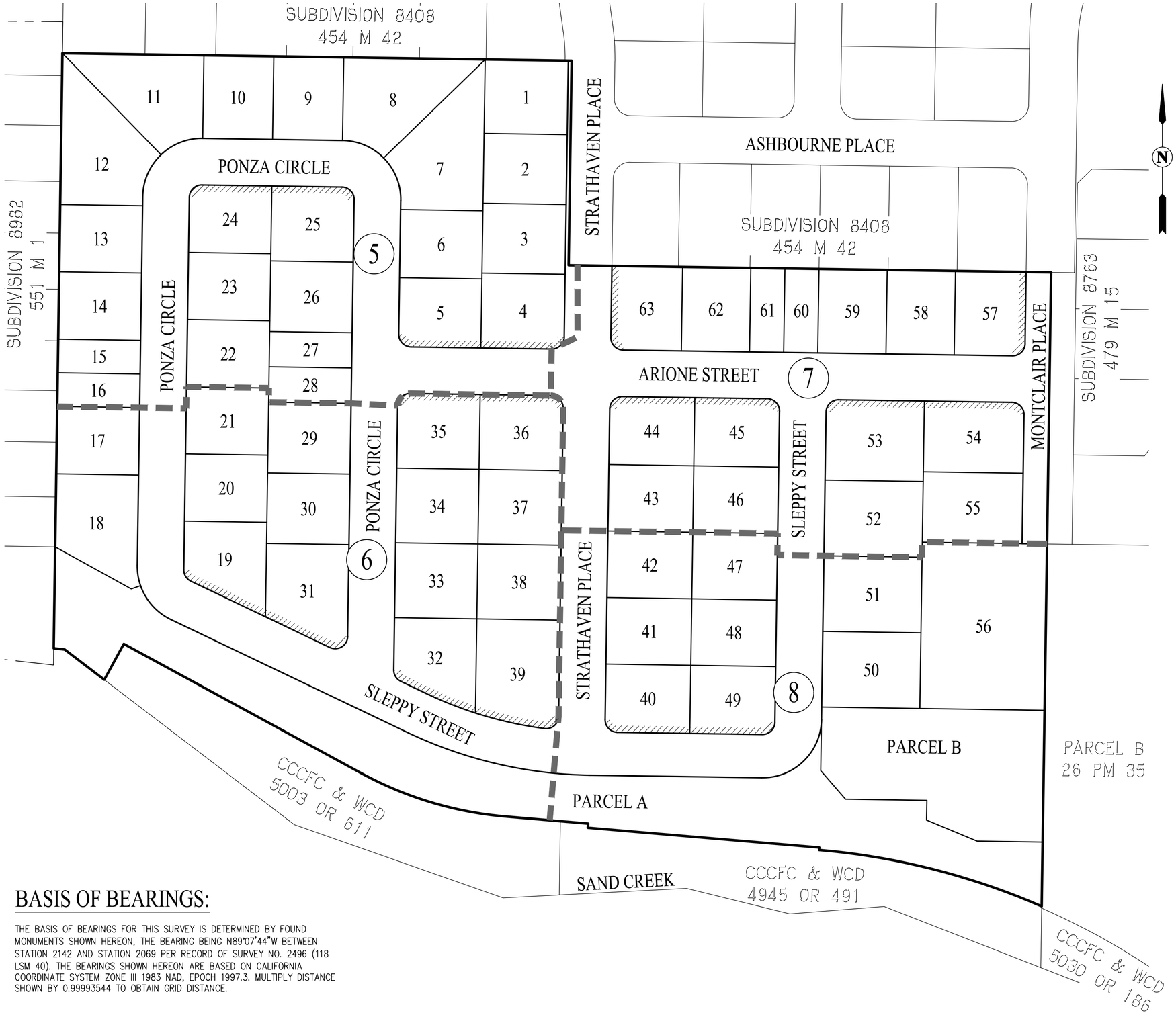
SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS

SCALE: 1" = 80' AUGUST 2024

80' 0' 40' 80' 160' 320'
GRAPHIC SCALE



N

LEGEND

———	SUBDIVISION BOUNDARY LINE
———	RIGHT OF WAY LINE
———	LOT LINE
– – – –	EASEMENT LINE
-----	TIE LINE
——— – ———	CENTERLINE
———	ADJACENT PROPERTY LINE
//////	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M–M)	MONUMENT TO MONUMENT
(M–PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT
– – –	SHEET LIMITS
5	SHEET NUMBER

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14–79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED–114 SHEET 2 OF 2, DATED FEBRUARY 1965

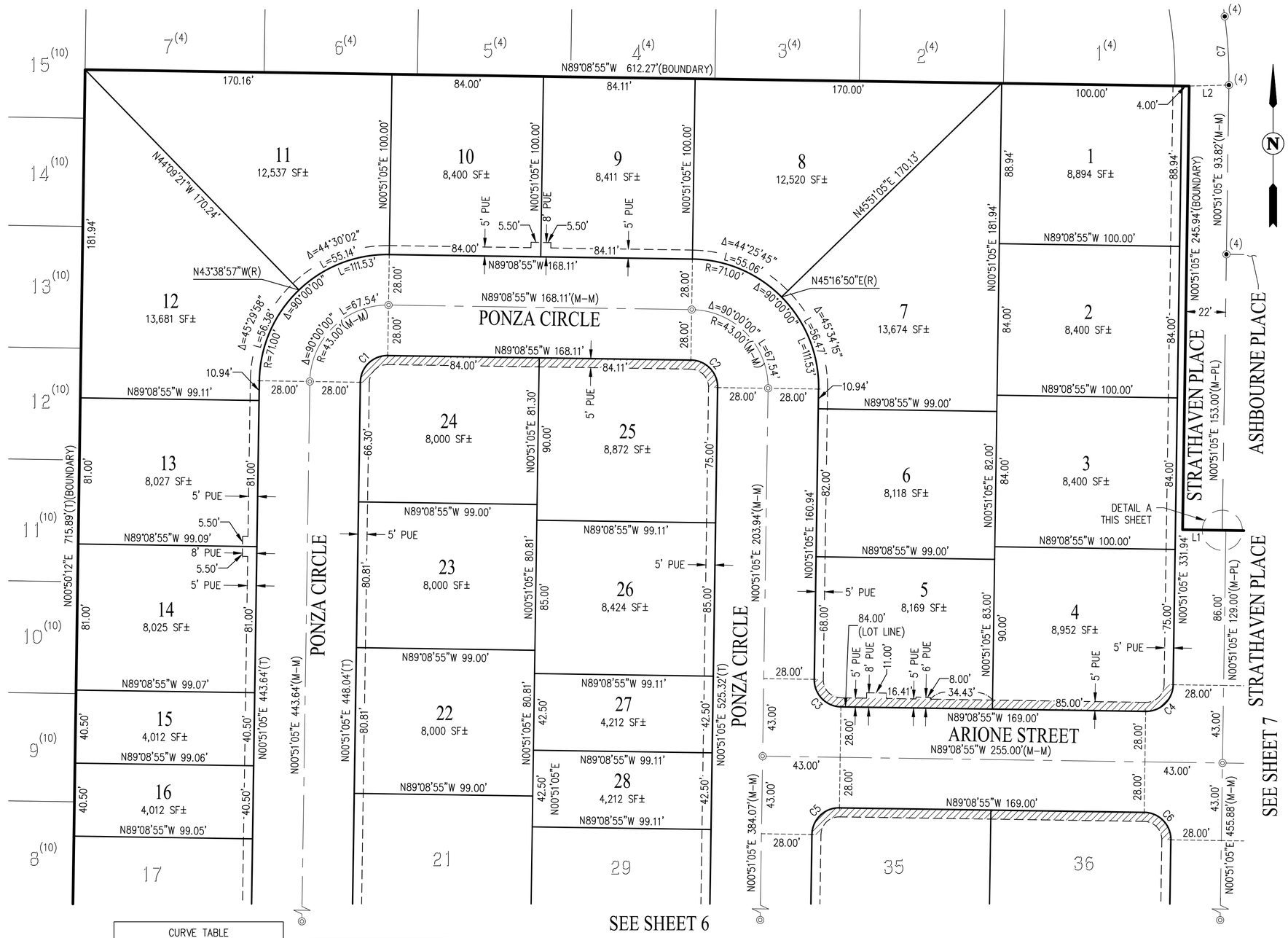
SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

SCALE: 1" = 40' AUGUST 2024

40' 0' 20' 40' 80' 160'
GRAPHIC SCALE

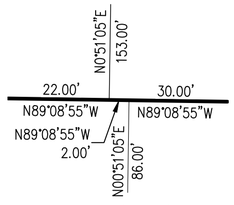


LEGEND

———	SUBDIVISION BOUNDARY LINE
———	RIGHT OF WAY LINE
———	LOT LINE
– – – – –	EASEMENT LINE
- - - - -	TIE LINE
——— – ———	CENTERLINE
———	ADJACENT PROPERTY LINE
//////	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M-M)	MONUMENT TO MONUMENT
(M-PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C1	15.00'	90°00'00"	23.56'
C2	15.00'	90°00'00"	23.56'
C3	15.00'	90°00'00"	23.56'
C4	15.00'	90°00'00"	23.56'
C5	15.00'	90°00'00"	23.56'
C6	15.00'	90°00'00"	23.56'
C7	250.00'	8°44'46"	38.16' (M-M)

LINE TABLE		
NO	BEARING	LENGTH
L1	N89°08'55"W	24.00'
L2	N88°33'22"E	22.02'



DETAIL A
NOT TO SCALE

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14-79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED-114 SHEET 2 OF 2, DATED FEBRUARY 1965

NOTES:

1. ALL TIES SHOWN ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
2. DISTANCES SHOWN HEREON ARE FEET AND DECIMALS THEREOF AND ARE GROUND LEVEL DISTANCES.

JOB NO. 1098-044

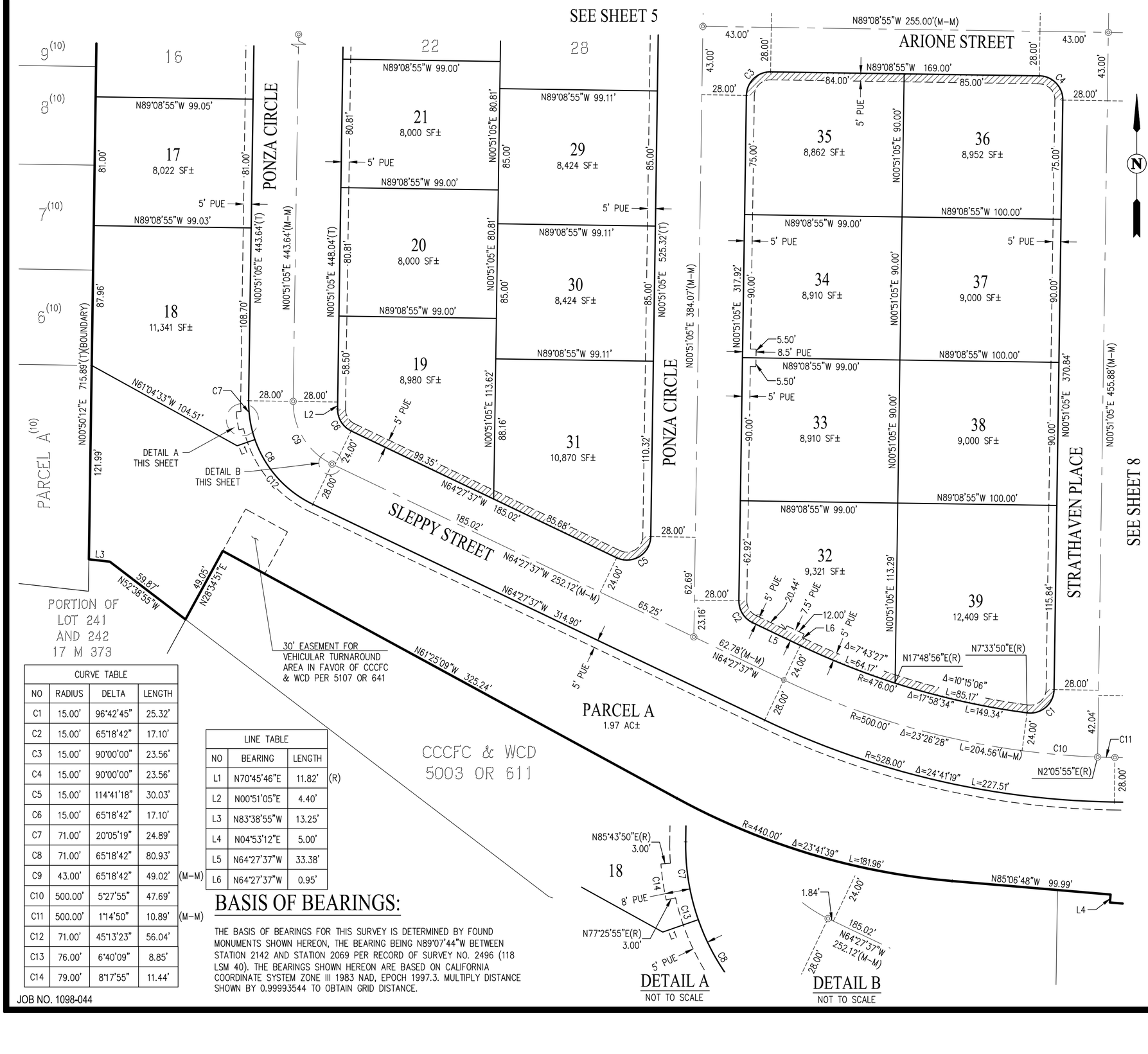
SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

SCALE: 1" = 40' AUGUST 2024

40' 0' 20' 40' 80' 160'
GRAPHIC SCALE



CURVE TABLE				
NO	RADIUS	DELTA	LENGTH	
C1	15.00'	96°42'45"	25.32'	
C2	15.00'	65°18'42"	17.10'	
C3	15.00'	90°00'00"	23.56'	
C4	15.00'	90°00'00"	23.56'	
C5	15.00'	114°41'18"	30.03'	
C6	15.00'	65°18'42"	17.10'	
C7	71.00'	20°05'19"	24.89'	
C8	71.00'	65°18'42"	80.93'	
C9	43.00'	65°18'42"	49.02'	(M-M)
C10	500.00'	5°27'55"	47.69'	
C11	500.00'	1°14'50"	10.89'	(M-M)
C12	71.00'	45°13'23"	56.04'	
C13	76.00'	6°40'09"	8.85'	
C14	79.00'	8°17'55"	11.44'	

LINE TABLE			
NO	BEARING	LENGTH	
L1	N70°45'46"E	11.82'	(R)
L2	N00°51'05"E	4.40'	
L3	N83°38'55"W	13.25'	
L4	N04°53'12"E	5.00'	
L5	N64°27'37"W	33.38'	
L6	N64°27'37"W	0.95'	

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

LEGEND

———	SUBDIVISION BOUNDARY LINE
———	RIGHT OF WAY LINE
———	LOT LINE
– – – – –	EASEMENT LINE
-----------	TIE LINE
——— – ———	CENTERLINE
———	ADJACENT PROPERTY LINE
//////////	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M-M)	MONUMENT TO MONUMENT
(M-PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14-79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED-114 SHEET 2 OF 2, DATED FEBRUARY 1965

NOTES:

1. ALL TIES SHOWN ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
2. DISTANCES SHOWN HEREON ARE FEET AND DECIMALS THEREOF AND ARE GROUND LEVEL DISTANCES.

SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

SCALE: 1" = 40' AUGUST 2024

40' 0' 20' 40' 80' 160'
GRAPHIC SCALE

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C1	15.00'	90°00'00"	23.56'
C2	15.00'	90°00'00"	23.56'
C3	15.00'	90°00'00"	23.56'
C4	15.00'	90°00'00"	23.56'
C5	15.00'	90°00'00"	23.56'
C6	15.00'	90°00'00"	23.56'
C7	15.00'	90°00'00"	23.56'
C8	15.00'	90°00'00"	23.56'

LEGEND

	SUBDIVISION BOUNDARY LINE
	RIGHT OF WAY LINE
	LOT LINE
	EASEMENT LINE
	TIE LINE
	CENTERLINE
	ADJACENT PROPERTY LINE
	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M–M)	MONUMENT TO MONUMENT
(M–PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14–79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED–114 SHEET 2 OF 2, DATED FEBRUARY 1965

NOTES:

1. ALL TIES SHOWN ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
2. DISTANCES SHOWN HEREON ARE FEET AND DECIMALS THEREOF AND ARE GROUND LEVEL DISTANCES.

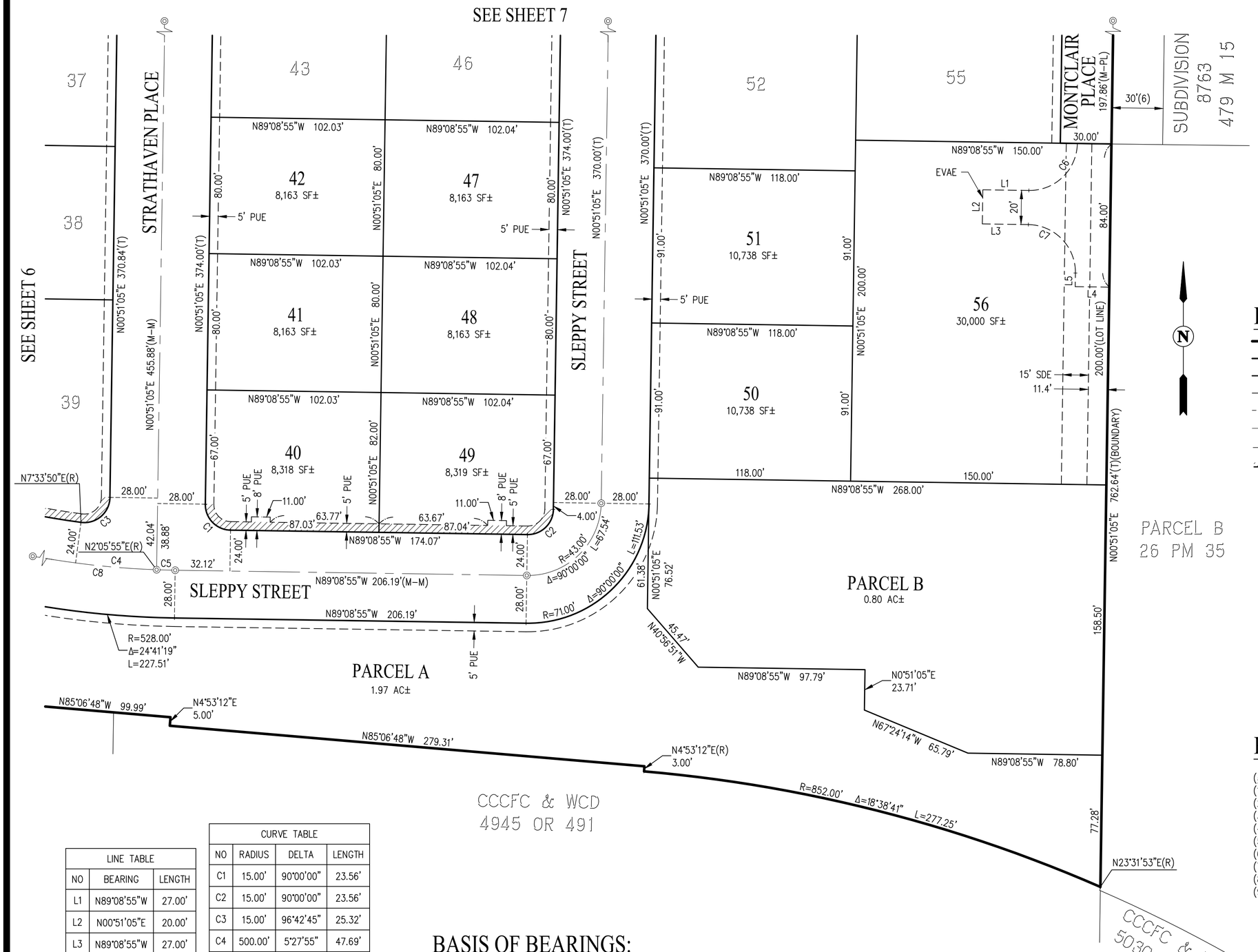
SUBDIVISION 9610
TRUMARK TRAILSIDE

CONSISTING OF 8 SHEETS
BEING A SUBDIVISION OF TRACTS ONE AND TWO
AS DESCRIBED IN DN 2024-0041145,
CONTRA COSTA COUNTY RECORDS
CITY OF BRENTWOOD, CONTRA COSTA COUNTY, CALIFORNIA

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916)788-4456
WWW.CBANDG.COM

SCALE: 1" = 40' AUGUST 2024

40' 0' 20' 40' 80' 160'
GRAPHIC SCALE



LEGEND

———	SUBDIVISION BOUNDARY LINE
———	RIGHT OF WAY LINE
———	LOT LINE
– – – – –	EASEMENT LINE
-----------	TIE LINE
——— – ———	CENTERLINE
———	ADJACENT PROPERTY LINE
//////////	RELINQUISHED ABUTTER'S RIGHTS
(T)	TOTAL
(R)	RADIAL
(M–M)	MONUMENT TO MONUMENT
(M–PL)	MONUMENT TO PROPERTY LINE
◉	FOUND STANDARD STREET MONUMENT PER REFERENCE AS NOTED
●	FOUND MONUMENT AS NOTED
◎	SET STANDARD STREET MONUMENT, LS 7960
AC	ACRES
SF	SQUARE FEET
( )	RECORD DRAWING AS NOTED
PUE	PUBLIC UTILITY EASEMENT
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
SDE	STORM DRAIN EASEMENT

LINE TABLE		
NO	BEARING	LENGTH
L1	N89°08'55"W	27.00'
L2	N00°51'05"E	20.00'
L3	N89°08'55"W	27.00'
L4	N89°08'55"W	20.00'
L5	N00°51'05"E	8.00'

CURVE TABLE				
NO	RADIUS	DELTA	LENGTH	
C1	15.00'	90°00'00"	23.56'	
C2	15.00'	90°00'00"	23.56'	
C3	15.00'	96°42'45"	25.32'	
C4	500.00'	5°27'55"	47.69'	
C5	500.00'	1°14'50"	10.89'	(M–M)
C6	28.00'	90°00'00"	43.98'	
C7	28.00'	90°00'00"	43.98'	
C8	500.00'	23°26'28"	204.56'	(M–M)

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°07'44"W BETWEEN STATION 2142 AND STATION 2069 PER RECORD OF SURVEY NO. 2496 (118 LSM 40). THE BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE III 1983 NAD, EPOCH 1997.3. MULTIPLY DISTANCE SHOWN BY 0.99993544 TO OBTAIN GRID DISTANCE.

REFERENCES:

(#) INDICATES REFERENCE NUMBER
(1) SUBDIVISION NO. SIX OF BRENTWOOD IRRIGATED FARMS AMENDED (17 M 373)
(2) DEED (5003 OR 611)
(3) DEED (17174 OR 964)
(4) SUBDIVISION 8408 (454 M 42)
(5) PARCEL MAP MS 14–79 (82 PM 33)
(6) SUBDIVISION 8763 (479 M 15)
(7) SUBDIVISION 8982 (551 M 1)
(8) RECORD OF SURVEY (118 LSM 40)
(9) CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RIGHT OF WAY MAP FOR SAND CREEK, ED–114 SHEET 2 OF 2, DATED FEBRUARY 1965

NOTES:

1. ALL TIES SHOWN ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
2. DISTANCES SHOWN HEREON ARE FEET AND DECIMALS THEREOF AND ARE GROUND LEVEL DISTANCES.

JOB NO. 1098-044

SUBJECT: Purchase one new replacement Street Sweeper, and authorize the City Manager or designee to execute any necessary documents in a total amount not to exceed $431,520 and amend the 2024/25 Operating Budget.

DEPARTMENT: Public Works

STAFF: Casey Wichert, Director of Public Works
Scott Dempsey, Fleet/Facilities Maintenance Manager

TITLE/RECOMMENDATION

Adopt a Resolution approving the purchase of one new replacement Schwarze A9 Monsoon street sweeper for the Streets Maintenance Division from Municipal Maintenance Equipment, Inc. in Sacramento, CA; authorizing the City Manager or designee to execute any necessary documents in an amount not to exceed $431,520; and amending the 2024/25 Vehicle and Equipment Replacement Fund budget by $96,033.

FISCAL IMPACT

The total cost of $431,520 will be expended through the Vehicle/Equipment Replacement Fund. Staff is requesting the 2024/25 Vehicle and Equipment Replacement Fund budget be increased by $96,033 to allow for this expenditure in the current fiscal year. The Vehicle and Equipment Replacement Fund has sufficient funds for this purchase, with a projected cash balance on June 30, 2025 of $8,734,682.

The Vehicle/Equipment Replacement Fund receives annual contributions from City funds in order to ensure sufficient resources are available when replacement is needed. Annual funding in the operating budget comes from the Enterprise Funds (57%), General Fund (38%), and other funds (5%).

BACKGROUND

The Streets Division currently has three Schwarze regenerative air street sweepers which are used for maintenance of the City's streets, gutters and storm water collection systems. This preventative maintenance helps to prevent flooding from debris entering the creeks, as well as to meet the City's National Pollutant Discharge

Elimination System (NPDES) permit requirement for trash reduction in the storm drain system.

The Vehicle Policy contains guidelines for replacement of City vehicles. Two street sweepers used for street cleaning operations are scheduled for replacement in FY 2024/25. Due to shortages of diesel engine chassis, only one unit is available at this time. Replacement of these machines will provide lower on-going maintenance costs and a new warranty period to protect the division from major, unknown maintenance costs in the short term and keep long term maintenance costs down, minimize downtime and prevent potential equipment rental costs as well. The emissions system interval checks are much less onerous for operations and maintenance, further improving efficiencies in the operation. Since approval for the new replacement street sweepers as part of the 2024/25 – 2025/26 Operating Budget, the replacement cost for this one replacement has increased by $96,033 due to the chassis shortages within California.

There are two California Air Resources Board (CARB) regulations that went into effect on January 1, 2024 that are hindering the City's ability to purchase diesel chassis' in California – the Advanced Clean Trucks and the Omnibus. Essentially, the Omnibus regulation states only diesel engines that produce a certain amount of NOx (nitrogen oxides) can be sold into California. California is currently the only state with this requirement and, therefore, the supply of these CARB certified engines is almost non-existent causing a severe shortage of functioning chassis in California. To further issues, there are currently no zero emission (electric/hydrogen) vehicles available that can be utilized for the type of work a street sweeper performs on a daily basis.

The street sweeper due for replacement has been in service for over nine years and currently has over 94,000 miles and more than 15,000 hours on the engine, vacuum body and gutter brooms.

City staff has previously researched many street sweeper models and determined the Schwarze street sweeper trucks best meets the needs of the City. This truck has proven to be both reliable and efficient. The Street Maintenance and Fleet Maintenance Divisions are satisfied with the combination of high performance, low maintenance costs, and comparable price to other similar models.

Pursuant to Purchasing Policy 10-7, Section 5.3, staff recommends utilizing Sole Source/Non-Competitive Negotiations for purchasing the Schwarze A9 Monsoon street sweeper truck to maintain uniformity in the Streets Maintenance fleet. Staff requests the approval to purchase the Schwarze A9 Monsoon street sweeper truck

from Municipal Maintenance Equipment, Inc., the authorized Schwarze dealer for Northern California. The street sweeper now available is a used version of the latest model year with less than 700 miles on it and priced at a $60,000 discount from a new cooperative purchasing priced unit for a total cost not to exceed $431,520.

With the uniformity of the sweepers, the Street Maintenance and Fleet Maintenance Divisions benefit from operational and maintenance-related efficiency, reduced repair time, parts ordering and stocking, and training for both Streets Maintenance operators and Fleet Maintenance personnel. Additionally, uniformity of the fleet helps improve safety by allowing drivers to be familiar with operating controls, i.e., levers, pedals, mirrors, instruments, truck inspections, etc., when driving different trucks from the same manufacturer.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

Alternative Options to the Staff Recommendation:

1. Do not approve staff's recommendation.
2. Modify staff's recommendation based on legally defensible findings.
3. Continue item with direction for staff to return with additional information.

ATTACHMENT(S)

1. Previous Action
2. Resolution

3. Quote

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On February 14, 2017, by Resolution No. 2017-17, City Council adopted the amended City Council/Administrative Policy No. 10-9, Policy and Procedures for the Use of Vehicles and Related Equipment ("Vehicle Policy").

On June 25, 2024, by Resolution 2024-73, City Council adopted the FY 2024/25 – 2025/26 Operating Budget.

RESOLUTION NO. 2024-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD APPROVING THE PURCHASE OF ONE NEW REPLACEMENT SCHWARZE A9 MONSOON STREET SWEEPER FROM MUNICIPAL MAINTENANCE EQUIPMENT IN SACRAMENTO, CA; AUTHORIZING THE CITY MANAGER OR DESIGNEE TO EXECUTE ANY NECESSARY DOCUMENTS IN AN AMOUNT NOT TO EXCEED $431,520; AND AMENDING THE 2024/25 VEHICLE AND EQUIPMENT REPLACEMENT FUND BUDGET BY $96,033.

WHEREAS, on February 14, 2017, by Resolution No. 2017-17, the City Council adopted the amended City Council/Administrative Policy No. 10-9, Policy and Procedures for the Use of Vehicles and Related Equipment ("Vehicle Policy"); and

WHEREAS, on June 25, 2024, by Resolution 2024-73, the City Council approved the 2024/25 – 2025/26 Operating Budget; and

WHEREAS, the Purchasing Policy 10-7 requires that purchases or services over $50,000 be approved by City Council; and

WHEREAS, retaining the uniformity of the fleet, the Street Maintenance and Fleet Maintenance Divisions benefit from operational and maintenance-related efficiency, reduced repair time, parts ordering and stocking, and training for both Street Maintenance and Fleet Maintenance personnel; and

WHEREAS, pursuant to Purchasing Policy 10-7, Section 5.3, staff recommends utilizing sole source/non-competitive negotiations for purchasing the Schwarze A9 Monsoon street sweeper to maintain uniformity in the Street Maintenance fleet; and

WHEREAS, the only Schwarze A9 Monsoon available is a unit of the latest model year with less than 700 miles and priced at a $60,000 discount from a new cooperative purchasing priced unit from the regional distributor Municipal Maintenance Equipment, and will be purchased in an amount not to exceed $431,520; and

WHEREAS, the total $431,520 cost will be expended through the Vehicle and Equipment Replacement Fund, which is included in the City Council approved 2024/25 – 2025/26 Operating Budget; and

WHEREAS, staff is requesting the 2024/25 Vehicle and Equipment Replacement Fund budget be amended in the amount of $96,033 to allow for these expenditures in the current fiscal year.

NOW, THEREFORE BE IT RESOLVED that the City Council of the City of Brentwood does hereby approve the purchase of one Schwarze A9 Monsoon street

sweeper from Municipal Maintenance Equipment in Sacramento, CA; authorize the City Manager or designee to execute any necessary associated documents in a total amount not to exceed $431,520 for fiscal year 2024/25; and amend the 2024/25 Vehicle and Equipment Replacement Fund budget by $96,033.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Brentwood at a regular meeting held on the 22th day of October 2024 by the following vote:

MUNICIPAL MAINTENANCE EQUIPMENT

CSLB #980409
DIR 1000004282
www.source-mme.com
Toll Free 1-888-484-9968

August 21, 2024

City of Brentwood
2201 Elkins Way
Brentwood, CA 94513

Attention: Scott Dempsey, Fleet/Facilities Manager

We are pleased to provide the following quotation for a Demo Schwarze Model A9TE Monsoon Sweeper (VIN: 3BPPHM7X6RF596232) mounted on a 2023 Peterbilt 220 Chassis.

One (1) Each Schwarze Model A9 Monsoon complete with the following standard features:

Sweeper Engine:

- Cummins 130HP Tier 4 Engine
- Fuel Water Separator
- 3-Point Safety Engine Shutdown Device
- Battery and 50-Gallon Fuel Tank Shared w/ Chassis
- 90 Amp Alternator
- 2 Year Warranty on Auxiliary Engine

Hydraulic System:

- 25 Gallon Vented Hydraulic Reservoir, w/Shut-Off Valves
- Tank Mounted Level and Temperature Indicator
- Hydraulic Pressure, 2500 PSI
- Spin-On 10 Micron Return Filter
- 9000 BTU Oil to Air Radiator Type Oil Cooler
- 12-Volt DC Hydraulic Backup System

Dust Separator

- Centrifugal Dust Separator, 29000 Cu. In. w/1680 Sq. In. Door

Hopper

- Mild Steel, 9.6 Cu. Yd., Volumetric Capacity, 8 Cu. Yd. Usable Capacity
- Screens – 5615 Square Inches, Saw Tooth Design
- Twin Dumping Cylinders, 51 Degrees
- Rear Door hydraulically Opened, Closed and Locked
- Dual 20" X 32" Watertight Inspection Doors, 1 Left, 1 Right
- External Weatherproof Dump Switches
- Shroud Enclosing the Auxiliary Engine

4634 Mayhew Road
Sacramento, CA 95827
Office: 916-922-1101
Fax: 916-922-1034

4750 Caterpillar Road, #D
Redding, CA 96003
Office: 530-243-4856
Fax: 530-243-1447

13922 Gracebee Avenue
Norwalk, CA 90650
Office: 714-528-8770
Fax: 714-528-8744

1930 W. Winton Avenue, #1
Hayward, CA 94545
Office: 510-670-0230
Fax: 510-670-9003

August 21, 2024
City of Brentwood
Schwarze Model A9 Monsoon Quotation
Page 2

Blower

- Closed Face Turbine 10 Curved Blades, 32.75" Dia. By 5" Wide
- 500 Brinell Hardness Abrasion Resistant Steel
- Fully Balanced Within 1.5 Grams on Both Sides
- Vacuum Enhancer, w/Indicator in Cab
- Remote Grease Lines for Fan Bearing

Pickup Head:

- 90" x 36" Sweeping Head with Rubber Blast Orifice
- 3/8" Thick, 14" Dia. Pressure Hose, 14" Suction Hose
- Sweeps-In-Reverse Capability
- Doublewide Full-Length Carbide Drag Shoes Warranted Against Wear-Out, Two Years/2000 Hours, Prorated

Dust Control System:

- PM 10 Certified by the South Coast Air Quality Management District (SCAQMD) as Meeting the Testing and Performance Standards Set Forth in SCAQMD Rule 1186.
- Twin Electric Diaphragm Water Pumps with Inlet Restriction Indicator
- 60 PSI, 6.0 GPM
- Water Tank Capacity 250 Gallons, Polyethylene
- 25-Foot-Long Fire Hydrant Fill Hose
- 50 Mesh Cleanable Filter, with Shut Off Valve
- Water Spray nozzles Shall be Provided as Follows: Five at Pickup Head, Two Nozzles Inside Hopper, Two at Gutter Broom, Two Nozzles in Suction Tube, Two at Front Axle
- Air Purge Systems for Flushing Water Lines

Operating Controls and Instruments

- Auxiliary Engine Control with Full Color Display on Console
- Keyed Ignition, Electronic Throttle, Leaf Bleeder
- Oil Pressure Gauge, Water Temperature Gauge
- Voltmeter, Tachometer, and Hour Meter
- Diagnostic Gauge for Aux. Engine, Overweight Warning
- Selectable Sweep or Lift in Reverse, Full Ramp Sweep Standby System, In-Cab Gutter Broom Tilt, Variable Speed Brooms, All Other Std. Sweeper Function Switches to be included for Standard and Options Selected
- Swiveling Console for Left or Right Sweeping

MUNICIPAL MAINTENANCE EQUIPMENT
CSLB #980409
DIR 1000004282
www.source-mme.com
Toll Free 1-888-484-9968

Safety Equipment

- Two Body Props to Lock Hopper in Raised Position
- Rear Amber LED Strobe with Guard
- 2 Rear Yellow Alternating LED Flashing Lights
- Slow Moving Vehicle Emblem
- Backup Alarm
- 5-LB. Fire Extinguisher
- Warning Triangle Kit

Sweeper Warranty

- 12 Months or 1200 Hours

Including the Following Selected Features:

Power Module

- 130HP Cummins Final Tier 4 Auxiliary Engine

Sweeping Head

- Standard Head with Rubber Blast Orifice

Gutter Brooms

- Dual Gutter Broom w/Power Tilt
- GEO Dual Gutter Broom
- Gutter Broom In-Cab Down Pressure
- Standby, Full w/ Throttle Ramp
- Variable Speed Gutter Broom

Miscellaneous

- Camera System, Three. One Camera facing each gutter broom and one facing rear hopper door
- 10 Point Remote Grease Manifold

4634 Mayhew Road
Sacramento, CA 95827
Office: 916-922-1101
Fax: 916-922-1034

4750 Caterpillar Road, #D
Redding, CA 96003
Office: 530-243-4856
Fax: 530-243-1447

13922 Gracebee Avenue
Norwalk, CA 90650
Office: 714-528-8770
Fax: 714-528-8744

1930 W. Winton Avenue, #1
Hayward, CA 94545
Office: 510-670-0230
Fax: 510-670-9003

August 21, 2024
City of Brentwood
Schwarze Model A9 Monsoon Quotation
Page 3

Water System

- Standard 250 Gallon Water Tank
- Additional 350 Gallon Water Tank (total of 600 Gallon Capacity)
- Water Tank Low Level Alarm & Indicator

Hopper Options

- Auto Drop-Down Screens
- Hopper Drain 6" (SS)
- Hopper Sound Suppression
- Hopper Deluge, 4 Nozzle, Conical Spray
- Hopper Aux. Engine Screen Cover
- Hopper, High Strength Stainless Steel (Lifetime Warranty)

Auxiliary Engine Options

- Low Hydraulic Level Indicator In-Cab

Rear Lighting Options

- Floodlight LED

Miscellaneous Options

- Arrowstick with Arrows, Whelen TA125NF1
- Hopper Inspection Door Handle Deflector
- 1 Extra Set of Keys
- 2 Front Bumper Strobes
- 2 Rear Bumper Strobes
- Hopper Screen Shaker
- Flush Mount Rear Hopper Strobes
- Flush Mount Side Strobes
- Peterbilt Air Horn
- 3" Right Side Gutter Boom Extension
- Modified Right Side Gutter Broom Joint
- Whelen M4 Strobes to be mounted on either side of beacon mount

MUNICIPAL MAINTENANCE EQUIPMENT

CSLB #980409
DIR 1000004282
www.source-mme.com
Toll Free 1-888-484-9968

Paint

- Painted White with Decal Kit

Mounted on a 2023 Peterbilt 220 Cabover Chassis

- 200 HP
- 33,000 GVWR
- Dual Steering
- 184"
- Allison 2500 RDS Automatic Transmission
- Air Dryer, Air Seat, Air Horn
- 12" Parabolic Mirror Set
- Air Conditioning and AM/FM Radio

Summary:	F.O.B Brentwood, CA	$395,424.23
	9.125% Estimated Sales Tax	$36,082.46
	CA Tire Fee	$10.50
	Total	$431,517.19

- City's Purchase Order to be prepared and sent directly to Municipal Maintenance Equipment Inc.
  4634 Mayhew Rd, Sacramento CA 95827
  Nancy Steffan Nsteffan@source-mme.com (916) 922-1101
- Pricing includes delivery and on-site training
- One demo unit available at this price
- Miles: 715 Hours: 33
- Sales tax applicable at time of delivery will be shown on invoice
- Terms NET 30. Quotation valid for 30 Days.

Thank you for your continued interest in this fine product. Should you have any questions or need additional information, please let us know. We look forward to being of service.

Sincerely,
Municipal Maintenance Equipment, Inc.

Bryce Newell
Northern Division Director of Sales

SUBJECT: 2025 Public Art and Design Academy Project

DEPARTMENT: Parks and Recreation

STAFF: Bruce Mulder, Director of Parks and Recreation
Lindsay Pinell, Recreation Supervisor

TITLE/RECOMMENDATION

Adopt a Resolution 1) approving a Memorandum of Understanding ("MOU") between the City of Brentwood ("City") and Liberty Union High School District ("District") regarding the Public Art and Design Academy ("PADA") in the amount of $18,630 2) amending FY 2024/25 or the

FY 2025/26 Operating Budget, by increasing the Public Art Acquisition Fund by $23,630 for the cost to build the artwork and for transportation and installation of the project and 3) authorizing the City Manager or designee to execute the MOU and make minor non-substantive revisions to it, in consultation with the City Attorney.

FISCAL IMPACT

If approved, funding for this project will come from the Public Art Acquisition Fund. The Fiscal Year (FY) 2024/25 or FY 2025/26 Operating Budget will require an amendment for the project expenditures, depending on the timing of the PADA project. The total project cost is estimated to be $23,630 and includes $18,630 for materials, supplies, and equipment for PADA to build the artwork and $5,000 for the transportation, installation and associated landscaping for the artwork, to be completed by City staff.

Including the requested amendment of $23,630 for the project cost, the fund balance in the Public Art Acquisition Fund as of June 30, 2025 is projected to be $3,153,166. The Public Art Acquisition Fund consists of development fees collected for the acquisition and construction of Public Art and can only be used for public art projects.

BACKGROUND

Annually, the City works with PADA on art projects designed and created by the academy's students. On September 18, 2024, PADA students presented three

sculpture project conceptual ideas to the Arts Commission. The project will be installed in the planter box on the corner of Sand Creek Road and O'Hara Avenue in Brentwood, California. This year, drawing inspiration from the 2024 Tri-Fish sculpture that was installed in this same location, the goal of PADA is to create a beautiful art piece that complements the Tri-Fish sculpture in a stunning and natural way based on how nature operates. Following discussion, the Arts Commission selected the project concept "Birds of Beauty" for recommendation to City Council.

City Staff requests the City Council adopt a Resolution 1) approving an MOU between the City and PADA in the amount of $18,630 2) amending the FY 2024/25 or the FY 2025/26 Operating Budget by increasing the Public Art Acquisition Fund by $23,630 for the cost of PADA students to build the artwork and for City Staff to transport, install and complete the landscaping of the project, depending and 3) authorizing the City Manager or designee to execute the MOU and make minor non-substantive revisions to it, in consultation with the City Attorney.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

1. Do not approve the resolution and MOU for the PADA project for the upcoming year.
2. Approve the resolution and MOU for the PADA project and request staff to identify a new conceptual idea to be considered by the Arts Commission.

ATTACHMENT(S)

1. Attachment 1: Previous Action
2. Attachment 2: PADA Resolution
3. Attachment 3: Memorandum of Understanding

PREVIOUS ACTION
Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On November 12, 2014, City Council adopted Resolution 2014-170 approving an MOU between the City and the District regarding PADA's murals at the cost of $10,463.64, amending the FY 2014/15 Operating Budget by increasing the Public Art Acquisition Fund by $10,463.64 and authorizing the City Manager to execute the MOU and make minor technical revisions to it in consultation with the City Attorney; and

On October 27, 2015, City Council adopted Resolution 2015-161 approving a MOU between the City and the District regarding PADA's mosaic sculptures at the cost of $16,728, amending the FY 2015/16 Operating Budget by increasing the Public Art Acquisition Fund by $16,728 and authorizing the City Manager to execute the MOU and make minor technical revisions to it in consultation with the City Attorney; and

On November 15, 2016, City Council adopted Resolution 2016-156 approving a MOU between the City and the District regarding PADA's mixed media mural at the cost of $11,892, amending the FY 2016/17 Operating Budget by increasing the Public Art Acquisition Fund by $11,892 and authorizing the City Manager to execute the MOU and make minor technical revisions to it in consultation with the City Attorney; and

On November 14, 2017, City Council adopted Resolution 2017-145 approving a Memorandum of Understanding between the City and the District regarding the PADA mural at the cost of $14,746, amending the FY 2017/18 Operating Budget by increasing the Public Art Acquisition Fund by $14,746 and authorizing the City Manager or his designee to execute the Memorandum of Understanding and make minor technical revisions to it in consultation with the City Attorney; and

On November 13, 2018, City Council adopted Resolution 2018-147 approving a Memorandum of Understanding between the City and District regarding the PADA mural at the cost of $9,434, amending the FY 2018/19 Operating Budget by increasing the Public Art Acquisition Fund by $9,434 and authorizing the Director of Parks and Recreation to execute the Memorandum of Understanding and make minor technical revisions to it in consultation with the City Attorney; and

On January 28, 2020, City Council adopted Resolution 2020-08 approving a Memorandum of Understanding between the City and District regarding the PADA mural at the cost of $4,819 amending the FY 2019/20 Operating Budget by increasing the Public Art Acquisition Fund by $4,819 and authorizing the Director of Parks and Recreation to execute the Memorandum of Understanding and make minor technical revisions to it in consultation with the City Attorney; and

On February 9, 2021, City Council adopted 2021-21 Resolution approving a Memorandum of Understanding between the City and District regarding the PADA mural at the cost of $12,299 amending the FY 2020/21 Operating Budget by increasing the Public Art Acquisition Fund by $12,299 and authorizing the Director of Parks and Recreation to execute the Memorandum of Understanding and make minor technical revisions to it in consultation with the City Attorney; and

On February 8, 2022, City Council adopted 2022-21 Resolution approving a Memorandum of Understanding between the City and District regarding the PADA mural at the cost of $10,426 amending the FY 2021/22 Operating Budget by increasing the Public Art Acquisition Fund by $10,426 and authorizing the Director of Parks and Recreation to execute the Memorandum of Understanding and make minor technical revisions to it in consultation with the City Attorney; and

On April 11, 2023, City Council adopted 2023-43 Resolution approving a Memorandum of Understanding with the District regarding the PADA mural at the cost of $3,513 amending the FY 2022/23 Operating Budget by increasing the Public Art Acquisition Fund by $3,513 and authorizing the Director of Parks and Recreation or designee to execute the Memorandum of Understanding and make minor non-substantive revisions to it in consultation with the City Attorney

On January 23, 2024, City Council Adopted Resolution 2024-07 approving a Memorandum of Understanding between the City and District regarding the PADA project at a cost of $20,272, amending FY 2023/24 or FY 2024/25 Operating Budget, depending on the timing of the PADA project, by increasing the Public Art Acquisition Fund by $20,272, and authorizing the City Manager or designee to execute the MOU and make minor non-substantive revisions to it, in consultation with the City Attorney

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD 1) APPROVING A MEMORANDUM OF UNDERSTANDING ("MOU") BETWEEN THE CITY OF BRENTWOOD ("CITY") AND LIBERTY UNION HIGH SCHOOL DISTRICT ("DISTRICT") REGARDING THE PUBLIC ART AND DESIGN ACADEMY IN THE AMOUNT OF $18,630 2) AMENDING FY 2024/25 OR THE FY 2025/26 OPERATING BUDGET, BY INCREASING THE PUBLIC ART ACQUISITION FUND BY $23,630 FOR THE COST TO BUILD THE ARTWORK AND FOR TRANSPORTATION, INSTALLATION AND LANDSCAPING OF THE PROJECT AND 3) AUTHORIZING THE CITY MANAGER OR DESIGNEE TO EXECUTE THE MOU AND MAKE MINOR NON-SUBSTANTIVE REVISIONS TO IT, IN CONSULTATION WITH THE CITY ATTORNEY.

WHEREAS, the City desires to support the Liberty Union High School's Public Art and Design Academy ("PADA") through the available public art acquisition fund; and

WHEREAS, the Arts Commission has recommended to the City Council sculptures within the City of Brentwood by the students of PADA; and

WHEREAS, the sculptures', titled "Birds of Beauty" will be located in the planter box on the corner of Sand Creek Road and O'Hara Avenue in Brentwood, CA; and

WHEREAS, the sculptures' goal is to "create a beautiful art piece that complements the Tri-Fish sculpture in a stunning and natural way based on how nature operates"; and

WHEREAS, supplies for PADA to be used for the sculpture will cost $18,630; and separately, $5,000 for the transportation, installation and associated landscaping for the artwork, to be completed by City staff; and

WHEREAS, the City and the District desire to memorialize their relationship regarding the mural for Fiscal Year 2024/25 in a MOU to set forth their respective roles and obligations.

NOW THEREFORE BE IT RESOLVED that the City Council of the City of Brentwood hereby adopts a Resolution 1) approving a Memorandum of Understanding between the City of Brentwood and Liberty Union High School District regarding the Public Art and Design Academy in the amount of $18,630 2) amending FY 2024/25 or FY 2025/26 Operating Budget, by increasing the Public Art Acquisition Fund by $23,630 for the cost to build the artwork and for City staff to transport, install and complete landscaping of the project and 3) authorizing the City Manager or designee to execute the MOU and make minor non-substantive revisions to it, in consultation with the City Attorney.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Brentwood at a regular meeting held on the 22nd day of October, 2024, by the following vote:

MEMORANDUM OF UNDERSTANDING
BETWEEN
LIBERTY UNION HIGH SCHOOL DISTRICT
AND THE CITY OF BRENTWOOD

This Memorandum of Understanding ("MOU") is entered this ____ day of _____, 2024 ("Effective Date"), by and between Liberty Union High School District ("District") and the City of Brentwood, a municipal corporation of the State of California ("City") (each a "Party" and collectively, the "Parties".)

RECITALS

A. The City desires to support the District's Public Art and Design Academy through the available public art acquisition fund.

B. The City desires sculptures in the planter box on the corner of Sand Creek Road and O'Hara Avenue in Brentwood, CA ("Project") by the students of the Public Art and Design Academy of Liberty High School.

C. The sculptures' goal is to compliment the Tri-Fish Sculpture installed in June 2024, in a stunning and natural way based on how nature operates.

D. The Parties desire to memorialize their relationship in this MOU and to set forth their respective roles and obligations related to the City's support of the Project.

NOW, THEREFORE, IT IS HEREBY AGREED by the Parties as follows:

1. Responsibilities of the District. Along with the terms and conditions of this MOU, the District agrees to be responsible for and complete those items set forth in the attached Exhibit B, which is incorporated herein by this reference.

2. Responsibilities of the City. Along with the terms and conditions of this MOU, the City agrees to be responsible for and complete those items set forth in the attached Exhibit C, which is incorporated herein by this reference.

3. Relationship of the Parties. It is understood that this is a MOU by and between independent contractor(s) and is not intended to, and will not be construed to, create the relationship of agent, servant, employee, partnership, joint venture or association, or any other relationship whatsoever other than that of independent contractor.

4. Term. This MOU will commence on the Effective Date and, unless extended or terminated earlier pursuant to this MOU, will terminate August 31, 2025.

5. Indemnity. Except as to the sole negligence or willful misconduct of the District, City will defend, indemnify and hold the District, its officers, agents and employees, harmless from any and all loss, damage, claims, demands, liability, expense or cost, including reasonable attorneys' fees, which arises out of, or is in any way connected with the performance of, the services by City or any of City's employees, agents or subcontractors, notwithstanding that the District may have benefited from their services.

Except as to the sole negligence or willful misconduct of City, the District will defend, indemnify and hold City, its officers, agents and employees, harmless from any and all loss, damage, claims, demands, liability, expense or cost, including reasonable attorneys' fees, which arises out of, or is in any way connected with the performance of, the services by the District or any of the District's employees, agents or subcontractors, notwithstanding that City may have benefited from their services.

The duty of the Parties to indemnify and save harmless as set forth herein, will include the duty to defend as set forth in Section 2778 of the California Civil Code. This Section 5 will survive the expiration of this MOU.

6. Insurance. Each Party will maintain comprehensive general liability insurance in the amount of two million dollars ($2,000,000) combined single limit to protect the Parties, their officers, employees and agents against claims for bodily injury, and property damage arising from the any Party's participation in the activities described herein. The form of such insurance will be satisfactory to each Party and may include self-insurance at levels acceptable to the Parties. Each Party's policy or policies will name the other Party as additional insured. This Section 6 will survive the expiration of this MOU.

7. Ownership Rights.

A. Copyrights.

1) Students and/or their parent or legal guardian ("Students") and District shall retain all copyrights in and to any work(s) created under this MOU, provided that Students grant to City, by separate instrument, an irrevocable license to graphically depict the work for any non-commercial purpose whatsoever. For the purposes of this limitation, the graphic depiction of the work(s) on materials designed to promote City shall be deemed to be a non-commercial use. City shall not be responsible for any third party infringement of Students' or District's copyright. City reserves the right to post the Project art on the City of Brentwood's website and in marketing publications.

2) If for any reason the Project, or any portion thereof, is not implemented, all rights to the proposed work shall be retained by Students and District.

3) District agrees that all work performed under this MOU shall comply with all applicable patent, trademark and copyright laws, rules, regulations and codes of the State of California and the United States. District hereby represents and warrants that the work does not, and District has not and will not, utilize any photographs, patent, trademark or copyright in performance under this MOU unless and until District has obtained proper permission and all releases and other necessary documents. If District specifies any material, equipment, process or procedure which is protected, District shall disclose such patents, trademarks and copyrights in the construction drawings and technical specifications, such listing to be appended to this MOU and shall be incorporated by this reference.

4) District agrees to release, indemnify, defend and save harmless City, its officers and employees from any and all claims, damages, suits, costs, expenses, liabilities, actions or proceedings of any kind resulting from the performance under this MOU which infringes upon any patent, trademark or copyright or other right protected by law.

B. District Moral Rights; City Ownership Rights.

1) City intends to make its best efforts to display the work at the project site as originally created by Students and District and to maintain the work in good condition. However, City must preserve complete flexibility to operate and manage City properties. Therefore, subject to its obligation to make good-faith efforts to consult with Students as set forth in subparagraph (B)(3) below, City retains the absolute right to alter, repair, modify, remove, relocate, sell, dispose of, or destroy (collectively, "Modify") the work in its sole judgment. For example, City may modify the work to eliminate hazards, to comply with the ADA, to otherwise aid in the management of its property and affairs, or through neglect or accident. If, during or after the term of this Agreement, City finds the project site to be inappropriate, City has the right to install the work at an alternate location that it chooses in its sole reasonable discretion.

2) With respect to the work produced under this Agreement, except as otherwise set forth herein, District waives any and all claims, arising at any time and under any circumstances, against City its officers, agents, employees, successors and assigns, arising under the federal Visual Artists Rights Act (17 U.S.C. §§106A and 113(d)), the California Art Preservation Act (Cal. Civil Code §§987 et seq.), and any other local, state, federal or international laws that convey rights of the same nature as those conveyed under 17 U.S.C. §106A, Cal. Civil Code §§987 et seq., or any other type of moral right protecting the integrity of works of art. If the work is incorporated into a building such that the work cannot be removed from the building without physical defacement, mutilation, alteration, distortion, destruction, or other modification (collectively, "Modification") of the work, District waives any and all such claims against any future owners of the Site, and its agents, officers and employees, for Modification of the work.

3) Where time permits, prior to and Modification of the work, City shall make reasonable good faith efforts to notify and consult with Students, at the last phone number or address provided by Students to the City, and to come to a mutually agreeable plan for disposition of the work. Such consultation shall be without charge by Students unless otherwise specifically agreed in writing. If the work is modified and City intends to maintain the work on display, City shall make a reasonable good faith effort to engage Students in the restoration of the work and to compensate Students for Students' time and efforts at fair market value, which may be the subject of a future Agreement between Students and City. However, City has no obligation under this Agreement to restore the work or to compensate Students for any restoration work. If City Modifies the work without Students' consent in a manner that is prejudicial to Students' reputation, Students retain the right to disclaim authorship of the work in accordance with California Civil Code §987(d) and 17 U.S.C. §106A(a)(2).

4) Except as provided in this Agreement, with respect to third parties who are not officers, employees, agents, successors or assigns of City, District retains District's moral rights in the work, as established in the Visual Artists Rights Act (17 U.S.C. §§106A and 113(d)), the California Art Preservation Act (Cal. Civil Code §§987 and 989), or any other local, state, federal or international moral rights laws that protect the integrity of works of art. Accordingly, nothing herein shall prevent District from pursuing a claim against a third party who is not an officer, employee, agent, successor or assign of City for Modification of the work. City has no obligation to pursue claims against third parties to remedy or prevent Modification of the work. However, as owner of the work, City may pursue claims against third parties for damages or to restore the work if a Modification of the work has occurred without City's authorization.

8. Non-discrimination. The Parties will comply with all applicable local, state and federal laws and regulations prohibiting discrimination and harassment.

9. Entire Agreement. This MOU and its Exhibits set forth and contain the entire understanding and agreement of the Parties, and all oral or written representations, understandings or agreements are expressly stated in this MOU. No testimony or evidence of any such representations, understandings, or covenants will be admissible in any proceeding of any kind or nature to interpret or determine the terms or conditions of this MOU.

10. Amendments. Changes to the terms and conditions of this MOU will be made only by written amendment signed by the Parties.

11. Notices. All notices with respect to this MOU will be given by first class mail to the parties as follows:

City: City of Brentwood
Attention: Director of Parks and Recreation
150 City Park Way
Brentwood, CA 94513

District: Liberty Union High School District
Attention: Superintendent of Schools
20 Oak Street
Brentwood, CA 94513

Or to such other persons, addresses or telephone numbers as the Parties may designate in writing from time to time.

12. Termination. Either Party may terminate this MOU, by delivery of written notice of election to terminate to the other Party. In the event of termination and in addition to the requirements of Exhibit B, any unexpended funds will be returned to the Party that has contributed them.

13. Assignment. Neither Party will assign any right or obligation pursuant to this MOU without the written consent of the other Party. Any attempted or purported assignment without the written consent of the other Party will be void and of no effect.

14. Jurisdiction and Venue. Any action at law or in equity brought under this MOU for the purpose of enforcing a right or rights provided for by this MOU will be tried in a court of competent jurisdiction in the County of Contra Costa, State of California, and the Parties waive all provisions of law providing for a change of venue in these proceedings to any other county.

15. Paragraph Headings. Paragraph headings as used herein are for convenience only and will not be deemed to be a part of such paragraphs and will not be construed to change the meaning thereof.

16. Waiver. Waiver by either Party of any default, breach or condition precedent will not be construed as a waiver of any other default, breach or condition precedent or of any other right under this MOU.

17. Severability. If any term, provision, covenant, or condition of this MOU is ruled invalid, void, or unenforceable by a court of competent jurisdiction, this MOU will nonetheless remain in full force and effect as to all remaining terms, provisions, covenants, and conditions.

18. Authority. The individuals executing this MOU represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this MOU on behalf of the respective legal entities of the Parties.

19. Signatures.

19.1 Counterparts. This MOU may be executed in two or more counterparts, each of which together will be deemed an original, but all of which together will constitute the same instrument.

19.2 Digital/Electronic Signatures. Using a City-approved method, this MOU may be executed using digital or electronic signatures in accordance with Government Code Section 16.5. The presence of an electronic signature on this MOU will be construed as the Parties' consent to do business electronically.

Liberty Union High School District:

By: _____
Denise Rugani, Superintendent

City of Brentwood:

By: _____
Tim Y. Ogden, City Manager

ATTEST:

By: _____
Amanda McVey, Interim City Clerk

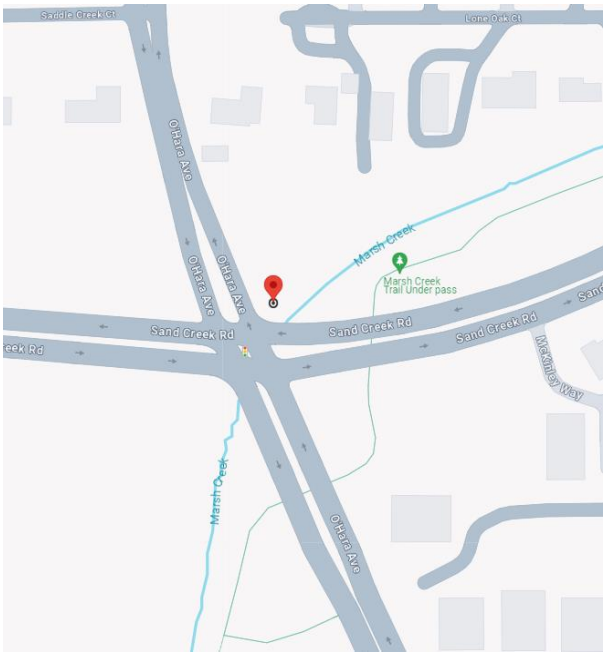
APPROVED AS TO FORM:

By: _____
Katherine Wisinski, City Attorney

Exhibit A
Project Description

The sculptures entitled “Birds of Beauty” will be installed in the planter box on the corner of Sand Creek Road and O’Hara Avenue in Brentwood, CA. This year, drawing inspiration from the 2024 Tri-Fish sculpture that was installed in this same location, the goal of PADA is to create a beautiful art piece that complements the Tri-Fish Sculpture in a stunning and natural way based on how nature operates.

Location of Sculptures



Sculptures Rendering

Exhibit B
District Responsibilities

1. Provide students for the Project.

2. The sculptures will be installed in the planter box on the corner of Sand Creek Road and O'Hara Avenue in Brentwood, CA (as described in Exhibit A).

3. Provide adult faculty supervision for the duration of the Project.

4. Purchase supplies and equipment needed for Project in the amount of $18,630.

5. Ensure that Students and their parents or legal guardians sign an Ownership Rights Form related to the project.

Exhibit C
City Responsibilities

1. Approve safety plan for the sculptures during the Project.

2. Pay $18,630 for supplies and equipment.

3. The City will contribute up to $5,000 for City staff to provide the transportation and installation of the art as well as to complete the landscaping in the planter.

4. Transport and install sculptures and complete the landscaping for the Project.

5. Accept long-term maintenance and insurance of the sculpture, but City retains the absolute right to alter, repair, modify, remove or destroy the Project in its sole judgment pursuant to the terms of the MOU.

SUBJECT: Adoption of Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the Solid Waste Organics Diversion Project.

DEPARTMENT: Public Works

STAFF: Casey Wichert, Director of Public Works
Vatsal Patel, Engineering Manager

TITLE/RECOMMENDATION

Adopt a Resolution adopting a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the Solid Waste Organics Diversion Project, CIP Project No. 542-54021

FISCAL IMPACT

This is an administrative function with no fiscal impact associated with the adoption of the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program.

Costs associated with the filing and recording, as well as the direct cost of mitigation measures, have been budgeted for in the adopted 2024/25 – 2028/29 Capital Improvement Program ("CIP"), which includes the Solid Waste Organics Diversion Project, CIP Project No. 542-54021 ("Project"). The Project is funded by the Solid Waste and Wastewater Enterprise Funds.

Funding for the construction of the project are still being assessed, as well as eligible tax credits and exemptions, and is planned to be discussed at the November 12, 2024 Council Meeting.

BACKGROUND

The Project consists of organic waste recovery facilities capable of beneficially reusing organic waste (including the organic fraction of solid waste and wastewater biosolids as defined by Senate Bill 1383 regulations), receiving liquid organic wastes, and producing renewable natural gas and biochar.

The purpose of the Project is to construct, operate, and maintain solid waste organics diversion facilities, which will facilitate the City achieving California's mandate of diverting 75 percent of organic waste from landfills by 2025. The specific objectives of the project are to (1) divert the City's organic solid waste and biosolids away from landfill disposal, (2) beneficially reuse organic waste by producing biochar, and (3) produce biogas to serve as a renewable natural gas supply.

The Project components are listed below.

1. Expansion of the Solid Waste Transfer Station to accommodate new equipment to separate and prepare organic waste for a new anaerobic digester.
2. Installation of an anaerobic digester and associated infrastructure.
3. Installation of centrifuges, biosolids dryers, and pyrolysis units to process material from the anaerobic digester.
4. Installation of pipelines and an interconnector station to convey renewable natural gas generated by the anaerobic digester to a Pacific Gas & Electric ("PG&E") main line.
5. Ancillary facilities related to above project components.
6. Realignment of a paved pedestrian path from Sunset Park to the Marsh Creek trail.
7. Tree removal to accommodate new facilities and pedestrian path realignment.

All Project components will occur within 12 acres, primarily within City-owned property and PG&E easements adjacent to the east boundary of the City's Wastewater Treatment Plant ("WWTP"), within the Solid Waste Transfer Station footprint, along the public pedestrian path between Elkins Way and Sunset Road on the eastern side of the Sunset Park Athletic Complex, within the parking lot at the southeast corner of the Sunset Park Athletic Complex, and within approximately 900 linear feet of Sunset Road.

CITY COUNCIL STRATEGIC INITIATIVE

Focus Area 2, Water, Wastewater, and Solid Waste Services, Goal 2.a; Combat climate change through organics management.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

On August 7, 2024, a Notice of Public Hearing and Intent to Adopt the Mitigated Negative Declaration was posted at the City's Municipal Services Center and Contra Costa County Clerk-Recorder's office, submitted to the State Clearinghouse, published it on the City's website, and mailed to the City's list of agencies and other interested parties regarding California Environmental Quality Act ("CEQA") documents available for review and property owners within 300 feet of the project site. In addition, the City published the notice of public hearing in the Brentwood Press on August 9, 2024.

ENVIRONMENTAL DETERMINATION

The City prepared an Initial Study for this project in accordance the CEQA (Public Resources Code Sections 21000 et seq., and the State CEQA Guidelines found at Title 14 of the California Code of Regulations Sections 15000 et seq.) to determine if the Project could have significant impacts on the environment.

Based on the Initial Study, the Project would not have any significant effects on the environment once mitigation measures are implemented. This conclusion is supported by the following findings:

1. The Project would have no impact to Agriculture and Forestry Resources; Hazards and Hazardous Materials; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; and Utilities and Service Systems.
2. The Project would have less-than-significant impacts to Aesthetics; Air Quality; Energy; Greenhouse Gas Emissions; Hydrology and Water Quality; Public Services; Recreation; Transportation; and Wildfire.
3. Impacts of the Project would be less than significant with incorporation of the mitigation measures to Biological Resources; Cultural Resources; Geology and Soils; Noise; and Tribal Cultural Resources.

The public review period for the Initial Study and proposed Mitigated Negative Declaration began on August 7, 2024, and ended at 5:00 p.m. on September 6, 2024. Staff received comments on the proposed Mitigated Negative Declaration from the following parties:

1. Confederated Villages of the Lisjan Nation ("Lisjan Nation")
2. Central Valley Regional Water Quality Control Board ("Central Valley Water Board").

3. Department of Resources Recycling and Recovery ("CalRecycle").

As a result of the comment letter from the Lisjan Nation, Mitigation Measures CULT-1 (Accidental Discovery of Archaeological Resources) and CULT-2 (Accidental Discovery of Human Remains) were revised to include additional requirements. CULT-1 was revised to add in the preparation of a mitigation plan in the event of a significant find, in consultation with a Native American Tribe traditionally and culturally affiliated with the geographic area of the project site. CULT-2 was revised to include a requirement that no pictures shall be taken or testing done on Native American human remains. These revisions result in mitigation measures that are equivalent or more effective in mitigating or avoiding potential significant effects of the Project, and would not cause any new potentially significant effect on the environment. Therefore, pursuant to Section 15073.5 of the State CEQA Guidelines, recirculation of the Mitigated Negative Declaration is not required.

The comment letter from the Central Valley Water Board described the types of permits required for various projects that affect surface waters and groundwaters. The Initial Study circulated for public review identified relevant Central Valley Water Board permits for the Project. No comments were provided regarding the analysis of environmental effects in the Initial Study or the proposed mitigation measures in the Mitigated Negative Declaration. Therefore, no change to the proposed Mitigated Negative Declaration was needed to address this comment letter.

The comment letter from CalRecycle clarified that the City's Solid Waste Transfer Station operates under a Solid Waste Facility Permit issued in 2019 and that agency acts as an enforcement agency for the City of Brentwood. The comment letter also included several questions seeking clarification regarding Project activities that would occur at the Solid Waste Transfer Station versus those that would occur at the WWTP, and identified Project components that may be subject to CalRecycle solid waste permitting requirements depending on if they occur within the boundary of the transfer station or the WWTP. The future application to CalRecycle to amend the City's Solid Waste Facility Permit to cover the Project will provide additional details regarding the Project to address these questions. No comments were provided regarding the analysis of environmental effects in the Initial Study or the proposed mitigation measures in the Mitigated Negative Declaration. Therefore, no change to the proposed Mitigated Negative Declaration was needed to address this comment letter.

ALTERNATIVE OPTION(S)

The City Council could decide to not adopt this Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the Solid Waste Organics Diversion Project.

This would either (1) require a new or supplemental environmental review to be undertaken in order to move forward with the Project, or (2) mean that the Project could not move forward without an approved environmental review. Compliance with CEQA is required in order for the Project to be completed.

ATTACHMENT(S)

1. Previous Action
2. Resolution
3. Initial Study
4. Mitigated Negative Declaration
5. Mitigation Monitoring and Reporting Program
6. Comment Letters
7. CIP Budget Sheet

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the City Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On February 22, 2022, by Resolution No. 2022-23, the City Council adopted a Notification of Intent to Comply (NOIC) with SB 1383 regulations and authorized staff to submit the NOIC to CalRecycle for approval.

On February 22, 2022, by Resolution No. 2022-25, the City Council adopted the City of Brentwood Strategic Plan FY 2022/23 – 2023/24 and directed staff to incorporate strategic plan costs into the Operating and CIP Budgets, as well as in the City's ten-year General Fund Fiscal Model, which includes the Organics Management strategic initiative.

On June 28, 2022, by Resolution No. 2022-85, the City Council adopted the FY 2022/23 – 2026/27 Capital Improvement Program, which includes the Solid Waste Organics Diversion Project, CIP Project No. 542-54021.

On November 08, 2022, by Resolution No. 2022-142, the City Council authorized the City Manager to execute a MOU between the City of Brentwood and Anaergia Services, LLC, to investigate the feasibility of a project to develop a high diversion organics operating facility that would be used to comply with the City's obligations related to the organic waste disposal requirements associated with SB 1383.

On January 23, 2024, by Resolution No. 2024-08, the City Council authorized the City Manager or Designee to execute an agreement between the City and W.M. Lyles Co., to design and construct a high diversion organics operating facility.

On April 23, 2024, by Resolution No. 2024-43, the City Council approved the contract documents and authorized the City Manager or his designee to execute an agreement with Robertson-Bryan, Inc., for environmental compliance services for the Solid Waste Organics Diversion Project, CIP Project No. 542-54021.

RESOLUTION NO. 2024-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD ADOPTING A MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SOLID WASTE ORGANICS DIVERSION PROJECT, CIP PROJECT NO. 542-54021

WHEREAS, on February 22, 2022, by Resolution No. 2022-23, the City Council adopted a Notification of Intent to Comply ("NOIC") with SB 1383 regulations and authorized staff to submit the NOIC to CalRecycle for approval; and

WHEREAS, on February 22, 2022, by Resolution No. 2022-25, the City Council adopted the City of Brentwood Strategic Plan FY 2022/23 – 2023/24 and directed staff to incorporate strategic plan costs into the Operating and CIP Budgets, as well as in the City's ten-year General Fund Fiscal Model, which includes the Organics Management strategic initiative; and

WHEREAS, on June 28, 2022, by Resolution No. 2022-85, the City Council adopted the FY 2022/23 – 2026/27 Capital Improvement Program, which includes the Solid Waste Organics Diversion Project, CIP Project No. 542-54021 ("Project"); and

WHEREAS, on April 23, 2024, by Resolution No. 2024-43, the City Council approved the contract documents and authorized the City Manager or his designee to execute an agreement with Robertson-Bryan, Inc., for environmental compliance services for the Project; and

WHEREAS, pursuant to the California Environmental Quality Act ("CEQA," codified at Public Resources Code Section 21000, et. seq.) and its implementing regulations (the "CEQA Guidelines," found at 14 CCR Section 15000, et. seq.), the City is the lead agency for the Project; and

WHEREAS, the City reviewed the Project application and prepared an Initial Study for the Project in accordance with Section 15063 of the CEQA Guidelines; and

WHEREAS, on the basis of the Initial Study prepared for the Project and pursuant to Section 15170 of the CEQA Guidelines, and pursuant to Section 15170 of the CEQA Guidelines, the City prepared a Mitigated Negative Declaration ("MND") for the Project, which MND is attached hereto, along with the Initial Study, attached as Exhibit 'A' and incorporated herein by this reference; and

WHEREAS, pursuant to Section 15097 of the CEQA Guidelines, the City has prepared a Mitigation Monitoring and Reporting Program ("MMRP") to accompany the Initial Study and MND, which is attached hereto as a component part of Exhibit 'B' and incorporated herein by this reference; and

WHEREAS, pursuant to Section 15072 of the CEQA Guidelines, the City provided Notice of Intent to adopt a MND for the Project, and pursuant to Public Resources Code Section 20191(b) and Section 15073 of the CEQA Guidelines, the City circulated the proposed MND for public review from August 7, 2024, through September 6, 2024; and

WHEREAS, on August 7, 2024, a Notice of Public Hearing and Intent to Adopt a MND was posted at the City's Municipal Services Center and Contra Costa County Clerk-Recorder's office, submitted to the State Clearinghouse, and mailed to the City's list of agencies and other interested parties regarding CEQA documents available for review and property owners within 300 feet of the Project site, and on August 9, 2024, the Notice of Public Hearing was published in the Brentwood Press; and

WHEREAS, mitigation measures in the proposed MND were revised based on comments received during the public review period, and the revisions result in mitigation measures that are equivalent or more effective in mitigating or avoiding potential significant effects of the Project, and would not cause any new potentially significant effect on the environment; and

WHEREAS, the City Council has considered the information provided to it by those testifying; has reviewed and considered the information provided in the Staff Report; has read and considered the report and supporting data; and has considered comments received.

NOW, THEREFORE BE IT RESOLVED that the City Council of the City of Brentwood does hereby find that:

1. The recitals set forth above are true and correct and are incorporated herein by this reference.
2. The MND and MMRP have been prepared and completed in accordance with the requirements of CEQA and the CEQA Guidelines.
3. The City Council has reviewed and considered the MND and MMRP, together with all comments received during the public review process, as well as the written responses prepared to such comments, the staff report, testimony by staff and the public, and all other materials and evidence submitted to the City relating to the Project.
4. The Initial Study, MND, and MMRP reflect the independent judgment and analysis of the City, and identified all potentially significant adverse environmental impacts and feasible mitigation measures or standard conditions of approval that would reduce these impacts to a less-than-significant level.
5. All mitigation measures identified in the final, revised MND are adopted and will be implemented as part of the Project.
6. There is no substantial evidence that the Project as mitigated in the MND will have a significant impact on the environment.

7. The monitoring and reporting of CEQA mitigation measures in connection with the Project will be conducted in accordance with the MMRP incorporated into the Project. Adoption of the MMRP will constitute fulfillment of the CEQA monitoring and/or reporting.
8. The City's custodian of record of proceedings for the Project is the Director of Public Works and the record of proceedings is maintained in the City's files at 150 City Park Way, Brentwood, California.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Brentwood at a regular meeting held on the 22th day of October 2024 by the following vote:

EXHIBIT ‘A’

INITIAL STUDY
FOR THE
CITY OF BRENTWOOD
SOLID WASTE ORGANICS DIVERSION PROJECT

Prepared for:

THE CITY OF BRENTWOOD
HERITAGE ▪ VISION ▪ OPPORTUNITY

Prepared by:

ROBERTSON - BRYAN, INC.
Solutions for Progress

In association with:

ASCENT

Natural Investigations Company

August 2024

INITIAL STUDY
FOR THE
CITY OF BRENTWOOD
SOLID WASTE ORGANICS DIVERSION PROJECT

Prepared for:

CITY OF BRENTWOOD
2201 Elkins Way
Brentwood, CA 94513
(925) 516-6000

Prepared by:

ROBERTSON-BRYAN, INC.
3100 Zinfandel Drive, Suite 300
Rancho Cordova, CA 95670
(916) 714-1801

In association with:

ASCENT ENVIRONMENTAL, INC.
455 Capitol Mall #300
Sacramento, CA 95814
(916) 444-7301

and

NATURAL INVESTIGATIONS COMPANY
3104 O Street #221
Sacramento, CA 95816
(916) 765-9381

August 2024

TABLE OF CONTENTS

SECTION PAGE

1 INTRODUCTION 1

1.1 REGULATORY GUIDANCE AND PURPOSE OF THIS DOCUMENT 1

1.2 PUBLIC REVIEW OF THE DOCUMENT 1

1.3 SUMMARY OF FINDINGS 1

1.4 OTHER APPROVALS 2

2 PROJECT DESCRIPTION 3

2.1 PROJECT LOCATION 3

2.2 BACKGROUND 3

2.3 PROJECT PURPOSE AND OBJECTIVES 3

2.4 EXISTING FACILITIES AND OPERATIONS 5

2.4.1 Solid Waste Transfer Station and Solid Waste Handling 5

2.4.2 WWTP and Biosolids Handling 6

2.5 PROJECT COMPONENTS 7

2.5.1 Waste Receiving Facilities 7

2.5.2 Anaerobic Digester Facilities 9

2.5.3 Biosolids Drying and Pyrolysis System 10

2.5.4 Natural Gas Pipelines and Interconnector station 11

2.5.5 Ancillary Facilities 11

2.5.6 Pedestrian Path Realignment 12

2.5.7 Tree Removal 13

2.6 PROJECT CONSTRUCTION 13

2.6.1 Schedule 13

2.6.2 Equipment, Workforce, and Work Hours 13

2.6.3 Safety and Best Management Practices 15

2.7 PROJECT OPERATIONS AND MAINTENANCE 17

2.7.1 Workforce 18

2.7.2 Truck Traffic 18

2.7.3 Maintenance 18

3 ENVIRONMENTAL CHECKLIST 20

3.1 AESTHETICS 21

3.1.1 Setting 21

3.1.2 Discussion 22

3.2 AGRICULTURE AND FOREST RESOURCES 24

3.2.1 Setting 24

TABLE OF CONTENTS

SECTION PAGE

3.2.2 Discussion 24
3.3 AIR QUALITY 26
3.3.1 Setting 26
3.3.2 Discussion 32
3.4 BIOLOGICAL RESOURCES 41
3.4.1 Setting 41
3.4.2 Discussion 44
3.5 CULTURAL RESOURCES 52
3.5.1 Setting 52
3.5.2 Discussion 53
3.6 ENERGY 56
3.6.1 Setting 56
3.6.2 Discussion 56
3.7 GEOLOGY AND SOILS 58
3.7.1 Setting 58
3.7.2 Discussion 59
3.8 GREENHOUSE GAS EMISSIONS 61
3.8.1 Setting 61
3.8.2 Discussion 63
3.9 HAZARDS AND HAZARDOUS MATERIALS 65
3.9.1 Setting 65
3.9.2 Discussion 65
3.10 HYDROLOGY AND WATER QUALITY 68
3.10.1 Setting 68
3.10.2 Discussion 70
3.11 LAND USE AND PLANNING 73
3.11.1 Setting 73
3.11.2 Discussion 73
3.12 MINERAL RESOURCES 74
3.12.1 Setting 74
3.12.2 Discussion 74
3.13 NOISE 75
3.13.1 Setting 75
3.13.2 Discussion 83
3.14 POPULATION AND HOUSING 89

TABLE OF CONTENTS

SECTION PAGE

3.14.1 Setting 89
3.14.2 Discussion 89
3.15 PUBLIC SERVICES 90
3.15.1 Setting 90
3.15.2 Discussion 90
3.16 RECREATION 92
3.16.1 Setting 92
3.16.2 Discussion 92
3.17 TRANSPORTATION 93
3.17.1 Setting 93
3.17.2 Discussion 96
3.18 TRIBAL CULTURAL RESOURCES 101
3.18.1 Setting 101
3.18.2 Discussion 102
3.19 UTILITIES AND SERVICE SYSTEMS 104
3.19.1 Setting 104
3.19.2 Discussion 104
3.20 WILDFIRE 107
3.20.1 Setting 107
3.20.2 Discussion 107
3.21 MANDATORY FINDINGS OF SIGNIFICANCE 109
3.21.1 Discussion 109
4 LIST OF PREPARERS 112
5 REFERENCES 113
5.1 WRITTEN REFERENCES 113
5.2 PERSONAL COMMUNICATIONS 116

LIST OF TABLES

Table 1. Construction activity and associated typical construction equipment. 14
Table 2. Operational truck and workforce traffic. 18
Table 3. National and California ambient air quality standards. 27
Table 4. Construction-related emissions of criteria air pollutants. 34
Table 5. Operations-related emissions of criteria air pollutants. 35
Table 6. Construction health risk results. 37
Table 7. Operational health risk results. 38
Table 8. Cumulative health risk summary. 39
Table 9. Summary of energy consumption and generation from project construction and operations. 57
Table 10. Change in greenhouse gas emissions for project operations compared to existing conditions ($MTCO_2e$/year) 64
Table 11. Existing ambient short-term noise measurements summary. 77
Table 12. Existing ambient long-term noise measurements summary. 77
Table 13. Ground vibration impact criteria for human response. 79
Table 14. Construction damage vibration criteria. 79
Table 15. Stationary (non-transportation) noise source standards in the City of Brentwood General Plan. 82
Table 16. Typical noise levels from construction equipment. 84

LIST OF FIGURES

Figure 1. Project vicinity map. 4
Figure 2. Project site plan. 8
Figure 3. Project operations process flow diagram. 9
Figure 4. Habitat types in the project area. 43
Figure 5. Special-status plant and wildlife records in the project area. 45
Figure 6. Noise measurement locations. 78

APPENDICES

Appendix A Air Quality/Greenhouse Gas Emissions Assumptions and Calculations

Appendix B Biological Resources Data

Appendix C Noise Data and Calculations

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADWF	average dry weather flow
BAAQMD	Bay Area Air Quality Management District
BDPS	biosolids drying and pyrolysis system
BMPs	best management practices
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CA MUTCD	California Manual on Uniform Traffic Control Devices
CCCFCWCD	Contra Costa County Flood Control and Water Conservation District
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
City	City of Brentwood
CNDDB	California Natural Diversity Database
dB	decibel
dBA	A-weighted decibel
DBH	diameter at breast height
ECCCHCP	East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan
EPA	U.S. Environmental Protection Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
HRA	health risk assessment
lb/day	pounds per day
MGD	million gallons per day
$MTCO_2e$	metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NOx	oxides of nitrogen
NPDES	National Pollution Discharge Elimination System
PG&E	Pacific Gas & Electric
PM	particulate matter
$PM_{2.5}$	particulate matter 2.5 microns in diameter
PM_{10}	particulate matter 10 microns in diameter or smaller
PPV	peak particle velocity
PRC	Public Resources Code

ROG	reactive organic gases
SB	Senate Bill
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WWTP	Wastewater Treatment Plant

This page intentionally left blank.

1 INTRODUCTION

1.1 REGULATORY GUIDANCE AND PURPOSE OF THIS DOCUMENT

This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code (PRC) Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) 15000 et seq. This Initial Study was prepared to determine if the Solid Waste Organics Diversion Project (project) proposed by the City of Brentwood (City) could have significant impacts on the environment. If the lead agency for the CEQA process determines that there is no substantial evidence for such impacts, or if the potential impacts can be reduced through revisions to the project or mitigation measures, a Negative Declaration or Mitigated Negative Declaration can be prepared (CEQA Guidelines 15070). The City, as the CEQA lead agency for the project, has determined that an Initial Study and Mitigated Negative Declaration are the appropriate documents for compliance with CEQA and the CEQA Guidelines.

1.2 PUBLIC REVIEW OF THE DOCUMENT

In accordance with Section 15073 of the CEQA Guidelines, this document will be circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on it. In reviewing this Initial Study, affected public agencies and the interested public should focus on whether the document sufficiently identifies and analyzes the possible impacts on the environment.

Following the close of the public review period, the City Council will review and evaluate the evidence contained in the Initial Study, associated proposed Mitigated Negative Declaration, and public comments received on these documents. At a scheduled and noticed public meeting, the City Council will consider approval of the project and adoption of the Mitigated Negative Declaration.

1.3 SUMMARY OF FINDINGS

Section 3 of this document contains the analysis and discussion of potential environmental impacts resulting from the project. Based on the analysis presented in Section 3, the project would have no impact on the following environmental factors.

- Agriculture and Forestry Resources
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Utilities and Service Systems

Impacts of the project were determined to be less than significant for the following environmental factors.

- Aesthetics

- Air Quality
- Energy
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Public Services
- Recreation
- Transportation
- Wildfire

Impacts of the project on the following environmental factors would be less than significant with incorporation of the mitigation measures described in Section 3.

- Biological Resources
- Cultural Resources
- Geology and Soils
- Noise
- Tribal Cultural Resources

As required by CEQA, a Mitigation Monitoring and Reporting Program will be prepared and adopted at the time of project approval by City Council. It will include those mitigation measures that would reduce potentially significant environmental impacts to less-than-significant levels.

1.4 OTHER APPROVALS

The City of Brentwood is the CEQA lead agency for the project. The City Council will be responsible for adopting the Mitigated Negative Declaration and approving the project. Additionally, the following responsible agencies may have jurisdiction over elements of the project.

- **Central Valley Regional Water Quality Control Board**: Coverage under the *General Permit for Storm Water Discharges Associated with Construction Activities* (Construction General Permit; Order No. 2022-0057-DWQ), for disturbance of more than one acre.
- **California Integrated Waste Management Board:** Solid waste facility permit modification.
- **Bay Area Air Quality Management District:** Clean Air Act General Conformity rule and authority to construct (for devices that emit air pollutants), permit to operate, and Air Quality Management Plan consistency determination.
- **East Contra Costa Habitat Conservancy:** Permit coverage under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan.
- **City of Brentwood Engineering:** Building structure permits; grading and drainage permit; paving permit; stormwater pollution prevention plan review; and electrical and plumbing permits.
- **Contra Costa Fire Protection District:** Fire suppression systems approval.

2 PROJECT DESCRIPTION

The City proposes to construct, operate, and maintain the Solid Waste Organics Diversion Project, consisting of organic waste recovery facilities capable of beneficially reusing organic waste (including the organic fraction of solid waste and wastewater biosolids as defined by Senate Bill [SB] 1383 regulations), receiving liquid organic wastes, and producing renewable natural gas and biochar (project). The following sections describe the project location, background, purpose and objectives, existing facilities, project components, construction methods, and operations and maintenance.

2.1 PROJECT LOCATION

The project would be located at the City of Brentwood Wastewater Treatment Plant (WWTP) at 2251 Elkins Way, the City's Solid Waste Transfer Station at 2301 Elkins Way, and on City-owned land adjacent to and east of the WWTP, in Contra Costa County, California. A vicinity map is provided in **Figure 1**.

2.2 BACKGROUND

The State of California enacted SB 1383, a state-mandated effort to reduce organic waste in California landfills by 75 percent and to increase excess edible food recovery 20 percent by 2025. SB 1383 targets greenhouse gas (GHG) emissions associated with the breakdown of organics in landfills. The goal of SB 1383 is to reduce emissions of short-lived climate pollutants, which include methane, black carbon, tropospheric ozone, and hydrofluorocarbons, by reducing the amount of food, yard waste, and biosolids in landfills.

In response to SB 1383, the City proposes to construct, operate, and maintain a new Solid Waste Organics Diversion Project to beneficially reuse organic waste and produce renewable natural gas. The project would use the organic fraction of municipal solid waste, yard waste, and WWTP biosolids as feedstocks for producing renewable energy while reducing the disposal of these wastes in landfills. In addition, the City is proposing to accept and treat external, pre-processed organic high strength waste[1]. Doing so would offer numerous economic benefits to the City, including increased revenue via tip fees and increased renewable natural gas production.

2.3 PROJECT PURPOSE AND OBJECTIVES

The purpose of the project is to construct, operate, and maintain solid waste organics diversion facilities, which will facilitate the City achieving California's mandate of diverting 75 percent of organic waste from landfills by 2025. The specific objectives of the project are listed below.

[1] The City is proposing to accept "anaerobically digestible material," defined in Title 14, CCR, section 17896.6(a)(1) as "inedible kitchen grease as defined in section 19216 of the Food and Agricultural Code, food material as defined in Title 14, CCR, section 17896.2(a)(12) and vegetative food material as defined in Title 14, CCR, section 17896.2(a)(12)(A), or as approved by the Department of Resources Recycling and Recovery. Herein, this material is referred to as "high strength waste."

Figure 1. Project vicinity map.

1. Divert the City's organic solid waste and biosolids away from landfill disposal.
2. Beneficially reuse organic waste by producing biochar.
3. Produce biogas to serve as a renewable natural gas supply.

2.4 EXISTING FACILITIES AND OPERATIONS

The following sections describe the existing sources of waste and waste handling operations at the City's Solid Waste Transfer Station and the current WWTP biosolids treatment and disposal practices that would be affected by the project.

2.4.1 Solid Waste Transfer Station and Solid Waste Handling

The Solid Waste Transfer Station includes a fully enclosed transfer building, a tipping pad, a materials storage area, and a container storage area. Access to the transfer station is via a road located on the eastern boundary of the WWTP.

The City operates the transfer station under Solid Waste Facility Permit No. 07-AA-0068 issued by the Contra Costa Environmental Health Division on February 14, 2014, and concurred by the California Integrated Waste Management Board. The permit establishes operating hours, allowable types and quantity of waste that may be received, and waste removal timeframe requirements. The transfer station also operates under a Permit to Operate issued by the Bay Area Air Quality Management District.

The City collects municipal solid waste, mixed recyclable materials, and yard waste on a weekly basis. All waste streams are delivered to the transfer station. The municipal solid waste and yard waste are transferred to Keller Canyon Landfill in Pittsburg, California, where the municipal solid waste is landfilled and yard waste is used as alternate daily cover. The recyclable materials are stockpiled and loaded into transfer trailers for further processing elsewhere.

The transfer station is permitted to receive 400 tons per day and currently receives an average of 200 tons per day. All materials arriving at the transfer station are generated within the city limits and are collected by the City's Solid Waste Division. An exception to this is mixed material brought to the transfer station by city residents on "Public Clean-Up Days" held up to 10 times per year on weekends.

The transfer station permitted hours of operation are Monday through Friday from 4:00 a.m. to 7:00 p.m., and Saturday and Sunday from 7:00am to 6:00pm. Currently, the transfer station opens at 4:00 a.m. Monday through Friday for collection trucks to leave the site. Some waste arrives soon after 4:00 a.m., but most arrives at the facility around 8:00 a.m. and again around 1:00 p.m. Vehicular traffic is minimal the rest of the afternoon. The transfer station generally closes at 3:30 p.m. when all daily waste handling activities have been completed. These operating hours are for internal operations only. The transfer station is not open to the public.

Potential nuisances and environmental hazards at the transfer station are eliminated or minimized by thoroughly cleaning the facility on a regular basis, promptly transferring wastes to a landfill, and implementing litter controls. In addition, the City implements the following practices.

1. Dust is controlled by operating vehicles at low speeds on paved surfaces only. In addition, the City regularly cleans the tipping pad and access roads with a street sweeper. Most transfer operations occur inside the transfer building, which is equipped with water misters to control dust and exhaust fans.
2. Vector, bird, and animal nuisances are controlled by routine cleaning and promptly loading and removing solid waste from the site. In the event a significant vector problem were to develop, a professional pest control company would be utilized to abate the problem.
3. Odors are controlled by promptly transferring wastes and regularly cleaning the tipping pad and collection vehicles, and by conducting transfers primarily within the transfer building.
4. All operation areas are graded to prevent ponding of water and to provide positive drainage. All stormwater and surface drainage from non-waste handling areas is directed across sloped areas to a basin equipped with a shut-off valve. The catch basin drains into a City-owned detention basin adjacent to Elkins Way and no storm water leaves City property. The drainage system has been designed to accommodate a 100-year storm event. Contact water, which occurs from washdowns of the waste receiving and unloading areas and from saturated loads of waste, drains directly to an oil-water separator before discharge to the City's WWTP.
5. Traffic is controlled by separating unloading collection vehicles from loading transfer vehicles; by maintaining clear, limited routes through the facility; by maintaining counterclockwise traffic flow without crossovers; and by using clear signage and pavement striping.
6. Worker health and safety is addressed by training personnel in accordance with the City of Brentwood's Injury and Illness Prevention Plan. Typical trainings address site safety policies; personal health and safety; worker right-to-know; hazardous waste recognition; facility operations; and emergency response procedures.

2.4.2 WWTP and Biosolids Handling

The City owns and operates a WWTP at the project site. The City is in the process of constructing the Phase II WWTP expansion project, which will expand the treatment capacity from 5 million gallons per day (MGD) average dry weather flow (ADWF) to 6.4 MGD ADWF to accommodate future increased wastewater inflows associated with development and population growth identified in the City's General Plan. The WWTP is permitted for surface discharge of effluent to Marsh Creek by the Central Valley Water Board under National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082660, Order No. R5-2024-0020 adopted in May 2024. The City also implements a recycled water program that irrigates parks and public spaces with recycled water from the WWTP, and operates a fill station at the WWTP that allows City utility customers to bring containers to fill with recycled water for appropriate use.

A byproduct of the WWTP treatment process is biosolids. Biosolids treatment consists of mixing the biosolids with a polymer and dewatering via two belt filter presses. Biosolids are then hauled

offsite for disposal at the Altamont Landfill in Livermore, California for use as alternate daily cover.

2.5 PROJECT COMPONENTS

The project components are listed below and described further in the following sections.

1. Expansion of the Solid Waste Transfer Station to accommodate new equipment to separate and prepare organic waste for a new anaerobic digester.
2. Installation of an anaerobic digester and associated infrastructure.
3. Installation of centrifuges, biosolids dryers, and pyrolysis units to process material from the anaerobic digester.
4. Installation of pipelines and an interconnector station to convey renewable natural gas generated by the anaerobic digester to a Pacific Gas & Electric (PG&E) main line.
5. Ancillary facilities related to above project components.
6. Realignment of a paved pedestrian path from Sunset Park to the Marsh Creek trail.
7. Tree removal to accommodate new facilities and pedestrian path realignment.

Figure 2 provides a site plan showing locations of the primary project components.

2.5.1 Waste Receiving Facilities

The Solid Waste Transfer Station would be expanded to provide space for new equipment required to extract the organic waste to be processed by the anaerobic digester. The existing transfer station building is approximately 20,800 square feet. A new pre-engineered metal building, approximately 20,000 square feet in size, would be added west of and adjacent to the existing building, at the current location of the yard waste pad.

The municipal solid waste coming into the transfer station would be sorted and processed using the newly installed equipment to create multiple products to increase recycling volume for the City and produce an organic waste slurry for the anaerobic digester. Select recyclables would be isolated and hauled away for further processing at a separate, offsite facility, consistent with current operations. The new equipment to be installed within the new building is listed below.

- Pre-shredder bag opener to prepare material for sorting.
- Primary electro-drum magnet to remove large mixed metals.
- Disc screen to further sort material.
- Secondary drum magnet to remove small ferrous metals.
- Optical sorter to sort material into three streams: (1) mixed marketable recyclable plastics and fiber; (2) select wood waste, organic textiles, compostable fiber, and green waste; and (3) remaining materials.
- Organic extrusion press to extract putrescible (i.e., decayable) organics for the anaerobic digester.

- Organics polishing system to remove floatable plastic and fiber and fast settling grit prior to storage in the buffer tanks that feed the anaerobic digester.

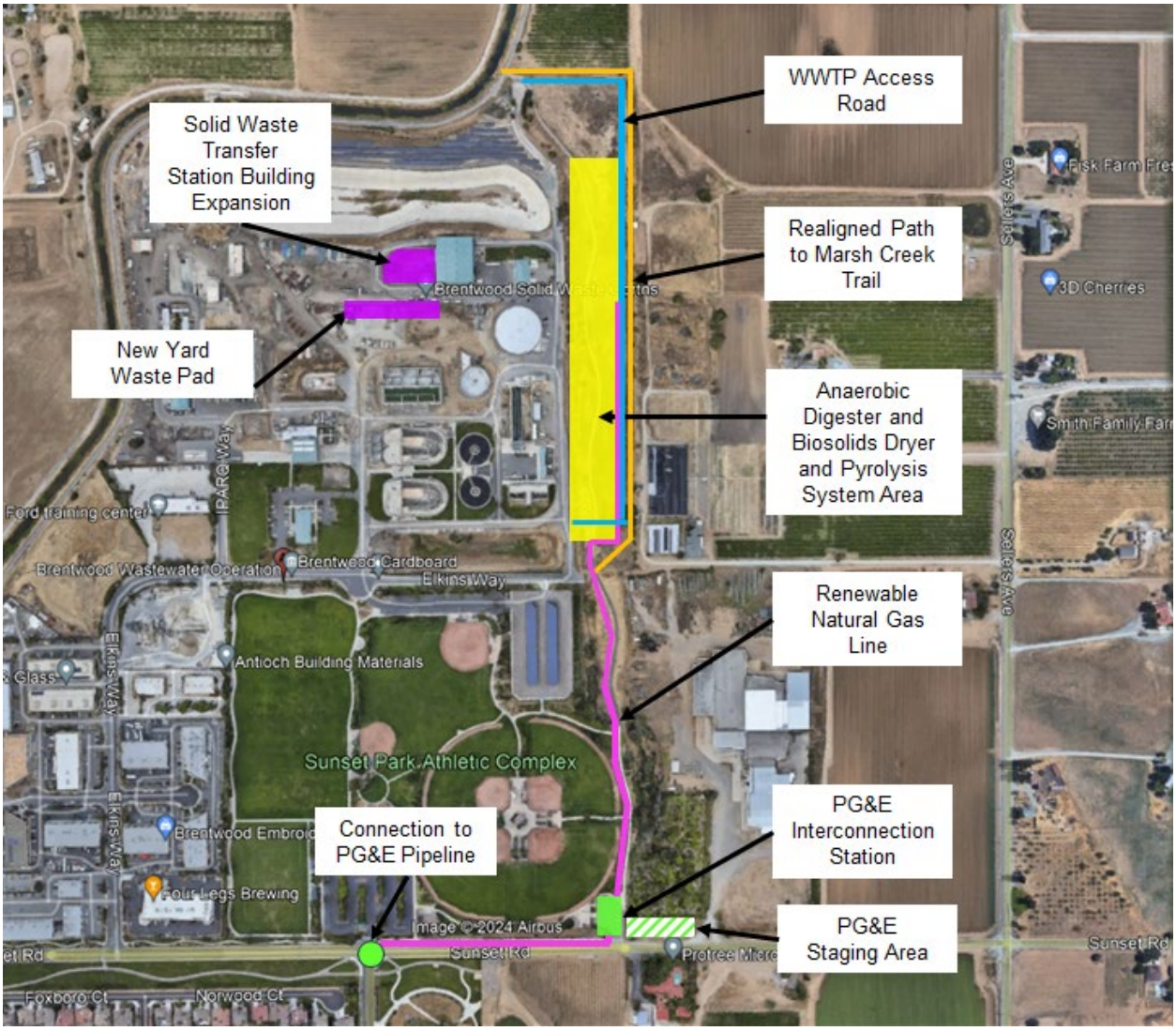


Figure 2. Project site plan.

Equipment also would be added to the site to receive and process high strength liquid waste for the organics digester, as follows.

- High strength waste liquid reception skid located adjacent to the anaerobic digester.
- High strength waste transfer pumps located adjacent to the anaerobic digester.

In addition, equipment would be added to the site to receive and thicken the waste activated sludge from the WWTP secondary clarifiers for co-digestion with anaerobically digestible

material, all of which would be transferred as digestate to the biosolids drying and pyrolysis system and filtrate to the WWTP headworks.

Finally, a new yard waste pad would be constructed. This yard waste pad would be a concrete pad with an area of approximately 10,000 square feet, located just south of the existing transfer station fence line (Figure 2). Some yard waste may be processed onsite by the anaerobic digester and the remainder would be sent to an offsite facility for composting.

2.5.2 Anaerobic Digester Facilities

The City would construct an approximately 2-million-gallon anaerobic digester to process WWTP biosolids, organic material from municipal solid waste, some yard waste, and high strength waste. The anaerobic digester would be constructed on City-owned land adjacent to and east of the transfer station and WWTP (Figure 2). Outputs from the anaerobic digester include digested biosolids that would be converted to biochar (described in Section 2.5.3) and biogas that would be treated and prepared for distribution to a PG&E main line (described in Section 2.5.4). A process flow diagram is provided in **Figure 3**.

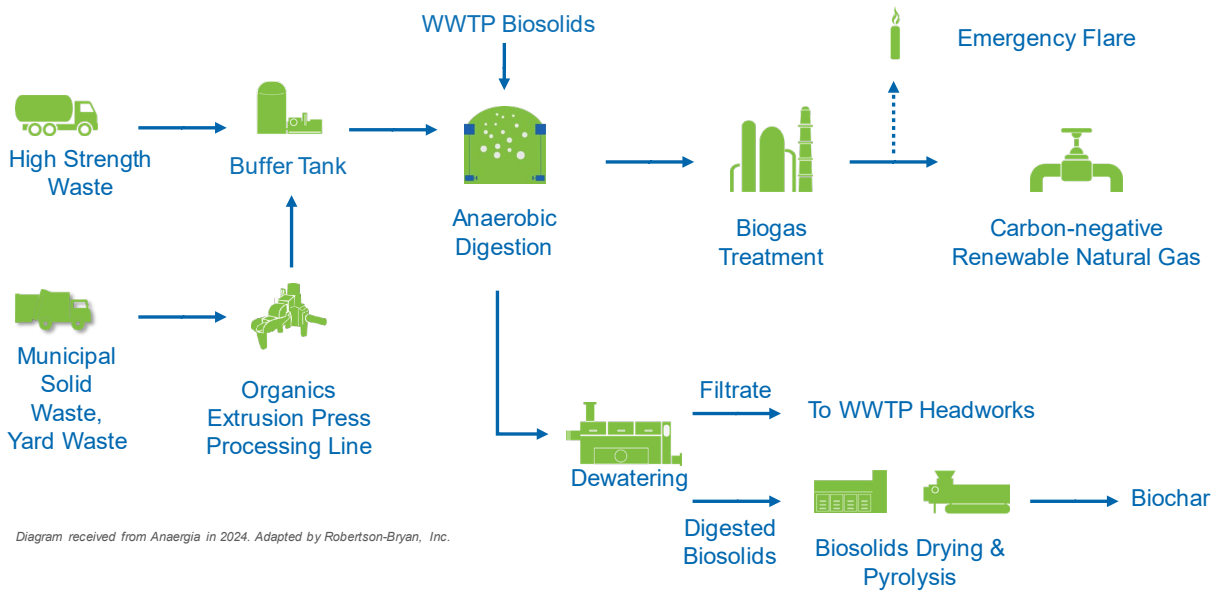


Figure 3. Project operations process flow diagram.

Additional components of the anaerobic digester facilities are listed below.

- Three buffer tanks would maintain consistent feeding for the anaerobic digester and counteract any changes in feedstock availability.
- Hot water boiler would provide anaerobic digester heating.

- Activated carbon-based control system would be sized to provide non-detectable odor levels at the project fence line.
- Flare system would burn off biogas produced by the anaerobic digester during maintenance or system outages. The flare system would meet best available control technology pollution control standards and be sized appropriately to accommodate the throughput in the digester.
- External biogas storage dome would provide at least 30 minutes of average storage to allow the biogas system to manage grid injection and minimize flaring.
- Gas holders to store gas would provide additional flexibility in the event of equipment maintenance to minimize flaring.

The anaerobic digester would produce biogas 24 hours a day, 7 days a week. The biogas would be conditioned with desulfurization scrubbers, then pressurized with centrifugal blowers to meet the grid injection pressure. Activated carbon vessels would be used to remove any trace contaminates including any remaining hydrogen sulfide, volatile organic carbon compounds, siloxanes, and reduced sulfur compounds. Contaminants would be removed through adsorption to activated carbon media. The final step would be pressurization and membrane separation of the carbon dioxide (CO_2) and methane (CH_4) in the biogas to meet the PG&E pipeline specifications for renewable natural gas, per specification in PG&E Gas Rule 29.

2.5.3 Biosolids Drying and Pyrolysis System

The biosolids dryer and pyrolysis system (BDPS) would process digested biosolids (digestate) from the anaerobic digester into biochar. The BDPS would be constructed on City-owned land adjacent to and east of the transfer station and WWTP (Figure 2). The BDPS would consist of the following elements.

- 3 centrifuges
- 20 biosolids dryers
- 5 pyrolysis units

The centrifuges would dewater the digestate from the anaerobic digester to 25 percent solids. The biosolids dryers would convert the dewatered digestate to dry pellets that would be at least 90 percent solids by weight. The dry pellets would feed into the pyrolysis units. The pyrolysis system would convert approximately half of the volatile organic material in the dry pellets to biochar. Biochar can be sold for various uses, including as a soil fertilizer.

Exhaust air from the biosolids dryers would be sent through an air filtration system consisting of sulfuric acid wet scrubbers and a biofilter. The exhaust air from the pyrolysis systems would be sent to a sodium hydroxide scrubber with a granular activated carbon filter.

Basic operation of the BDPS would result in biochar being produced and packaged in bags. The biochar may be applied by the City on public parks and medians or hauled offsite by the BDPS vendor for sale. The BDPS could be operated to use only the biosolids dryers, which would result in Class A biosolids being produced that would be hauled to a landfill for use as daily

cover. If the BDPS is out of service for an extended period, then the existing belt filter press system would be used and those biosolids would be hauled to a landfill for use as daily cover, as they are now.

Note: The City previously approved construction and operation of 1 centrifuge, 8 biosolids dryers, and 2 pyrolysis units as part of the City's WWTP Phase II Expansion Project (City of Brentwood 2023a). With the project proposed herein, operation of these units is a changed condition relative to the WWTP Phase II Expansion Project. Specifically, the BDPS would receive digested biosolids from an anaerobic digester, which would digest diverted organic waste and high strength waste in addition to WWTP biosolids. The Supplemental Initial Study for the WWTP Phase II Expansion Project prepared to assess effects of operating the BDPS does not address the facilities receiving digested biosolids from an anaerobic digester because the digester was not part of that project. Furthermore, the location for the additional centrifuges, biosolids dryers, and pyrolysis units under the project overlaps with the location proposed for the WWTP Phase II Expansion Project resulting in overlapping construction areas. Therefore, for this Initial Study, all 3 centrifuges, 20 biosolids dryers, and 5 pyrolysis units are considered part of the project and are analyzed in their entirety in this document.

2.5.4 Natural Gas Pipelines and Interconnector station

Renewable natural gas produced from the anaerobic digester biogas would be piped to a new PG&E interconnector station. The interconnector station is the point where the project and PG&E facilities meet and the custody of renewable natural gas is exchanged. The interconnector station would be mounted on a 50-feet long and 100-feet wide pad and installed at what is currently a parking lot located off Sunset Road adjacent to the Sunset Park Athletic Complex (Figure 2). The interconnector station would include assets and equipment necessary to analyze, measure, odorize, and stop the flow of gas. This project component would be constructed by PG&E.

One 4-inch diameter gas pipeline would be installed between the WWTP and the PG&E interconnector station, east of the Sunset Park Athletic Complex and west of the pedestrian path connecting Sunset Road and Elkins Way on City-owned property. Upon completion of pipeline installation, the disturbed area would be planted with native grass seed within the current natural area. Disturbed areas adjacent to Sunset Park would be replanted consistent with the park landscape (e.g., turf, shrubs). This project component would be constructed by a City contractor.

A second pipeline, no larger than 8 inches in diameter, would be installed to connect the interconnector station to an existing PG&E main line within the roadbed of Sunset Road. This project component would be constructed by PG&E.

The pipeline alignments and interconnector station location are shown in Figure 2.

2.5.5 Ancillary Facilities

The following ancillary facilities would be installed to facilitate project operations. These facilities would be located within the footprint of the WWTP or the adjacent property where the anaerobic digester and BDPS would be located.

- An ammonia removal system would be used as a side stream treatment to remove ammonia from the dewatering operation and recover ammonium sulfate that can be used as a fertilizer product. The system would include a buffer tank, ammonia stripper, ammonia scrubber, recirculation blowers, pumps, and a heat exchanger. The outlet of this system would go to odor control. This system would also include sulfuric acid storage (may be common with odor control for biosolids dryers) and an ammonium sulfate storage tank.
- A pump station would be constructed to return flows from the various project components to the WWTP headworks. This pump station would receive all the filtrate, centrate, condensate, and other process drains from the solids thickening, anaerobic digestion, renewable natural gas, dewatering, ammonia removal, biodrying, and pyrolysis systems, which would be piped to the headworks for treatment.
- A blower at the WWTP to account for the additional ammonia and biochemical oxygen demand loading from the anaerobic digester.
- A diesel-powered generator, assumed to be 2.5-megawatt capacity, would provide backup power during outages.
- New paved roadways within the site to access facilities.
- Perimeter fencing around the new Solid Waste Transfer Station and WWTP facilities.
- Electrical services for the facilities.
- Stormwater detention basin and pump station to hold and convey stormwater from the anaerobic digester-BPDS area to the existing detention basin adjacent to Elkins Way.
- Security lighting on new buildings and in parking areas.

2.5.6 Pedestrian Path Realignment

A paved pedestrian path to the east of the Solid Waste Transfer Station and WWTP connects the Marsh Creek trail, located north of the facilities, and the Sunset Park Athletic Complex, located south of the WWTP. This path would be realigned to the east of its existing location to accommodate the new facilities, as shown in Figure 2.

The pedestrian path area between Elkins Way and Marsh Creek Trail would be inaccessible to the public while the realigned path is constructed, which would last approximately eight weeks. During this time, signage would be provided in the Sunset Park Athletic Complex vicinity directing path users to alternative routes to the Marsh Creek Trail and at Marsh Creek Trail directing users to alternative routes to access the park.

The abandoned segments of the path would be demolished and reused at the project site as grindings. The disturbed area would be planted with native grass seed.

2.5.7 Tree Removal

Construction of the project would include removal of up to 25 trees, including valley oak, California live oak, California peppertree, olive, black poplar, Fremont cottonwood, carob, Chinese pistachio, plum, black walnut, cherry, fan palm, and birch.

Ten of the trees are in the area adjacent to and east of the WWTP where the anaerobic digester, biosolids dryers, and pyrolysis systems would be constructed. These ten trees include five valley oak trees (*Quercus lobata*) that range in diameter at breast height (DBH) from 3–16 inches, two California live oak trees (*Quercus agrifolia*) that range from 6–16 inches DBH, and three California peppertrees *(Schinus molle*) that range from 18–24 inches DBH. Any existing trees that are not in direct conflict with new facilities would be retained.

The other fifteen trees are located along the eastern extent of the project area where construction of the realigned pedestrian path would occur. When the new path is constructed, every effort would be made to route the new path around the existing trees and keep as many as possible. Of the fifteen trees that could be removed, four are native species, including one black walnut and three in the Populus genus, and twelve are non-native species including an assortment of common orchard, agricultural and landscaping varieties. Ten trees have a DBH less than 6 inches, with six of those trees having a DBH less than 2 inches. The remaining five trees have a DBH ranging from 7–16 inches.

2.6 PROJECT CONSTRUCTION

The construction methods and activity occurring over the course of the project, including number of construction personnel, vehicle round trips per day, and the onsite equipment operations required to construct the facilities would vary. Construction activities would include site preparation (e.g., excavation, grading, and clearing), installation of underground features (e.g., trenching/backfilling), concrete work for foundations/structures, equipment installation, paving and landscaping, and miscellaneous activities and cleanup. The sections below identify the City's assumptions and construction details relevant for conducting the review and assessment of environmental effects of project construction and operations.

2.6.1 Schedule

The project schedule anticipates construction beginning in December 2024 and requiring approximately 30 months to complete.

2.6.2 Equipment, Workforce, and Work Hours

The following sections describe the equipment needed to construct the new facilities at the Solid Waste Transfer Station and WWTP, and install the renewable natural gas facilities, and the anticipated peak work force needed.

2.6.2.1 Solid Waste Transfer Station, WWTP Facilities, and Pedestrian Path

Table 1 lists the types of equipment that may be used on an as-needed basis to construct the new facilities at the Solid Waste Transfer Station and the WWTP, and realign the pedestrian path. An

anticipated peak day of construction activity for the project would likely occur on a day when equipment-intensive activity, such as concrete placement, occurs. Such a day would involve use of 3 to 4 pieces of equipment and 10 to 15 delivery trips of concrete over an 8-hour day. The anticipated peak daily construction workforce for the project is approximately 30 workers and the average number of workers for the duration of construction would be approximately 15 workers.

Table 1. Construction activity and associated typical construction equipment.

Site Prep (excavation, grading, clearing)	• Excavator • Loader • Dozer • Compactor • Water Truck • Fuel Truck
Trenching	• Excavator • Compactor • Water Truck • Loader
Concrete Work	• Concrete Truck • Concrete Pump Truck • Forklift • Crane • Loader
Equipment Installation	• Crane • Forklift • Welder • Compressor • Generator
Paving/Landscape	• Dump Truck • Roller • Paving Equipment • Concrete Truck • 10-wheeler AC truck • Mini-Excavator
Cleanup/Decommissioning	• Loader • Mini-Excavator • Dump Truck • Forklift

Construction would be performed between 7:00 a.m. and 4:00 p.m., Monday through Friday. Construction work may periodically occur on Saturdays to maintain project schedule and would be limited to between 9:00 a.m. and 4:00 p.m. in accordance with the City's *Engineering Procedures Manual* (City of Brentwood 2023b).

A temporary fence around the construction site would be installed to prevent public access to the project site during construction.

2.6.2.2 Renewable Natural Gas Pipelines and Interconnector Station

Construction of the renewable natural gas pipelines would be completed using open trench methodology. The interconnector station would involve concrete work and placement of the skid-mounted station components. A staging area would be located adjacent to the work area, as shown in Figure 2, for placement of PG&E construction equipment and supplies. A temporary fence would be installed to prevent public access to the construction area while the pipeline between the WWTP and Sunset Road and interconnector station are being installed. The total duration of work to install the interconnector station and pipelines to the tie-in point in Sunset Road is estimated to be 30 days.

In accordance with the City's *Engineering Procedures Manual* (City of Brentwood 2023b), work within 300 feet of an occupied residence would limited to occurring between 8:00 a.m. and 4:30 p.m. In accordance with the City's *Traffic Control Plan Submittal Criteria* (City of Brentwood n.d.), work in Sunset Road when lane closure is required would be limited to occurring between 9:00 a.m. and 3:00 p.m.

2.6.3 Safety and Best Management Practices

The following safety measures and best management practices (BMPs) are elements of the project that the City would implement to reduce or avoid adverse environmental effects of the project. These practices incorporate compliance with regulatory requirements as well as sensitive design elements and construction BMPs.

2.6.3.1 Erosion Control and Stormwater Pollution Prevention:

Because the project would disturb more than one acre, the City, or its construction contractor, would file the Notice of Intent and Permit Registration Documents for authorization of project construction activities under the State Water Resources Control Board's (SWRCB) *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Order No. 2022-0057-DWQ/NPDES Permit No. CAS000002). The stormwater pollution prevention plan (SWPPP) to be prepared for the project would describe the BMPs that the City and its contractors shall use to avoid and minimize potential adverse construction-related water quality effects. Construction designs and drawings, and contracts for construction activities shall refer to and accommodate the requirements of the Construction General Permit and elements of the SWPPP. The SWPPP would be required in the contract specifications. Water quality, erosion, and sediment control measures would be implemented in accordance with the SWPPP. The SWPPP also would identify responsibilities of construction contractors for implementation and inspection of BMPs, and training elements for the personnel responsible for installation and maintenance of the BMPs. The SWPPP may include, as relevant, but not be limited to, the following general categories of BMPs that have proven successful at reducing adverse water quality effects.

- Waste Management and Spill Prevention and Response: Waste management BMPs are designed to minimize exposure of waste materials at all construction sites and staging

areas such as waste collection and disposal practices, containment and protection of wastes from wind and rain, and equipment cleaning measures. Spill prevention and response BMPs involve planning, equipment, and training for personnel for emergency event response.

- Erosion and Sedimentation Control: Erosion control BMPs are designed to prevent erosion processes or events including scheduling work to avoid rain events, stabilizing exposed soils; minimize offsite sediment runoff; remove sediment from onsite runoff before it leaves the site; and slow runoff rates across construction sites. Identification of appropriate temporary and long-term seeding, mulching, and other erosion control measures as necessary. Sedimentation BMPs are designed to minimize offsite sediment runoff once erosion has occurred involving drainage controls, perimeter controls, detention/sedimentation basins, or other containment features.
- Good Housekeeping and Non-Storm Water Discharge Management: Good housekeeping BMPs are designed to reduce exposure of construction sites and materials storage to storm water runoff, including truck tire tracking control facilities; equipment washing; litter and construction debris; and designated refueling and equipment inspection/maintenance practices. Non-storm water discharge management BMPs involve runoff measures for contaminants not directly associated with rain or wind including vehicle washing and street cleaning operations.
- BMP Inspection and Monitoring: Identification of clear objectives for evaluating compliance with SWPPP provisions, and specific BMP inspection and monitoring procedures, environmental awareness training, contractor and agency roles and responsibilities, reporting procedures, and communication protocols.

The measures outlined herein are routinely implemented in the construction industry and have been developed for similar projects and been proven successful at reducing storm water and non-storm water construction contaminant discharges.

2.6.3.2 Hazardous Materials Safety

Standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors. Furthermore, pursuant to 40 Code of Federal Regulations 112, a spill prevention, containment, and countermeasures plan or, for smaller quantities, a spill prevention and response plan, that identifies BMPs for spill and release, and disposal of any spills or releases, would be established. As required under state and federal law, plans for notification and evacuation of site workers and local residents in the event of a hazardous materials release would be in place throughout construction.

2.6.3.3 Dust Control

The construction contractor would implement the following measures for the duration of construction activities, consistent with the Bay Area Air Quality Management District's 2022 CEQA Guidelines, which require these BMPs for a project to have less-than-significant criteria air pollutant impact related to construction-related fugitive dust emissions.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day, or as needed to suppress dust.
- All haul trucks transporting soil, sand, or other loose material off-site will be covered.
- All visible mud or dirt trackout onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping would not be used.
- All vehicle speeds on unpaved roads will be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, will be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road will be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel.
- Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The local air district's "general air pollution complaints" phone number will also be visible to ensure compliance with applicable regulations.

2.6.3.4 Traffic Control

Construction of the new facilities at the Solid Waste Transfer Station and WWTP is not anticipated to require temporary street closures or traffic detours. Deliveries of equipment and materials would be via Elkins Way, which is designed to accommodate heavy truck traffic. Deliveries could occur in the early morning if necessary to minimize traffic conflicts and have sufficient clearance to navigate around corners. Pilot cars would accompany oversized loads.

Connection of the new natural gas pipeline to PG&E's mainline in Sunset Road would require temporary reduction in lanes on Sunset Road. Traffic flow would be maintained in each direction by providing traffic control in accordance with the latest edition of the *California Manual of Uniform Traffic Control Devices, Part 6: Temporary Traffic Control*. Traffic control is expected to involve temporary lane closures and use of flaggers. Lane closure on Sunset Road is expected to last 30 working days, with work occurring Monday through Friday between 9:00 a.m. and 3:00 p.m., in accordance with the City's *Traffic Control Plan Submittal Criteria* (City of Brentwood n.d.).

2.7 PROJECT OPERATIONS AND MAINTENANCE

Project operations and maintenance would require additional WWTP and Solid Waste Transfer Facility staff and alter the truck and vehicle traffic, as further described below.

2.7.1 Workforce

Currently, the WWTP is operated by 18 full-time employees and the Solid Waste Transfer Station is operated by 21 full-time employees. WWTP staff generally arrive at 6:00 a.m. and depart at 4:00 p.m. Solid Waste Transfer Facility staff generally arrive at 4:00 a.m. and leave at 3:30 p.m. (refer to described in Section 2.4.1 for additional information regarding hours of operation at the transfer station). The City anticipates an additional 3–5 full-time equivalent employees would be employed to operate and maintain the project facilities. The daily volume of workforce trips to the Solid Waste Transfer Station and WWTP under existing conditions and with the project is provided in Table 2.

2.7.2 Truck Traffic

Access to the Solid Waste Transfer Station and WWTP would continue to be via Elkins Way and the existing access road on the eastern boundary of the existing WWTP site. The daily volume of trucks to and from the Solid Waste Transfer Station and WWTP under existing conditions and with the project as presented in Table 2. These truck trips would occur Monday through Friday during normal operating hours.

Table 2. Operational truck and workforce traffic.

Truck Type	Existing Conditions	Project
Trips for Operations and Maintenance Workforce		
Workforce—one way (per day)	21	24–26
Hauling Trips to Solid Waste Transfer Station / WWTP		
Trucks Bringing Municipal Waste (per day)	85	85
Trucks Bringing Yard Waste (per day)	12	12
Trucks Bringing Recyclables (per day)	16.5	16.5
Trucks Bringing High Strength Waste (per day)	0	5–10
Trucks Bringing Chemicals for Odor Control Systems (per month)	0	3
Hauling Trips from Solid Waste Transfer Station / WWTP to Offsite Locations		
Transfer Trucks Hauling Municipal Waste to Landfill (per day)	5	4
Transfer Trucks Hauling Recyclables (per day)	2.5	3
Transfer Trucks Hauling Yard Waste for Composting (per day)	1.5	1
Trucks Hauling Biosolids to Landfill (per day)	1.5	0
Trucks Hauling Biochar (per week)	0	1
Trucks Hauling Ammonia Sulfate Fertilizer (per week)	0	2–3

2.7.3 Maintenance

Maintenance activities would be undertaken periodically and as needed, including unscheduled emergency maintenance, to ensure optimal operation of the new facilities. These activities would generally comprise the following. City workforce would be conducting the maintenance.

- Bi-monthly preventative activities for all major equipment, including lubrication of equipment, inspection, and cleaning.
- Regular testing and adjustment of all major equipment for operational efficiency, safety and permit and regulatory compliance, such as air quality requirements.
- Regular biogas testing and as needed replacement of gas-conditioning media in compliance with air quality requirements.

3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION		
1.	Project Title:	Solid Waste Organics Diversion Project
2.	Lead Agency Name and Address:	City of Brentwood 2201 Elkins Way, Brentwood, CA, 94513
3.	Contact Person and Phone Number:	Casey Wichert, Director of Public Works (925) 516-6000
4.	Project Location:	City of Brentwood, Contra Costa County
5.	Project Sponsor's Name and Address:	*Not applicable*
6.	General Plan Designation:	PF-Public Facility, P-Park
7.	Zoning:	PF-Public Facility, P-Park
8.	Description of Project:	See Section 2, Project Description
9.	Surrounding Land Uses and Setting:	See Section 2, Project Description
10.	Other public agencies whose approval is required:	See Section 1.4, Other Approvals

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

    The City sent formal notification letters by mail and electronic format, pursuant to PRC Section 21080.3.1, on May 1, 2024, to the City's Native American Heritage Commission (NAHC) Tribal Consultation list. The letters included a project description, project map, and name, telephone, and email information for the City's point of contact. See Section 3.18, "Tribal Cultural Resources," for additional information.

3.1 AESTHETICS

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐
c)	In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

3.1.1 Setting

Land uses surrounding the project site include agricultural operations to the east and north, light industrial and commercial uses to the west, and Sunset Park to the south, which includes baseball and soccer playing fields. A pedestrian path runs east of the project site connecting Sunset Park to Marsh Creek Trail. Marsh Creek Trail is to the north of the project site.

The Conservation and Open Space element of the City's General Plan (City of Brentwood 2014) addresses the protection of visual resources in Goal COS 7, which states, "Protect hillsides and ridgelines from visual impacts and erosion." General Plan Policy COS 7-3 requires the City "preserve and protect prominent community views of scenic resources, including Mount Diablo, local hills and ridgelines, and open space areas surrounding Brentwood, and consider community visual access and view corridors when reviewing development proposals."

The only state highway in the vicinity of the project is State Route 4. State Route 4 from State Route 160 near Antioch to mile-marker 40.5 near Brentwood has been identified by the California Department of Transportation as being eligible for scenic highway designation (California Department of Transportation 2019). An eligible state highway becomes officially designated through a process in which the local governing body applies for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a State Scenic Highway. The project site is located approximately three miles east of State Route 4.

3.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

A scenic vista is typically defined as a panoramic view or vista from an identified viewpoint, public road, public trails, public recreational areas, or scenic highways. The project site is in an area of minimal topographic relief and surrounding viewpoints are obscured by buildings, other structures, and trees. New project facilities would be visible from the realigned pedestrian path between Elkins Ways and Marsh Creek, but would not be visible from a scenic vista as there is no scenic vista in the project vicinity. Furthermore, the project would not adversely affect community views of scenic resources, Mount Diablo, local hills, or the ridgelines from public spaces because the views from the public spaces affected by the project (i.e., pedestrian path from Elkins Way to Marsh Creek Trail) are of adjacent buildings, other structures, trees and agricultural land. Therefore, the project would have a **less-than-significant impact** on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no designated scenic highways in the project area. The nearest scenic highway is State Route 4 and the project site is not visible from the highway. The project is located at the eastern edge of the urbanized area of Brentwood, with agricultural land to the north and east. There is limited visibility of the project area from nearby Elkins Way. The project would remove trees along the eastern boundary of the project site for construction of the realigned pedestrian path, however, the visual character of the views to the east would still consist primarily of agricultural lands, as occurs under existing conditions. Therefore, the project would have a **less-than-significant impact** on scenic resources.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project components at the Solid Waste Transfer Station and WWTP would be of similar character and height to other structures at the site. Furthermore, the project components would not substantially change or block any views from public spaces. From the approximately 0.4-mile realigned pedestrian path, views to the west would change from that of grassland adjacent to the path and the WWTP in the background to views of the new WWTP facilities. Views from the path to the east would still consist primarily of agricultural lands, similar to existing conditions, though trees along the fence line would be removed. Once users reached Marsh Creek Trail, views would be similar to existing conditions. The General Plan designation for the project site is "PF-Public Facility" (City of Brentwood 2014), therefore the proposed uses are compatible with the current zoning designation.

Placement of the PG&E interconnector station at the southeast corner of Sunset Park would change the visual character of that site from that of a parking lot. The General Plan designation

for the Sunset Park parking lot is "P-Park" (City of Brentwood 2014). However, the visual character would not be degraded given that the existing site is a paved surface with vehicles occasionally parked, not an area with landscaping or recreational space.

Based on the discussion above, the project would have a **less-than-significant impact** on the existing visual character and quality of the site and its surroundings and would not conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The project facilities would use site lighting similar to the lighting used at the Solid Waste Transfer Station and WWTP buildings and parking areas. Lighting would be designed in accordance with City design standards to minimize glare, including shielding to ensure that light does not spill onto adjacent properties. The project would not appreciably change existing glare or lighting conditions because the visibility of the site from residential areas and public spaces and roadways is limited. Therefore, the project would have a **less-than-significant impact** on day or nighttime views in the area.

3.2 AGRICULTURE AND FOREST RESOURCES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

3.2.1 Setting

The Solid Waste Transfer Station and WWTP is characterized as disturbed areas with structures, turf, and paved surfaces. The land adjacent to the transfer station and WWTP to be used for project facilities is designated in the General Plan as "PF-Public Facility" (City of Brentwood 2014). None of the project site is designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (California Department of Conservation 2024a).

3.2.2 Discussion

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No aspect of construction or operations of the project would convert Farmland to non-agricultural use because none exists on the project site. Therefore, the project would have **no impact** on Farmland.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

The project site is not zoned or used for agricultural purposes, nor do any Williamson Act contracts apply to the project site. Therefore, the project would have **no impact** on existing zoning for agricultural use or a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project site is not zoned for forestland, timberland, or Timberland Production. There is no timberland present on or adjacent to the project site. Therefore, the project would have **no impact** on forest land.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No forest land exists at the project site. Therefore, the project would have **no impact** on forest land.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

As previously described, no agricultural, forestland, or timberland resources exist on the project site. Therefore, the project would have **no impact** on Farmland, agricultural land, or forest land.

3.3 AIR QUALITY

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☑	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

3.3.1 Setting

The project site is in the eastern portion of Contra Costa County, which is within the San Francisco Bay Area Air Basin and the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Ozone and particulate matter (i.e., respirable [PM_{10}] and fine [$PM_{2.5}$]) are the primary pollutants of concern within the county. Contra Costa County is designated by California as "nonattainment" for ozone, PM_{10}, and $PM_{2.5}$, and either as "attainment" or "unclassified" for other pollutants relative to California Ambient Air Quality Standards (CAAQS) (California Air Resources Board 2022). Relative to National Ambient Air Quality Standards (NAAQS), the county is categorized as "nonattainment" for the 8-hour ozone standard and unclassified for the PM_{10} and $PM_{2.5}$ standards (U.S. Environmental Protection Agency 2024).

Regulatory Framework

Federal Plans, Regulations, and Laws

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates draw primarily from the Clean Air Act, which was enacted in 1970. The most recent major amendments were made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants and hazardous air pollutants.

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the EPA and the California Air Resources Board (CARB) as being of concern on both the nationwide and statewide levels: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead, PM_{10}, and $PM_{2.5}$.

The Clean Air Act required EPA to establish National Ambient Air Quality Standards (NAAQS), and the California Clean Air Act adopted in 1988 required CARB to establish the California

Ambient Air Quality Standards (CAAQS). The most recent NAAQS and the CAAQS are summarized in **Table 3**. The primary standards protect public health and the secondary standards protect public welfare.

Table 3. National and California ambient air quality standards.

Pollutant	Averaging Time	CAAQS [a,b]	NAAQS [c] Primary [b,d]	NAAQS [c] Secondary [b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm [f] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hou	—	35 µg/m^3	Same as primary standard
Lead [f]	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	—	—
	Rolling 3-Month Average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride [f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

CAAQS=California ambient air quality standard; NAAQS=national ambient air quality standard; µg/m^3=micrograms per cubic meter; km=kilometers; ppb=parts per billion; ppm=parts per million.

a. California standards for ozone, carbon monoxide, sulfur dioxide (1- and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a

Pollutant	Averaging Time	CAAQS [a,b]	NAAQS [c] Primary [b,d]	NAAQS [c] Secondary [b,e]
reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. c. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies. d. National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. e. National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. f. The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. Source: California Air Resources Board 2016.				

State Regulations

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs and for implementing the California Clean Air Act to achieve the CAAQS in Table 3.

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned federally regulated criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The California Clean Air Act requires that all local air districts endeavor to attain and maintain the CAAQS by the earliest date practical. The California Clean Air Act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources. The California Clean Air Act also provides air districts with the authority to regulate indirect sources, such as vehicle movement and residential, commercial, and industrial development.

Toxic Air Contaminants

Toxic air contaminants (TAC) in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of hazardous air pollutants as TACs. Most recently in 1998, particulate matter exhaust from

diesel engines (diesel particulate matter [PM]) was added to CARB's list of TACs. After a TAC is identified, CARB adopts an airborne toxics control measure for sources that emit that TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated gasoline regulations) and control technologies. With the implementation of CARB's Risk Reduction Plan and other regulatory programs, it is estimated that emissions of diesel PM will be less than half of those in 2010 by 2035 (California Air Resources Board 2024a). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Local Regulations

Bay Area Air Quality Management District

The BAAQMD maintains and manages air quality conditions in the San Francisco Bay Area Air Basin, including Contra Costa County, through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans and programs for the attainment of the NAAQS and CAAQS, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the Clean Air Act and California Clean Air Act.

The California Clean Air Act requires that all local air districts in the state endeavor to achieve and maintain the CAAQS in their region by the earliest practical date. The California Clean Air Act specifies that local air districts should focus attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources. To achieve the CAAQS, BAAQMD prepares and updates air quality plans on a regular basis. The air quality plans published by BAAQMD and other local air districts in the state are incorporated into California's State Implementation Plan Strategy and meet Clean Air Act requirements.

BAAQMD also sets thresholds of significance for the purpose of evaluating air quality impacts under CEQA. BAAQMD's air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS. BAAQMD's project level thresholds, which are scientifically substantiated, are numerical concentrations of criteria air

pollutants considered to be protective of human health. Projects that do not exceed thresholds would not contribute to the nonattainment of the CAAQS and subsequently the NAAQS or result in increases in health-related impacts associated with increases in criteria air pollutants or ozone precursors. The most recently adopted thresholds of significance are contained in the 2022 *California Environmental Quality Act Air Quality Guidelines* (2022 CEQA Guidelines; Bay Area Air Quality Management District 2022).

The most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan). To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors (reactive organic gases [ROG] and oxides of nitrogen [NOx]) and reduce the transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds upon and enhances BAAQMD's efforts to reduce emissions of fine particulate matter (i.e., $PM_{2.5}$) and TACs. The 2017 Clean Air Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants (Bay Area Air Quality Management District 2017).

The 2017 Plan focuses on two paramount goals (Bay Area Air Quality Management District 2017).

1. Protect air quality and health at the regional and local scale by attaining all state and national air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs.
2. Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

In addition to the 2022 CEQA Guidelines and adopted Clean Air Plan, the BAAQMD also has the following rules and regulations that would apply to the project.

- Regulation 2, Rule 1 General Permit Requirements. This rule includes criteria for issuance or denial of permits, exemptions, and appeals against decisions of the Air Pollution Control Officer and BAAQMD actions on applications.
- Regulation 2, Rule 2 New Source Review. Applies to new or modified sources and contains requirements for Best Available Control Technology and Prevention of Significant Deterioration.
- Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants. Applies preconstruction permit review to new and modified sources of Toxic Air Contaminants; contains project health risk limits and requirements for Toxic Best Available Control Technology.
- Regulation 7 Odorous Substances. Places general limitations on odorous substances and specific emission limitations on certain odorous compounds. BAAQMD staff investigate and track all odor complaints it receives, make attempts to visit the site and identify the source of the objectionable odor, and assist the owner or facility in finding a way to reduce the odor.

- Regulation 8, Rule 8 Wastewater Collection and Separation Systems. Limits the emissions of organic compounds from wastewater collection and separation systems that handle liquid organic compounds from industrial processes.
- Regulation 9, Rule 7 Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters. Limits the emissions of nitrogen oxides and carbon monoxide from industrial, institutional and commercial boilers, steam generators, and process heaters.
- Regulation 10 Standards of Performance for New Stationary Sources. Establishes emissions and/or performance standards for new plants and other sources.
- Regulation 11 Hazardous Pollutants. Sets emission and performance standards for hazardous pollutants.

City of Brentwood General Plan

The Conservation and Open Space Chapter of the City of Brentwood General Plan includes the following air quality policies relevant to the project (City of Brentwood 2014).

- Policy COS 8-2: Minimize exposure of sensitive receptors to concentrations of air pollutant emissions and toxic air contaminants.
- Policy COS 8-5: Continue to require all construction projects and ground disturbing activities to implement BAAQMD dust control and abatement measures.

Thresholds of Significance

BAAQMD adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under CEQA (Bay Area Air Quality Management District 2022). The BAAQMD's 2022 CEQA Guidelines establish the levels at which emissions of ozone precursors (ROG and NOx), particulate matter, local carbon monoxide, and TACs would cause significant air quality and health impacts. Project impacts herein are evaluated based on both the State CEQA Guidelines Appendix G environmental checklist questions and BAAQMD thresholds of significance. Appendix G of the State CEQA Guidelines includes the following criteria for assessing an air quality impact.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Based on the State CEQA Guidelines Appendix G questions and adopted BAAQMD thresholds of significance, the project would result in a significant air quality impact if it would:

- cause average daily construction-related criteria air pollutant or precursor emissions to exceed 54 pounds per day (lb/day) for ROG and NOx, 82 lb/day for PM_{10} exhaust, and 54 lb/day for $PM_{2.5}$ exhaust, or substantially contribute to emission concentrations (e.g., PM_{10}, $PM_{2.5}$) that exceed applicable NAAQS or CAAQS;
- cause average daily operational criteria air pollutant or precursor emissions to exceed 54 lb/day or 10 tons per year for ROG and NOx, 82 lb/day or 15 tons per year for PM_{10} exhaust, and 54 lb/day or 10 tons per year for $PM_{2.5}$ exhaust, or substantially contribute to emission concentrations (e.g., PM_{10}, $PM_{2.5}$) that exceed the applicable NAAQS or CAAQS;
- not implement BAAQMD's Basic Construction Mitigation Measures for dust emissions (e.g., PM_{10} and $PM_{2.5}$);
- result in long-term operations-related local mobile-source carbon monoxide emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm;
- cause project-level TAC emissions that result in a cancer risk greater than 10.0 in one million, a non-cancer hazard index greater than 1.0 for chronic or acute health risks, or $PM_{2.5}$ concentrations that exceed 0.3 $\mu g/m^3$ (annual average), unless in compliance with a qualified community risk reduction plan;
- result in a cumulative cancer risk greater than 100 in one million at any off-site receptor, a non-cancer hazard index greater than 10.0, or $PM_{2.5}$ concentrations greater than 0.8 $\mu g/m^3$ (annual average), unless in compliance with a qualified community risk reduction plan; or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (i.e., five confirmed complaints per year averaged over 3 years).

3.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

The Clean Air Act requires air districts to create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. These plans must be updated periodically. The most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2017 Clean Air Plan. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors (ROG and NOx) and reduce the transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds upon and enhances BAAQMD's efforts to reduce emissions of $PM_{2.5}$ and TACs. The 2017 Clean Air Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants (Bay Area Air Quality Management District 2017).

A project that would not support the 2017 Clean Air Plan's goals would not be considered consistent with the plan. On an individual project basis, consistency with BAAQMD's quantitative thresholds is interpreted as demonstrating support for the 2017 Clean Air Plan's

goals. As discussed under "b" below, the project would not result in exceedances of BAAQMD's thresholds of significance for criteria air pollutants, thus would not conflict with the 2017 Clean Air Plan's goal to attain air quality standards. Furthermore, the project would not result in new land use development. Because the project would not result in land use development or population growth, which can lead to increases in vehicular traffic and associated emissions, and construction and operations emissions would not exceed BAAQMD-adopted mass emissions thresholds. Therefore, the project would have a **less than significant impact** on implementation of an applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Exhaust and fugitive dust emissions would result from the use of heavy-duty diesel equipment used onsite, heavy-duty truck deliveries, and worker commute trips for project construction. Project operations would result in emissions of criteria air pollutants associated with the new solid waste handling equipment (i.e., anaerobic digester, BDPS), chemical deliveries, solid waste hauling, and hauling of process byproduct (i.e., biochar, ammonia sulfate fertilizer). Construction and operations are evaluated separately below.

Construction-Related Criteria Air Pollutants and Ozone Precursors

To estimate construction emissions, anticipated daily use rates, equipment horsepower, and daily anticipated mileage (worker commute, vender deliveries) were used as modeling inputs. Activity use data was applied to calculate exhaust emissions from off-road equipment using emissions factors from the California Emissions Estimator Model (CalEEMod) Appendix G for each pollutant (e.g., ROG, NOx, PM). Mobile source emissions were derived using emissions factors from CARB's Emissions Estimator Model 2021 outputs for the project area (i.e., San Francisco Bay Area). Total emissions were then divided by the number of anticipated workdays in each year of construction, to obtain average daily emissions for comparison to BAAQMD's average daily mass emissions thresholds. BAAQMD's basic dust control measures were incorporated into the emissions modeling, as these would be adhered to during all construction activities, consistent with General Plan Policy COS 8-5 (see Section 2.6.3.3). A detailed summary of model inputs, emissions factors, and emissions modeling is provided in **Appendix A**. **Table 4** presents the modeled emissions that would result from construction activities of the project.

Operations-Related Criteria Air Pollutants and Ozone Precursors

Operation of the project would result in new onsite stationary emissions sources and onsite and offsite mobile sources. Onsite sources would include off-gassing emissions of volatile organic compounds from buffer tanks and biofilters, and combustion-related emissions from boiler use, activated carbon tail gas, pyrolysis, an emergency backup diesel generator (to be used during power outages) and flares (during temporary equipment failures/repairs).

Table 4. Construction-related emissions of criteria air pollutants.

Emission Source	Average Daily Emissions (pounds per day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Year 1 (2024)				
Heavy-Duty Equipment	1.05	13.11	0.51	0.46
Mobile Sources (worker commute, haul trucks)	0.45	2.09	0.20	0.19
Total [a]	1.50	15.20	0.71	0.65
Year 2 (2025)				
Heavy-Duty Equipment	2.79	35.33	1.45	1.31
Mobile Sources (worker commute)	0.45	2.09	0.20	0.19
Total [a]	3.24	37.41	1.64	1.49
Year 3 (2026)				
Heavy-Duty Equipment	1.37	18.58	0.73	0.66
Mobile Sources (worker commute)	0.45	2.09	0.20	0.19
Total [a]	1.82	20.67	0.92	0.85
Year 4 (2027)				
Heavy-Duty Equipment	0.15	2.44	0.07	0.05
Mobile Sources (worker commute)	0.45	2.09	0.20	0.19
Total [a]	0.60	4.52	0.27	0.24
BAAQMD Threshold of Significance	54	54	82	54
Exceeds BAAQMD Threshold?	No	No	No	No

NOx=oxides of nitrogen; ROG=reactive organic gases; PM_{10}=particulate matter 10 micrometers or less in diameter; $PM_{2.5}$ = fine particulate matter.
[a] Totals may not sum due to rounding.
Source: Modeled by Ascent 2024. See Appendix A for details.

Operation of the project also would require additional employees, and existing biosolids hauling would be replaced with other hauling activities. Based on the anticipated increase in additional employees (i.e., up to five new), increases in high strength waste deliveries (i.e., up to 20 per day), elimination of existing biosolids deliveries to landfills (i.e., 1.5 per day), and the increase in biochar and ammonia sulfate fertilizer trips (i.e., one, three, respectively), the project would result in a net increase of 13 trips per day (5 passenger vehicles, 8 truck trips).

Project-specific emissions were quantified for each proposed onsite stationary source using anticipated daily operations activity data (e.g., hours per year, hours per day) and equipment-specific parameters (e.g., flowrate, tail gas pollutant composition) with a combination of vendor-supplied emissions data and emissions factors from published documents (e.g., EPA's *Compilation of Air Pollutant Emissions Factors from Stationary Sources* [AP-42]). Emissions Estimator Model 2021 was used to derive emissions factors for employee work commute and heavy-duty diesel truck trips. For detailed emissions inputs and modeling assumptions, refer to

Appendix A. A summary of the net change in operations-related emissions compared to existing conditions is summarized in **Table 5**.

Table 5. Operations-related emissions of criteria air pollutants.

Emission Source	ROG		NOx		PM_{10} (exhaust)		$PM_{2.5}$ (exhaust) [b]	
	Avg. Daily	TPY	Avg. Daily	TPY	Avg. Daily	TPY	Avg. Daily	TPY
Mobile	<1	<1	6.9	<1	<1	<1	<1	<1
Stationary	38.1	7.0	23.0	4.2	4.6	<1	4.6	<1
Total [a]	38.4	7.0	29.9	4.8	4.7	<1	4.6	<1
BAAQMD Threshold of Significance	54	10	54	10	82	15	54	10
Exceeds BAAQMD Threshold?	No		No		No		No	

NOx=oxides of nitrogen; PM_{10}=particulate matter 10 micrometers or less in diameter; $PM_{2.5}$=fine particulate matter 2.5 micrometers or less in diameter; ROG=reactive organic gases; TPY= tons per year.

[a] Totals may not sum due to rounding.

[b] PM emissions from stationary sources were provided for PM_{10}. Due to lack of $PM_{2.5}$ data, PM_{10} emissions are used as a conservative estimate of $PM_{2.5}$ from various emission sources.

Source: Modeled by Ascent 2024. See Appendix A for details.

As shown above, project construction and operations emissions would not exceed BAAQMD's daily or annual thresholds for any criteria air pollutants or ozone precursors. Furthermore, project construction activities would adhere to all BAAQMD best management practices to minimize dust emissions. Likewise, operations-generated emissions would not be anticipated to result in regional concentrations such that adverse health effects could occur. Therefore, the project would result in a **less-than-significant impact** on the cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations?

Increased concentrations of carbon monoxide and TACs can result in health-related impacts to sensitive receptors. Substantial carbon monoxide concentrations occur at intersections with high hourly volumes and extended periods of queuing (Bay Area Air Quality Management District 2022). Sources of construction-related TACs potentially affecting sensitive receptors include off-road diesel-powered equipment and associated diesel PM emissions. Operations-related TACs include a variety of pollutants and sources, including diesel PM from diesel trucks, process, and combustion emissions from stationary sources (e.g., flare, pyrolysis). Emissions from carbon monoxide and TACs are discussed separately below.

Carbon Monoxide

The BAAQMD has developed a screening methodology to evaluate projects for the potential to result in local carbon monoxide emissions that could exceed established thresholds of significance. Based on the screening criteria, if the project is consistent with the following criteria, an impact from carbon monoxide would not occur.

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway)

Construction material deliveries (e.g., vendor, concrete) would occur throughout the construction period, with peak deliveries occurring during concrete work, when an estimated 15 concrete deliveries per day would occur. On these days, total peak-hour trips could be up to 45 vehicles (i.e., 30 worker trips and 15 truck trips). Once construction is complete, the project would result in minimal increases in operations employee/truck trips (i.e., 13 trips per day). Considering that the project is not a land use development project that would result in substantial vehicular use and, therefore, not subject to a local congestion management program (although, construction would adhere to City standards and procedures for safety and signage), project-generated construction and operations trips would not exceed established BAAQMD vehicle per hour screening levels, the project would not result in substantial carbon monoxide emissions that would exceed established thresholds of significance.

Toxic Air Contaminants

When evaluating TAC concentrations and associated health risks, the primary factors influencing risk exposure include duration of exposure and proximity of sources to receivers, as health risk increases with increased exposure duration and pollutant concentrations reduce with increasing distance from the source. Consistent with General Plan Policy COS 8-2 and BAAQMD 2022 CEQA Guidelines, potential increases in TAC emissions were evaluated for project construction and operations, discussed separately below.

Construction

Based on the emissions modeling conducted, described above under item "b)," air dispersion modeling and risk calculations were conducted to evaluate project-generated TAC exposure and $PM_{2.5}$ concentrations. The air dispersion model included the following sources.

- Heavy-duty construction equipment diesel PM ($PM_{2.5}$ exhaust) emissions and dust from vehicle movement ($PM_{2.5}$ dust) as adjacent line volume sources, covering the project site where construction activities would occur.
- Construction worker and haul/vendor truck on-road emissions of diesel PM and fugitive dust on roadways as volume line sources.
- Onsite diesel PM idling emissions as point sources.

Using BAAQMD-specific source parameters for the above source types, site-specific meteorological and terrain data, and activity/duration parameters for the proposed construction activities, the EPA's air dispersion model AERMOD was run to obtain ground-level concentrations using unitized emission rates for all sources. Applying the mass emissions calculated for the project to the modeled concentrations and Office of Environmental Health Hazard Assessment exposure and risk potency rates, the total cancer, chronic health hazard, and total $PM_{2.5}$ from construction activities were modeled. See Appendix A for a detailed explanation of all model inputs and outputs. Results from this construction health risk assessment (HRA) are presented in **Table 6**, including the maximally exposed individual residential receptor, and the maximally exposed individual worker receptor. For this output, the maximally exposed individual residential receptor is the cluster residential properties adjacent to the east of the project site. As shown in Table 6, construction emissions would not exceed any BAAQMD health risk thresholds of significance at nearby receptors. Maximum $PM_{2.5}$ concentrations would occur at the maximally exposed individual worker receptor; all other receptor locations would experience lower $PM_{2.5}$ concentrations during construction.

Table 6. Construction health risk results.

Health Risk	MEIR	MEIW
Cancer Risk (Chance in One Million)	7.4	5.9
BAAQMD Cancer Risk Threshold of Significance	10	10
Chronic Health Hazard	<1	0.02
BAAQMD Chronic Health Hazard Threshold of Significance	1	1
$PM_{2.5}$ ($\mu g/m^3$)	NA [a]	0.12
BAAQMD $PM_{2.5}$ Threshold of Significance	0.3	0.3
Exceeds BAAQMD Threshold?	No	No

BAAQMD=Bay Area Air Quality Management District; MEIR=maximally exposed individual resident; MEIW=maximally exposed individual worker.

[a] The highest $PM_{2.5}$ concentration was modeled to occur at the MEIW; $PM_{2.5}$ concentrations at all other receptor locations would be less than at the MEIW.

Source: Modeled by Ascent in 2024. See Appendix A for details.

Operations

Project operation would introduce new TAC sources on the project site, including benzene 1,3-butadiene, formaldehyde, toluene, and others (see Appendix A for a complete list) associated with new stationary equipment. In addition, high strength waste and truck hauls occurring on project access roads would generate diesel PM in the form of exhaust. Off-gassing emissions would occur from the BDPS. During emergencies or temporary equipment failures, TACs would be emitted from gas flaring and a diesel backup generator.

To conduct the HRA, all stationary and onsite sources were modeled in AERMOD, as follows.

- Point source for stacks (e.g., diesel generator, flare).
- Area sources for BDPS.

- Line volumes for on-haul and off-haul truck movement.

Using BAAQMD-specific source parameters for the above source types, site-specific meteorological and terrain data, and activity/duration parameters for the proposed operational activities, AERMOD was run to obtain ground-level concentrations using unitized emission rates for all sources. Applying the mass emissions estimated for the project to the modeled concentrations and Office of Environmental Health Hazard Assessment exposure and risk potency rates, total cancer, acute/chronic health hazards, and total $PM_{2.5}$ concentrations from operational activities were modeled. See Appendix A for a detailed explanation of all model inputs and outputs. Results from the HRA are presented in **Table 7**, including the maximally exposed individual residential receptor and maximally exposed individual worker receptor. For this output, the maximally exposed individual residential receptor is the cluster of residential properties adjacent to the east of the project site. As shown in Table 7, project operational emissions (offsite mobile and onsite stationary) would not exceed the health-based thresholds adopted by BAAQMD. The highest $PM_{2.5}$ concentration would occur at the maximally exposed individual residential receptor; all other offsite locations would be exposed to lower $PM_{2.5}$ concentrations. The project would not expose sensitive receptors to substantial pollutant concentrations (i.e., carbon monoxide, TACs, $PM_{2.5}$).

Table 7. Operational health risk results.

Health Risk	MEIR	MEIW
Cancer Risk (Chance in One Million)	0.5	<1
BAAQMD Cancer Risk Threshold of Significance	10	10
Acute Health Hazard	<1	<1
BAAQMD Acute Health Hazard Threshold of Significance	1	1
Chronic Health Hazard	0.09	0.70
BAAQMD Chronic Health Hazard Threshold of Significance	<1	<1
$PM_{2.5}$ ($\mu g/m^3$)	0.20	NA [a]
BAAQMD $PM_{2.5}$ ($\mu g/m^3$) Threshold of Significance	0.3	0.3
Exceeds BAAQMD Threshold?	No	No

BAAQMD=Bay Area Air Quality Management District; MEIR=maximally exposed individual resident; MEIW=maximally exposed individual worker; $\mu g/m^3$=micrograms per cubic meter.
[a] The highest $PM_{2.5}$ concentration was modeled to occur at the MEIR; $PM_{2.5}$ concentrations at all other receptor locations would be less than at the MEIR.
Source: Modeled by Ascent in 2024. See Appendix A for details.

To evaluate cumulative risk exposure, project-generated maximum risk and $PM_{2.5}$ concentrations were combined with available published risk and emissions data from nearby sources, using the BAAQMD Stationary Source Map (Bay Area Air Quality Management District 2023a) and the Mobile Source Screening Map (Bay Area Air Quality Management District2023b). A search was conducted using the existing WWTP address (2251 Elkins Way) and a 1,000-foot buffer was drawn around the facility. The tool identified three sources, which are listed in **Table 8** (two generators and a concrete facility). Using distance multipliers to adjust reported risk from each

source, the combined risk and $PM_{2.5}$ values were summed at both the maximally exposed individual residential receptor and the maximally exposed individual worker receptor. As shown in Table 8, the project would not result in exceedance of the BAAQMD's cumulative threshold.

Table 8. Cumulative health risk summary.

Source	Cancer Risk		Chronic Risk		$PM_{2.5}$ (µg/m³)	
	MEIR	MEIW	MEIR	MEIW	MEIR	MEIW
Project Construction	7.4	5.9	<1	<1	NA [a]	NA [b]
Project Operation	<1	<1	<1	<1	0.20	0.20
Roadways	1.2	1.2	<1	<1	0.03	0.03
Generator (FID 14752)	<1	<1	<1	<1	0.00	0.00
Fossil Fuel Generator (FID 15789)	<1	<1	<1	<1	0.04	0.04
Ready-Mix Concrete (FID 18249)	<1	<1	<1	<1	0.14	0.29
Cumulative Total	9.3	7.5	<1	<1	0.41	0.56
BAAQMD Threshold of Significance	100		10		0.8	
Exceeds BAAQMD Threshold?	No	No	No	No	No	No

BAAQMD=Bay Area Air Quality Management District; MEIR=maximally exposed individual resident; MEIW=maximally exposed individual worker; µg/m³=micrograms per cubic meter.

[a] Construction $PM_{2.5}$ is not included in the cumulative analysis due to the temporary nature of construction emissions.

[b] The highest modeled $PM_{2.5}$ (i.e., 0.20 µg/m3 at the MEIR) was conservatively applied to both receptor locations for the cumulative analysis.

Source: Modeled by Ascent in 2024. See Appendix A for details.

In summary, project-generated construction and operational TAC emissions would not result in exceedance of BAAQMD risk-related thresholds of 10 in one million for cancer risk. non-cancer hazard index of 1.0 for chronic or acute health risks, or $PM_{2.5}$ concentrations greater than 0.3 $\mu g/m^3$. When combining project-generated health risk with identified existing TAC sources, the BAAQMD's cumulative risk thresholds of 100 in one million for cancer risk, 10.0 for non-cancer health risk, and 0.8 $\mu g/m^3$ for $PM_{2.5}$ would not be exceeded. Based on the above discussion, emissions from project construction and operations would have a **less-than-significant impact** on sensitive receptors.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

The predominant source of power for construction equipment is diesel engines. Generation of these odor emissions would vary greatly on a day-to-day basis depending on the type of

construction activities. The odors would be limited to the construction period and would be temporary.

Regarding operations, the project would introduce new sources of odors associated with combustion sources (e.g., occasional flaring, emergency diesel generator), anaerobic digester, and BDPS. The additional potential odor sources would be installed and operated where solid waste is currently processed through the City's Solid Waste Transfer Station and municipal wastewater is currently treated. In addition, because the project would divert a portion of the organic waste volume already processed at the existing transfer station, the project would not result in an increase in processed waste volume or new types of odorous compounds that do not already exist at the site.

A public records search request was submitted to the BAAQMD that returned no records of previously documented odor complaints for the existing WWTP (Henderson, pers. comm., 2024). Furthermore, odor from the Solid Waste Transfer Station is currently controlled by promptly transferring waste and regularly cleaning the tipping pad and collection vehicles, and by conducting transfers primarily within the transfer building, which would continue to occur. A new activated carbon-based control system at the anaerobic digester would be sized to provide non-detectable odor levels at the project fence line, and an ammonia removal system would be used as a side stream treatment to remove ammonia from the dewatering operation, including a buffer tank, ammonia stripper, ammonia scrubber, recirculation blowers, pumps, and a heat exchanger.

Considering that the project would not introduce new odor sources that do not already exist at the project site (i.e., solid waste transfers, water treatment processes), there are no records of past odor complaints, and the new solid waste diversion processes would be equipped with odor control technology, the project would not result odorous emissions that could affect a substantial number of people. Therefore, the project would have a **less-than-significant impact** on a substantial number of people due to other emissions, such as odors.

3.4 BIOLOGICAL RESOURCES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

3.4.1 Setting

The project site is located in eastern Contra Costa County, an area with diverse land uses including urban cities, undeveloped lands, unincorporated agricultural lands along the Marsh Creek corridor north of the city, and sparsely populated foothill areas of the Diablo Mountain Range west of the city. Land elevations range from approximately 0 to 100 feet above mean sea level.

The City of Brentwood is in the jurisdiction of the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP). The ECCCHCP allows Contra Costa County, the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD), the East Bay Regional Park District and the cities of Brentwood, Clayton, Oakley, and Pittsburg (collectively, the Permittees) to control endangered species permitting for activities and projects in the region that they perform or approve. The project is subject to permitting under the ECCCHCP and mitigation measures for special-status species or their habitats covered by the ECCCHCP.

Habitat types within the project area, as defined by the ECCCHCP, consist of "Urban", which includes the Solid Waste Transfer Station, WWTP site and the area of the pipeline alignment that traverses Sunset Park and Sunset Road, and "Ruderal" (i.e., vegetation associated with human disturbance), which includes the area east of the WWTP site where new facilities would be constructed and operated, and the PG&E staging area along Sunset Road, as shown in **Figure 4**.

A literature review and database searches were completed to determine the potential for presence of special-status plant and wildlife species or their habitat in the project area. Sensitive natural communities, as defined by CDFW, include areas of high ecological importance due to being considered rare within the region, likely to support sensitive plants or animals, or provide connectivity between other sensitive habitats, and include wetlands and riparian areas within the project area. Existing documents pertinent to biological resources in the vicinity of the project were reviewed and analyzed, as applicable, including the following sources:

- CDFW's California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife 2024);
- USFWS Information for Planning and Consultation Species List (U.S. Fish and Wildlife Service 2024);
- California Native Plant Society Electronic Inventory of Rare and Endangered Plants of California (California Native Plant Society 2024); and
- East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (Jones and Stokes 2006).

Special-status plant species are defined as any species that is granted status by a federal, state, or local agency. Federally listed plant species are defined as those species granted status by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act and include threatened, endangered, proposed threatened or endangered, candidate, or listed species proposed for delisting. State-listed plant species are granted status by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act, and include rare, threatened, and endangered species. Under CEQA, special-status plants also include rare, threatened, or endangered species identified by the California Native Plant Society (California Native Plant Society 2024; Lists 1B and 2).

A special-status fish or wildlife species is any species granted status by the USFWS, National Oceanic and Atmospheric Administration National Marine Fisheries Service, or CDFW. Federally listed species are those granted status as threatened, endangered, proposed threatened or endangered, candidate, or listed species proposed for delisting. Also included are USFWS-designated Birds of Conservation Concern, which include "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA [Endangered Species Act] of 1973" (U.S. Fish and Wildlife Service 2008). State-listed fish and wildlife species include those granted status as threatened, endangered, California Fully Protected species, and California Species of Special Concern.

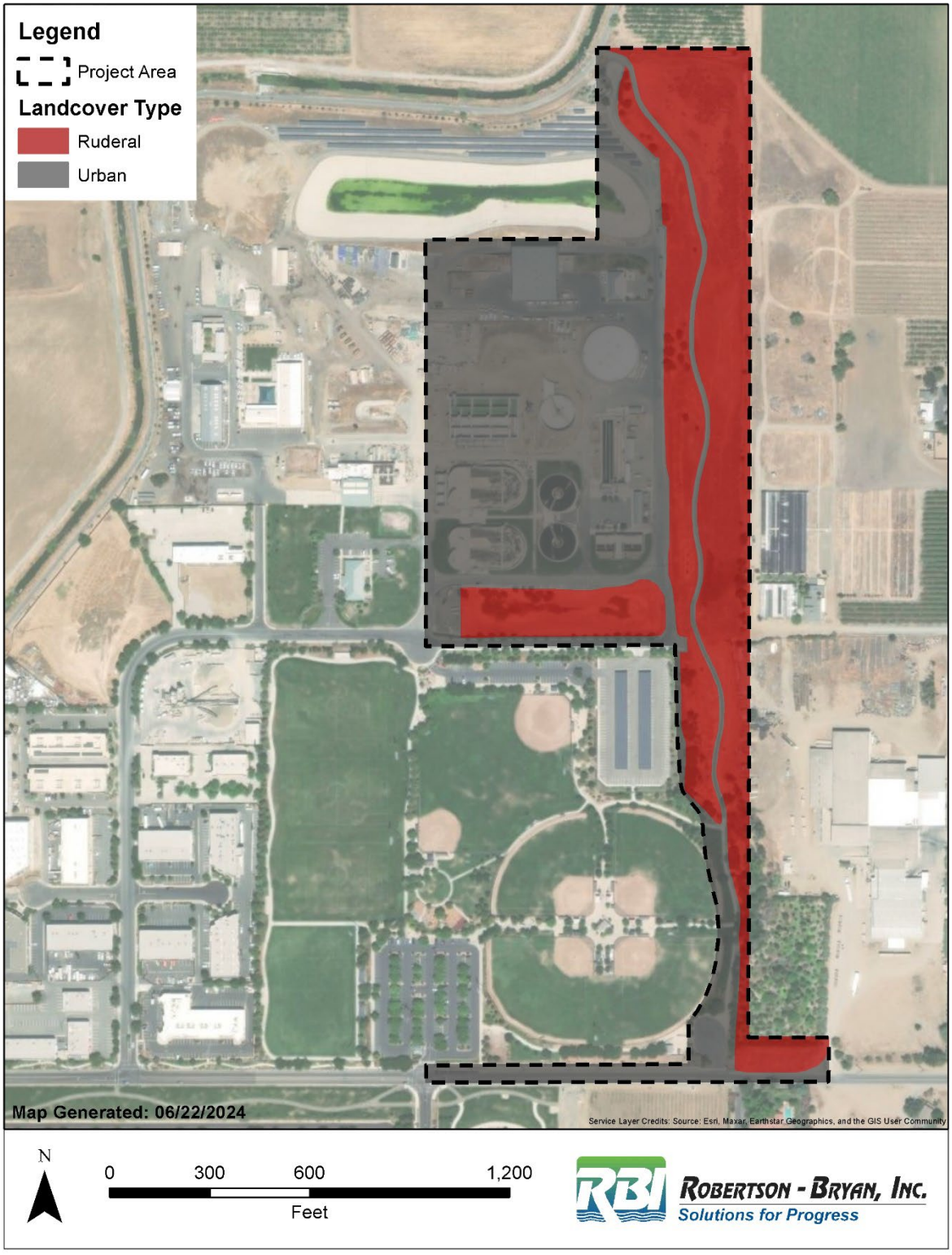


Figure 4. Habitat types in the project area.

Biological resource surveys of the Solid Waste Transfer Station, WWTP site, lands adjacent to and east of the WWTP, and the pipeline alignment were conducted on February 13, 2024, March 27, 2024, and May 15, 2024, for presence of habitat and special-status species in the areas to be affected by construction activities. Vegetation communities were assessed in the field based on observed plant species composition using approved CDFW methods. Vegetation communities were classified based on *A Manual of California Vegetation* (Sawyer et al. 2011) and cross-referenced with wildlife habitat types as classified in California Statewide Wildlife Habitat Relationships System (Mayer and Laudenslayer 1988). No special-status plant or wildlife species or their signs, covered or not covered by the ECCCHCP, were found during the surveys. **Figure 5** shows a map of the locations of known special-status plant populations and wildlife occurrences in the project area based on the CNDDB database records.

Tree species in the project area include Valley oak, California live oak, California peppertree, olive, black poplar, Fremont cottonwood, carob, Chinese pistachio, plum, black walnut, cherry, fan palm, and birch.

The results of the reconnaissance surveys and literature review also are summarized in **Appendix B**, as follows.

- Table B-1 (Vegetation Communities and Wildlife Habitats)
- Table B-2 (Special-Status Plants and Wildlife Species)

An aquatic resources delineation field survey was conducted on June 8, 2023, based on the finding of water and wetland-obligate plants during a May 30, 2023, initial scoping survey. The survey determined the source of water was a leaking water supply pipe from an adjacent agricultural property. The survey concluded that no wetlands are present on the project site.

3.4.2 Discussion

The assessment of potential effects of the project is conducted for those species identified in Appendix B as having the potential to occur in the project area and be affected by one or more aspects of the project construction activities or operations.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Construction-Related Effects to Special-Status Plants

Construction of new facilities east of the WWTP would result in the permanent loss of approximately nine acres of ruderal grassland habitat. In addition, construction-related activities, including ground disturbance (e.g., grading and excavation), material staging and vehicular traffic, and general construction activities, could potentially damage or destroy special-status plants, if present.

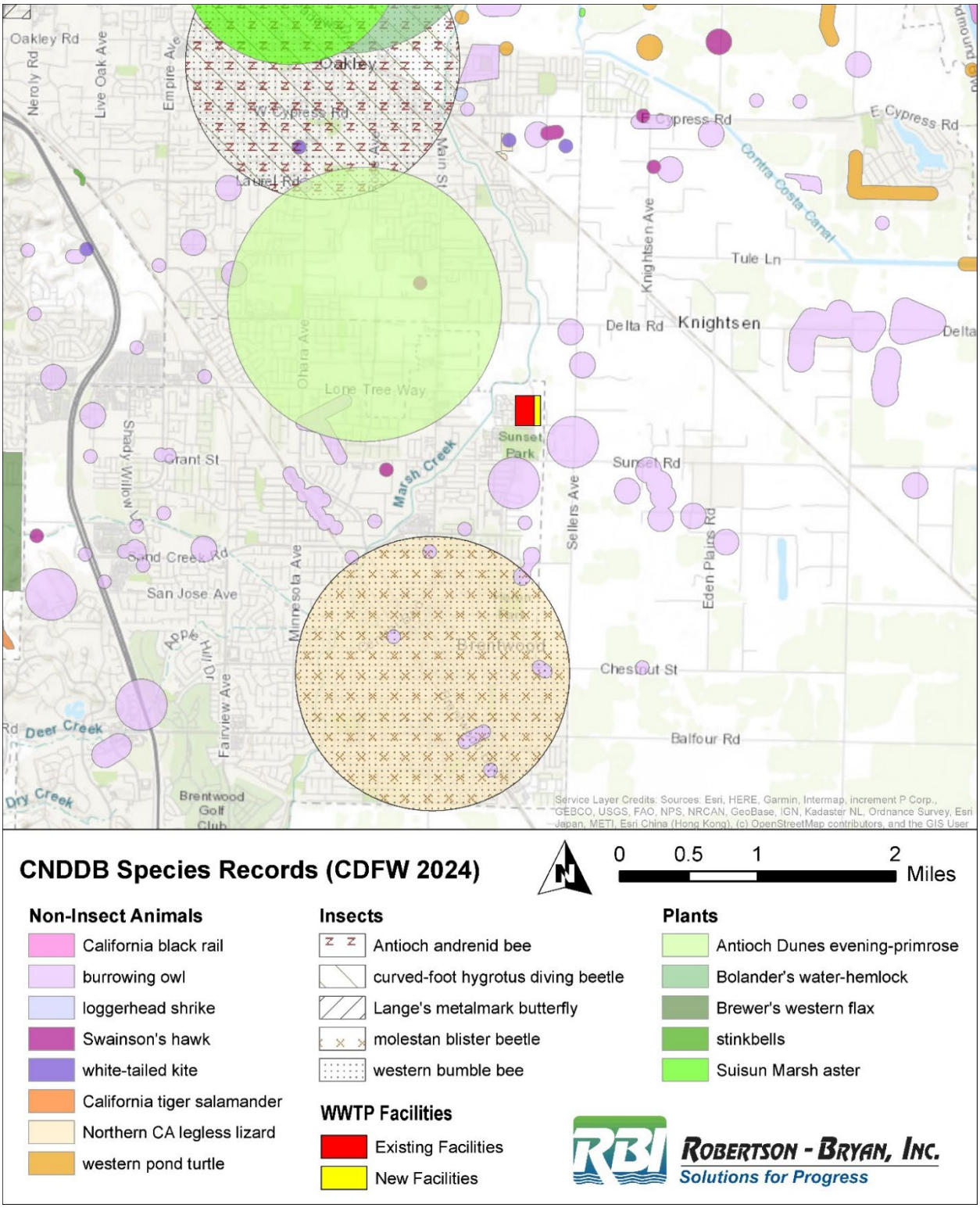


Figure 5. Special-status plant and wildlife records in the project area.

Although unlikely based on the field survey results and due to the urban and ruderal grassland environments, the project site may represent potential habitat for special-status plant species including, but not limited to, large flowered fiddleneck (*Amsinckia grandiflora*), big tarplant (*Blepharizonia plumosa*), and diamond-petaled poppy (*Eschscholzia rhombipetala*). There are several records for special-status plant occurrences in eastern Contra Costa County. Appendix B, Table B-2 shows the potentially occurring special-status plant species in the project area. No special-status plants, covered or not covered by the ECCCHCP, were found during the field surveys, which were conducted during the blooming periods (i.e., during early and late spring) for all species that have the potential to occur at the project site.

Direct effects resulting from the project including the permanent loss of approximately nine acres of ruderal grasslands and the loss or disturbance of special-status plants or their habitats would be considered a potentially significant impact. Implementation of Mitigation Measures BIO-1 and BIO-2 would reduce the construction-related impacts to special-status plants to **less-than-significant with mitigation incorporated**.

MITIGATION MEASURE BIO-1: GENERAL CONSTRUCTION MEASURES

All contractors and equipment operators will be made aware of the ecological values of the site and will be given instructions to comply with all mitigation measures. Construction activities will be limited to a designated work area (including the work corridor and staging areas). The work area will be clearly identified and will be staked and flagged where necessary prior to initiation of construction activities. This will include flagging of riparian and wetland habitats in the vicinity of work areas to ensure their avoidance and protection.

MITIGATION MEASURE BIO-2: PARTICIPATION IN THE ECCCHCP

The City will participate in the ECCCHCP for the project to mitigate potential impacts to special-status species or their habitats covered under the ECCCHCP. This coverage will allow the City to minimize and compensate for potential effects resulting from construction- and operation-related activities associated with the project through implementation of all applicable conservation measures and compensation mechanisms of the ECCCHCP. To compensate for unavoidable project-related effects the City will pay either the applicable fee or dedication of land in lieu of the fee as described in Chapter 9, Funding, and in Brentwood Ordinance number 850.

Operations and Maintenance-Related Effects to Special-Status Plants

Once constructed, operations and maintenance of the project would require additional WWTP and Solid Waste Transfer Facility staff and alter the truck and vehicle traffic, as shown in Table 2. However, because all operation and maintenance activities associated with the project would occur in Urban areas where no habitat for special-status plant species occurs, operations and maintenance of the project would have **no impact** on special-status plants.

Construction-Related Effects to Special-Status Amphibians or Reptiles

Ruderal grassland habitat within the project site represents potential terrestrial habitat for special-status amphibian and reptile species such as California tiger salamander, silvery legless lizard, California horned lizard, giant garter snake, and San Joaquin whipsnake. Construction-related activities including ground disturbance, material staging and vehicular traffic, and general facility construction activities in these habitats could potentially disturb or harm these individuals or their nests, if present. Construction-related disturbances would be considered a potentially significant impact, if these species occur within the project site. Implementation of Mitigation Measures BIO-1 and BIO-2 (described above) and Mitigation Measure BIO-3 would reduce the impact to **less-than-significant with mitigation incorporated**.

MITIGATION MEASURE BIO-3: SPECIAL-STATUS AMPHIBIANS AND REPTILES

The City will implement pre-construction surveys, as necessary per the ECCCHCP, for California tiger salamander, silvery legless lizard, western pond turtle, California horned lizard, giant garter snake, and San Joaquin whipsnake in the annual, ruderal grassland habitat associated with the project.

Surveys will be implemented in accordance with methods described in Section 6.4.3 of the ECCCHCP.

If any ECCCHCP-covered species are found (California tiger salamander, silvery legless lizard, western pond turtle, or giant garter snake), all applicable avoidance and minimization measures, construction monitoring, conservation measures, and/or mitigation fees of the ECCCHCP will be implemented.

If any special-status species not covered by the ECCCHCP (California horned lizard and San Joaquin whipsnake) are discovered, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW. Protection measures developed in consultation with CDFW could include developing appropriate construction buffers, use of exclusion fencing, and biological monitoring of all initial clearing and grubbing activities.

Operations and Maintenance-Related Effects to Special-Status Amphibians or Reptiles

As noted above, operations and maintenance of the project would require additional WWTP and Solid Waste Transfer Facility staff and alter the truck and vehicle traffic within the project site. Additional truck and vehicle traffic could increase the potential for impacts to special-status amphibians and reptiles, if they were to occur on the roadways of the project site. However, because habitat for amphibians and reptiles within the project site is considered marginal, at best, resulting in a very low chance that special-status species would occur and because truck and vehicle traffic would only be minimally increased (Table 2), operations and maintenance of the project would have a **less-than-significant impact** on special-status amphibians and reptiles.

Construction-Related Effects to Nesting or Foraging Special-Status Birds

The project site and surrounding area represents potential nesting, burrowing, and foraging habitat for burrowing owl, as well as foraging habitat for Swainson's hawk and golden eagle. These species are covered under the ECCCHCP. Additional special-status bird species not covered by the ECCCHCP are known to or could potentially forage or nest in the vicinity of the project site.

Construction of the project would include removal of up to 25 trees, including Valley oak, California live oak, California peppertree, olive, black poplar, Fremont cottonwood, carob, Chinese pistachio, plum, black walnut, cherry, fan palm, and birch.

Ten of the trees are in the area adjacent to and east of the WWTP where the anaerobic digester, biosolids dryers, and pyrolysis systems would be constructed. These ten trees include five valley oak trees (*Quercus lobata*) that have a DBH ranging 3–16 inches, two California live oak trees (*Quercus agrifolia*) that range from 6–16 inches DBH, and three California peppertrees (*Schinus molle*) that range from 18–24 inches DBH. Based on their proximity to each other and location, these trees appear to have been planted as landscape trees adjacent to the WWTP. The trees are not considered suitable nesting habitat for raptors and no active or old nests were observed in any of the trees when they were surveyed in May 2024.

The other fifteen trees are located along the eastern extent of the project area where construction of the realigned pedestrian path would occur. Of the fifteen trees that could be removed, four are native species, including one black walnut and three in the Populus genus, and twelve are non-native species including an assortment of common orchard, agricultural and landscaping varieties. Ten trees have a DBH less than 6 inches, with six of those trees having a DBH less than 2 inches. The remaining five trees range in DBH from 7–16 inches. All fifteen trees are located near a property fence line separating the project area from a greenhouse/warehouse operation and fields used intensively for agriculture. The trees are present in a linear, broken, and patchy nature, lacking suitable connectivity, density and habitat for nesting birds, including raptors and songbirds. The fifteen trees are not considered suitable nesting habitat, and no active or old nests were observed in any of the trees when they were surveyed in May 2024.

Tree removal and the potential construction-related disturbances to nesting and foraging special-status birds are considered a potentially significant impact. Implementation of Mitigation Measures BIO-1 and BIO-2 (described above) and Mitigation Measures BIO-4 and BIO-5 would reduce the impact to **less-than-significant with mitigation incorporated**.

MITIGATION MEASURE BIO-4: BURROWING OWLS

The City will implement pre-construction surveys for burrowing owls or burrows at proposed construction sites with potential habitat in accordance with methods described in Section 6.4.3 of the ECCCHCP.

If the burrowing owls nests or burrows are discovered in the work areas, all applicable avoidance and minimization measures, construction monitoring, conservation measures, and/or mitigation fees for this species in the ECCCHCP will be implemented.

MITIGATION MEASURE BIO-5: OTHER SPECIAL-STATUS BIRDS

If construction activities are scheduled to occur between February 15 and September 15, preconstruction surveys will be conducted at proposed construction sites within 30 days prior to any such activities to determine whether any nests of special-status birds are present. A qualified biologist will search within 1,000 feet of sites for raptor nests, and within 250 feet of sites for passerine nests. Biologists will conduct a visual and aural search of the survey area on foot, using binoculars to scan tree tops for the presence of nests.

If any nests are identified, measures to reduce impacts to less-than-significant levels, such as species-specific buffers and nest monitoring, would be developed in consultation with appropriate resource agencies (CDFW and/or USFWS).

Operations and Maintenance-Related Effects to Special-Status Birds

Operations and maintenance of the project, including increases in truck trips and traffic, would not be expected to have any impact on special-status bird nesting or foraging due to the limited amount of nesting trees and foraging habitat located within proximity to the project site, therefore, operations and maintenance of the project would have **no impact.**

Construction-Related Effects to Special-Status Mammals

American badger, ringtail, pallid bat, and Townsend's big-eared bat, have the potential to occur in the project site. While it is unlikely that American badger and ringtail would occur in the WWTP portion of the project site due to the lack of habitat, developed nature of the site, and daily disturbances (e.g., employee activities, vehicle traffic, and noise), areas of annual grassland habitat may be potential habitat. The potential for construction-related disturbances to these species, if they occur in the project site during construction, is considered a potentially significant impact. Implementation of Mitigation Measures BIO-1 and BIO-2 (described above) and Mitigation Measures BIO-6 and BIO-7 would reduce the impact to **less-than-significant with mitigation incorporated**.

MITIGATION MEASURE BIO-6: AMERICAN BADGER

The City will implement pre-construction surveys for American badgers or burrows at proposed construction areas with potential habitat in conjunction with burrowing owl surveys.

If any American badgers or burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection measures developed in consultation with CDFW could include developing appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.

MITIGATION MEASURE BIO-7: RINGTAIL

The City will implement pre-construction surveys for ringtail and their burrows at proposed construction areas with potential habitat.

If any ringtail or ringtail burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection measures developed in consultation with CDFW would likely be similar to those developed for American badger and could include developing appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.

The project area represents potential foraging habitat for special-status bats, including Townsend's western big-eared bat and Pallid bat, both of which utilize a variety of open habitats and habitat edges for foraging. In addition, buildings located in the vicinity of the project area could provide suitable roosting habitat for these species. Construction of the project would permanently impact ruderal habitat on lands adjacent to the WWTP, however, significant open habitat and habitat edge areas occur near the project site, including parks, open fields, agricultural lands, open lands within the WWTP site, and the Marsh Creek corridor. Thus, relative to existing foraging habitat, the loss of a few acres of ruderal grasslands would not be expected to affect the foraging success of bats that may roost in the project vicinity. In addition, because construction work would be restricted to occurring between 7:00 a.m. and 4:30 p.m. (see Section 2.6.2), construction activities would be timed to avoid disturbance to foraging bats, which tend to forage after dusk. Finally, while bats could potentially roost in buildings within the WWTP, the project does not include the demolition or alteration of any existing building or structures where bats may roost. Therefore, construction-related effects of the project are considered a **less-than-significant impact** to special-status bats.

Operations and Maintenance-Related Effects to Mammals

Operations and maintenance of the project, including minor increases in truck trips and traffic, would not be expected to have any impact on special-status mammals, therefore, operations and maintenance of the project would have **no impact** on mammals.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

There is no riparian habitat or other sensitive natural communities in the project area. Therefore, implementation of the project would result in **no impact** to riparian habitat or other sensitive natural communities.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are no federally protected wetlands located within the project site. Therefore, implementation of the project would result in **no impact** to federally protected wetlands.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

There are no known migratory wildlife corridors or native wildlife nursery sites in the project area. However, construction activities could temporarily affect the movement of native resident or migratory wildlife that may be present in the project area. Construction effects on potential wildlife movement and migration would be minimized by construction work occurring between 7:00 a.m. and 4:30 p.m. (see Section 2.6.2), providing periods during the day unaffected by construction noise and other activity, and implementation of Mitigation Measure BIO-1, which would restrict all construction activities to the defined work area. Operations and maintenance of the project would occur in an urban environment and be similar to existing conditions, with the work day typically beginning at 4:00 a.m. and ending at 3:00 p.m. Due to the temporary and limited nature of potential disturbance to wildlife movement from construction activities and operations and maintenance activities being similar to existing conditions, this impact is considered **less-than-significant**.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The City of Brentwood does not have a Tree Preservation ordinance that restricts the removal of trees within City limits. Contra Costa County has a Tree Preservation Ordinance that provides for the preservation of certain protected trees in unincorporated areas of the county. However, Ordinance 816-6.1002 Section 6 states that public agencies/utilities can trim and clear trees if necessary if the disturbance is related to the public services provided by the agency/utility. Because the City does not have a tree ordinance and the Contra Costa County tree ordinance allows for exceptions for public agencies/utilities, tree removal associated with the project would not conflict with the Contra Costa Tree Preservation Ordinance and there would be **no impact**.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The City would participate in the ECCCHCP for the project. This coverage would allow the City to minimize and compensate for potential effects resulting from construction- and operation-related activities associated with the project. Therefore, the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan and there would be **no impact**.

3.5 CULTURAL RESOURCES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☑	☐	☐

3.5.1 Setting

The information in this setting is from investigations conducted by Natural Investigations Company, Inc., documented in a report titled *Cultural Resources Assessment for the City of Brentwood Solid Waste Organics Diversion Project, Contra Costa County, California*. The investigations included a search of the California Historical Resources Information System (CHRIS) conducted by the Northwest Information Center on June 7, 2024; a search of the Sacred Lands File conducted by the NAHC; outreach via letters and telephone to Native American tribes and individuals identified on a contact list provided by the NAHC; a buried archaeological site sensitivity analysis; and a pedestrian surface survey of the entire project area limits.

A CHRIS records search was conducted to determine whether prehistoric or historic cultural resources have been previously recorded in the boundaries of the project area limits and surrounding area, the extent to which the project site and surrounding area have been previously surveyed, and the number and type of cultural resources within a 0.5-mile radius of the project. The archival search of the archaeological and historical records, national and state databases, and historic maps included the following sources.

- National Register of Historic Places: listed properties
- California Register of Historical Resources: listed resources
- Historic Property Data File for Solano County
- Archaeological Determinations of Eligibility
- Built Environment Resources Directory
- California Inventory of Historical Resources
- California Historical Landmarks
- California Points of Historical Interest
- Historical Bureau of Reclamation General Land Office land plat maps

The CHRIS records search did not identify any previously recorded cultural resources in the project area limits, but did identify four previously recorded sites within a 0.5-mile radius.

The Sacred Lands File search with the NAHC found no sensitive Native American cultural resources in the project area. The NAHC provided contact information for tribal members and organizations affiliated with the region and recommended that they be contacted for more information on the potential for Native American cultural resources within or near the project area limits. Natural Investigations conducted Native American outreach via letter and telephone to all individuals and groups included on the NAHC contact list for the project. Natural Investigations did not receive any responses to the outreach.

The buried sensitivity analysis determined that geologic land forms and soils in the project area limits date to the Late Pleistocene/Holocene (126,000–12,000 years ago to the present). These formations and soils typically exhibit a moderate to high sensitivity for the presence of buried deposits of cultural resources. However, the soils are not conducive to the preservation of buried cultural resources because of the characteristics of their parent material (e.g., erosional surfaces). Furthermore, the project encompasses previously disturbed areas associated with construction of the Solid Waste Transfer Station, WWTP, roadways, a paved trail, and other subsurface infrastructure. Therefore, project construction activities would likely not encounter significant buried deposits of cultural resources.

Natural Investigations' professionally qualified archaeological staff conducted a pedestrian surface survey of the entire project area limits on May 13, 2024, using transects spaced no greater than 15 meters apart. During the pedestrian survey, all visible ground surfaces across the project area limits were carefully examined for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, and/or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes and foundations), or historic-era debris (e.g., metal, glass, ceramics). Surface visibility across the project area limits was generally poor (1%–25%) due to landscaping, paved areas, existing structures, and dense grasses. The pedestrian surface survey did not identify any prehistoric or historic sites or artifacts or any evidence to suggest the presence of buried deposits of cultural resources. On the contrary, the survey identified that the project area is previously disturbed by construction of the City's Solid Waste Transfer Station, WWTP, roadways, a paved trail, and other subsurface infrastructure.

3.5.2 Discussion

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

A "historical resource" is any resource that is listed in or determined to be eligible for listing in the California Register of Historical Resources, as defined in PRC Section 5024.1 and CCR Section 4852. The California Register of Historical Resources includes resources listed in or formally determined to be eligible for listing in the National Register of Historic Places, as well as some California State Landmarks and Points of Historical Interest. Based on the negative results of the CHRIS search and Native American outreach efforts, as well as the negative findings of the field survey, there is no indication that the project would impact any historical

resources as defined under CEQA Section 15064.5. Therefore, the project would have **no impact** on historical resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

A "unique archaeological resource" is defined in PRC Section 21083.2(g) as archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it: (1) contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) has a special and particular quality such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

Project construction activities would involve ground disturbing activities, including grading and excavations for underground utility installations (e.g., pipes) and facility foundations. As described above, no archaeological resources pursuant to CEQA Section 15064.5 were identified within the project area limits through the database record searches or the field survey and construction activities are unlikely to encounter buried cultural resources. Nevertheless, construction activities have the potential to encounter buried archaeological resources (e.g., deposits of stone, bone and shell artifacts, dark gray "midden" sediments, historic trash deposits, and stone or adobe foundations) as the lack of surface indications does not always ensure that there are no buried sites, features, or objects of significance. Therefore, the project could have a potentially significant impact on archaeological resources. With implementation of Mitigation Measure CULT-1, this impact would be **less than significant with mitigation**.

MITIGATION MEASURE CULT-1: ACCIDENTAL DISCOVERY OF CULTURAL RESOURCES

In the event that cultural resources are inadvertently discovered during project construction activities, work will be halted within 100 feet of the find and a qualified archaeologist (i.e., an archaeologist that meets the qualifications at 36 CFR Part 61) will be retained to assess its potential significance. Construction activities may continue in other areas, but may not resume in the area of the find until its significance is assessed and it is appropriately treated. If the find is not significant, then no additional cultural resources investigations are necessary and project work may resume in the area of the find. If the find is determined significant, additional cultural resources investigations, such as data recovery excavation, may be warranted and would be determined in consultation with the City of Brentwood, Native American Tribe traditionally and culturally affiliated with the geographic area of the project site, and any other relevant regulatory agencies or interested parties, as appropriate.

c) Substantially disturb human remains, including those interred outside of formal cemeteries?

Based on the documentary research described above, no evidence suggests that any prehistoric- or historic-era marked or unmarked human interments are present within or in the immediate vicinity of the project site. However, there is the potential for unmarked, previously unknown

Native American or other graves to be present and be uncovered during construction activities. California law recognizes the need to protect historic-era and Native American human burials, skeletal remains, and grave-associated items from vandalism and inadvertent destruction and any substantial change to or destruction of these resources would be a potentially significant impact. Implementation of the Mitigation Measure CULT-2 would reduce this impact to **less than significant with mitigation**.

MITIGATION MEASURE CULT-2: ACCIDENTAL DISCOVERY OF HUMAN REMAINS

If human remains are inadvertently uncovered during project activities, then the stipulations of State of California Health and Safety Code Section 7050.5 will be followed to treat the discovery. This code section states that the County Coroner must be notified immediately of the discovery of human remains and no further disturbance may occur in the area of the discovery until the County Coroner has made a determination regarding the origin and disposition of the remains pursuant to PRC Section 5097.98. If the human remains are determined to be of Native American origin, the County Coroner will notify the NAHC, who will determine and notify a Most Likely Descendent. Treatment of the remains will be determined in consultation with the Most Likely Descendent, the City of Brentwood, and appropriate regulatory agencies.

3.6 ENERGY

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☑	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☑	☐

3.6.1 Setting

Electricity and natural gas are supplied to the City from PG&E. The proportion of PG&E-delivered electricity generated from eligible renewable energy sources is anticipated to increase over the next three decades to comply with the state's renewable portfolio goals under SB 100 and AB 1020.

In 2022, PG&E provided its customers with 38 percent eligible renewable energy (i.e., biomass combustion, geothermal, small-scale hydroelectric, solar, and wind); 49 percent from nuclear power; 8 percent from large-scale hydroelectric, and 5 natural gas (Pacific Gas & Electric 2023). The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors.

3.6.2 Discussion

a,b) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Project construction would involve the consumption of energy resources related to the use of gasoline and diesel fuel for construction work vehicle trips, hauling truck trips, materials delivery truck trips, and operation of off-road construction equipment. Diesel equipment would not be operated on each day of construction, so there would be days during the construction period when no diesel use would occur. Diesel-powered construction equipment is regulated by CARB's "In-Use Off-Road Diesel Vehicle Regulation." This regulation is intended to reduce emissions from in-use off-road, heavy-duty diesel vehicles by limiting idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into construction fleets, and retiring, replacing, or repowering older engines. This regulation would result in the use of fuel-efficient vehicles during the construction of the project. **Table 9** summarizes energy consumption and generation from project construction.

Project operations would require new sources of energy, including natural gas to operate the boiler, electricity to operate buildings, pumps, and other equipment, and some diesel fuel to operate the emergency backup generator. However, the project would also construct an anaerobic digester that would produce biogas that would be fed into an existing PG&E pipeline, resulting in a new form of alternative energy (i.e., renewable natural gas) through this cogeneration process. Table 9 summarizes energy consumption and generation from project operations.

The one-time expenditure of fuel and energy for construction in combination with the operation of a new form of renewable energy supply would not be considered a wasteful or inefficient use of energy. In contrast, generating a new form of renewable energy is consistent with CEQA Appendix G guidance for energy analyses and would further support the City's and state's objectives of reducing fossil-fuel sources of energy. Furthermore, the project would result in minimal increases in existing truck trips (i.e., 13 per day), thus would not result in substantial increases in mobile-source fuel. For these reasons, the project would not result in the wasteful, inefficient, or unnecessary consumption of energy or conflict with a local or state plan for renewable energy or energy efficiency. This impact would be **less than significant**.

Table 9. Summary of energy consumption and generation from project construction and operations.

	Gasoline (gallons)	Diesel (gallons)	Natural Gas (MCF/yr)	Electricity (MWh/yr)
Project Consumption				
Construction				
Mobile (worker, haul trucks)	16,142	15,366	—	160,707
Off-Road Equipment	—	232,849	—	—
Total	16,142	248,215	—	160,707
Operations				
Mobile (worker, haul trucks)	84,353	55,090	—	—
Stationary (boiler, flare, generator, pumps)	—	939	64	9,417
Total	84,353	56,029	64	9,417
Project Generation				
Anaerobic Digester	—	—	137	—
Net	**100,495**	**304,244**	**-73**	**170,124**

MCF/yr=million cubic feet per year; MWh/yr=megawatt hours per year
Source: Modeled by Ascent in 2024. See Appendix A for details.

3.7 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

3.7.1 Setting

The soils underlying the project site consist of Rincon and Delhi series soils. Rincon soils are mineral soils that generally lack organic material and typically occur on erosional surfaces and typically date to the Late Pleistocene (126,000–12,000 years ago) (U.S. Department of Agriculture Natural Resources Conservation Service 1999:163 and 258). Delhi soils typically date to 15,000–12,000 years ago and represent soils that are not fully developed or weakly expressed because they are too young, erosion has removed material faster than soil can develop, or new material is added faster than soil develops (Rapp and Hill 1998:32).

The project site is not located in an Earthquake Fault Zone or Landslide Zone, as defined by the California Department of Conservation (2024b). The project site and much of the area surrounding the site is in a Liquefaction Zone (California Department of Conservation 2024b).

3.7.2 Discussion

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault; ii) strong seismic ground shaking; iii) seismic-related ground failure, including liquefaction?

Fault ground ruptures are unlikely at the project site as there are no active faults mapped across the site. However, the project site is subject to potentially strong ground-shaking during seismic events that could occur from active faults in the region and associated liquefaction, in which the soils become unstable and reduce in strength and stiffness. Project structures would be required to be designed and constructed in accordance with the City of Brentwood Municipal Code Title 15, *Buildings and Construction*, which adopts by reference the California Building Standards Code. The California Building Standards Code is a minimum requirement intended to protect life safety and prevent structures from collapsing in the event of an earthquake. Because the project would conform to the applicable California Building Code regulations as well as specific geotechnical investigations and associated design recommendations, potential hazards associated with strong seismic ground shaking, failure, or liquefaction would be minimized. Therefore, the project would have a **less than significant** on the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, and ground failure, including liquefaction.

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iv) landslides?

The project site is not susceptible to landslides because the site and surrounding area are mostly flat. Therefore, the project would have a **no impact** on the risk of loss, injury, or death involving landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Project construction activities have the potential to result in localized and temporary soil erosion if disturbed soils are exposed to rainfall. The potential for construction-related soil erosion is addressed in Section 3.9, "Hydrology and Water Quality." As described in that section, soil erosion during project construction would be minimized through implementation of a SWPPP and BMPs. The project would not involve any operations-related activities that would cause or contribute to long-term soil erosion. Disturbed surfaces would either be paved or planted with native seed or landscape plants (e.g., grass, shrubs, trees). Therefore, the project would have a **less than significant impact** on soil erosion and loss of topsoil.

c,d) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?

The project is not located on a geologic unit or soil that is considered unstable. The soils in the upper 6 feet are non-plastic and, therefore, have no or low expansion potential (Bianchin, pers.

comm., 2024). The project would be required to adhere to the requirements of the California Building Standards Code, which includes specifications for site preparations such as compaction requirements for foundations. Project components at the Solid Waste Transfer Station—the new building, yard waste area and ancillary facilities—would be constructed at the existing grade. Similarly, project components to be constructed on the parcel east of and adjacent to the WWTP—the new anaerobic digester, BDPS, and ancillary facilities—would be constructed close to the existing grade, though some grading to prepare the site would be completed to create levels areas on which to construct the new facilities. Fill that would to be imported would be specified to have low expansion potential. The renewable natural gas pipeline would be installed below ground and the overlying soil restored to the same elevation as existing conditions. Finally, the new PG&E interconnector station at the parking lot located at the southeast corner of Sunset Park would be installed at the existing grade. Therefore, the project have a **less than significant impact** on the creation of unstable geologic units or soils, or substantial risks to life or property.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project would not contribute to use of septic tanks or alternative wastewater disposal systems. Therefore, there would be **no impact** on soils utilized for septic tanks or alternative wastewater disposal systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Previous investigations have concluded that potentially important vertebrate fossils may occur in two older alluvial deposits that occur in the project area consisting of Holocene and Pleistocene dune sands (City of Brentwood 2016). The Holocene deposits are too young to yield fossils, however, deep excavation in older Pleistocene units has the potential to encounter vertebrate fossils (City of Brentwood 2016). This impact would be **less than significant with mitigation incorporated** with implementation of Mitigation Measure GEO-1.

MITIGATION MEASURE GEO-1: ACCIDENTAL DISCOVERY OF PALEONTOLOGICAL RESOURCES

Should construction or grading activities result in the discovery of unique paleontological resources (e.g., teeth, bones, fossils), the finds shall be set aside and all excavation activity shall cease within 100 feet of the specific place of discovery until a qualified archaeologist, paleontologist, or historian has assessed the find and, if deemed significant, salvaged the find in a timely manner. The decision to conduct paleontological salvage operations will be determined by the qualified archaeologist, paleontologist, or historian in consultation with City staff. Work may proceed on other parts of the project while assessment and/or salvage by the qualified archaeologist, paleontologist, or historian is underway. Finds determined significant by the paleontologist shall be conserved and deposited with a recognized repository such as the University of California Museum of Paleontology.

3.8 GREENHOUSE GAS EMISSIONS

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

3.8.1 Setting

Greenhouse Gas Emissions and Climate Change

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. The earth's surface absorbs a portion of the solar radiation that enters the earth's atmosphere, and a smaller portion of this radiation is reflected toward space. GHGs within the earth's atmosphere absorb this infrared radiation (i.e., thermal heat). As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on earth.

GHGs are naturally present in the atmosphere, are released by natural and anthropogenic (human-caused) sources and are formed from secondary atmospheric reactions. Natural sources of GHGs include human, animal, and plant respiration; organic matter decomposition; and ocean evaporation. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes. The following GHGs are widely accepted as the principal contributors to human-induced global climate change: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).

Carbon monoxide is a colorless and odorless GHG that results from burning coal, oil, natural gas, and wood. Methane is the main component of natural gas and is associated with agricultural practices and landfills. Nitrous oxide is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices. Hydrofluorocarbons are synthetic chemicals used as a substitute for chlorofluorocarbons in automobile air conditioners and refrigerants. Perfluorocarbons are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors. Sulfur hexafluoride is an inorganic, odorless, colorless, nontoxic, and nonflammable GHG used for insulation in electric power transmission and distribution equipment, and in semiconductor manufacturing.

Global warming potential is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to carbon monoxide. The reference gas for global warming potential is carbon dioxide; therefore, carbon dioxide has a global warming potential of 1. The other main

GHGs attributed to human activity include methane, which has a 100-year global warming potential of 25, and nitrous oxide, which has a global warming potential of 298 (California Air Resources Board 2024). The concept of carbon monoxide equivalents (CO_2e) is used to account for the different global warming potentials of GHGs to absorb infrared radiation. These global warming potential values are derived from the Intergovernmental Panel on Climate Change's *Fourth Assessment Report* and used by CARB's methodology for developing its statewide inventory.

Impacts of GHGs are borne globally, as opposed to the more localized air quality effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to a global climate, local climate, or microclimate. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis.

Regulatory Setting

EPA is the federal agency responsible for implementing the federal Clean Air Act. On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the federal Clean Air Act and that EPA has the authority to regulate GHGs. However, in California and within the San Francisco Bay Area Air Basin, project-level GHG impacts are assessed following guidance issued at the state-level by CARB, locally adopted climate action plans or GHG reduction plans, and adopted air district thresholds of significance.

CARB adopted the *2022 Scoping Plan to Achieve Carbon Neutrality* (2022 Scoping Plan), which is the most current version of the Scoping Plan (California Air Resources Board 2022). The 2022 Scoping Plan outlines a strategy to achieve AB 1279 GHG reduction targets. The 2022 Scoping Plan outlines the strategies the state will implement to achieve carbon neutrality by reducing GHG emissions to meet the anthropogenic target, and by expanding actions to capture and store carbon through the state's natural and working lands and using a variety of mechanical approaches. Local air districts, including BAAQMD, when establishing their thresholds, derive such thresholds that when projects meet them, they would also meet goals established by CARB. Thus, projects that comply with BAAQMD's established GHG thresholds would also meet CARB's GHG reduction goals.

While the City of Brentwood has adopted General Plan policies that include commitments to develop and implement a climate action plan to reduce GHG emissions, to this date, no such plan has been prepared or adopted.

The BAAQMD's 2022 CEQA Guidelines provide recommended procedures for evaluating air quality and climate impacts in CEQA documents. The 2022 CEQA Guidelines recommend GHG thresholds of significance for new stationary sources. In accordance with BAAQMD guidance, new stationary source projects that do not exceed established thresholds would not result in significant effect on the environment or conflict with local or state goals for reducing GHG emissions.

Thresholds of Significance

Based on the CEQA Appendix G questions and adopted BAAQMD thresholds of significance, the project would result in a significant GHG impact if it would:

- generate GHG emissions, either directly or indirectly, exceeding 10,000 metric tons of CO_2e per year ($MTCO_2e$/year) resulting in a significant effect on the environment; or
- conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

3.8.2 Discussion

a,b) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed above, projects that meet established BAAQMD thresholds of significance would also not conflict with the CARB 2022 Scoping Plan; thus, both CEQA Appendix G questions pertaining to GHG emissions are evaluated together.

GHG emissions would occur during project construction from the use of heavy-duty diesel equipment used onsite, heavy-duty truck deliveries, and worker commute trips. Project operations would result in GHG emissions associated with the new solid waste processing equipment (i.e., anaerobic digester, biosolids dryer, pyrolysis units), increases in mobile source emissions from solid waste hauling activities and biochar offsite deliveries, and the use of a backup emergency generator and flaring. The project also would result in the avoidance of landfill-related GHG off-gassing emissions due to the diversion of solid waste that is currently going to a landfill to the project, which would produce renewable natural gas.

To conduct the analysis, all new sources of GHG emissions and the anticipated reduction in emissions from landfill diversion were calculated. Emissions from construction activities were modeled using CalEEMod using project-specific construction equipment information. On-road mobile source emissions were quantified using CARB's Emissions Estimator Model 2021. To account for the reduction in emissions, using the existing annual waste stream quantities that would be diverted to anaerobic digestion, a comparative emissions model using EPA's Waste Reduction Model (WARM) was conducted. The model generates annual GHG emissions associated with the existing solid waste processing operations (i.e., landfilling) compared to the proposed project (i.e., anaerobic digester) to estimate the net change associated with the proposed alternative waste processing process.

A summary of project-generated increases, anticipated reduction, and net changes in annual GHG emissions are included in **Table 10**. All emissions inputs and outputs are included in Appendix A.

Project construction-related emissions would result in annual average emissions of 36 MTCO2e/year. While the BAAQMD does not have adopted quantitative thresholds for construction, the total estimated construction emissions over the 30-month construction period

(i.e., 1,080 $MTCO_2e$) were amortized over a 30-year period for comparison to the 10,000 $MTCO_2e$/year operational threshold.

Project operations would result in a net increase in GHG emissions of 13,067 $MTCO_2e$/year and when combined with construction result in a total increase of 13,103 $MTCO_{2e}$/year. However, as a result of solid waste that is currently landfilled being diverted to the anaerobic digester under the project, GHG emissions would be reduced by 9,377 $MTCO_2e$/year, offsetting some of the project-generated onsite (construction, stationary, and mobile) emissions and resulting in a net increase in emissions of 3,725 $MTCO_2e$/year. Importantly, potential additional GHG reductions are expected to occur due to avoided emissions relating to energy consumption from the production of metals and plastics that could be reduced from future increased recycling efforts. The WARM model accounts for these GHG emissions reductions in addition to the avoided landfill-related emissions. In addition, the WARM model combines the future conditions (without the project assuming landfilling would continue) to the project's GHG benefits to result in a combined (avoided + project-generated benefit) net GHG benefit. However, for this analysis, because the project is primarily responsible for the change from landfilling waste to anaerobically digesting waste, only this portion of GHG emissions reduction was applied. All GHG emission calculations are included in Appendix A.

The emissions estimate includes all emissions sources (i.e., construction, mobile, stationary), thus is conservative when compared to a stationary-source threshold. Nonetheless, the project would not exceed applicable stationary source thresholds of 10,000 MTCO2e/year and would result in an overall net benefit to GHG emissions by reducing emissions associated with landfilling waste that would have otherwise occurred without the project. This impact would be **less than significant.**

Table 10. Change in greenhouse gas emissions for project operations compared to existing conditions ($MTCO_2e$/year)

Project Parameter	$MTCO_2e$/year
Project-Generated	
Construction	
Amortized over 30 years	36
Operation	
Mobile Sources (worker commute, truck trips)	316
Stationary Sources (flare, boiler, tail gas, biodryer, generator)	12,751
Project-Generated Total	13,103
Project-Avoided	
Landfill Diversion	-9,377
Project Net	**3,725**
BAAQMD Threshold of Significance	10,000
Exceeds Threshold?	No

$MTCO_2e$/year = metric tons of carbon dioxide equivalent emissions per year
A positive value means an increase relative to existing conditions and a negative value means a decrease relative to existing conditions.
Source: Modeled by Ascent in 2024.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

3.9.1 Setting

A hazardous waste is a substance, or mixture, with properties that make it potentially dangerous or harmful to human health or the environment. Specifically, hazardous wastes include waste listed on one of the four Resource Conservation and Recovery Act hazardous wastes lists—the F-list (non-specific source wastes), K-list (source-specific wastes), P-list and U-list (both lists consist of discarded commercial waste products), or that exhibits one of the four characteristics of a hazardous waste—ignitability, corrosivity, reactivity, or toxicity.

The project site is not located in a wildland fire hazard area or a designated California Department of Forestry and Fire Protection area (refer to Section 3.20, "Wildfire").

3.9.2 Discussion

a,b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Create a significant hazard to the

public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Project construction activities would involve the use, storage, and transport of potentially hazardous products such as paints, solvents, glues, and cements. Petroleum hydrocarbon products such as gasoline, diesel, and lubricants would be used in heavy equipment and construction vehicles. By complying with all existing hazardous material regulations, project construction would be protective of public health and the environment. Also, the project would conform to the specifications in the SWPPP prepared under a Construction General Permit required by the SWRCB to avoid spills and releases of hazardous materials and wastes. Inspections would be conducted to verify consistent implementation of General Construction Permit conditions and BMPs would be required to minimize the potential for spills and releases and help ensure the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas.

Project operations at the Solid Waste Transfer Station would not involve the use of additional hazardous chemicals. The transfer station has a load checking program to identify, isolate, and properly handle and dispose of any hazardous waste that is incidentally delivered in loads of municipal solid waste. The load checking program would be continued with the project.

WWTP operations currently involve the use of chemicals for treatment of wastewater. Project operations at the WWTP for the new project facilities would involve the use of additional chemicals that may be considered hazardous if released to the environment in sufficient quantity. Operation of the new anaerobic digester would involve use of ferric chloride and sulfuric acid. Operation of the biosolids dryers would also involve use of sulfuric acid. Operation of the pyrolysis systems would involve the use of sodium hydroxide. Installation of a new diesel generator would require storage of diesel fuel onsite. All chemicals and fuel would be stored and used onsite in accordance with federal, state, and local regulations.

By complying with the Construction General Permit and all federal, state, and local regulations regarding storage and use, the project would have a **less-than-significant impact** on the public and the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The project site is not located within 0.25 mile of an existing or proposed school (City of Brentwood 2014). Therefore, the project would have **no impact** related to emission or handling of hazardous materials, substances, or waste within 0.25 mile of a school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the "Cortese List") (California Department of Toxic Substances and Control 2024). Therefore, the project would have **no impact** on the public or the environment related to such a site.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The project is not within an airport land use plan area, or within two miles of a public airport or public use airport. The closest airport is the Byron Airport operated by Contra Costa County, which is approximately 8.5 miles south of the project site. Therefore, the project would have **no impact** on people residing or working in an airport land use plan area or vicinity of an airport.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

During installation of the renewable natural gas pipeline in Sunset Road, traffic flow would be maintained in both directions by traffic control flaggers who would be able to respond to and prioritize emergency vehicle access. Project facilities would not obstruct or otherwise interfere with an emergency response plan or emergency evacuation plan. Therefore, the project would have **no impact** on implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

As discussed in Section 3.20, "Wildfire," the project is not in a high severity wildfire area. Therefore, the project would have **no impact** on exposing people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.10 HYDROLOGY AND WATER QUALITY

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☑	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☑	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☑	☐
	i) result in a substantial erosion or siltation on- or off-site;	☐	☐	☑	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☑	☐
	iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
	iv) impede or redirect flood flows?	☐	☐	☐	☑
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☑
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☑

3.10.1 Setting

Site Drainage Characteristics

The Solid Waste Transfer Station and WWTP sites are graded to prevent ponding of water and to provide positive drainage. Stormwater and surface drainage is directed across sloped areas to a catch basin. The catch basin drains into a City-owned detention basin and no stormwater leaves City property. The drainage system is designed to accommodate a 100-year storm event.

Drainage inside the transfer building from washdowns of the waste receiving and unloading areas, the wash pads, and from saturated loads of waste drain into a sand/oil separator then to the sanitary sewer. Drainage from outside storage areas also drain to the sand/oil separator then the sanitary sewer. The sanitary sewer conveys this drainage to the City's WWTP.

Drainage in the grassland area adjacent to and east of the WWTP and Sunset Park either infiltrates and or is conveyed to Marsh Creek via a storm drain maintained by the City.

Marsh Creek is the dominant stream in the project area. Marsh Creek passes through Brentwood and traverses north to its confluence with the San Joaquin River and the large embayment area within the Sacramento-San Joaquin Delta known as Big Break. Rainfall runoff generated in the city is conveyed via the stream channels and constructed stormwater drainage systems that discharge to the ditches, streams, and Marsh Creek. All these streams within the city have generally been straightened with constructed flood control levees, which are under the control of the Contra Costa County Flood Control and Water District (CCCFCWCD).

Regulatory Setting

The Municipal Regional Stormwater Permit issued by the San Francisco Bay Regional Water Quality Control Board requires Contra Costa County municipalities, which includes the City of Brentwood, to implement a construction site control program to prevent construction site discharges of pollutants to receiving waters. Each permittee requires the submittal of an erosion control plan that includes appropriate site-specific BMPs, inspection of construction project, and implementation of an enforcement response plan to respond to and require timely corrections of non-compliant conditions.

California's NPDES permit program requires permits for discharges from construction activities that disturb one or more acres. SWRCB adopted a general NPDES permit for stormwater discharges associated with construction activity (Construction General Permit) in Order No. 2022-0057-DWQ, which became effective on September 1, 2023. The Construction General Permit includes specific requirements based on the "risk level" of the site. Obtaining coverage under the Construction General Permit requires filing of a Notice of Intent and preparation and implementation of a SWPPP, which specifies BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges. The Construction General Permit requires implementation of BMPs that control pollutant discharges using the best available technology economically achievable for toxic and non-conventional contaminants, the best conventional technology for conventional contaminants, and any other necessary BMPs to meet water quality standards. The Construction General Permit contains technology-based numeric action levels for pH and turbidity and requires visual monitoring for potential contaminant runoff at all sites, and effluent monitoring at all risk level 2 and 3 sites, with follow-up actions required for exceedances of numeric action levels. The Construction General Permit also specifies runoff reduction requirements for all sites not covered by a municipal NPDES permit, to minimize postconstruction stormwater runoff impacts. Authorization for coverage under the Construction General Permit will be acquired for the project, and appropriate BMPs will be implemented to ensure compliance with the permit conditions.

3.10.2 Discussion

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Construction activities have the potential to affect surface and ground water quality if not properly controlled through BMPs. Construction activities with the potential to affect water quality consist primarily of ground disturbances from the use of earthmoving equipment for grading, excavation, trenching, backfilling, hauling, and soil compaction. These activities have the potential to result in temporary increases in total suspended solids, turbidity, petroleum products, and trash in runoff from the construction areas. Other potential construction-related contaminants and water quality effects include increased concentrations and loading of organic matter, nutrients (nitrogen and phosphorus), and other remnant historical contaminants that may be contained in the soil (e.g., trace metals, pesticides).

Stormwater from construction areas within the Solid Waste Transfer Station and WWTP would be routed to the existing onsite detention basin located adjacent to Elkins Way, as occurs under existing conditions. During construction in the grassland area adjacent to the WWTP where the new anaerobic digester and BDPS units would be located, stormwater would flow into the underlying CCCFCWCD storm drain for discharge to Marsh Creek until grading in that area is complete and the stormwater pump station is installed, after which stormwater would flow to a new intermediate treatment detention basin before flowing into the existing larger detention basin located adjacent to Elkins Way. The portion of the grassland area where the path would be realigned would continue to drain to the CCCFCWCD storm drain. Stormwater in the area adjacent to Sunset Park where the renewable natural gas line would be installed would flow into the adjacent storm drain, as it does under existing conditions. Within the paved areas of the Sunset Park parking lot and Sunset Road, stormwater during construction would be discharged to the existing stormwater collection system.

Implementation of the erosion control and stormwater pollution prevention BMPs described in Section 2.6.3, "Safety and Best Management Practices," which includes preparing an erosion control plan and obtaining coverage under SWRCB's NPDES Construction General Permit (Order No. 2022-0057-DWQ/NPDES Permit No. CAS000002) and development of a SWPPP, would minimize and avoid the potential temporary construction-related water quality effects of the project. Through implementation of erosion control and stormwater pollution prevention BMPs, the risk of direct discharges of project construction-related contaminants to surface and ground waters would be low and the stormwater discharge to Marsh Creek, as affected by stormwater runoff from the construction areas, would not substantially degrade water quality such that beneficial uses would be adversely affected.

Operations

Following completion of project construction, stormwater at the Solid Waste Transfer Station and WWTP would continue to be routed to the existing stormwater collection system and onsite detention basin located adjacent to Elkins Way. Similarly, stormwater from the new area with the

anaerobic digester and BDPS units would drain to a new detention basin located adjacent to these facilities. A new pump station would then pump the stormwater to the existing detention basin adjacent to Elkins Way. Because the site characteristics (e.g., paved areas, wastewater treatment structures) and types of operations and maintenance activities would be similar to existing conditions, the stormwater discharge quality at the Solid Waste Transfer Station and WWTP would be similar to existing conditions during project operations, and all stormwater would be contained on City property.

Runoff from the realigned pedestrian path would flow onto adjacent terrain, which drains to the CCCFCWCD storm drain and Marsh Creek. Stormwater in the area adjacent to Sunset Park where the renewable natural gas line would be installed would flow into the existing storm drain. Within the paved areas of the new PG&E interconnector station (former parking lot) and Sunset Road, stormwater would be discharged to the existing stormwater collection system, as it does under existing conditions, and eventually to Marsh Creek. The stormwater discharge quality from these areas would be similar to existing conditions because the land cover types would be the same as existing conditions.

Based on the above discussion, the project construction and operations would have a **less than significant impact** on constituent discharges that would violate water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality of sufficient frequency and magnitude to adversely affect beneficial uses.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project involves conversion of approximately nine acres of existing earthen areas to impervious surfaces to erect the new anaerobic digester and BDPS units. This amount of impervious area is inconsequential compared to the amount available regionwide to recharge underlying groundwater aquifers. Furthermore, the project would not increase demand for groundwater supplies. Therefore, the project would have a **less-than-significant impact** on groundwater supplies and groundwater recharge and would not impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial on- or offsite erosion or siltation; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The project would not alter the existing drainage patterns in a manner that would create areas with high erosion potential. Facility ground surfaces would either be paved or planted with native seed or landscape plants (e.g., turf, shrubs). Furthermore, routing of stormwater drainage at the Solid Waste Transfer Station and WWTP would be addressed in the project design to be captured in onsite detention basins and be retained on City property. Runoff from other project

areas (i.e., pedestrian path, PG&E interconnector station) would be similar to existing conditions because the finished grade and amounts of impervious area would be similar. Therefore, the project would have a **less-than-significant impact** on on- and off-site erosion and siltation, surface runoff, and stormwater drainage systems.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: iv) impede or redirect flood flows?

The nearest waterway that conveys flood flows is Marsh Creek. The project does not involve placing vegetation, structures, or other impediments in Marsh Creek. Furthermore, as described above in "a," stormwater from the new area with the anaerobic digester and BDPS units would be routed to an onsite detention basin. Therefore, the project would have **no impact** on flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project is not located in a flood zone, or an area subject to exposure to seiche or tsunami. Therefore, the project would have **no impact** on the risk release of pollutants due to project inundation from flooding, seiche, or tsunami.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Stormwater discharges in the City are regulated by the Municipal Regional Stormwater Permit issued by the San Francisco Bay Regional Water Quality Control Board. The NPDES permit requirements implement federal and state water quality regulations, including relevant water quality objectives and implementation provisions in state water quality control plans. As described above in paragraph "b," the project would not result in depletion of groundwater or impede groundwater recharge in the project area. Therefore, the project would have **no impact** on the implementation of a water quality control plan or sustainable groundwater management plan.

3.11 LAND USE AND PLANNING

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☑
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

3.11.1 Setting

The project site is designated in the City's General Plan as "PF-Public Facility" (City of Brentwood 2014). The project site also is within the ECCCHCP area, which is discussed in detail in Section 3.4, "Biological Resources."

3.11.2 Discussion

a) Physically divide an established community?

The project facilities would be located at the existing Solid Waste Transfer Station, WWTP, a vacant parcel adjacent to the WWTP, and a current parking lot adjacent to Sunset Park, thus no communities would be physically divided by the project elements. Therefore, the project would have **no impact** on established communities.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project would be consistent with the City's General Plan land use designation for the site. The placement of the PG&E interconnector station in the existing, 5-space parking lot at the southeast corner of Sunset Park would not create an environmental effect due to conflict with the City's land use plans, based on the resource-specific analyses presented in this Initial Study. A larger parking lot to serve Sunset Park is provided west of the interconnector station location. Finally, the City has applied for coverage of the project under the ECCCHCP. Therefore, the project would have **no impact** due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.12 MINERAL RESOURCES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

3.12.1 Setting

The City's General Plan identifies coal, oil and gas, and sand as significant mineral resources within the area (City of Brentwood 2014). The project site is not used for mineral resource extraction.

3.12.2 Discussion

a,b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The project is not in an area used for mineral extraction. Therefore, the project would have **no impact** on availability of known mineral resources of value to the region and the residents of the state, or the availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

3.13 NOISE

	Would the project result in:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

3.13.1 Setting

Sound is mechanical energy transmitted in the form of a pressure wave from a disturbance or vibration. Noise is generally defined as sound that is loud, unpleasant, unexpected, or disagreeable. The human ear is sensitive to a wide range of sound pressure fluctuations. Sound pressure levels are expressed in logarithmic units called decibels. Because the human ear is not equally sensitive to all sound frequencies, a "dBA" (i.e., A-weighted) frequency-dependent rating scale is used to reflect the range of sensitivity for the average human ear from the faintest sound audible to the maximum sensitivity. Based on the dBA scale, a10 dBA increase is perceived by the average human ear as a doubling of the loudness, thus a 70dBA sound is twice as loud as a 60 dBA sound. Negative effects of noise exposure include nuisance effects (e.g., annoyance, sleep disturbance) to physical damage to the human auditory system. The dBA scale is used for purposes of environmental noise assessment and regulation.

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is a measure typically used to describe potential vibration effects to buildings. The root mean square amplitude is most frequently used to describe the effect of vibration on the human body. The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, up to causing building damage at the highest levels. Damage to structures from vibration is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely result in structural damage. Ground vibration generated by construction equipment spreads through the ground and diminishes in strength with distance.

Definition of Terms

The following are definitions of technical noise terms used throughout this section.

- Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period.
- Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013:2-48, Federal Transit Administration 2018:207–208).
- Community Noise Equivalent Level: This is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 decibel (dB) penalty applied to sound levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m. (Caltrans 2013:2-48).
- Day-Night Noise Level (L_{dn}): This is the energy-average of the A-weighted sound levels occurring over a 24-hour period, with a penalty of 10 dB applied to A-weighted sound levels occurring during the nighttime hours (10:00 p.m. to 7:00 a.m.).
- Vibration Decibels (VdB): VdB is the vibration velocity level in the decibel scale (Federal Transit Administration 2018:Table 5-1).
- Peak Particle Velocity (PPV): PPV is the peak signal value of an oscillating vibration waveform, usually expressed in inches per second (Federal Transit Administration 2018:Table 5-1).

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for nighttime noise to result in sleep disruption. The area surrounding the project site is primarily developed with industrial, public, and agricultural land uses. The Sunset Park Athletic Complex is located along Elkins Way, south of the project site. Several industrial and commercial businesses are located along Elkins Way southwest of the project site. The project site is also adjacent to agricultural uses in unincorporated Contra Costa County to the east. The nearest existing noise-sensitive receptors to the project site where onsite construction would occur is a cluster of residential uses adjacent to the RC U-Pick Cherries Orchard approximately 500 feet east of the project site boundary, 650 feet east of the acoustical center of construction activities. Additionally, there is a single-family residence located approximately 1,100 feet southeast of the project site boundary along Sellers Avenue. Regarding offsite pipeline installation, there are single-family residences south of Sunset Road, with the closest approximately 175 feet south of Sunset Road, where the pipeline would turn west along Sunset Road.

Existing Noise Sources

The BNSF railroad line is an active freight and passenger rail line that crosses through the City of Brentwood and is located approximately 1 mile northeast of the project site. Funny Farm 4CA 2 is a privately owned airstrip located approximately 2 miles southeast of the project site. The nearest public use airport is Byron Airport located approximately 8.5 miles south of the project site.

To characterize the existing ambient noise environment at the project site, three long-term (LT) (24-hour continuous) and two short-term (ST) ambient noise level measurements were conducted in the project area on May 30, 2024. The locations of the noise monitoring sites are shown in **Figure 6**. A Larson Davis Laboratories and SoftdB Piccolo II precision integrating sound level meters were used for the ambient noise measurements. The meters were calibrated before use with Larson Davis Laboratories Model CAL200 acoustical calibrator to ensure measurement accuracy. The measurement equipment meets all pertinent specifications of the American National Standards Institute. The results of the ambient noise short-term measurements are summarized in **Table 11**, and the results of the ambient noise long-term measurements are summarized in **Table 12**.

Table 11. Existing ambient short-term noise measurements summary.

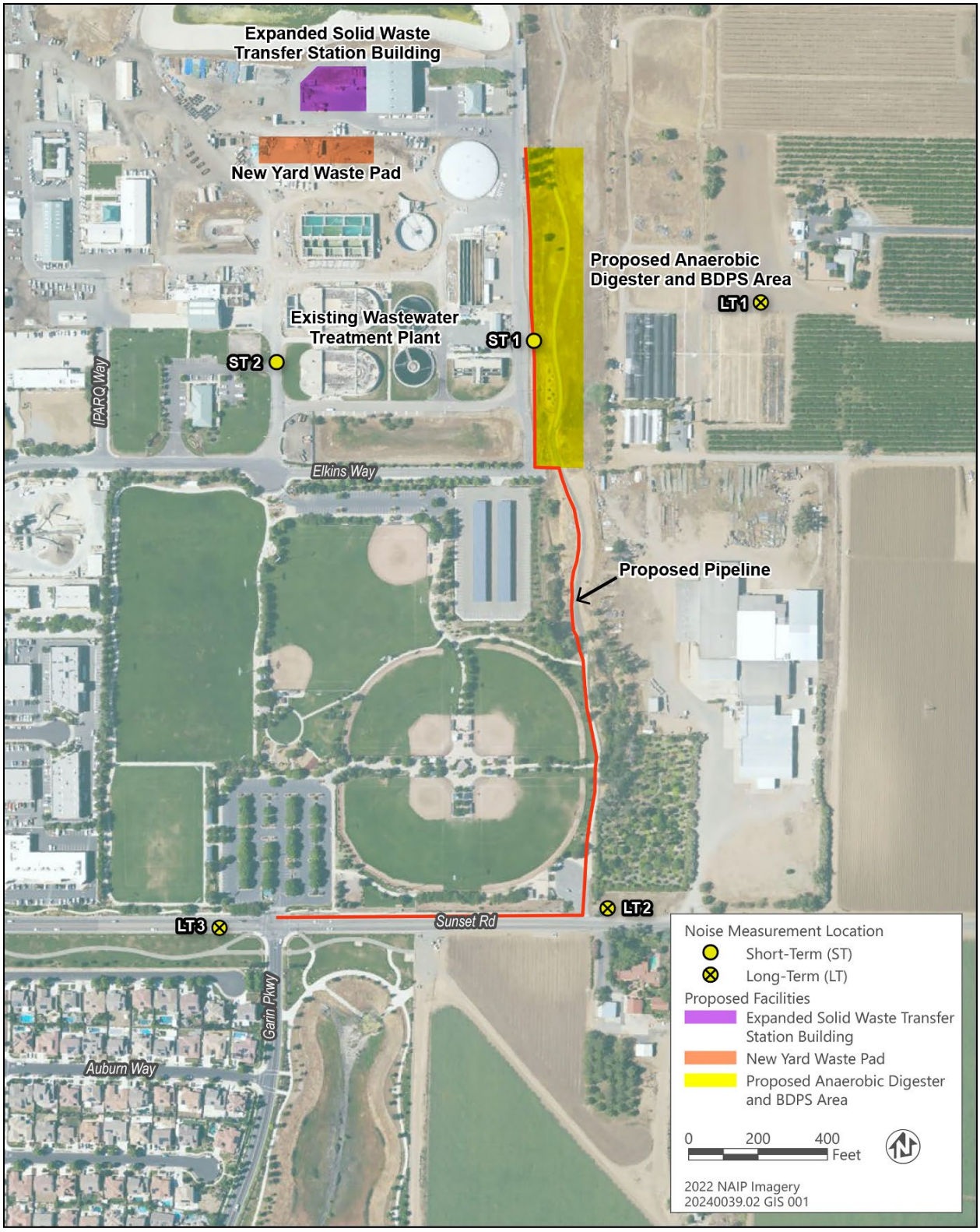
Measurement Name	Measurement Time	L_{eq}	L_{max}	L_{min}
Short-term 1 (ST1) (20-minute)	9:59 a.m. to 10:19 a.m.	63.5	83.0	55.9
Short-term 2 (ST2) (22-minute)	10:28 a.m. to 10:50 a.m.	59.8	76.1	45.4

L_{eq}=equivalent continuous sound level; L_{max}=maximum noise level; L_{min}=minimum noise level
Refer to Figure 6 for ambient noise level measurement locations.
Refer to Appendix C for noise measurement data.
Source: Data collected by Ascent Environmental 2024.

Table 12. Existing ambient long-term noise measurements summary.

Measurement Name	Measurement Date	Measurement Time	L_{dn}	CNEL	L_{eq}	L_{max}	L_{min}
Long-term 1 (LT1) (24-hour)	Thursday, May 30, 2024	1:00 p.m. to 1:00 p.m.	57.9	58.2	51.9	86.7	39.7
Long-term 2 (LT2) (24-hour)	Thursday, May 30, 2024	2:00 p.m. to 2:00 p.m.	64.2	64.6	59.8	79.1	41.1
Long-term 3 (LT3) (24-hour)	Thursday, May 30, 2024	2:00 p.m. to 2:00 p.m.	61.9	62.2	57.5	87.6	34.9

CNEL=community noise equivalent level L_{dn}=day-night level; L_{eq}=equivalent continuous sound level; L_{max}=maximum noise level; L_{min}=minimum noise level
Refer to Figure 6 for ambient noise level measurement locations.
Refer to Appendix C for noise measurement data.
Source: Data collected by Ascent Environmental 2024.



Source: Adapted by Ascent in 2024.

Figure 6. Noise measurement locations.

Applicable Noise Standards

Federal Transit Administration

The Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* guides engineers, planners, and consultants in assessing noise and vibration from the construction, operation, and maintenance of projects. To address the human response to ground vibration, the FTA has established guidelines for maximum-acceptable vibration criteria for different types of land uses, shown **Table 13**. In addition, FTA has established construction vibration damage criteria, shown in **Table 14**.

Table 13. Ground vibration impact criteria for human response.

Land Use Category	Frequent Events [a]	Occasional Events [b]	Infrequent Events [c]
Category 1: Buildings where vibration would interfere with interior operations	65 VdB	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime uses.	75 VdB	78 VdB	83 VdB
VdB=vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude. [a] "Frequent Events" is defined as more than 70 vibration events of the same source per day. [b] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. [c] "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day. Source: Federal Transit Administration 2018.			

Table 14. Construction damage vibration criteria.

Land Use Category	Peak Particle Velocity (inches per second)
Reinforced-concrete, steel, or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12
Source: Federal Transit Administration 2018.	

In addition to vibration criteria, FTA has established construction noise criteria based on the land use type affected by noise and the time of day the noise would occur. The FTA residential noise criteria used in this analysis are 90 dBA L_{eq} for daytime and 80 dBA L_{eq} for nighttime and 100 dBA L_{eq} for nonresidential uses.

Contra Costa County General Plan

The Contra Costa County General Plan includes policies to address major noise sources within the unincorporated county. The following policies related to noise are applicable to the project (Contra Costa County 2005:11-37):

- Policy 11-2: The standard for outdoor noise levels in residential areas is a L_{dn} of 60 dB. However, a L_{dn} of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.
- Policy 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

City of Brentwood General Plan

The City of Brentwood General Plan Noise Element contains policies to address major noise sources and to promote safe and comfortable noise levels throughout the city (City of Brentwood 2014:10-1). The following policies related to noise and vibration apply to the project:

- Policy N 1-3: Require new development to mitigate excessive noise through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials such as rubberized asphalt.
- Policy N 1-7: For projects that are required by CEQA to analyze noise impacts, the following criteria shall be used to determine the significance of those impacts:

  Stationary and Non-Transportation Noise Sources

- A significant impact will occur if the project results in an exceedance of the noise level standards contained in this element, or the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater.

  Transportation Noise Sources

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in roadway noise levels will be considered significant;
- Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in roadway noise levels will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in roadway noise levels will be considered significant.
- Policy N 1-9: Local truck traffic, including loading and unloading, shall be limited to specific routes, times, and speeds appropriate to each zoning district.
- Policy N 1-11: Ensure that existing development is protected, to the greatest extent feasible, from noise impacts due to construction on adjacent or nearby properties.

- Policy N 1-13: Control non-transportation related noise from site specific noise sources to the standards shown in Table N-2 [shown as Table 15 in this document].
- Policy N 1-15: Require construction activities to comply with standard best practices (see Action N 1e).
- Action N 1e: During the environmental review process, determine if proposed construction will constitute a significant impact on nearby residents and, if necessary, require mitigation measures in addition to the standard best practices controls. Suggested best practices for control of construction noise include:
    - Construction period shall be less than 12 months;
    - Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on weekdays, and between 8:00 a.m. and 5:00 p.m. on Saturdays. No construction shall occur on Sundays or City holidays;
    - All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment;
    - The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists;
    - At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences;
    - Unnecessary idling of internal combustion engines shall be prohibited;
    - Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible;
    - The required construction-related noise mitigation plan shall also specify that haul truck deliveries are subject to the same hours specified for construction equipment;
    - Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing; and
    - The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Table 15. Stationary (non-transportation) noise source standards in the City of Brentwood General Plan.

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard (dBA)	
		Daytime (7:00 a.m.–10:00 p.m.)	Nighttime (10:00 p.m.–7:00 a.m.)
Residential	L_{eq}	55	45
Residential	L_{max}	70	65

dBA=A-weighted decibels; L_{eq}=equivalent continuous sound level; L_{max}=maximum noise level.

[a] The residential standards apply to all properties that are zoned for residential use. The exterior noise level standard is to be applied at the property line of the receiving land use or at a designated outdoor activity area (at the discretion of the Community Development Director) of the new development. For mixed-use projects, the exterior noise level standard may be waived (at the discretion of the Community Development Director) if the project does not include a designated activity area and mitigation of property line noise is not practical. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). The City can impose standards that are more restrictive than specified above based upon determination of existing low ambient noise levels.

[b] Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises. In no case shall mitigation be required to a level that is less than existing ambient noise levels, as determined through measurements conducted during the same operational period as the subject noise source.

[c] In situations where the existing noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level of the noise source to the existing level plus 3 dB.

Source: City of Brentwood 2014.

City of Brentwood Municipal Code

The City of Brentwood Municipal Code incorporates specific noise standards to control noise within the City. Chapter 9.32 "Noise Regulations" includes standards for conducting noise measurements, general noise regulations, and exemptions. The following standards included in the Brentwood Municipal Code are relevant to the project:

Section 9.32.050 Prohibited special noise sources.

A. Grading, Site Improvement, Infrastructure Improvements and Outside Heavy Construction. All operation of power construction equipment or any other construction device that creates noise in excess of the noise level limits of this article, and all performance of any outside construction work, including, but not limited to, grading and trenching, that creates noise in excess of the noise level limits of this article shall be limited to the following hours: Monday through Friday from 7:00 a.m. until 3:30 p.m., or until 5:30 p.m. with the express written approval of the city engineer or designee. No such work shall be performed on Saturday or Sunday or city holidays, except that such work may be performed on Saturday between 8:00 a.m. and 5:00 p.m. with the express written approval of the city engineer or designee…

   2. Construction activities within city right-of-way, such as road work or installation of drainage facilities, may be performed outside of the specified work hours of this subsection A, including overnight work, with the express written approval of the city engineer or designee…

B. Outside Carpentry Construction. No person in a residential zone shall operate or permit the operation of any mechanically powered saw, sander, drill, grinder or similar tools, so

as to create any noise which exceeds the noise level limits of this article, except during the following hours: Monday through Friday from 7:00 a.m. until 7:00 p.m. and Saturday from 9:00 a.m. to 5:00 p.m.

1. No work described in this subsection B may performed on Sunday or any city holiday or on Monday through Saturday outside of the hours specified above unless all such work is conducted within a completely enclosed structure.
2. Home repairs, lawn mowing, gardening and routine maintenance of personal property is not considered construction.

Section 9.32.070 Exemptions

F. Construction activity or garbage collection performed by an agency of government, provided that all equipment is operated in accordance with manufacturer's specifications and is equipped with all noise reducing equipment in proper condition.

3.13.2 Discussion

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

This discussion includes an analysis of short-term construction and long-term operational noise.

Construction Noise (Temporary)

To assess potential temporary construction-related noise impacts, sensitive receptors and their relative exposure were identified.

Construction of the project is anticipated to begin in December 2024 and is expected to be completed in approximately 30 months. Construction would generally be performed between 7:00 am and 4:00 pm, Monday through Friday, with the potential to occur periodically on Saturdays between 9:00 a.m. and 4:00 p.m. Where work is located within 300 feet of an occupied residence, work would be limited to occurring between 8:00 a.m. and 4:30 p.m. Work located on Sunset Road requiring lane closure would be limited to between 9:00 a.m. and 3:00 p.m. In all cases, construction work would comply with City Municipal Code Section 9.32.050, the City Standard Specifications, and the *Traffic Control Plan Submittal Criteria*.

The City and County have not adopted construction-specific noise standards. Thus, the FTA construction noise standards are used to assess construction noise impacts. FTA has a daytime construction noise standard of 90 dBA L_{eq} for residential uses and 100 dBA L_{eq} for commercial/industrial uses (Federal Transit Authority 2018:179).

Project-generated construction source noise levels were determined based on methodologies, reference emission levels, and usage factors from the FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (Federal Transit Authority 2018) and Federal Highway Administration's *Roadway Construction Noise Model User's Guide* (Federal Highway

Administration 2006). Reference noise levels for specific equipment and activity types are well documented, and the usage thereof is common practice in the field of acoustics.

Construction equipment with substantially higher noise-generation characteristics, such as pile drivers, rock drills, and blasting equipment, would not be used for construction of any phase of the project. Construction is a temporary activity and noise from construction ceases once construction is complete. Construction-generated noise levels would fluctuate depending on the type, number, and duration of equipment used. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the ambient noise environment at nearby receptors.

The typical maximum noise levels (i.e., L_{max}) for various pieces of construction equipment at 50 feet away are presented in **Table 16**. However, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities during that time.

Table 16. Typical noise levels from construction equipment.

Equipment Type	Typical Noise Level (L_{max} dBA) at 50 feet [a,b]
Backhoe	80
Concrete Mixer	85
Compactor	80
Crane/Lift	85
Compressor (Air)	80
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator	70
Grader	85
Paver	85
Roller	85
Pickup Trucks	54

L_{max}=maximum noise level.
[a] Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications.
[b] Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.
Source: Federal Transit Agency 2018:176.

As shown in Table 16, the maximum noise levels at 50 feet for typical construction equipment could result in levels up to 85 dBA. Sound from a localized source (i.e., a point source)

propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dBA for each doubling of distance from a point source.

Modeling for on-site construction noise conservatively assumed the simultaneous operation of three pieces of heavy equipment (i.e., a front-end loader, an excavator, and a dozer) within proximity and at the edge of the project site. These three pieces of equipment would generate a combined noise level of 81.6 dBA L_{eq} and 85.6 dBA L_{max} at 50 feet. See **Appendix C** for detailed calculations.

The attenuated noise level at the nearest noise-sensitive receptor approximately 500 feet from the eastern project boundary would be 61.6 dBA L_{eq} and 65.6 dBA L_{max}. Thus, noise generated by onsite construction activities would not be expected to exceed FTA's daytime construction noise standard of 90 dBA L_{eq} for residential uses or 100 dBA L_{eq} for commercial/industrial uses. Calculations of these combined noise levels are provided in Appendix C.

Off-site construction would involve different activities than on-site construction; and thus, would require different types of equipment. As this work is linear, elevated noise levels would only occur temporarily in the location where construction occurs before moving along the roadway.

Modeling for the off-site natural gas pipeline construction assumed the simultaneous operation of three pieces of heavy equipment for trenching (i.e., an excavator, a front-end loader, and a flatbed truck) along the eastern boundary of the Sunset Athletic Complex where pipeline alignment would occur. Based on reference noise levels and accounting for typical usage factors of individual pieces of equipment, off-site construction-related activities could generate a combined hourly average noise level of approximately 79.6 dBA L_{eq} and 83.6 dBA L_{max} at 50 feet. Detailed inputs and parameters for the estimated construction noise exposure levels are provided in Appendix C.

The nearest noise-sensitive receptor, a single-family residence, is located approximately 175 feet from the south side of Sunset Road where the pipeline construction would occur. At this distance, off-site construction noise would attenuate, through distance alone, to a level of 68.8 dBA L_{eq} and 72.9 dBA L_{max} at the sensitive receptor, which would not exceed the applicable daytime noise standard of 90 dBA L_{eq} for residential receptors.

The project's daytime construction noise would result in perceptible increases in noise (i.e., 10 dBA or more above existing noise levels). However, due to the temporary and transient nature of construction activities, elevated noise levels would not occur for extended periods of time at any one location. Furthermore, because construction would occur during the less-sensitive daytime hours, when other existing noise sources are also present (e.g., roadway noise, other nearby construction), the project's construction noise alone would not result in substantial new noise sources that would exceed the applicable maximum noise level thresholds or result in noise level increases that could result in adverse health effects (i.e., sleep interruption, prolonged excessive noise leading to annoyance) to nearby receptors.

Traffic Noise (Construction and Permanent)

Construction material deliveries (e.g., vendor, concrete) would occur throughout the construction period, with peak deliveries occurring during concrete work, when an estimated 15 concrete deliveries per day would occur. On these days, total peak-hour trips could be up to 45 vehicles (i.e., 30 worker trips and 15 truck trips), compared to the 145 truck and employee trips per day that occur under existing conditions (Table 2). Deliveries could occur in the early morning. Deliveries would be made via Sunset Road to Elkins Way, which currently experience truck traffic in the early morning and during the day; the City's solid waste collection trucks travel on Elkins Way as early as 4:00 a.m. and into the early afternoon (see Section 2.4.1, "Solid Waste Transfer Station and Solid Waste Handling").

The project would minimally change operations from existing conditions to accommodate the new organic waste recovery system. As detailed in Section 2.6.2 (Table 2), the project would result in 165 combined truck and employee commute trips as compared to 145 under existing conditions (i.e., a net increase of 20 trips). However, some trip types would occur daily (e.g., workforce, high strength waste haul), while others would occur weekly (e.g., process byproduct hauling) or monthly (e.g., odor control chemical delivery), resulting in a daily increase of 13 trips (or a 9 percent increase) over existing conditions. Of these trips, employee commute trips would be dispersed over multiple roadways and truck trips (e.g., high strength waste delivery, process byproduct hauling) would be limited to the project site and Elkins Way via Sunset Road. As such, incremental project-generated vehicle trips on any individual roadway would be less than the total anticipated increase in trips.

It is widely accepted that people can begin to detect sound level increases of 3 dBA in typical noisy environments. A 5 dBA increase is generally perceived as a distinctly noticeable increase and a 10 dBA increase is generally perceived as a doubling of loudness (Caltrans 2013:2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3 dBA increase in sound would generally be perceived as barely detectable. A doubling of existing traffic on any roadway would not occur, therefore project-generated traffic-related noise increase would not be perceptible (i.e. less than 3 dB).

Operational (Permanent) Stationary Noise

Operation of the project would introduce several new stationary noise sources, including various types of pumps (e.g., sump pumps, digester feed pumps), biogas and flare blowers, air compressors, chillers, and fans. These noise sources would be primarily associated with the anaerobic digester and scattered throughout the site. In addition, new equipment (e.g., conveyors, shredders) would be located within the newly expanded transfer station building. However, the new building would be entirely enclosed (i.e., no windows) and located next to the existing transfer station building, which would act as a barrier between the new building and offsite receptors and would be over 1,000 feet from existing offsite receptors. For these reasons, the noise sources within the new transfer station building would not contribute to offsite noise levels. The new PG&E interconnection station does not include rotating equipment, therefore no operational noise from this facility is anticipated. This assessment focused on the new stationary equipment that would be located near the eastern boundary of the new anaerobic digester and BDPS, the project features closest to offsite sensitive receptors.

Based on site-specific equipment details (e.g., equipment type, reference noise levels) and their proposed location on the project site, offsite noise levels, assuming the simultaneous operation of each piece of equipment were modeled (Appendix C). The nearest offsite receptor to the proposed stationary equipment is the residential use directly east of the project site, near the RC U-Pick Cherries operation. At this location, operational noise is anticipated to be 68.8 dBA $L_{eq.}$ Applying this hourly noise level for daily continuous operation would result in a 24-hour noise level of 75.2 dB L_{dn}. Noise associated with exterior (not enclosed) pumps (e.g., chiller pumps, pump station, ammonia removal pumps) near the eastern edge of the project would be the primary contributors to the exterior noise levels.

The City of Brentwood has adopted daytime and nighttime noise standards for residential land uses (i.e., 55 dBA L_{eq} and 45 dBA L_{eq}, respectively). The nearest offsite receptor is located within Contra Costa County, where maximum noise levels of 60 dBA L_{dn} have been established for residential uses. Anticipated operational noise would exceed both the City of Brentwood and Contra Costa County noise standards for residential uses. Incorporation of Mitigation Measure NOISE-1, which requires that appropriate noise enclosures be installed, quieter alternative equipment be used, or a sound wall be constructed, to be verified by a qualified acoustical engineer, would ensure that offsite noise levels do not exceed the City of Brentwood or Contra Costa County noise standards, making this impact **less than significant with mitigation incorporated.**

MITIGATION MEASURE NOISE-1. REDUCE OPERATIONAL (PERMANENT) STATIONARY NOISE

To ensure that City of Brentwood's daytime (i.e., 55 dBA L_{eq}) and nighttime (45 dBA L_{eq}) and Contra Costa County's residential noise limits (i.e., 60 dBA L_{dn}) are not exceeded, the City shall implement the following measures.

Prior to commencing operation of the proposed anaerobic digester and BDPS, the City of Brentwood shall prepare an operational noise mitigation and monitoring plan, in consultation with a qualified acoustical engineer. Specific measures that may be recommended include the selection of alternative, quieter equipment options, selection and installation of equipment enclosures, and, or in combination with the aforementioned, construct a solid (i.e., no openings between noise sources and offsite receptors) sound barrier on the eastern boundary of the project site.

Based on the final selection of alternative equipment type, enclosures and barriers, and prior to final installation and operation of equipment, the plan shall be verified by the acoustical professional, using site-specific parameters (equipment sound pressure levels, enclosure transmission loss parameters, individual equipment operational activity hours) to confirm that the daytime and nighttime noise levels adopted by the City of Brentwood and Contra Costa County are not exceeded at any nearby noise-sensitive receptor. Documentation (e.g., noise model inputs, noise reduction recommendations, residual noise levels) shall be prepared and submitted to the City of Brentwood for approval.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Construction activities that may expose people to excessive vibration, resulting in sleep disturbance or prolonged disruption to daily activities and work, are more likely to occur during extended construction schedules that involve impact equipment (e.g., pile drivers, jackhammers), blasting, or large haul trucks. Based on FTA guidance, transient vibrations, such as construction activity with a 0.2 inches per second (in/sec) PPV may be characterized as causing structural damage to non-engineered timber and masonry buildings, 0.3 PPV in/sec for engineered concrete masonry, and 0.5 PPV in/sec for reinforced concrete, steel, or timber structures. In addition, peak vibration levels (VdB) established by the FTA recommend a level of 80 VdB to evaluate disturbance to sensitive land uses where people sleep.

Based on the proposed construction activity and types of equipment that would be used, the heaviest piece of construction equipment that would generate the highest levels of vibration would be a vibratory roller. A vibratory roller operated within approximately 26 feet of an existing building or structure could expose that structure to levels of ground vibration that exceed FTA recommended level of 0.2 in/sec PPV with respect to the prevention of structural damage. Also, a vibratory roller operated within 73 feet of a building could expose the building occupants to ground vibration levels that exceed the FTA maximum-acceptable vibration standard of 80 VdB with respect to human annoyance for residential uses. Because onsite and offsite construction activity would take place more than 73 feet from sensitive receptors (i.e., the nearest receptor to onsite construction would be approximately 500 feet from the eastern project boundary; the nearest receptor to offsite construction would be approximately 175 feet from where pipeline installation would occur), there would be no exceedance of FTA's recommended level of 0.2 in/sec PPV with respect to the prevention of structural damage or FTA's standard of 80 VdB with respect to human annoyance for residential uses. Vibration modeling calculations are provided in Appendix C.

Therefore, the project would have a **less than significant impact** on the exposure of persons to excessive groundborne vibrations or groundborne noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project is not located in the vicinity of an airport as the nearest airport, Byron Airport, is located approximately 8.5 miles south of the project site. Therefore, the project would not expose people residing or working in the project area to excessive noise levels and there would be **no impact** related to airport noise.

3.14 POPULATION AND HOUSING

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

3.14.1 Setting

The City's current population is approximately 66,000 (U.S. Census Bureau 2024).

3.14.2 Discussion

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The project would not include the construction of new homes or businesses. The project would not increase the permitted capacity of the Solid Waste Transfer Station or WWTP, thus would not be growth inducing. Similarly, the pedestrian path realignment similarly would not be growth inducing. The PG&E interconnector station and renewable natural gas pipeline would provide natural gas supplies in lieu of extracted supplies. Therefore, the project would have **no impact** on population growth.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Housing does not exist where the project facilities would be located. Therefore, the project would have **no impact** on population growth in the area or the displacement of people or housing.

3.15 PUBLIC SERVICES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire protection?	☐	☐	☐	☑
	ii) Police protection?	☐	☐	☐	☑
	iii) Schools?	☐	☐	☐	☑
	iv) Parks?	☐	☐	☑	☐
	v) Other public facilities?	☐	☐	☐	☑

3.15.1 Setting

The provision of public services in the project area is the responsibility of the City of Brentwood (e.g., police, parks) and other local special districts (e.g., school districts, East Contra Costa Fire Protection District).

3.15.2 Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i) fire protection; ii) police protection; iii) schools; v) other public facilities?

The project would not cause changes to the level of fire and police protection services, schools, or other public services. Furthermore, the project would not result in an increase in population or facilities that would increase in demand for fire protection services nor would it affect service ratios. Therefore, the project would have **no impact** on the need for fire protection, police protection, schools, or other public facilities.

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: iv) parks?

The project is not a land use development project that would result in increased use of existing parks or demand for a new park.

The project would involve temporary construction-related activities affecting the use of the pedestrian path connecting Sunset Park to Marsh Creek Trail. The public would not be able to use the path for approximately eight weeks. There are two nearby access points to Marsh Creek Trail, one is approximately 0.25 mile west of Sunset Park adjacent to the Black Diamond Kids Center and the other is approximately 0.5 mile west of Sunset Park near the intersection of Sunset Road and Jane Way. Increased use of other regional recreational paths is not expected because Marsh Creek Trail would continue to be accessible at these other locations.

The placement of the PG&E interconnector station in the existing, 5-space parking lot at the southeast corner of Sunset Park off Sunset Road would not create the need for an additional parking lot or result in demand for a new park. A larger, approximately 248-space parking lot is available west of the interconnector station location. There also is an approximately 184-space parking lot on the north side of the park accessible via Elkins Way.

Access to Sunset Park would be maintained during project construction. As described in Section 2.6.3.4, "Traffic Control," traffic flow on Sunset Road would be maintained in each direction during construction of the renewable natural gas pipeline. Therefore, park users would still be able to access the large park parking lot off Sunset Road. Access to the park parking lot off Elkins Way would not be affected by construction activities as no construction activities would occur in Elkins Way and traffic volume would not be substantially affected, as described in Section 3.17, "Transportation."

Because there are nearby access points to Marsh Creek Trail, ample parking is provided adjacent to Sunset Park, and access to Sunset Park would be maintained, the project would have a **less-than-significant impact** on park services.

3.16 RECREATION

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

3.16.1 Setting

The City's 38-acre Sunset Park Athletic Complex is adjacent to the project site. Trails in the project vicinity connect the park to the Marsh Creek Trail.

3.16.2 Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

As described in Section 3.15, "Public Services," the project would involve temporary construction-related activities affecting use of the pedestrian path connecting Sunset Park to Marsh Creek Trail for approximately eight weeks, during which the public would not be able to use the path. However, there are two nearby access points to Marsh Creek Trail. Furthermore, access to Sunset Park would be maintained, the main park parking lots off Sunset Road and Elkins Way would be unaffected, and the project is not a land development project that would generate new park users. Therefore, the project is not expected to increase the use of other existing neighborhood and regional parks or other recreational facilities. As such, the project would have a **less-than-significant impact** on neighborhood parks and regional parks or other recreational facilities.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

The project's effect on the recreational use of the pedestrian path connecting Sunset Park to Marsh Creek Trail would be temporary. Furthermore, the project would not result in an increase in population resulting in an associated increase in demand for recreational facilities. Therefore, the project would have **no impact** on the requirement for construction or expansion of recreational facilities.

3.17 TRANSPORTATION

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☑	☐
b)	Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☑	☐
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
d)	Result in inadequate emergency access?	☐	☐	☑	☐

3.17.1 Setting

Transportation Network in Project Vicinity

The following roadways are in the project vicinity.

- **IPARQ Way** is a bidirectional north-south two-lane roadway that connects with Elkins Way at its southern end and provides access to the City's Municipal Services Center. There are sidewalks along both sides of IPARQ Way. There are no bicycle facilities present along IPARQ Way.

- **Elkins Way** is a bidirectional two-lane roadway that provides direct access to the project site. Elkins Way runs north-south between Sunset Road and the Ford Training Center, at which point it transitions to an east-west roadway. There is a sidewalk along the entirety of the southern/eastern side of Elkins Way and a sidewalk along the northern/western side of Elkins Way between Sunset Road and IPARQ Way.
- **Sunset Road** is a bidirectional east-west two-lane roadway located south of the project site. There is a sidewalk along the northern portion of Sunset Road between the City of Brentwood's eastern boundary and Brentwood Boulevard. There are Class II bicycle facilities present on the northern side of Sunset Road.

Bicycle facilities are classified in the *Contra Costa Countywide Bicycle and Pedestrian Plan* (Contra Costa Transportation Authority 2018:40–42). Class I bikeways are shared-use paths designated for the exclusive use of people riding bicycles and walking with minimal crossflow traffic. Marsh Creek Trail and the paved pedestrian paths east of the WWTP and Sunset Park that connect Sunset Road to Marsh Creek Trail are Class I bikeways. Class II bikeways are designated lanes on streets, typically adjacent to the outer vehicle travel lanes, using special lane markings. There is a Class II bike lane along the westbound portion of Sunset Road.

Tri-Delta Transit provides fixed-route bus service in the cities of Antioch, Bay Point, Brentwood, and Oakley. The bus stop closest to the project site is near the intersection of Brentwood Boulevard and Balfour Road, approximately 1.5 miles southwest of the project site.

Applicable Plans and Regulations

California Code of Regulations, Section 15064.3

The *Technical Advisory on Evaluating Transportation Impacts in CEQA* published by the Office of Planning and Research provides guidance for conducting transportation analyses for CEQA documents based on vehicle miles traveled (VMT). Per the guidance, projects that generate or attract fewer than 110 trips per day can be presumed to result in a less-than-significant VMT impact, absent substantial evidence indicating otherwise (Office of Planning and Research 2018).

California Fire Code

The 2022 California Fire Code, which is codified as CCR Title 24 Part 9 incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, access, and use of buildings. Topics addressed in the California Fire Code include design standards for fire apparatus access (e.g., turning radii, minimum widths), standards for emergency access during construction, provisions intended to protect and assist fire responders, and other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises.

California Manual on Uniform Traffic Control Devices, Part 6: Temporary Traffic Control

The *California Manual on Uniform Traffic Control Devices* (CA MUTCD), Part 6: Temporary Traffic Control provides principles and guidance for the implementation of temporary traffic control to ensure the provision of reasonably safe and effective movement of all roadway users (e.g., motorists, bicyclists, pedestrians) through or around temporary traffic control zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. Additionally, this document notes that temporary traffic control plans and devices shall be the responsibility of the public body or official having jurisdiction to guide road users (California Department of Transportation 2024:1029).

Contra Costa County Transportation Analysis Guidelines

In July 2020, the Contra Costa County Board of Supervisors adopted transportation analysis guidelines to assist project applicants and County staff in preparing transportation analyses. In accordance with the OPR Technical Advisory, the County *Transportation Analysis Guidelines* indicate that a project that generates fewer than 110 daily vehicle trips should be expected to cause a less-than-significant impact under CEQA and would not require further VMT analysis (Contra Costa County 2020:13).

Contra Costa County Fire Protection District

The Contra Costa County Fire Protection District provides fire protection services to the City of Brentwood. The Contra Costa County Fire Protection District Ordinance 2022-34 adopts the 2022 California Fire Code as amended by the changes, additions, and deletions included in the ordinance (Contra Costa County Fire Protection District 2022).

City of Brentwood General Plan

The Circulation Element of the City's General Plan provides a framework for decisions concerning the city's multi-modal (i.e., transit, roadway, bicycle, pedestrian, rail) transportation system and establishes standards to guide the development of the transportation system through goals, policies, and actions (City of Brentwood 2014). The following General Plan policies related to transportation are relevant to the project.

- Policy CIR 1-2: Ensure that the City's circulation network is a well-connected system of streets, roads, highways, sidewalks, and paths that effectively accommodates vehicular and non-vehicular traffic in a manner that considers the context of surrounding land uses and the needs of all roadway users.
- Policy CIR 1-3: When analyzing impacts to the circulation network created by new development or roadway improvements, consider the needs of all users, including those with disabilities, ensuring that pedestrians, bicyclists, and transit riders are considered at an equal level to automobile drivers.
- Policy CIR 1-12: Maintain and improve critical transportation facilities for emergency vehicle access and emergency evacuation needs.
- Policy CIR 2-1: Establish and maintain a system of interconnected bicycle, pedestrian, and equestrian facilities that facilitate commuter and recreational travel, and that are consistent with the City's parks, trails, and recreation goals and policies in this General Plan and the Contra Costa County *Countywide Bicycle and Pedestrian Plan*.
- Policy CIR 2-4: Create an accessible circulation network that is consistent with guidelines established by the Americans with Disabilities Act, allowing mobility-impaired users such as the disabled and elderly to safely and effectively travel within and beyond the city.
- Policy CSF 2-5: Develop and maintain a system of parks, trails, and recreation facilities to create diverse opportunities for passive and organized recreation.

City of Brentwood Municipal Code

Section 15.06.010 of the City of Brentwood Municipal Code adopts the 2022 California Fire Code by reference, as amended by Contra Costa County Fire Protection District Ordinance 2022-34. Chapter 12.08 identifies the permits required for encroachments in a public right-of-way and the specific standards related to public safety and access to which project applicants must adhere.

City of Brentwood Standard Plans and Specifications

The City of Brentwood *Standard Plans and Specifications* include design and construction standards and specifications (e.g., sight distance, grading standards) to guide development activities within the city. The City Engineer requires that all public and private improvements within the city be constructed in accordance with the Standard Plans and Specifications.

City of Brentwood Traffic Control Plan Submittal Criteria

The City's *Traffic Control Plan Submittal Criteria* establishes standards for the preparation and submission of a traffic control plan. The Traffic Control Plan Submittal Criteria requires that traffic control is provided in accordance with the latest edition of the CA MUTCD; establishes permissible hours for lane closures between 9:00 a.m. and 3:00 p.m. unless otherwise approved; and lists minimum requirements to be included on a traffic control plan (City of Brentwood n.d.).

City of Brentwood Encroachment Permit

The City requires an Encroachment Permit for any work that is performed within the public right-of-way including streets and sidewalks. The City encroachment permit application includes provisions for any activity within the public right-of-way including the approval of a traffic control plan for work affecting the public right-of-way (City of Brentwood 2022).

3.17.2 Discussion

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The project is not a land use development project that would result in increased demand for pedestrian, bicycle, or transit facilities, as there would be no operational activity associated with the project that would generate such trips, and the project would result in an increase of three to five new employees.

There are no existing or planned transit facilities within approximately 1.5 miles of the project site. Thus, the project would not disrupt existing transit service; interfere with the implementation of any planned transit facilities; or conflict with adopted plans, guidelines, polices, or standards related to such facilities.

The project would result in a slight increase in truck trips to and from the project site; however, these trips would not require the construction or alteration of any public roadways and thus would not conflict with a program, plan, ordinance, or policy addressing roadway facilities.

Equipment and materials delivery necessary for facility construction would be via Elkins Way. There are sidewalks along both sides of Elkins Way that provide pedestrian access to the surrounding commercial and industrial sites. Construction of the new facilities is not anticipated to require temporary street closures and/or traffic detours on Elkins Way; thus, pedestrian access along Elkins Way would be maintained.

Construction of the renewable natural gas pipeline in Sunset Road is not anticipated to require temporary street closures or traffic detours. As described in Section 2, "Project Description," through traffic would be maintained in each direction by providing traffic control in accordance with the CA MUTCD. Section 6F of the CA MUTCD recommends implementing bicycle and pedestrian detour signs where flow is rerouted to ensure safe and effective movement during construction work within the public right-of-way (California Department of Transportation 2024). Therefore, safe navigation for bicyclists and pedestrians would be provided during project construction. Once construction of the pipeline is complete, the roadway would be returned to its original condition, thus the project would not permanently disrupt existing roadway, bicycle, or pedestrian facilities.

To accommodate the new facilities, the pedestrian path between Elkins Way and Marsh Creek Trail would be realigned to the east of its existing location, as shown in Figure 2. The path would be designed and constructed in accordance with City design standards and specifications and would maintain the connection between Elkins Way and Marsh Creek Trail. Therefore, realignment of the path would not conflict with General Plan Policy CIR 2-1, which intends to maintain a system of interconnected pedestrian and bicycle facilities.

The project would not involve the redesign of any roadways and thus would not interfere with any planned bicycle and/or pedestrian facilities, or conflict with adopted plans, guidelines, policies, or standards related to such facilities.

In summary, traffic control measures would provide for the safe and efficient movement of vehicles, bicycles, and pedestrians during construction. All transportation infrastructure would be returned to its original condition after construction such that the existing physical transportation network would not be adversely affected. For these reasons, the project would not permanently disrupt any existing or planned roadway, bicycle, or pedestrian facilities; and would not conflict with adopted plans, policies, or standards related to such facilities. This impact would be **less than significant.**

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles travelled?

The City of Brentwood has not adopted VMT guidelines and thresholds that address CEQA Guidelines Section 15064.3. Therefore, in the absence of lead agency-adopted VMT guidelines and thresholds of significance, the VMT analysis herein relies on the guidance provided in CEQA Guidelines Section 15064.3 and the Office of Planning and Research guidance. This analysis assumes that construction workers and project employees would not carpool and thus would generate two trips per worker per day.

Relevant to calculating trips is State CEQA Guidelines Section 15064.3(a), which states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks (Office of Planning and Research 2018). Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT) but need not be.

Therefore, larger on-road vehicles that do not fall within the categories of cars and light trucks do not need to be considered in calculations of trips or VMT.

Construction activities associated with the project would not result in permanent increases in vehicular trips along roadways in and around the project site because construction trips would be temporary and intermittent. Although different phases of construction would require varying numbers of construction personnel, an estimated 30 workers would be required during peak construction. Assuming each worker would generate two trips per day, construction workers would generate a total of 60 daily commute trips during peak construction. Therefore, the number of construction worker trips would not exceed screening criteria for small projects in the Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA* of 110 new daily trips per day. Additionally, construction activities are expected to require an average of 15 workers, thus the number of trips generated by workers on a typical construction workday would be lower. For these reasons, the project would not result in a substantial increase in VMT during construction.

The project may require an additional three to five employees to operate and maintain the new facilities. Assuming each worker would drive alone to and from the project site each day, the project would result in a net increase of six to 10 new commute trips per day. Therefore, the project would not exceed 110 new daily trips per day and is consistent with the Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA* threshold for small projects. For these reasons, the project would result in a substantial increase in VMT during operations.

Because construction and operational activities would generate fewer than 110 new daily trips per day, the project would not conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision(b). This impact would be **less than significant**.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Project construction activities would require the hauling of heavy equipment (e.g., bulldozers, excavators, asphalt roller machine) to the project site and the operation of large trucks on the surrounding roadway network. The roads that would be used to access the project site (i.e., Sunset Road, Elkins Way) are already used by heavy trucks accessing existing industrial and commercial properties in the vicinity of the project site as well as under existing conditions on the project site itself. Thus, the use of heavy-duty construction equipment on the roadway network would not be considered an incompatible use.

Construction of the renewable natural gas pipeline by PG&E would require the temporary closure of the vehicular and bicycle lane on Sunset Road. Pursuant to Section 12.08.030 of the City of Brentwood Municipal Code, an encroachment permit would be required for construction in the public right-of-way. Per the City encroachment permit application, an approved traffic control plan is required to be in place before the start of any work affecting the public right-of-way (City of Brentwood 2022). In compliance with the City Traffic Control Plan Submittal

Criteria, the traffic control plan would be prepared in accordance with the latest edition of the CA MUTCD, which provides guidance to ensure the safe and effective movement of all roadway users through or around temporary traffic control zones. Per Section 6B.01 of the CA MUTCD, adequate warning, delineation, and channelization should be provided to assist in guiding road users (e.g., motorists, bicyclists, and pedestrians) in advance of and through the traffic control zone (California Department of Transportation 2024:1032). Additionally, areas of the project site undergoing active construction would be closed (i.e., fenced) to prevent public access to the project site during construction. Therefore, because traffic control and other safety measures would be provided during project construction, such activity would not substantially increase transportation hazards. Furthermore, construction plans for work on Sunset Road would be subject to review by the City Engineer to ensure that the roadway would be restored in compliance with applicable roadway design standards. For these reasons, the project would not be anticipated to substantially increase transportation-related hazards during construction activities.

Operations

The project plans would be subject to review by the City Engineer to ensure that applicable design standards and specifications are met to minimize transportation hazards during operations. Operational activities associated with the project would not require the construction, redesign, or alteration of any public roadways; thus, project operation would not substantially increase transportation hazards due to a design feature. Although operation and maintenance activities would result in additional truck trips to and from the project site via Elkins Way, the types of vehicles and equipment (e.g., heavy-duty trucks) accessing the project area during operational activities would be consistent with those used under existing conditions. Therefore, the project would not substantially increase hazards due to incompatible uses. For these reasons, the project would not be anticipated to substantially increase transportation-related hazards during operations.

Summary

The project would be subject to and adhere to all City design standards and safety regulations that are intended to reduce transportation hazards. A traffic control plan would be prepared to ensure that project construction would minimize potential safety impacts during construction on public right of way. Additionally, the project plans would be subject to review by the City Engineer to ensure that applicable design standards and specifications are met to minimize transportation hazards during operations. For these reasons, the project would not substantially increase hazards due to a design feature or incompatible use. This impact would be **less than significant.**

d) Result in inadequate emergency access?

The Contra Costa County Fire Protection District would continue to provide fire protection and emergency response services to the project site. The project would be required to comply with the 2022 California Fire Code, as adopted by reference in Contra Costa County Fire Protection District Ordinance No. 2022-34. Section 3303.1 of the California Fire Code requires that an owner or authorized agent develop, implement, and maintain an approved written site safety plan

at the project site applicable during all phases of construction, repair, alteration, or demolition work. Section 3303.1.1 details the required elements that all site safety plans must have, which include fire department vehicle access routes. During construction in the public right-of-way, traffic control measures that comply with CA MUTCD guidelines would be implemented. Section 6B.01.7D of the CA MUTCD requires that the needs of emergency service providers be evaluated and incorporated into traffic control plans (California Department of Transportation 2024). Thus, adequate emergency access would be provided during construction activities. The project would not involve the construction or redesign of any public roadways, and thus, existing emergency access to the project site would remain unchanged. For these reasons, the project would not result in inadequate emergency access during construction or operations. This impact would be **less than significant**.

3.18 TRIBAL CULTURAL RESOURCES

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
	i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☑	☐	☐
	ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

3.18.1 Setting

"Tribal cultural resources" (e.g., sites, features, places, cultural landscapes, sacred places, and/or objects with cultural value to a California Native American tribe) is a term defined in PRC Section 21074. The stipulations of PRC Sections 21073, 21080.3.1, 21080.3.2, 21082.3, and 21084.3 as amended by AB 52 are the responsibility of the City.

Tribal Use of the Project Site

The project site is in the ethnographic territory of the Eastern Miwok, near the boundary between the territory of the Bay and Plains Miwok. Miwok primarily relied on gathering wild foods and hunting mammals (e.g., mule deer, tule elk, antelope) for subsistence. Among the plant foods exploited were greens collected in the spring and acorns collected in the fall. Miwok use the bow and arrow, snares, traps, nets, and enclosures or blinds for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, they used sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of woven tools. Political units among the Miwok were structured by similarities in language and ethnicity, and villages were divided into "tribelets" that controlled specific lands and the natural resources within that territory. (Natural Investigations Company 2024)

Assembly Bill 52

AB 52 establishes that, "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

To initiate the AB 52 consultation process, Tribes must submit a written request to a lead agency to be informed through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the Tribe (PRC Section 21080.3.1[b]). The following is the list of Tribes that have requested notification by the City of proposed projects:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Chicken Ranch Rancheria of Me-Wuk Indians
- Confederated Villages of Lisjan
- Guidiville Indian Rancheria
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- North Valley Yokuts Tribe
- Ohlone Indian Tribe
- Tule River Indian Tribe
- Wilton Rancheria
- Wuksache Indian Tribe/Eshom Valley Band

On May 1, 2024, the City sent AB 52 notification letters describing the project via both U.S. mail and email to the Tribes. The letter included a project description and map depicting the project location. Pursuant to PRC 21080.3.1 (b), the Tribes had thirty days from the receipt of the letter to request, in writing, consultation with the City regarding the Proposed Project. The City received an email from the Amah Mutsun Tribal Band of Mission San Juan Bautista recommending searches through the CHRIS and Sacred Lands File, and NAHC outreach, cultural sensitivity training for construction crews, and presence of trained archaeological and tribal monitors during earth moving activities. The City also received an email from Confederated Villages of Lisjan requesting a copy of the CHRIS and Sacred Lands File results, and the CEQA document being prepared. No other Tribes responded to the AB 52 notification letter.

3.18.2 Discussion

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site,

feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k);ii) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Buried tribal cultural resources may include, but are not limited to, deposits of stone, bone and shell artifacts, dark gray "midden" sediments, or cemeteries. As described in Section 3.5, "Cultural Resources," cultural resources investigations did not identify any cultural resources, historical resources, unique archaeological resources, human remains, or indication of the presence of buried deposits of any tribal cultural resources pursuant to PRC Section 21074 in the project area limits. Therefore, the project construction activities do not warrant the presence of monitors during earth moving activities. Nevertheless, because construction activities have the potential to encounter buried archaeological resources that could be considered tribal cultural resources if they are of Native American origin, the City would implement Mitigation Measures CULT-1 to reduce impacts to tribal cultural resources to **less-than-significant impact with mitigation**.

3.19 UTILITIES AND SERVICE SYSTEMS

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☑	☐	☐
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☑	☐
c)	Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐
d)	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☑	☐
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☑	☐

3.19.1 Setting

The City of Brentwood, which is the project proponent, is responsible for providing solid waste collection, water, and wastewater services for the community. Electric power and natural gas is provided by PG&E. The project site is located within the CCCFCWCD. Storm water and drainage from the Solid Waste Transfer Station and WWTP is routed to a City-owned detention basin located onsite.

3.19.2 Discussion

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

The project may require a small additional amount of recycled water use at the Solid Waste Transfer Station for dust control, cleaning of equipment, washdowns of receiving and unloading areas, and other operational activities, but the amount would not require or result in the relocation or construction of new or expanded water treatment or distribution facilities.

The project may generate a small additional amount of washdown water from inside the transfer station that is routed to the City's WWTP for treatment, but this additional wastewater inflow would be immeasurable relative to the WWTP influent flow rate. Therefore, the project would

not require or result in the relocation or construction of new or expanded wastewater treatment facilities.

The project would include features onsite to accommodate the stormwater drainage generated from additional impervious surfaces (e.g., building roof runoff, pavement drainage). Additional stormwater drainage from the project facilities would be conveyed to an existing detection basin located adjacent to Elkins Way by the newly installed pump station. The project would not require modifications to any offsite stormwater drainage systems. The realigned pedestrian path would have an impervious area similar to existing conditions, thus would not generate additional runoff. Similarly, the PG&E interconnector station would not change the amount of impervious area as a result of being installed at the current parking lot at the southwest corner of Sunset Park. Therefore, the project would not require or result in relocation or construction of new or expanded storm water drainage facilities.

The project would require installation of new electrical power facilities onsite, but would not require relocation or construction of new or expanded electrical power offsite.

The project would not require relocation or construction of new or expanded telecommunications facilities.

The project would generate renewable natural gas and includes installation of a new pipeline to convey this natural gas to a PG&E mainline. The environmental effects of installing this new pipeline are addressed herein, and include effects on air quality (Section 3.3), biological resources (Section 3.4), noise (Section 3.13), and transportation (Section 3.17). The impacts to these resources would be **less than significant with mitigation** described in the respective resource sections.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As described above in "a," the project may result in a small additional amount of recycled water use at the Solid Waste Transfer Station for operational activities, but would not require new water supplies. Therefore, the project would not affect the City's water supplies relative to those described in its Urban Water Management Plan and would have a **less-than-significant impact** on water supplies.

c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

As described above in "a," the project may result in a small additional amount of wastewater conveyed to the City's WWTP, but would not measurably use WWTP capacity. Therefore, the project would result in a determination by the City that it has adequate capacity to serve the project and the impact would be **less than significant**.

d,e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction

goals? Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The project would be operated primarily to divert organic waste from landfills and produce biochar that would be land applied within the City or hauled offsite for sale. The project would result in a reduction in the amount of waste going to landfills through the diversion of organics to energy recovery and biochar production. Consequently, the project would not generate excess solid waste, impair attainment of solid waste reduction goals, or conflict with solid waste statutes and regulations. Rather, the project could be consistent with solid waste statutes and regulations, and state-wide solid waste reduction goals.

Demolition of abandoned portions of the pedestrian path would not generate solid waste; the material would be reused at the project site as grindings.

Any solid waste generated during construction would go to Keller Canyon Landfill, which has remaining capacity through 2050 (CalRecycle 2023). Therefore, the project would not substantially affect the capacity of landfills.

The City's solid waste operations currently comply with federal, state, and county requirements. In addition, the City has an ongoing recycling program that would be employed during the construction, operation, and maintenance of the project. There are no aspects of, or actions proposed under the project that would result in a failure to not comply with existing solid waste statutes and regulations. As a result, there is ample evidence to suggest that the facility would continue to comply with federal, state, and local statutes and regulations related to solid waste.

Therefore, the project would have **less-than-significant impact** on the capacity of the local solid waste infrastructure, attainment of solids waste reduction goals, and compliance with solid waste statutes and regulations.

3.20 WILDFIRE

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☑	☐
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☑
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

3.20.1 Setting

In California wildfire protection jurisdictions are separated and overseen by local, state, or federal governments. The city of Brentwood is designated as a Local Responsibility Area, meaning that the local government is responsible for wildfire protection (CalFire 2023). There are no "Very High Fire Hazard Severity Zones" in or near the project site (CalFire 2023).

3.20.2 Discussion

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

As described in Section 3.17, "Transportation," the construction and operations-related project trips would not substantially affect the capacity or congestion patterns on affected roads. Emergency access to and from the site for construction and operations workers would continue to be provided via Elkins Way. Therefore, the project would have **no impact** on an adopted emergency response plan or emergency evacuation plan.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

There would be little to no risk for wildfire during construction. There is a possibility for construction equipment that runs on fossil fuels to potentially generate sparks, and there is a possibility that grass could be ignited during grading. As such, construction vehicles would be equipped with fire extinguishers to address any possibility of a small fire that could be ignited by

construction activities. There would be little to no risk of wildfire during project operations. The project site would be comprised of buildings and paved areas, with little to no vegetation to fuel a fire. Therefore, the project would have a **less-than-significant impact** on exacerbating wildfire risks and thereby, creating pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) Require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The project would utilize existing roads for access, existing water sources for operations and fire suppression, and existing utility services. Therefore, the project would have a **no impact** on wildfire risk and the environment as a result of installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities).

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

As discussed in Section 3.10, "Hydrology and Water Quality," the project would not substantially increase in impervious area or runoff or change erosion rates compared to existing conditions. Furthermore, the project is not located on a slope that would become unstable post-fire. Therefore, the project would have **no impact** on risks to people or structures as a result of runoff, postfire slope instability, or drainage changes.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

3.21.1 Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

With respect to terrestrial wildlife resources, as discussed in Section 3.4, "Biological Resources," the project has the potential primarily to result in temporary construction-related disturbance to potential habitats in the project area, and several wildlife species, if present during the time of construction. However, feasible project-specific mitigation measures are identified to minimize and avoid the potential adverse effects. There would be permanent impacts to potential habitats where the new facilities would be placed. The City would also participate in the ECCCHCP, which is designed to protect core habitat areas and populations of special-status species in the region, and promote recovery of species and habitats. The project would have no impact on fish or fish habitat.

The project has the potential to result in temporary construction-related disturbance to buried archaeological resources, human remains, or tribal cultural resources, as discussed in Section 3.5, "Cultural Resources, and Section 3.18, "Tribal Cultural Resources." However, feasible project-specific mitigation measures are identified to address potential effects to these resources.

Impacts to fish and wildlife species, and cultural and tribal cultural resources would be **less than significant with mitigation** identified in Section 3.4, "Biological Resources," and Section 3.5, "Cultural Resources."

b) Does the project have impacts that are individually limited, but cumulatively considerable?

Project construction would result in temporary construction-effects to air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, recreation, transportation, and tribal resources. As documented in this Initial Study, project construction would result in minimal and localized effects with respect to most of these resources. Mitigation measures have been identified for biological resources cultural resources, geology and soils, and tribal cultural resources that when implemented would avoid or minimize the potentially significant impacts that may occur to these resources from project construction. With implementation of the mitigation measures, the temporary construction-related effects would not cause or contribute to any adverse long-term cumulative effects to these resources.

With respect to operations, the project would result in effects on air quality, biological resources, GHG emissions, noise, and transportation. As documented in this Initial Study, project operations would be less than significant or less than significant with mitigation. The potential contribution of operations-related effects of the project to cumulative impacts for these resources is discussed below.

Air Quality and Greenhouse Gas Emissions: As discussed in Sections 3.3 ("Air Quality") and 3.8 ("Greenhouse Gas Emissions"), the potential adverse effects of GHG emissions and the primary concern of air quality pollutants occur over local, regional, and global areas as a result of the cumulative emissions of sources. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards, or measurably influence global greenhouse gases. Accordingly, the thresholds for project-related emissions of regulated air pollutants and greenhouse gases established by BAAQMD consider the regional emissions necessary for maintaining compliance with the air quality standards and long-term greenhouse gas emission reduction objectives. Because the estimated air pollutant and greenhouse gas emissions that would occur under the project are well below the BAAQMD thresholds of significance, the project would not result in a cumulatively considerable contribution to any significant cumulative air quality or GHG impacts.

Biological Resources. The future cumulative biological resource conditions for terrestrial special-status species in the project area will improve relative to existing conditions given the ongoing implementation of the ECCCHCP, which is for the protection and recovery of species in the region. With the City adding facilities adjacent to the WWTP to the site, as well as realign the connecting path, the City would contribute to the fair share implementation of the ECCCHCP for the potential project-related permanent habitat disturbances, and thus not contribute considerably to any adverse cumulative terrestrial biological resource impacts.

Noise. As the City of Brentwood develops, additional temporary and permanent noise sources may occur within the project vicinity, from additional vehicle traffic or business activity. As

described in Section 3.13 ("Noise"), the project would contribute new permanent sources of noise that may be noticed by receptors in nearby residences. To ensure that noise from the project does not exceed the City's and Contra Costa County's residential noise limits, mitigation has been proposed consisting of reducing operational (permanent) noise from the project.

Transportation. No information exists to suggest that the future traffic conditions in Brentwood, including employee- and hauling-related trips that would increase slightly under the project, would be significantly adverse. It is assumed that City and regional transportation planning and construction of transportation systems will be implemented to accommodate the increased community development and population growth. Therefore, potential cumulative transportation impacts are not assessed further.

Based on the above discussion and information presented in this Initial Study, the project would not have impacts that are individually limited, but cumulatively considerable.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

The project would support the state's long-term goals of reducing waste in landfills, which would extend the life of existing landfills and reduce future impacts from needing to create new landfills to dispose of human waste. The project also would reduce GHGs associated with the breakdown of organics in landfills. Potential impacts from project construction would be less than significant or less than significant with mitigation. Consequently, the environmental effects of the project would have **a less than significant impact** on human beings.

4 LIST OF PREPARERS

Robertson-Bryan, Inc.

Michelle Brown, P.E. ..... Associate Engineer / Project Manager

Keith Whitener ..... Resource Director / Principal Scientist

Ascent Environmental, Inc.

Dimitri Antoniou, AICP ..... Project Director

Matthew McFalls ..... Air Quality Technical Lead

Jing Qian ..... Air Quality / GHG Specialist

Peter Hoholick ..... Noise Specialist

Elena Savignano ..... Transportation Planner

Jazmin Amini ..... Transportation Planner

Natural Investigations Company

Philip Hanes ..... Principal Archaeologist

John Nadolski ..... Principal Investigator

Dylan Stapleton ..... Archaeologist

5 REFERENCES

5.1 WRITTEN REFERENCES

Bay Area Air Quality Management District. 2017. *Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area*. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf.

Bay Area Air Quality Management District. 2022. *2022 CEQA Guidelines*. Available: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Bay Area Air Quality Management District. 2023a. *Stationary Source Screening Map*. Available: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed July 18, 2024

Bay Area Air Quality Management District. 2023b. *Mobile Source Screening Map*. Available: https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429. Accessed July 29, 2024.

CalFire. 2023. *State Responsibility Area Fire Hazard Severity Zones, Contra Costa County*. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-maps-2022. Accessed April 25, 2024.

California Air Resources Board. 2016. *Ambient Air Quality Standards*. Available: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

California Air Resources Board. 2022. *Maps of State and Federal Area Designations*. Available: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed July 18, 2024.

California Air Resources Board. 2024a. *Overview: Diesel Exhaust and Health*. Available: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health#:~:text=Diesel%20Particulate%20Matter%20and%20Health&text=In%201998%2C%20CARB%20identified%20DPM,and%20other%20adverse%20health%20effects.

California Air Resources Board. 2024b. *GHG Warming Potentials.* Available: https://ww2.arb.ca.gov/ghg-gwps.

California Department of Conservation. 2024a. *California Important Farmland Finder*. Available: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed April 25, 2024.

California Department of Conservation. 2024b. *EQ Zapp: California Earthquake Hazards Zone Application*. Available: https://www.conservation.ca.gov/cgs/geohazards/eq-zapp. Accessed May 8, 2024.

California Department of Fish and Wildlife. 2024. *California Natural Diversity Database, RareFind 5*. Available: https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed June 10, 2024.

California Department of Toxic Substances and Control. 2024. *Hazardous Waste and Substances site "Cortese" List.* Available: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/. Accessed April 25, 2024.

California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. California Department of Transportation Division of Environmental Analysis. Sacramento, CA. Prepared by ICF Jones & Stokes. September Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf.

California Department of Transportation. 2019. *List of Eligible and Officially Designated State Scenic Highways*. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed August 25, 2024.

California Department of Transportation. 2024. *California Manual on Uniform Traffic Control Devices*. 2014 Edition, Revision 8 (January 11, 2024).

California Native Plant Society. 2024. *Inventory of Rare and Endangered Plants of California*. Available: https://www.cnps.org/rare-plants/cnps-inventory-of-rare-plants. Accessed May 28, 2024.

CalRecycle. 2023. Solid Waste Information System facility database. Facility/Site Summary Details for Keller Canyon Landfill. Available: https://www2.calrecycle.ca.gov/SolidWaste/Site/Search. Accessed August 16, 2023.

City of Brentwood. No date. *Traffic Control Plan Submittal Criteria*. Available: https://www.brentwoodca.gov/government/engineering/reference-information/-folder-311.

City of Brentwood 2014. *City of Brentwood General Plan*. Adopted July 22, 2014. Available: https://www.brentwoodca.gov/home/showpublisheddocument/2900/638301044656500000.

City of Brentwood. 2016. *Initial Study / Proposed Mitigated Negative Declaration City of Brentwood Wastewater Treatment Plant Phase II Expansion Project*. Prepared by Robertson-Bryan, Inc. Elk Grove, CA.

City of Brentwood. 2022. *Encroachment Permit Application*. Available: https://www.brentwoodca.gov/government/engineering.

City of Brentwood. 2023a. *Resolution 2023-138, A Resolution of the City Council of the City of Brentwood Adopting the Supplemental Initial Study and Supplemental Mitigated Negative Declaration and Amended Mitigation Monitoring and Reporting Program for*

the Wastewater Treatment Plant Expansion – Phase II Project, CIP Project No. 592-59140. November 14, 2023.

City of Brentwood. 2023b. *Engineering Procedures Manual*. Revised September 2023. Available: https://www.brentwoodca.gov/government/engineering.

Contra Costa County. 2005. *Contra Costa County General Plan*. January. Available: https://www.contracosta.ca.gov/4732/General-Plan.

Contra Costa County. 2020. *Contra Costa County Transportation and Analysis Guidelines*. June. Available: https://www.contracosta.ca.gov/DocumentCenter/View/70739/FINAL-CCC-Transportation-Analysis-Guidelines-v3-5-10-21?bidId=.

Contra Costa County Fire Protection District. *Ordinance No. 2022-34, Fire Code, Ordinance of the County of Contra Costa, the Crockett-Carquinez Fire Protection District, and the Contra Costa County Fire Protection District Adopting the 2022 California Fire Code with Amendments*. November.

Contra Costa Transportation Authority. 2018. *Contra Costa Countywide Bicycle and Pedestrian Plan*. July. Available: https://ccta.net/projects/countywide-bicycle-and-pedestrian-plan/.

Federal Highway Administration. 2006. *Roadway Construction Noise Model User's Guide*. Washington, D.C. Prepared by the Research and Innovative Technology Administration, Cambridge, MA. January. Available: https://www.fhwa.dot.gov/Environment/noise/construction_noise/rcnm/rcnm00.cfm.

Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment Manual*. Prepared by John A. Volpe National Transportation Systems Center. Washington, D.C. September. Available: https://www.transit.dot.gov/research-innovation/transit-noise-and-vibration-impact-assessment-manual-report-0123.

Intergovernmental Panel on Climate Change. 2007. *Fourth Assessment Report*.

Jones and Stokes. 2006. *East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan*. J&S 01478.01. San Jose, CA. October. Available: https://www.cocohcp.org/221/Final-HCP-NCCP.

Mayer, K. E., and W. F. Laudenslayer, Jr. 1988. *A Guide to Wildlife Habitats of California*. State of California, Resources Agency, Department of Fish and Game, Sacramento, CA.

Natural Investigations Company. 2024. *Cultural Resources Assessment for the City of Brentwood Solid Waste Organics Diversion Project, Contra Costa County, California*. Sacramento, CA.

Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. April. Available: https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.

Pacific Gas and Electric. 2023. *Power Content Label*. Available: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf.

Rapp, George, Jr. and Christopher L. Hill. 1998. *Geoarchaeology*. Yale University Press, New Haven and London.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2011. *A Manual of California Vegetation*. 2nd Edition. California Native Plant Society Press. Sacramento, CA.

U.S. Census Bureau. 2024. *QuickFacts*. Available: https://www.census.gov/quickfacts/fact/table/brentwoodcitycalifornia/PST045222. Accessed April 26, 2024.

U.S. Department of Agriculture Natural Resources Conservation Service. 1999. *Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Second Edition*. U.S. Government Printing Office, Washington, D.C.

U.S. Environmental Protection Agency. 2024. *Nonattainment Areas for Criteria Pollutants (Green Book)*. Current as of June 30, 2024. Available: https://www.epa.gov/green-book.

U.S. Fish and Wildlife Service. 2008. *Birds of Conservation Concern 2008*. Division of Migratory Bird Management. Arlington, VA.

U.S. Fish and Wildlife Service. 2024. *Species List*. Available: https://ipac.ecosphere.fws.gov/. Accessed May 2024.

5.2 PERSONAL COMMUNICATIONS

Bianchin, Jim. Principal Engineering Geologist. Bajada Geoscience, Inc. May 9, 2024—Email to Bryan Evans (W.M. Lyles Co.) regarding results of soils testing at City of Brentwood project site for the Solid Waste Organics Diversion Project.

Henderson, Rochele. Staff Specialist II. Bay Area Air Quality Management District. May 22, 2024. Email to Dimitri Antoniou (Ascent Environmental, Inc.) pertaining to a public records search request for odor complaints for the City of Brentwood Wastewater Treatment Plant.

APPENDIX A

Air Quality/Greenhouse Gas Emissions Assumptions and Calculations

TABLE OF CONTENTS

CONSTRUCTION CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS EMISSIONS CALCULATIONS 4
Emissions Summary – Construction 5
Construction Emissions Detail 6
Off-Road Exhaust Emissions 7
Onsite Haul Truck Exhaust Emissions 9
On-Road Truck Haul Exhaust Emissions 10
Fugitive Dust Emissions 11
Construction Input Parameters 13
Equipment Exhaust Emission Factors 14
Offroad Equipment Emission Factors by Engine Tier 15
Welder and Generator Emission Factors 16
Equipment Horsepower and Load Factors 17
EMFAC 2021 (On-Road) Emission Rates 18
Emission Rates based on VMT, Trip, and Idle/Diurnal 21
EMFAC 2021 (On-Road) Emission Rates - Low Speed 22
Fugitive Dust Emissions Factors 23
Conversion Factors 25
EMFAC Vehicle Classification and Weights 26

OPERATIONAL CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS EMISSIONS CALCULATIONS 27
Emissions Summary – Operation 28
Mass Emissions from AD and BDPS Facilities 29
Mobile Exhaust Emissions: On-Road 31
Project Input 32
Emission Factors based on VMT, Trip, and Idle/Diurnal 33
EMFAC 2021 (On-Road) Emission Query Result 34
Fugitive Dust Emissions 38
AD and BDPS Facilities Emission Calculations 40
Fd Calculations 43

GHG OFFSET CALCULATIONS 44
GHG Offset 45
WARM Inputs 46
WARM Model 57

ENERGY CALCULATIONS **77**
Energy Consumption, Construction 78
On-Road Fuel Consumption Rates (Construction) 79
Off-Road Fuel Consumption Rates (Construction) 80
Energy Consumption, Operation 81
On-Road Fuel Consumption Rates (Operational) 82
Equipment Energy Load 83

HRA MEMORANDUM **84**

CONSTRUCTION TOXIC AIR CONTAMINANT EMISSION RATES AND RISK CALCULATIONS **95**
DPM Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration 96
Scaled DPM Concentrations at Receptors 106
Scaled $PM_{2.5}$ Concentrations at Receptors 114
AERMOD Outputs 122
TAC Emission Rates Calculation 132
Exposure Parameters used in HRA 133
AERMOD Dispersion Modeling Report 135

OPERATIONAL TOXIC AIR CONTAMINANT EMISSION RATES AND RISK CALCULATIONS **228**
Cumulative Risk Summary 229
Roadway Risks 230
TAC Emission Rates - Mobile Sources 232
TAC Emission Rates - Stationary Sources 233
HARP Output of Cancer Risks, Chronic Health Index, and Acute Health Index 237
HARP Project Summary Report 241
AERMOD Dispersion Modeling Report 249

CONSTRUCTION CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS EMISSIONS CALCULATIONS

Emissions Summary – Construction
Construction Emissions Detail
Off-Road Exhaust Emissions
Onsite Haul Truck Exhaust Emissions
On-Road Truck Haul Exhaust Emissions
Fugitive Dust Emissions
Construction Input Parameters
Equipment Exhaust Emission Factors
Offroad Equipment Emission Factors by Engine Tier
Welder and Generator Emission Factors
Equipment Horsepower and Load Factors
EMFAC 2021 (On-Road) Emission Rates
Emission Rates based on VMT, Trip, and Idle/Diurnal
EMFAC 2021 (On-Road) Emission Rates - Low Speed
Fugitive Dust Emissions Factors
Conversion Factors
EMFAC Vehicle Classification and Weights

Construction Emissions Summary

Construction-Related Emissions of Criteria Air Pollutants

Emission Source	Average Daily Emissions (lbs/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Year 1				
Heavy-Duty Equipment	1.05	13.11	0.51	0.46
Mobile Sources (worker commute, haul trucks)	0.45	2.09	0.20	0.19
Total	1.50	15.20	0.71	0.65
Year 2				
Heavy-Duty Equipment	2.79	35.33	1.45	1.31
Mobile Sources (worker commute, haul trucks)	0.45	2.09	0.20	0.19
Total	3.24	37.41	1.64	1.49
Year 3				
Heavy-Duty Equipment	1.37	18.58	0.73	0.66
Mobile Sources (worker commute, haul trucks)	0.45	2.09	0.20	0.19
Total	1.82	20.67	0.92	0.85
Year 4				
Heavy-Duty Equipment	0.15	2.44	0.07	0.05
Mobile Sources (worker commute, haul trucks)	0.45	2.09	0.20	0.19
Total	0.60	4.52	0.27	0.24
Thresholds of Significance	**54**	**54**	**82**	**54**
Exceed?	No	No	No	No

Notes: ROG = Reactive Organic Gases; NOx = Oxides of Nitrogen; CO = Carbon Monoxide; PM_{10} = Particulate matter 10 micrometers or less in diameter; $PM_{2.5}$ = Fine particulate matter. Totals may not sum due to rounding.

The mobile source emissions are dominated by worker commutes. Although comparatively negligible, the daily average haul truck emissions were also summed for all trips to maintain a conservative estimate.

Year 1 = 2024

GHG Yearly Emissions

Year	CO2e (MTs/yr)
1	126
2	398
3	446
4	106
Project Avg	269

Construction Emissions Detail

Onsite Emissions

Exahust

Off-Road Equipment

Year	Daily Average by Year (lb/day) ROG	NOx	PM10E	PM2.5E	CO2e (MT/yr)
1	1.05	13.11	0.51	0.46	42
2	2.79	35.33	1.45	1.31	314
3	1.37	18.58	0.73	0.66	362
4	0.15	2.44	0.07	0.05	22

Off-Road Hauling

	ROG lb/day	NOX lb/day	CO lb/day	PM10 lb/day	PM2.5 lb/day	CO2e MT/year
Project	0.000	0.021	0.002	0.000	0.000	0.31

Fugitive

Off-Road Equipment

	PM10 lb/day	PM2.5 lb/day	
Project	2.47	0.37	BMP

Aggregate Storage Pile Fugitive Dust

Material Type	PM10 lb/day	PM2.5 lb/day	
Soil	1.49	0.23	Unmitigated
	0.58	0.09	BMP

Offsite Emissions

Exahust

Mobile On-road

Trip Purpose	ROG lb/day	NOx lb/day	PM10_Ex lb/day	PM2.5_Ex lb/day	PM10_D* lb/day	PM2.5_D* lb/day	CO2e MT/year
Export (soil/waste)	0.01	0.14	0.00	0.00	0.00	0.00	0.93
Export (trees/veg.)	0.00	0.03	0.00	0.00	0.00	0.00	0.17
Import (soil/fill)	0.01	0.18	0.00	0.00	0.00	0.00	1.72
Import (concrete)	0.01	0.17	0.00	0.00	0.00	0.00	4.46
Import (material/supplies)	0.01	0.16	0.00	0.00	0.00	0.00	2.34
Worker Commute	0.40	1.41	0.20	0.19	0.03	0.01	74.10
Project	0.45	2.09	0.20	0.19	0.03	0.01	83.72

Note:

* Dust emissions include breakwear, tirewear only.

Fugitive

Mobile On-road

Trip Purpose	PM10 (lbs/day)	PM2.5 (lbs/day)
Export (soil/waste)	0.00	0.00
Export (trees/veg.)	0.00	0.00
Import (soil/fill)	0.00	0.00
Import (concrete)	0.00	0.00
Import (material/su	0.00	0.00
Worker Commute	0.30	0.07
Project	0.30	0.00

Dust Mitigation

61% Reduction in fugitive dust emission from vehicle traveling on unpaved road by watering twice daily.

55% Reduction in fugitive dust emission from grading, bulldozing and truck loading by watering exposed area twice daily.

Off-Road Exhaust Emissions

Equipment and hours provided										CalEEMod Default Diesel Fueled Offroad Equipment Emission Factors										Equipment Emissions									Annual GHG Emission
										TOG	ROG	NOX	CO	PM10	PM2.5	CO2	CH4	N2O	CO2e	TOG	ROG	NOX	CO	PM10	PM2.5	CO2	CH4	N2O	CO2e
Element Type	Equipment	Equipment #	HP	EPA Engine Tier (or Model Year)	Hr/Day	Days of Phase	Load Factor	Modeled Equipment	Hours per Phase	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	lb/day	lb	lb	lb	lb	lb	lb	lb	lb	MT
Site Prep (excavation, grading, clearing)	Excavator	1	165	IV	6	50	0.38	Excavators	300	0.189	0.05	0.26	3.7	0.01	0.01	528.09	0.021	0.004	530	0.04	2.07	10.8	153	0.41	0.41	21899.2	0.87	0.17	9.97
	Loader	1	150	IV	6	50	0.36	Rubber Tired Loaders	300	0.268	0.05	0.26	3.7	0.01	0.01	526.16	0.021	0.004	528	0.05	1.79	9.29	132	0.36	0.36	18791.8	0.75	0.14	8.55
	Dozer	1	367	III	6	50	0.4	Rubber Tired Dozers	300	0.441	0.09	2.32	2.6	0.09	0.08	532.17	0.022	0.004	534	0.19	8.74	225	252	8.74	7.77	51669.4	2.14	0.39	23.52
	Compactor	1	367	III	6	50	0.38	Rollers	300	0.17	0.09	2.32	2.6	0.09	0.08	529.72	0.021	0.004	531	0.07	8.3	214	240	8.3	7.38	48860	1.94	0.37	22.22
	Water Truck	1	150	2020	8	50	0.38	Off-Highway Trucks	400	0.259	0.218	1.372	3.341	0.068	0.062	526.64	0.021	0.004	528	0.06	11	69	168	3.42	3.12	26471.9	1.06	0.2	12.04
	Fuel Truck	1	350	2020	8	50	0.38	Off-Highway Trucks	400	0.211	0.177	1.086	1.174	0.038	0.035	528.59	0.021	0.004	530	0.12	20.8	127	138	4.46	4.11	61995.8	2.46	0.47	28.2
Trenchinig	Excavator	1	165	IV	6	75	0.38	Excavators	450	0.189	0.05	0.26	3.7	0.01	0.01	528.09	0.021	0.004	530	0.06	3.11	16.2	230	0.62	0.62	32848.8	1.31	0.25	14.95
	Compactor	1	165	IV	6	75	0.38	Rollers	450	0.151	0.05	0.26	3.7	0.01	0.01	527.45	0.021	0.004	529	0.04	3.11	16.2	230	0.62	0.62	32809.3	1.31	0.25	14.93
	Water Truck	2	150	2020	6	75	0.38	Off-Highway Trucks	900	0.259	0.218	1.372	3.341	0.068	0.062	526.64	0.021	0.004	528	0.14	24.7	155	378	7.69	7.01	59561.8	2.38	0.45	27.09
	Loader	1	150	IV	6	75	0.36	Rubber Tired Loaders	450	0.268	0.05	0.26	3.7	0.01	0.01	526.16	0.021	0.004	528	0.07	2.68	13.9	198	0.54	0.54	28187.7	1.13	0.21	12.83
Concrete Work	Concrete Truck	5	367	2020	8	20	0.38	Off-Highway Trucks	800	0.211	0.177	1.086	1.174	0.038	0.035	528.59	0.021	0.004	530	0.25	43.5	267	289	9.35	8.61	130014	5.17	0.98	59.13
	Concrete Pump Truck	1	400	2020	8	20	0.38	Off-Highway Trucks	160	0.211	0.177	1.086	1.174	0.038	0.035	528.59	0.021	0.004	530	0.05	9.49	58.2	63	2.04	1.88	28340.9	1.13	0.21	12.89
	Forklift	1	175	III	8	125	0.2	Forklifts	1000	0.222	0.09	2.32	2.6	0.09	0.08	528.24	0.021	0.004	530	0.15	6.94	179	201	6.94	6.17	40760.3	1.62	0.31	18.55
	Crane	1	375	III	8	50	0.29	Cranes	400	0.239	0.09	2.32	2.6	0.09	0.08	527.59	0.021	0.004	529	0.14	8.63	222	249	8.63	7.67	50596	2.01	0.38	23.01
	Loader	1	150	IV	6	50	0.36	Rubber Tired Loaders	300	0.268	0.05	0.26	3.7	0.01	0.01	526.16	0.021	0.004	528	0.05	1.79	9.29	132	0.36	0.36	18791.8	0.75	0.14	8.55
Equipment Installation	Crane	2	375	III	8	235	0.29	Cranes	3760	0.239	0.09	2.32	2.6	0.09	0.08	527.59	0.021	0.004	529	1.34	81.1	2091	2344	81.13	72.12	475602	18.93	3.61	216.31
	Forklift	1	175	III	8	235	0.2	Forklifts	1880	0.222	0.09	2.32	2.6	0.09	0.08	528.24	0.021	0.004	530	0.29	13.1	337	377	13.06	11.61	76629.3	3.05	0.58	34.87
	Welder	1	84	NA	8	235	0.45	Welders	1880	0	0.1164	1.32	1.9917	0.0521	0.0479	348.94			349.00	0.141	18.2	207	312	8.15	7.5	54668.9	0	0	24.8
	Compressor	1	84	NA	8	235	0.38	Rollers	1880	0.29	0.244	2.6	3.414	0.129	0.118	528.03	0.021	0.004	530	0.18	32.3	344	452	17.07	15.61	69858.1	2.78	0.53	31.81
	Generator	2	84	NA	8	235	0.74	Generator Sets	3760	0	0.0503	0.44	1.1852	0.0362	0.0333	162.93			163	0	25.9	227	611	18.68	17.18	83951.1	0	0	38.1
									0																				
Paving/Landscape	Dump Truck	1	125	2020	6	30	0.38	Off-Highway Trucks	180	0.259	0.218	1.372	3.341	0.068	0.062	526.64	0.021	0.004	528	0.02	4.11	25.9	63	1.28	1.17	9926.97	0.4	0.08	4.51
	Roller	2	40	IV	6	30	0.38	Rollers	360	0.675	0.09	2.75	4.1	0.01	0.01	586.9	0.024	0.005	589	0.04	1.09	33.2	49.5	0.12	0.12	7080.21	0.29	0.06	3.22
	Paving Equipment	1	300	IV	6	30	0.42	Pavers	180	0.128	0.05	0.26	2.6	0.01	0.01	527.68	0.021	0.004	529	0.03	2.5	13	130	0.5	0.5	26384.2	1.05	0.2	12
	Concrete Truck	1	367	IV	6	30	0.38	Off-Highway Trucks	180	0.211	0.05	0.26	2.6	0.01	0.01	528.59	0.021	0.004	530	0.06	2.77	14.4	144	0.55	0.55	29253.2	1.16	0.22	13.3
	10 wheeler AC truck	3	367	IV	6	30	0.38	Off-Highway Trucks	540	0.211	0.05	0.26	2.6	0.01	0.01	528.59	0.021	0.004	530	0.17	8.3	43.2	432	1.66	1.66	87759.5	3.49	0.66	39.91
	Mini-Excavator	1	45	IV	6	30	0.38	Excavators	180	0.478	0.09	2.75	4.1	0.01	0.01	587.14	0.024	0.005	589	0.02	0.61	18.7	27.8	0.07	0.07	3984.22	0.16	0.03	1.81
Cleanup/Decomissioning	Loader	1	150	IV	6	40	0.36	Rubber Tired Loaders	240	0.268	0.05	0.26	3.7	0.01	0.01	526.16	0.021	0.004	528	0.04	1.43	7.43	106	0.29	0.29	15033.4	0.6	0.11	6.84
	Mini-Excavator	1	45	IV	6	40	0.38	Excavators	240	0.478	0.09	2.75	4.1	0.01	0.01	587.14	0.024	0.005	589	0.02	0.81	24.9	37.1	0.09	0.09	5312.29	0.22	0.05	2.42
	Dump Truck	1	150	IV	6	40	0.38	Off-Highway Trucks	240	0.259	0.05	0.26	3.7	0.01	0.01	526.64	0.021	0.004	528	0.04	1.51	7.84	112	0.3	0.3	15883.2	0.63	0.12	7.22
	Forklift	1	175	III	8	40	0.2	Forklifts	320	0.222	0.09	2.32	2.6	0.09	0.05	528.24	0.021	0.004	530	0.05	2.22	57.3	64.2	2.22	1.23	13043.3	0.52	0.1	5.94
																			Total		**353**	**5045**	**8313**	**208**	**187**	**1625969**	**59**	**11**	**739**

Notes:

The equipment emission factors are queried from CalEEMod 2022 Appendix G Table G-11 based on provided horsepower values.

Tier III and Tier IV engine emission factors are from CalEEMod 2022 Appendix G Table G-13.

Welder and Generator emission factors are from OFFROAD2021 emission inventory dataset (sheet other off-road EF).

Loading factors are from CalEEMod default diesel-fueled equipment loading factors (Sheet Default HP LF).

Phase	Phase Total (lb)					Workdays
	ROG	NOx	PM10E	PM2.5E	CO2e (MT)	
Site Prep	53	656	26	23	105	50
Trenching	34	201	9	9	70	75
Concrete	70	736	27	25	122	125
Equipment	171	3206	138	124	346	235
Paving	19	148	4	4	75	30
Cleanup	6	97	3	2	22	40

Phase	Year	Weight	Daily Average resolved by Year (lb/day)				CO2e (MT/yr)
			ROG	NOx	PM10E	PM2.5E	
Site Prep	1	0.4	1.05	13.11	0.51	0.46	42
Site Prep	2	0.60	1.05	13.11	0.51	0.46	63
Trenching	2	1.00	0.45	2.69	0.13	0.12	70
Concrete	2	1.00	0.56	5.89	0.22	0.20	122
Equipment Install	2	0.17	0.73	13.64	0.59	0.53	59
Equipment Install	3	0.83	0.73	13.64	0.59	0.53	287
Paving	3	1.00	0.65	4.94	0.14	0.14	75
Cleanup	4	1.00	0.15	2.44	0.07	0.05	22

Emissions from Onsite Off-road Equipment

Year	Daily Average by Year (lb/day)				CO2e (MT/yr)
	ROG	NOx	PM10E	PM2.5E	
1	1.05	13.11	0.51	0.46	42
2	2.79	35.33	1.45	1.31	314
3	1.37	18.58	0.73	0.66	362
4	0.15	2.44	0.07	0.05	22

Onsite Haul Truck Exhaust Emissions

Trip Purpose	Total VMT	Total Work Days	Number of Vehicles	Vehicle Type	Average Daily Emission							GHG Emissio
					ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D*	PM2.5_D*	CO	CO2e**
					lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	MT/year
Export (soil/waste)	13	125	1	HHDT	3.70E-05	0.002	0.000	0.000	0.000	0.000	0.000	0.02
Export (trees/veg.)	10	125	1	MHDT	2.96E-05	0.001	0.000	0.000	0.000	0.000	0.000	0.01
Import (soil/fill)	63	125	1	HHDT	1.85E-04	0.009	0.000	0.000	0.000	0.000	0.001	0.08
Import (concrete)	111	390	1	HHDT	1.05E-04	0.005	0.000	0.000	0.000	0.000	0.000	0.14
Import (material/supplies)	50	235	1	HHDT	7.87E-05	0.004	0.000	0.000	0.000	0.000	0.000	0.06

Notes:
*Particulate Matter from vehicle break wear only.
** GWP used for quantifying COe Emissions are values from IPCC Sixth Assessment Report in Sheet GWP Assumpiton, assuming two-years to estimate annual emission.

The calculation is based on EF from the following table

VMT-based emission rate (g/miles)

Vehicle Category	Fuel	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO	CO2	CH4	N2O	CO2e	Units
HHDT	Diesel	0.16788208	8.2471382	0.03618963	0.034624087	0.12979144	0.045427	0.5961852	2607.3501	0.007798	0.41079	2719.71	g/mile
MHDT	Diesel	0.13237254	3.439499	0.0316685	0.030298537	0.05903841	0.02066344	0.3173583	1696.0001	0.006148	0.26721	1769.12	g/mile

Notes:
EMFAC 2021 County-wide Emission Factors for Vehicle on paved road at low speeds are used to estimate off-road exhaust emissions.
Emission rates are aggregated over all speeds <=25 mph.

On-Road Truck Haul Exhaust Emissions

Phases	Trip Purpose	Total One-way	One-way Trip Length	Total VMT	Total Work Days	Number of Vehicle	Fleet Type	Fuel	ROG	NOx	PM10_ Ex	PM2.5 _Ex	PM10_ D*	PM2.5_ D*	CO2	CH4	N2O	CO2e
									lb	lb	lb	lb	lb	lb	lb	lb	lb	MT
Site Prep+Trenching	Export (soil/waste)	13	20	260	125	1	HHDT	Diesel	1.4	18.0	0.0	0.0	0.1	0.0	4155	0.1	0.7	2
Site Prep+Trenching	Export (trees/veg.)	10	5	50	125	1	MHDT	Diesel	0.1	3.8	0.0	0.0	0.0	0.0	752	0.0	0.1	0
Site Prep+Trenching	Import (soil/fill)	63	20	1,260	125	1	HHDT	Diesel	1.4	22.4	0.1	0.1	0.3	0.1	7698	0.1	1.2	4
Concrete+Equipment Insta	Import (concrete)	112	25	2,800	390	1	HHDT	Diesel	4.5	64.6	0.2	0.2	0.7	0.2	20011	0.2	3.2	10
Equipment Install	Import (material/supplies)	50	25	1,250	235	1	HHDT	Diesel	2.7	37.0	0.1	0.1	0.3	0.1	10509	0.1	1.7	5
Entire Construction	Worker Commute	16,650	25	416,250	555	30	Worker		224.28	782.1	108.9	104.2	15.7	4.8	332481	10.9	51.1	158
								Total lb	234	928	109	105	17	5				178
								Avg Daily (lb/day)	0.42	1.67	0.20	0.19	0.03	0.01				

Note: The average daily emissions is estimated as the total emission over total work days, because worker commute dominates mobile onroad emission.

Notes:
*Particulate Matter from vehicle break wear and tire wear only.
**GWP used for quantifying COe Emissions are values from IPCC 4th Assessment Report in Sheet GWP Assumpiton.
The calculation is based on the following Table
Operational days per year 365
Weeks per year 52
The bold entry indicate an emission reduction.

On-Road Emission Rates

Fleet Type	Fuel Type	VMT-Based Emission Rate (g/mi)									Trip-Based Emission Rate (g/trip)									Idle/Diurnal-Based Emission Rate (g/vehicle/day)								
		ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O
HHDT	Diesel	1.7E-2	1.9E+0	2.7E-2	2.6E-2	1.1E-1	3.6E-2	1.6E+3	7.8E-4	2.5E-1	0.0E+0	2.9E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	5.1E+0	6.1E+1	3.2E-2	3.0E-2	0.0E+0	0.0E+0	1.2E+4	2.4E-1	1.8E+0
MHDT	Diesel	3.1E-2	1.2E+0	1.4E-2	1.4E-2	5.7E-2	1.9E-2	1.1E+3	1.4E-3	1.8E-1	0.0E+0	1.7E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	2.5E-1	1.3E+1	2.9E-2	2.8E-2	0.0E+0	0.0E+0	2.3E+3	1.1E-2	3.6E-1
Worker Fleet	EMFAC default mix	1.6E-1	8.4E-1	1.2E-1	1.1E-1	1.7E-2	5.2E-3	3.6E+2	8.2E-3	5.4E-2	0.0E+0	3.4E-1	2.5E-3	2.3E-3	0.0E+0	0.0E+0	8.2E+1	9.2E-2	3.7E-2	2.1E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0	0.0E+0

Notes
Emission type -specific emission rates are provided in worksheet EMFAC EF.

Fugitive Dust Emissions

Onsite Stockpiling

Volume per Stockpile	2,000	cubic yard	
Mass per Stockpile	1,686	tons	
Total # of Piles during Project	1		
Estimated Total Mass	1,686	tons	
PM10 EF	0.49	lbs/ton	see sheet Fugitive Dust EF
Duration	555	days	

Emission	PM10 (lbs/day)	PM2.5 (lbs/day)
Unmitigated	1.49	0.23
BMP	0.39	0.06

Onsite Bulldozing

Phase	Workdays	Equipment	Total Equipment Hour	PM10 EF (lb/hr)	PM10 (lbs/day)	PM2.5 (lbs/day)	
Site Prep	50	Dozer	300	0.47	2.85	0.43	Unmitigated
					0.74	0.11	BMP

Onsite Off-Road Equipment Movement

Phase	Equipment	Equipment #	Hr/Day	Days of Phase	Weight (tons)	Hours per Phase	Active Hours	Vehicle Speed (mph)	Onsite VMT (unpaved road)	PM 10 EF (lb/VMT) Uncorrected	Corrected	PM emissions (lb) PM10, unmitig	PM10, with BMP
Site Prep	Excavator	1	6	50	39	300	150	0.3	45	2.70	2.26	101.6	26.4
Site Prep	Loader	1	6	50	20	300	150	0.3	45	2.00	1.67	75.2	19.6
Site Prep	Dozer	1	6	50	33	300	150	0.3	45	2.51	2.09	94.2	24.5
Site Prep	Fuel Truck	1	8	50	165	400	200	2	400	5.17	4.32	1,728.3	449.4
Trenching	Excavator	1	6	75	39	450	225	0.3	67.5	2.70	2.26	152.4	39.6
Trenching	Loader	1	6	75	20	450	225	0.3	67.5	2.00	1.67	112.8	29.3
Concrete Work	Concrete Truck	5	8	20	33	800	400	0.3	120	2.51	2.09	251.3	65.3
Concrete Work	Concrete Pump Truck	1	8	20	35	160	80	0.3	24	2.57	2.15	51.6	13.4
Concrete Work	Forklift	1	8	125	6	1000	500	0.3	150	1.16	0.97	145.9	37.9
Concrete Work	Loader	1	6	50	23	300	150	0.3	45	2.13	1.78	80.1	20.8
Equipment Install	Forklift	1	8	235	6	1880	940	0.3	282	1.16	0.97	274.2	71.3
Paving	Dump Truck	1	6	30	30	180	90	2	180	2.40	2.01	361.1	93.9
Paving	Concrete Truck	1	6	30	33	180	90	0.3	27	2.51	2.09	56.5	14.7
Paving	10 wheeler AC truck	3	6	30	30	540	270	2	540	2.40	2.01	1,083.4	281.7
Paving	Mini-Excavator	1	6	30	15	180	90	0.3	27	1.76	1.47	39.7	10.3
Cleanup	Loader	1	6	40	23	240	120	0.3	36	2.13	1.78	64.1	16.7
Cleanup	Mini-Excavator	1	6	40	25	240	120	0.3	36	2.21	1.85	66.5	17.3
Cleanup	Dump Truck	1	6	40	30	240	120	2	240	2.40	2.01	481.5	125.2
Cleanup	Forklift	1	8	40	5	320	160	0.3	48	1.07	0.90	43.0	11.2

Notes

Certain equipment were assumed not to generate significant fugitive dust and thus excluded from this table due to their nature or usage (such as water trucks, paving equipment, and rollers) or limited movement (such as cranes).

Weights of equipment data were engineering estimates based on general industry reference and data from manufacturer such as Caterpillar, Volvo Trucks, Putzmeister America, Schwing America, Mack Trucks Industrial.

Onsite truck activites were assumed to be 50% mobile, 50% standby (load/unload)

Phase	Workdays	PM emissions (lb), BMP PM10	PM emissions (lb), BMP PM2.5	PM emissions (lb/day), BMP PM10	PM emissions (lb/day), BMP PM2.5
Site Prep	50	519.84	77.98	10.40	1.56
Trenching	75	68.96	10.34	0.92	0.14
Concrete Work	125	137.51	20.63	1.10	0.17
Equipment Install	235	71.30	10.69	0.30	0.05
Paving	30	400.59	60.09	13.35	2.00
Cleanup	40	170.34	25.55	4.26	0.64
		project average		2.46583097	0.369875

On-road Vehicles

Emission Factors

Trip Purpose	Load Capacity (tons)	Vehicle Category	GVWR (ton)	Avg. Weight (tons)	PM10 EF (lbs/VMT)	
					Paved Roads	Paved Roads, Corrected
Export (soil/waste)	20.52	HHDT	30	20	4.1E-4	4.0E-4
Export (trees/veg.)	2	MHDT	17	16	4.1E-4	4.0E-4
Import (soil/fill)	16.4	HHDT	30	22	4.1E-4	4.0E-4
Import (concrete)	18.225	HHDT	30	21	4.1E-4	4.0E-4
Import (material/supplies)	25	HHDT	30	18	4.1E-4	4.0E-4
Worker Commute	-	., LDT1, LDT2	2	2	4.1E-4	4.0E-4

Notes:
Emission factor for travel on paved roads is estimated using Eq 3 and 3a on worksheet "Fugitive Dust EF".
Average weight of worker commute vehicle is calcualted as the average of vehicle category max weight (LDA: 3,190 lbs, LDT1: 3,750 lbs, LDT2: 5,750 lbs, EMFAC2011)
For calculating EF from paved road, the average weight of all vehicles traveling the road is assumped to be 2.4 tons
Assuming BMP watering unpaved road twice daily.

Dust Emissions

Trip Purpose	Workdays	Paved Road (mi)	Total Emissions		Avg Daily	
			PM10 (lbs)	PM2.5 (lbs)	PM10 (lbs/day)	PM2.5 (lbs/day)
Export (soil/waste)	125	250	0.099	0.025	0.001	0.000
Export (trees/veg.)	125	50	0.020	0.003	0.000	0.000
Import (soil/fill)	125	1,250	0.495	0.000	0.004	0.001
Import (concrete)	390	2,778	1.101	0.000	0.003	0.001
Import (material/supplies)	235	1,250	0.495	0.000	0.002	0.001
Worker Commute	555	416,250	164.976	0.000	0.297	0.074
			167.19	0.03	0.30	0.00

Notes:
Mitigation reduction 74% Reduction by BMP watering unpaved road three times daily.
Trackout distance 6 miles EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road.
Industrial Roads are defined as the roads within trackout distance from the project site, to be conservative.
Miles on Industrial Roads is estimated as # of one-way trips multiplied by trackout distance.

PM2.5 to PM10 Mass Emission Ratio used in Calculation

Fugitive Dust Source	PM2.5/PM10	Reference
Stockpiling	0.15	Based on k-values of PM2.5 and PM10 in EPA. AP-42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.4 Aggregate Handling and Storage Piles
Paved road	0.25	EPA. AP-42. Analysis of the Fine Fraction of Particulate Matter in Fugitive Dust, Final
Unpaved road	0.15	EPA. AP-42. Analysis of the Fine Fraction of Particulate Matter in Fugitive Dust, Final

Construction Input Parameters

Construction Input Parameters

Item	Value	Unit
Earliest Start Year	2025	year
Daily schedule	9	hours/day
Weekly Schedule	5	days/week
Total duration	555	work days*
Total Years	2.13	calendar years
OnRoad VMT		
Worker Commute (one-way)	25	miles
Onsite Construction Worker	15	workers/day
Material Export		
Distance		
Off-Haul (soil/waste) Distance (one-way)	20	miles
Off-Haul (Trees/Veg.) Distance	5	miles
Quantity		
Material Export (Off-Haul) Quantity	100	cy
Tree Removal (Off-Haul) Quantity	5	trees
Material Import		
Distance		
Soil/Fill Source Site Distance (one-way)	20	miles
Construction Materials/Supplies Distance (one-way)	25	miles
Quantites		
On-Haul (Soil/Fill) Quantity	500	cy
Concrete Quantity	500	cy
On-Haul (Materials/Supplies) Quantity	50	Total truck deliveries
On-Haul (Trees/Veg.) Quantity	5	#trees
Onsite stockpiling Quantity	2,000	cy
Truck Capacity		
On/Off - Haul (Soil/Fill/Waste) Truck Capacity	16	cy
Concrete Truck Capacity	9	cy
Vendor Import Truck Capacity	25	tons/truck
Tree Hauling Truck Capacity	2	tons/truck

*555 work days, or 27 months

Construction Trip and VMT calculation

Trip Type	Load Capacity (tons)	# One-way Trips	One-way Trip Length (mi)	Daily trips	Number of Vehicles	Total VMT (Unpaved Road)	Total VMT (Paved Road)
Export (soil/waste)	20.52	12.5	20	0.02	1	13	250
Export (trees/veg.)	2	10	5	0.02	1	10	50
Import (soil/fill)	16.4	63	20	0.11	1	63	1,250
Import (concrete)	18.225	111	25	0.20	1	111	2,778
Import (material/supplies)	25	50	25	0.09	1	50	1,250
Worker Commute		16650	25	30	30	0	416,250

Assumptions:

Worker commute trip rate	1	round trips/worke	provided
Mature tree weight	2	tons/tree	https://thetimberlandinvestor.co
Topsoil (loose)	2,050	lb/CY	https://www.trorc.org/wp-content/uploads/2022/01/Cubic_Yardage_Chart-D.p
Topsoil (packed)	2,565	lb/CY	https://www.trorc.org/wp-content/uploads/2022/01/Cubic_Yardage_Chart-D.p
Concrete (gravel or stone mix)	4,050	lb/CY	https://www.trorc.org/wp-content/uploads/2022/01/Cubic_Yardage_Chart-D.p
Concrete (average wet mix)	3730	lb/CY	https://www.trorc.org/wp-content/uploads/2022/01/Cubic_Yardage_Chart-D.p

Source: data provided to Ascent by Brenwood WWTP

Construction Schedule/Phasing

Number of workdays breakdown as phase percent by year

Phase Check	Work Days	Calendar Months	Year			
			1	2	3	4
Site Prep	50	2.5	0.4	0.6		
Trenching	75	3.75		1		
Concrete	125	6.25		1		
Equipment Install	235	11.75		0.1702128	0.8297872	
Paving	30	1.5			1	
Cleanup	40	2				1

Equipment Exhaust Emissions Factors

Data Subset from CalEEMod Appendix G 11 Statewide Average Annual Offroad Equipment Emission Factors (grams per horsepower-hour)

Equipment	Year	Fuel	LowHP	HighHP	TOG	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
Cranes	2025	Diesel	0	25	1.509	1.268	4.898	5.859	0.005	0.389	0.358	586.607	0.024	0.005
Cranes	2025	Diesel	25	50	2.245	1.886	5.81	7.309	0.005	0.565	0.52	592.06	0.024	0.005
Cranes	2025	Diesel	50	75	1.636	1.375	9.722	4.696	0.005	0.981	0.903	525.413	0.021	0.004
Cranes	2025	Diesel	75	100	0.456	0.383	3.564	3.727	0.005	0.206	0.19	526.436	0.021	0.004
Cranes	2025	Diesel	100	175	0.424	0.356	3.321	3.362	0.005	0.181	0.166	528.683	0.021	0.004
Cranes	2025	Diesel	175	300	0.322	0.27	2.772	1.537	0.005	0.118	0.108	527.564	0.021	0.004
Cranes	2025	Diesel	300	600	0.239	0.201	1.95	1.663	0.005	0.079	0.073	527.585	0.021	0.004
Cranes	2025	Diesel	600	750	0.452	0.38	3.764	2.675	0.005	0.187	0.172	527.208	0.021	0.004
Cranes	2025	Diesel	750	999	0.579	0.487	6.034	4.087	0.005	0.251	0.231	527.447	0.021	0.004
Dumpers/Tenders	2025	Diesel	0	25	0.691	0.571	4.367	2.359	0.007	0.163	0.15	572.88	0.023	0.005
Excavators	2025	Diesel	0	25	1.066	0.882	6.484	3.582	0.011	0.251	0.231	845.98	0.034	0.007
Excavators	2025	Diesel	25	50	0.478	0.402	3.446	4.211	0.005	0.107	0.098	587.138	0.024	0.005
Excavators	2025	Diesel	50	75	0.267	0.224	2.514	3.342	0.005	0.139	0.128	527.223	0.021	0.004
Excavators	2025	Diesel	75	100	0.235	0.197	2.045	3.46	0.005	0.081	0.074	524.872	0.021	0.004
Excavators	2025	Diesel	100	175	0.189	0.159	1.164	3.078	0.005	0.057	0.053	528.086	0.021	0.004
Excavators	2025	Diesel	175	300	0.158	0.133	0.987	1.099	0.005	0.033	0.03	528.274	0.021	0.004
Excavators	2025	Diesel	300	600	0.137	0.115	0.714	1.043	0.005	0.025	0.023	526.988	0.021	0.004
Excavators	2025	Diesel	600	750	0.26	0.218	2.427	1.51	0.005	0.089	0.082	530.428	0.022	0.004
Excavators	2025	Diesel	750	999	0.094	0.079	2.36	0.992	0.005	0.021	0.02	534.921	0.022	0.004
Forklifts	2025	Diesel	25	50	0.757	0.636	3.929	5.026	0.005	0.178	0.164	587.35	0.024	0.005
Forklifts	2025	Diesel	50	75	2.03	1.706	13.424	5.618	0.005	1.044	0.961	520.49	0.021	0.004
Forklifts	2025	Diesel	75	100	0.321	0.269	2.551	3.599	0.005	0.135	0.124	527.108	0.021	0.004
Forklifts	2025	Diesel	100	175	0.25	0.21	1.661	3.169	0.005	0.085	0.078	527.465	0.021	0.004
Forklifts	2025	Diesel	175	300	0.222	0.187	1.426	1.204	0.005	0.055	0.05	528.244	0.021	0.004
Forklifts	2025	Diesel	300	600	0.276	0.232	1.832	1.254	0.005	0.068	0.063	531.099	0.022	0.004
Forklifts	2025	Diesel	600	750	0.276	0.232	1.832	1.254	0.005	0.068	0.063	531.099	0.022	0.004
Forklifts	2025	Diesel	750	999	0.135	0.114	2.432	1.045	0.005	0.023	0.021	527.64	0.021	0.004
Generator Sets	2025	Diesel	0	25	0.656	0.542	4.347	2.869	0.008	0.177	0.163	568.322	0.023	0.005
Generator Sets	2025	Diesel	25	50	0.441	0.364	3.482	3.759	0.007	0.093	0.086	568.312	0.023	0.005
Off-Highway Trucks	2025	Diesel	25	50	0.807	0.678	4.009	5.532	0.005	0.185	0.17	582.022	0.024	0.005
Off-Highway Trucks	2025	Diesel	50	75	0.278	0.234	1.633	3.905	0.005	0.027	0.024	522.493	0.021	0.004
Off-Highway Trucks	2025	Diesel	75	100	0.367	0.309	2.692	3.878	0.005	0.156	0.143	530.118	0.022	0.004
Off-Highway Trucks	2025	Diesel	100	175	0.259	0.218	1.372	3.341	0.005	0.068	0.062	526.643	0.021	0.004
Off-Highway Trucks	2025	Diesel	175	300	0.222	0.187	1.149	1.234	0.005	0.044	0.041	526.221	0.021	0.004
Off-Highway Trucks	2025	Diesel	300	600	0.211	0.177	1.086	1.174	0.005	0.038	0.035	528.587	0.021	0.004
Off-Highway Trucks	2025	Diesel	600	750	0.275	0.231	1.67	1.574	0.005	0.064	0.059	528.69	0.021	0.004
Off-Highway Trucks	2025	Diesel	750	999	0.201	0.169	2.949	1.134	0.005	0.049	0.045	524.321	0.021	0.004
Pavers	2025	Diesel	0	25	1.038	0.858	6.558	3.542	0.011	0.245	0.226	860.205	0.035	0.007
Pavers	2025	Diesel	25	50	1.089	0.915	4.118	4.929	0.005	0.264	0.243	587.425	0.024	0.005
Pavers	2025	Diesel	50	75	0.72	0.605	4.905	3.706	0.005	0.42	0.386	524.498	0.021	0.004
Pavers	2025	Diesel	75	100	0.295	0.248	2.646	3.445	0.005	0.139	0.128	526.537	0.021	0.004
Pavers	2025	Diesel	100	175	0.22	0.185	1.676	3.014	0.005	0.08	0.073	528.494	0.021	0.004
Pavers	2025	Diesel	175	300	0.13	0.11	1.069	1	0.005	0.036	0.033	528.337	0.021	0.004
Pavers	2025	Diesel	300	600	0.128	0.108	1.041	0.98	0.005	0.032	0.029	527.676	0.021	0.004
Pavers	2025	Diesel	600	750	0.075	0.063	0.263	0.954	0.005	0.009	0.008	527.836	0.021	0.004
Plate Compactors	2025	Diesel	0	25	0.662	0.547	4.144	3.471	0.009	0.162	0.149	568.406	0.023	0.005
Rollers	2025	Diesel	0	25	1.008	0.833	6.317	4.394	0.012	0.242	0.223	847.999	0.034	0.007
Rollers	2025	Diesel	25	50	0.675	0.567	3.678	4.113	0.005	0.166	0.153	586.902	0.024	0.005
Rollers	2025	Diesel	50	75	2.239	1.882	15.11	6.171	0.005	1.081	0.994	527.546	0.021	0.004
Rollers	2025	Diesel	75	100	0.29	0.244	2.601	3.414	0.005	0.129	0.118	528.034	0.021	0.004
Rollers	2025	Diesel	100	175	0.151	0.127	1.1	2.906	0.005	0.049	0.045	527.452	0.021	0.004
Rollers	2025	Diesel	175	300	0.248	0.208	2.175	1.522	0.005	0.087	0.08	528.085	0.021	0.004
Rollers	2025	Diesel	300	600	0.17	0.143	1.428	1.422	0.005	0.049	0.046	529.722	0.021	0.004
Rubber Tired Dozers	2025	Diesel	25	50	0.628	0.528	3.679	5.181	0.005	0.127	0.117	586.987	0.024	0.005
Rubber Tired Dozers	2025	Diesel	50	75	0.805	0.677	5.408	4.257	0.005	0.385	0.354	527.918	0.021	0.004
Rubber Tired Dozers	2025	Diesel	75	100	0.704	0.591	4.915	4.156	0.005	0.355	0.327	531.632	0.022	0.004
Rubber Tired Dozers	2025	Diesel	100	175	0.622	0.522	4.472	3.687	0.005	0.29	0.267	528.125	0.021	0.004
Rubber Tired Dozers	2025	Diesel	175	300	0.511	0.43	4.599	2.585	0.005	0.201	0.185	528.56	0.021	0.004
Rubber Tired Dozers	2025	Diesel	300	600	0.441	0.371	3.506	2.902	0.005	0.154	0.142	532.172	0.022	0.004
Rubber Tired Dozers	2025	Diesel	600	750	0.276	0.232	2.871	1.1	0.005	0.081	0.075	527.876	0.021	0.004
Rubber Tired Loaders	2025	Diesel	0	25	1.026	0.848	6.486	3.503	0.011	0.242	0.223	850.791	0.035	0.007
Rubber Tired Loaders	2025	Diesel	25	50	1.148	0.965	4.369	5.969	0.005	0.26	0.239	588.75	0.024	0.005
Rubber Tired Loaders	2025	Diesel	50	75	2.322	1.951	15.449	6.324	0.005	1.133	1.042	528.023	0.021	0.004
Rubber Tired Loaders	2025	Diesel	75	100	0.415	0.349	2.946	3.79	0.005	0.177	0.163	522.879	0.021	0.004
Rubber Tired Loaders	2025	Diesel	100	175	0.268	0.225	1.602	3.283	0.005	0.085	0.078	526.161	0.021	0.004
Rubber Tired Loaders	2025	Diesel	175	300	0.213	0.179	1.492	1.16	0.005	0.05	0.046	526.675	0.021	0.004
Rubber Tired Loaders	2025	Diesel	300	600	0.234	0.197	1.459	1.261	0.005	0.055	0.05	527.135	0.021	0.004
Rubber Tired Loaders	2025	Diesel	600	750	0.24	0.202	1.253	1.574	0.005	0.046	0.042	526.188	0.021	0.004
Rubber Tired Loaders	2025	Diesel	750	999	0.226	0.19	3.418	1.122	0.005	0.064	0.059	529.003	0.021	0.004
Welders	2025	Diesel	0	25	0.7	0.578	4.358	2.806	0.008	0.18	0.165	568.329	0.023	0.005
Welders	2025	Diesel	25	50	0.602	0.498	3.676	4.525	0.007	0.113	0.104	568.301	0.023	0.005

Offroad Equipment Emission Factors by Engine Tier

Data Subset from CalEEMod Appendix G-13. Offroad Equipment Emission Factors by Engine Tier (grams per horsepowe

Tier	Low HP	High HP	ROG	NOX	CO	PM10	PM2.5	TOG
Tier 1	25	49	1.320	5.260	4.100	0.480	0.440	1.340
Tier 1	50	74	0.900	6.540	8.500	0.550	0.510	0.910
Tier 1	75	119	0.900	6.540	8.500	0.550	0.510	0.910
Tier 1	120	174	0.620	6.540	8.500	0.300	0.280	0.630
Tier 1	175	299	0.290	5.930	8.500	0.120	0.110	0.290
Tier 1	300	599	0.290	5.930	8.500	0.120	0.110	0.290
Tier 1	600	750	0.290	5.930	8.500	0.120	0.110	0.290
Tier 1	751	999	0.290	5.930	8.500	0.120	0.110	0.290
Tier 2	25	49	0.220	4.630	4.100	0.280	0.260	0.220
Tier 2	50	74	0.170	4.750	3.700	0.190	0.180	0.170
Tier 2	75	119	0.170	4.750	3.700	0.190	0.180	0.170
Tier 2	120	174	0.150	4.150	3.700	0.130	0.120	0.150
Tier 2	175	299	0.110	4.150	2.600	0.090	0.080	0.110
Tier 2	300	599	0.090	3.790	2.600	0.090	0.080	0.090
Tier 2	600	750	0.090	3.790	2.600	0.090	0.080	0.090
Tier 2	751	999	0.090	3.790	2.600	0.090	0.080	0.090
Tier 3	25	49	0.220	4.630	4.100	0.280	0.260	0.220
Tier 3	50	74	0.090	2.740	3.700	0.190	0.180	0.090
Tier 3	75	119	0.090	2.740	3.700	0.110	0.100	0.090
Tier 3	120	174	0.090	2.320	3.700	0.110	0.100	0.090
Tier 3	175	299	0.090	2.320	2.600	0.090	0.080	0.090
Tier 3	300	599	0.090	2.320	2.600	0.090	0.080	0.090
Tier 3	600	750	0.090	2.320	2.600	0.090	0.080	0.090
Tier 3	751	999	0.090	2.320	2.600	0.090	0.080	0.090
Tier 4 Final	25	49	0.090	2.750	4.100	0.010	0.010	0.090
Tier 4 Final	50	74	0.090	2.740	3.700	0.010	0.010	0.090
Tier 4 Final	75	119	0.050	0.260	3.700	0.010	0.010	0.050
Tier 4 Final	120	174	0.050	0.260	3.700	0.010	0.010	0.050
Tier 4 Final	175	299	0.050	0.260	2.600	0.010	0.010	0.050
Tier 4 Final	300	599	0.050	0.260	2.600	0.010	0.010	0.050
Tier 4 Final	600	750	0.050	0.260	2.600	0.010	0.010	0.050
Tier 4 Final	751	999	0.050	2.240	2.600	0.020	0.020	0.050
Tier 4 Interim	25	49	0.090	4.550	4.100	0.130	0.120	0.090
Tier 4 Interim	50	74	0.090	2.740	3.700	0.110	0.100	0.090
Tier 4 Interim	75	119	0.080	2.150	3.700	0.010	0.010	0.080
Tier 4 Interim	120	174	0.080	2.150	3.700	0.010	0.010	0.080
Tier 4 Interim	175	299	0.060	1.290	2.600	0.010	0.010	0.060
Tier 4 Interim	300	599	0.060	1.290	2.600	0.010	0.010	0.060
Tier 4 Interim	600	750	0.060	1.290	2.600	0.010	0.010	0.060
Tier 4 Interim	751	999	0.060	2.240	2.600	0.050	0.050	0.060

Welder and Generator Emission Factors

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2025
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	Vehicle Category	Model Year	Horsepower Bin	Fuel	HC_tpd	ROG_tpd	TOG_tpd	CO_tpd	NOx_tpd	CO2_tpd	PM10_tpd	PM2.5_tpd	SOx_tpd	NH3_tpd
Statewide	2025	Military Tactical Support - Misc - Welder	Aggregate	100	Diesel	0.00032	0.00038	0.00046	0.00649	0.00429	1.13629	0.00017	0.00016	1.3E-05	9.3E-06
Statewide	2025	Portable Equipment - Rental Generator	Aggregate	100	Diesel	0.02496	0.0302	0.03594	0.71215	0.26479	97.9005	0.02178	0.02004	0.00091	0.0008

Calculated Emission Factors (g/hp-hr)

Vehicle Category	Model Year	Horsepower Bin	Fuel	HC	ROG	TOG	CO	NOx	CO2	PM10	PM2.5	SOx	NH3
Military Tactical Support - Misc - Welder	Aggregate	100	Diesel	0.09777	0.11635	0.14079	1.99172	1.31833	348.945	0.05205	0.04789	0.00401	0.00286
Portable Equipment - Rental Generator	Aggregate	100	Diesel	0.04153	0.05026	0.05981	1.18517	0.44066	162.927	0.03625	0.03335	0.00151	0.00133

Equipment Horsepower and Load Factors

Equipment	Fuel	Horsepower	Load Factor
Aerial Lifts	Diesel	46	0.31
Air Compressors	Diesel	37	0.48
Bore/Drill Rigs	Diesel	83	0.50
Cement and Mortar Mixers	Diesel	10	0.56
Concrete/Industrial Saws	Diesel	33	0.73
Cranes	Diesel	367	0.29
Crawler Tractors	Diesel	87	0.43
Dumpers/Tenders	Diesel	16	0.38
Excavators	Diesel	36	0.38
Forklifts	Diesel	82	0.20
Generator Sets	Diesel	14	0.74
Graders	Diesel	148	0.41
Off-Highway Tractors	Diesel	38	0.44
Off-Highway Trucks	Diesel	376	0.38
Other Construction Equipment	Diesel	82	0.42
Other General Industrial Equipment	Diesel	35	0.34
Other Material Handling Equipment	Diesel	93	0.40
Pavers	Diesel	81	0.42
Paving Equipment	Diesel	89	0.36
Plate Compactors	Diesel	8	0.43
Pressure Washers	Diesel	14	0.30
Pumps	Diesel	11	0.74
Rollers	Diesel	36	0.38
Rough Terrain Forklifts	Diesel	96	0.40
Rubber Tired Dozers	Diesel	367	0.40
Rubber Tired Loaders	Diesel	150	0.36
Scrapers	Diesel	423	0.48
Signal Boards	Diesel	6	0.82
Skid Steer Loaders	Diesel	71	0.37
Surfacing Equipment	Diesel	399	0.30
Sweepers/Scrubbers	Diesel	36	0.46
Tractors/Loaders/Backhoes	Diesel	84	0.37
Trenchers	Diesel	40	0.50
Welders	Diesel	46	0.45

Source: CalEEMod 2022 Appendix G Table G-12

EMFAC 2021 (On-Road) Emission Rates Output

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Contra Costa
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	NOx_RUNEX	NOx_IDLEX	NOx_STREX	NOx_TOTEX	PM2.5_RUNEX	PM2.5_IDLEX	PM2.5_STREX	PM2.5_TOTEX	PM2.5_PMTW	PM2.5_PMBW	PM2.5_TOTAL
Contra C	2025	LDA	Aggregat	Aggregat	Gasoline	335916	1E+07	1E+07	0	2E+06	0	0.5459	0	0.4395	0.9854	0.016	0	0.0033	0.0193	0.0282	0.0363	0.0838
Contra C	2025	LDA	Aggregat	Aggregat	Diesel	1259.9	36194	36194	0	5295.1	0	0.0073	0	0	0.0073	0.0005	0	0	0.0005	8E-05	0.0001	0.0007
Contra C	2025	LDA	Aggregat	Aggregat	Electricit	22047	1E+06	0	1E+06	108839	407710	0	0	0	0	0	0	0	0	0.0023	0.0018	0.0041
Contra C	2025	LDA	Aggregat	Aggregat	Plug-in H	9851	453994	219887	234107	40734	70707	0.0016	0	0.0052	0.0068	0.0003	0	9E-05	0.0004	0.001	0.0007	0.0021
Contra C	2025	LDT1	Aggregat	Aggregat	Gasoline	31581	1E+06	1E+06	0	139009	0	0.1397	0	0.0599	0.1996	0.002	0	0.0004	0.0024	0.0025	0.0038	0.0087
Contra C	2025	LDT1	Aggregat	Aggregat	Diesel	15.059	179.44	179.44	0	42.739	0	0.0003	0	0	0.0003	4E-05	0	0	4E-05	4E-07	7E-07	4E-05
Contra C	2025	LDT1	Aggregat	Aggregat	Electricit	90.268	4001.7	0	4001.7	433.48	1545	0	0	0	0	0	0	0	0	9E-06	7E-06	2E-05
Contra C	2025	LDT1	Aggregat	Aggregat	Plug-in H	49.921	2645.4	1148.5	1496.9	206.42	452.1	8E-06	0	3E-05	3E-05	1E-06	0	3E-07	1E-06	6E-06	4E-06	1E-05
Contra C	2025	LDT2	Aggregat	Aggregat	Gasoline	158167	6E+06	6E+06	0	736768	0	0.4254	0	0.2618	0.6873	0.0084	0	0.0016	0.01	0.0142	0.0214	0.0457
Contra C	2025	LDT2	Aggregat	Aggregat	Diesel	656.91	27340	27340	0	3093.4	0	0.0013	0	0	0.0013	0.0001	0	0	0.0001	6E-05	9E-05	0.0003
Contra C	2025	LDT2	Aggregat	Aggregat	Electricit	1078.9	39239	0	39239	5489.3	15149	0	0	0	0	0	0	0	0	9E-05	7E-05	0.0002
Contra C	2025	LDT2	Aggregat	Aggregat	Plug-in H	1306.2	66002	30153	35849	5401	10828	0.0002	0	0.0007	0.0009	3E-05	0	1E-05	4E-05	0.0001	1E-04	0.0003
Contra C	2025	MHDT	Aggregat	Aggregat	Gasoline	731.79	39166	39166	0	14642	0	0.02	7E-05	0.0072	0.0273	6E-05	0	9E-06	7E-05	0.0001	0.0007	0.0009
Contra C	2025	MHDT	Aggregat	Aggregat	Diesel	5595.4	232125	232125	0	64605	0	0.3109	0.0814	0.1184	0.5107	0.0035	0.0002	0	0.0037	0.0008	0.0041	0.0085
Contra C	2025	MHDT	Aggregat	Aggregat	Electricit	48.088	2656.9	0	2656.9	606.94	2924.6	0	0	0	0	0	0	0	0	9E-06	2E-05	3E-05
Contra C	2025	MHDT	Aggregat	Aggregat	Natural G	55.402	2558.3	2558.3	0	509.92	0	0.0003	0.0004	0	0.0007	3E-06	1E-06	0	5E-06	8E-06	5E-05	6E-05
Contra C	2025	HHDT	Aggregat	Aggregat	Gasoline	0.7268	63.253	63.253	0	14.541	0	0.0005	0	2E-05	0.0005	2E-07	0	2E-08	2E-07	3E-07	2E-06	3E-06
Contra C	2025	HHDT	Aggregat	Aggregat	Diesel	5216.8	600062	600062	0	76369	0	1.2299	0.3507	0.2448	1.8254	0.0171	0.0002	0	0.0173	0.0058	0.0182	0.0413
Contra C	2025	HHDT	Aggregat	Aggregat	Electricit	37.013	3826.2	0	3826.2	482.7	7059	0	0	0	0	0	0	0	0	4E-05	6E-05	1E-04
Contra C	2025	HHDT	Aggregat	Aggregat	Natural G	485.56	32536	32536	0	4411.9	0	0.0345	0.007	0	0.0416	5E-05	1E-05	0	7E-05	0.0003	0.0017	0.0021

PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW	PM10_PMBW	PM10_TOTAL	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	CH4_TOTEX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	N2O_TOTEX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_TOTEX
0.0174	0	0.0036	0.021	0.1127	0.1037	0.2374	3824.3	0	118.32	3942.6	0.0297	0	0.1212	0.1509	0.063	0	0.0567	0.1196	0.1114	0	0.5551	0.6665
0.0005	0	0	0.0005	0.0003	0.0003	0.0012	9.3157	0	0	9.3157	4E-05	0	0	4E-05	0.0015	0	0	0.0015	0.0009	0	0	0.0009
0	0	0	0	0.0093	0.0051	0.0144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0003	0	1E-04	0.0004	0.004	0.0019	0.0063	66.35	0	2.8773	69.228	0.0002	0	0.0019	0.0021	0.0003	0	0.0009	0.0012	0.0007	0	0.0078	0.0085
0.0022	0	0.0004	0.0026	0.0098	0.011	0.0234	399.37	0	13.222	412.59	0.0067	0	0.0165	0.0232	0.0107	0	0.0061	0.0168	0.0293	0	0.0844	0.1137
5E-05	0	0	5E-05	2E-06	2E-06	5E-05	0.0821	0	0	0.0821	3E-06	0	0	3E-06	1E-05	0	0	1E-05	6E-05	0	0	6E-05
0	0	0	0	4E-05	2E-05	5E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1E-06	0	3E-07	1E-06	2E-05	1E-05	4E-05	0.3468	0	0.0154	0.3622	1E-06	0	1E-05	1E-05	1E-06	0	5E-06	6E-06	3E-06	0	4E-05	4E-05
0.0092	0	0.0017	0.0109	0.0569	0.0612	0.129	2379.8	0	69.689	2449.5	0.0182	0	0.0661	0.0843	0.0394	0	0.0303	0.0697	0.069	0	0.3011	0.3701
0.0002	0	0	0.0002	0.0002	0.0003	0.0007	9.3594	0	0	9.3594	2E-05	0	0	2E-05	0.0015	0	0	0.0015	0.0004	0	0	0.0004
0	0	0	0	0.0003	0.0002	0.0005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3E-05	0	1E-05	5E-05	0.0006	0.0003	0.0009	9.1022	0	0.4418	9.544	3E-05	0	0.0003	0.0003	4E-05	0	0.0001	0.0002	9E-05	0	0.001	0.0011
6E-05	0	9E-06	7E-05	0.0005	0.0019	0.0025	75.628	0.4276	0.7474	76.803	0.0006	0.0002	0.0008	0.0016	0.001	6E-06	0.0005	0.0015	0.0032	0.0008	0.0044	0.0084
0.0037	0.0002	0	0.0038	0.0031	0.0116	0.0185	291.32	14.032	0	305.35	0.0004	7E-05	0	0.0004	0.0459	0.0022	0	0.0481	0.0078	0.0015	0	0.0094
0	0	0	0	4E-05	7E-05	0.0001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4E-06	1E-06	0	5E-06	3E-05	0.0001	0.0002	2.7412	0.3229	0	3.0642	0.0021	0.001	0	0.0031	0.0006	7E-05	0	0.0006	3E-05	1E-05	0	4E-05
2E-07	0	3E-08	2E-07	1E-06	6E-06	8E-06	0.1427	0	0.0008	0.1435	1E-05	0	6E-09	1E-05	1E-05	0	4E-07	1E-05	6E-05	0	3E-08	6E-05
0.0179	0.0002	0	0.018	0.0233	0.052	0.0933	1063	67.49	0	1130.5	0.0005	0.0014	0	0.0019	0.1675	0.0106	0	0.1781	0.0111	0.0291	0	0.0403
0	0	0	0	0.0001	0.0002	0.0003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6E-05	1E-05	0	7E-05	0.0013	0.005	0.0063	49.179	5.6447	0	54.824	0.0793	0.0189	0	0.0982	0.01	0.0012	0	0.0112	0.0015	0.0003	0	0.0018

ROG_DIURN	ROG_HOTSOAK	ROG_RUNLOSS	ROG_TOTAL	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HOTSOAK	TOG_RUNLOSS	TOG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX	NH3_RUNEX	Fuel Consumption
0.5562	0.1624	0.4249	1.81	0.1626	0	0.6078	0.7703	0.5562	0.1624	0.4249	1.9138	9.6233	0	5.4878	15.111	0.0378	0	0.0012	0.039	0.4994	415.74
0	0	0	0.0009	0.001	0	0	0.001	0	0	0	0.001	0.0122	0	0	0.0122	9E-05	0	0	9E-05	0.0001	0.8322
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0048	0.0019	0.0017	0.0169	0.001	0	0.0086	0.0095	0.0048	0.0019	0.0017	0.0179	0.1018	0	0.0607	0.1625	0.0007	0	3E-05	0.0007	0.0096	7.3
0.0972	0.0269	0.0767	0.3145	0.0428	0	0.0924	0.1351	0.0972	0.0269	0.0767	0.3359	1.5654	0	0.8192	2.3846	0.0039	0	0.0001	0.0041	0.0442	43.507
0	0	0	6E-05	7E-05	0	0	7E-05	0	0	0	7E-05	0.0004	0	0	0.0004	8E-07	0	0	8E-07	6E-07	0.0073
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2E-05	5E-06	5E-06	7E-05	5E-06	0	4E-05	5E-05	2E-05	5E-06	5E-06	7E-05	0.0005	0	0.0003	0.0008	3E-06	0	2E-07	4E-06	5E-05	0.0382
0.2435	0.068	0.1838	0.8655	0.1007	0	0.3297	0.4304	0.2435	0.068	0.1838	0.9258	5.453	0	2.9031	8.3561	0.0235	0	0.0007	0.0242	0.2609	258.3
0	0	0	0.0004	0.0004	0	0	0.0004	0	0	0	0.0004	0.0039	0	0	0.0039	9E-05	0	0	9E-05	9E-05	0.8361
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0004	0.0002	0.0001	0.0019	0.0001	0	0.0011	0.0013	0.0004	0.0002	0.0001	0.002	0.014	0	0.008	0.022	9E-05	0	4E-06	9E-05	0.0014	1.0064
0.0024	0.0006	0.0049	0.0162	0.0047	0.0012	0.0048	0.0106	0.0024	0.0006	0.0049	0.0184	0.0665	0.0122	0.0957	0.1743	0.0007	4E-06	7E-06	0.0008	0.0019	8.0987
0	0	0	0.0094	0.0089	0.0017	0	0.0107	0	0	0	0.0107	0.0294	0.0468	0	0.0762	0.0028	0.0001	0	0.0029	0.0538	27.277
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	4E-05	0.0021	0.001	0	0.0032	0	0	0	0.0032	0.0083	0.0022	0	0.0105	0	0	0	0	0.003	0.3542
6E-06	2E-06	2E-05	9E-05	9E-05	0	4E-08	9E-05	6E-06	2E-06	2E-05	0.0001	0.0032	0	5E-05	0.0033	1E-06	0	8E-09	1E-06	3E-06	0.0151
0	0	0	0.0403	0.0127	0.0332	0	0.0458	0	0	0	0.0458	0.0534	0.4239	0	0.4773	0.0101	0.0006	0	0.0107	0.1423	100.98
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0.0018	0.0814	0.0193	0	0.1007	0	0	0	0.1007	0.4744	0.0393	0	0.5137	0	0	0	0	0.0302	6.3368

Emission Factors based on VMT, Trip, and Idle/Diurnal

Summed columns in EMFAC AQ M X Q C U,V AE AI AM V,AW O Z S AG AK AO U N Y R AF AJ AN

Vehicle Category	Fuel	VMT-based (g/mile)									Trip-based (g/trip)									Idle/diurnal-based (g/vehicle/day)								
		ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O
HHDT	Diesel	0.02	1.86	0.03	0.03	0.11	0.04	1607	0	0.25	0	2.91	0	0	0	0	0	0	0	5.07	61	0.03	0.03	0	0	####	0.24	1.85
MHDT	Diesel	0.03	1.21	0.01	0.01	0.06	0.02	1139	0	0.18	0	1.66	0	0	0	0	0	0	0	0.25	13.2	0.03	0.03	0	0	2275	0.01	0.36
LDA	Gasoline	0.01	0.04	0	0	0.02	0	271	0	0	0	0.26	0	0	0	0	69.2	0.07	0.03	1.5	0	0	0	0	0	0	0	0
LDA	Diesel	0.02	0.18	0.01	0.01	0.02	0	233	0	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDA	Electricity	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDA	Plug-in Hybrid	0	0	0	0	0.01	0	133	0	0	0	0.12	0	0	0	0	64.1	0.04	0.02	0.44	0	0	0	0	0	0	0	0
LDT1	Gasoline	0.02	0.11	0	0	0.02	0.01	325	0.01	0.01	0	0.39	0	0	0	0	86.3	0.11	0.04	2.79	0	0	0	0	0	0	0	0
LDT1	Diesel	0.3	1.56	0.23	0.22	0.02	0.01	415	0.01	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT1	Electricity	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT1	Plug-in Hybrid	0	0	0	0	0.01	0	119	0	0	0	0.12	0	0	0	0	67.8	0.04	0.02	0.28	0	0	0	0	0	0	0	0
LDT2	Gasoline	0.01	0.06	0	0	0.02	0.01	334	0	0.01	0	0.32	0	0	0	0	85.8	0.08	0.04	1.4	0	0	0	0	0	0	0	0
LDT2	Diesel	0.01	0.04	0.01	0	0.02	0.01	311	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT2	Electricity	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT2	Plug-in Hybrid	0	0	0	0	0.01	0	125	0	0	0	0.12	0	0	0	0	74.2	0.04	0.02	0.3	0	0	0	0	0	0	0	0
Worker Fleet	EMFAC default mi	0.16	0.84	0.12	0.11	0.02	0.01	359	0.01	0.05	0	0.34	0	0	0	0	81.9	0.09	0.04	2.12	0	0	0	0	0	0	0	0

Notes:

Assume Worker Fleet = 25/50/25 percent mix of light duty autos, light duty truck class 1, and light duty truck class 2

EMFAC Emission Types Used to Estimate Onroad Emission Rates

Pollutant	VMT-based (g/mile)	Trip-based (g/trip)	Idle/Diurnal-based
TOG, ROG	RUNEX	STREX,	IDLEX, DIURN
Gases	RUNEX	STREX	IDLEX
PM - Exhaust	RUNEX	STREX	IDLEX
PM - Dust	PMTW, PMBW		

Acronyms:

RUNEX	Running exhaust	g/mile
PMBW	PM brakewear	g/mile
PMTW	PM tirewear	g/mile
STREX	Start exhaust	g/trip
HOTSOAK	Hot Soak evaporative	g/trip
RUNLOSS	Running Loss evaporativ	g/trip
IDLEX	Idle exhaust	g/vehicle/day
DIURN	Diurnal Loss evaporative	g/vehicle/day

EMFAC 2021 (On-Road) Emission Rates - Low Speed

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Contra Costa
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption, mph for Speed, kWh/day for Energy Consumption

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Total VMT	CVMT	EVMT	NOx_RUNI	PM2.5_RU	PM10_RUI	CO2_RUNI	CH4_RUNI	N2O_RUNI	ROG_RUNEX	TOG_RUNI	CO_RUNEX	SOx_RUNE	NH3_RUNI	PM10_PM	PM2.5_PMBW
Contra Costa	2025	HHDT	Aggregate	5	Diesel	714.2052	714.2052282	0	0.014697	9.09E-05	9.5E-05	2.703831	2.11E-05	0.000426	0.0004534	0.000516	0.001059	2.56E-05	0.000112	0.000123	4.29E-05
Contra Costa	2025	HHDT	Aggregate	10	Diesel	5530.566	5530.566187	0	0.058298	0.000178	0.000186	18.80522	4.43E-05	0.002963	0.0009541	0.001086	0.004593	0.000178	0.001172	0.000898	0.000314
Contra Costa	2025	HHDT	Aggregate	15	Diesel	11081.84	11081.84259	0	0.070809	0.000155	0.000162	30.42869	3.16E-05	0.004794	0.0006793	0.000773	0.004905	0.000288	0.002479	0.001748	0.000612
Contra Costa	2025	HHDT	Aggregate	20	Diesel	26987.45	26987.44766	0	0.107913	0.000197	0.000206	62.11338	3.56E-05	0.009786	0.0007666	0.000873	0.007713	0.000588	0.006348	0.001975	0.000691
Contra Costa	2025	HHDT	Aggregate	25	Diesel	13266.17	13266.16909	0	0.051821	0.00013	0.000136	28.18066	1.69E-05	0.00444	0.000364	0.000414	0.003199	0.000267	0.003006	0.001987	0.000695
Contra Costa	2025	MHDT	Aggregate	5	Diesel	784.4775	784.4775065	0	0.007184	4.59E-05	4.8E-05	2.038713	1.23E-05	0.000321	0.0002644	0.000301	0.000477	1.93E-05	0.000136	5.32E-05	1.86E-05
Contra Costa	2025	MHDT	Aggregate	10	Diesel	6539.857	6539.856645	0	0.026279	0.000298	0.000312	14.39863	6.23E-05	0.002269	0.0013412	0.001527	0.003002	0.000136	0.001458	0.000443	0.000155
Contra Costa	2025	MHDT	Aggregate	15	Diesel	10924.4	10924.40154	0	0.026673	0.000323	0.000338	18.93897	5.21E-05	0.002984	0.0011208	0.001276	0.003251	0.000179	0.002518	0.000741	0.000259
Contra Costa	2025	MHDT	Aggregate	20	Diesel	14258.87	14258.86574	0	0.02578	0.000267	0.000279	21.03439	3.26E-05	0.003314	0.0007018	0.000799	0.003033	0.000199	0.003328	0.000953	0.000334
Contra Costa	2025	MHDT	Aggregate	25	Diesel	19647.91	19647.90522	0	0.029746	0.000283	0.000296	26.12974	3.2E-05	0.004117	0.0006881	0.000783	0.003339	0.000247	0.004584	0.001079	0.000378

Onroad exhaust EF (lbs/mile) assuming vehicle travel with speed less than 25 mph on unpaved road

Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX	NH3_RUNEX	PM10_PMBW	PM2.5_PMBW
2025	HHDT	Aggregate	Aggregate	Diesel	57580.23	8.247138223	0.0346	0.03619	2607.35	0.007798	0.410789	0.167882	0.191121	0.5961852	0.02469	0.191498	0.129791	0.045427
2025	MHDT	Aggregate	Aggregate	Diesel	52155.51	3.439498994	0.0303	0.031669	1696	0.006148	0.267206	0.132373	0.150696	0.3173583	0.01606	0.198547	0.059038	0.020663

Fugitive Dust Emission Factors

1 Aggregate Storage Piles [1]

Emissions result from several distinct processes within the stockpiling cycle: 1. loading of materials through batch or drop operations, 2.

E(lb/ton)=(k)(0.0032)(U/5)^1.3/(M/2)^1.4

Where:	PM10	Unit	Source
k= Particle Size Multiplier:	0.35	dimensionless	AP-42 Chapter 13.2.4-3, PM10 emissions
U= mean wind speed	6.7	mph	CalEEMod for Contra Costa County
M= moisture content (%)	3.4	constant	AP-42 Chapter 13.2.4-3, Table 13.2.4-1, exposed ground
PM10 Emission factor	**0.49**	**lbs/ton**	

2 Travel on Unpaved Roads (Heavy Duty Trucks)[2]

E(lbs/VMT)=(k)(s/12)^a (W/3)^b

Where:	PM10	Unit	Source
k= Particle Size Multiplier:	1.5	dimensionless	AP-42 Chapter 13.2.2-2, PM10 emissions; industrial roads
s= Silt Content (%)	6.4	constant	AP-42 Chapter 13.2.2-1, municipal solid waste landfills disposal routes
a=	0.9	constant	AP-42 Chapter 13.2.2-2, industrial roads
b=	0.45	constant	AP-42 Chapter 13.2.2-2, industrial roads
W=Vehicle Weight	19.7	tons	Vehicle Weight
PM10 Emission factor	**1.989**	**lbs/VMT**	For above weight truck

2a Correction for Natural Precipitation[3]

E(ext)=E[(365-P)/365]

Where:		Unit	Source
P=#days/yr with >=0.01 inch precipitation during	60	days	AP-42 Chapter 13.2.2, Figure 13.2.2-1
Corrected EF PM10	**1.662**	lbs/VMT	

3 Travel on Paved Roads

E(lbs/VMT)=(k)(sL)^.91 (W)^1.02

Where:	**PM10**	Unit	Source
k= Particle Size Multiplier:	0.0022	lb/VMT	AP-42 Chapter 13.2.1, Table 13.2.1-1, PM10 emissions
sL= road surface silt loading	0.06	g/m^2	AP-42 Chapter 13.2.1, Table 13.2.1-2 Baseline with ADT category 5,000-10,000
	7.4	g/m^2	AP-42 Chapter 13.2.1, Table 13.2.1-3, Municipal solid waste landfill
W= average weight of the vehicles traveling the rc	2.4	tons	Statewide average vehicle weight in CA
PM10 Emission factor	0.00041	lbs/VMT	Public roads
	0.03337	lbs/VMT	Industrial roads

Correction for Natural Precipitation[5]

3a E(ext)=E[(1-P/4N)]

Where:		Unit	Source
Eext = annual or other long-term average emission factor		dimensionless	
P=#days/yr with >=0.01 inch precipitation during	60	days	AP-42 Chapter 13.2.1, Figure 13.2.1-2
N=# days in averaging period	365	days	
Corrected EF PM10	**0.00040**	lbs/VMT	Public roads
	0.03200	lbs/VMT	Industrial roads

4 Bulldozing[6]

Equation is applied to graders and dozers to estimate fugitive dust from grading activity

Emissions factors for P10 from bulldozing are scaled from those of PM15

E(lbs/hr)=1.0*s^1.5/M^1.4 AP-42 Table 11.9-1, PM15,overburden

Where

E(PM10)=E(PM15)*F

Where:			**PM15** Unit	Source
M=	material moisture content	7.9	%	AP-42 Table 11.9-3,Overburden
s=	material silt content	6.9	%	AP-42 Table 11.9-3,Overburden
F=	scaling factor	0.75	constant	AP-42 Table 11.9-1, PM10
	PM15	0.63	lbs/hr	
	PM10	**0.47**	lbs/hr	

Sources

[1] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.4 Aggregate Handling And Storage Piles, Eqn. 1

[2] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.2 Unpaved Roads, Eqn. 1

[3] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.2 Unpaved Roads, Eqn. 2

[4] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road, Eqn. 1

[5] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road, Eqn. 2

[6] EPA. AP 42, Fifth Edition, Volume I Chapter 11: Mineral Products Industry, 11.9 Mineral Products Industry, Table 11.9-1 Bulldozing

Conversion Factors

Conversion

grams per pound	453.59237
pounds per ton	2000
pounds per metric ton	2204.62
days per year	365
grams per short ton	907185
grams per metric ton	1000000
cubic centimeteters per cubic yards	764555

Constants

Soil Density (g/cm3)	1.55	Queried from map (Soil bulk density for Washington, Oregon, California, Arizona, and New Mexico, USA), databasi
Concrete Density (g/cm3)	2.4	Jones, Katrina (1999). "Density of Concrete". The Physics Factbook

Global Warming Potentials for Greenhouse Gases based on a 100-year horizon

Source	CO2 GWP	CH4 GWP	N2O GWP
IPCC Second Assessment Report	1	21	310
IPCC Third Assessment Report	1	23	296
IPCC Fourth Assessment Report (w/o climate carbon feedback)	1	25	265
IPCC Fourth Assessment Report (with climate carbon feedback)	1	34	298
IPCC Fourth Assessment Report (Avg)	1	25	298
IPCC Fifth Assessment Report (Avg)	1	28	265
IPCC Sixth Assessment Report	1	27.9	273

Source: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf

EMFAC Vehicle Classfication and Weights

EMFAC202x Vehicle Class	CalEEMod	GVWR (lb)
LDA, MCY	LDA	-
LDT1	LDT1	<= 6000
LDT2	LDT2	<=6000
MDV, MH, LHD, T6,	MHDT	14,001 – 33,000
T7, PTO, BUS, Motor Coach	HHDT	33,000 – 60,000

OPERATIONAL CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS EMISSIONS CALCULATIONS

Emissions Summary – Operation

Mass Emissions from AD and BDPS Facilities

Mobile Exhaust Emissions: On-Road

Ops Mass Emissions

Fugitive Dust Emissions

Project Input

Emission Factors based on VMT, Trip, and Idle/Diurnal

EMFAC 2021 (On-Road) Emission Query Result

AD and BDPS Facilities Emission Calculations

Fd Calculations

Emissions Summary - Operation

Operational Emissions of Criteria Air Pollutants

Avereage Daily Emissions

Emission Source	Average Daily Emissions (lbs/day)			
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Mobile	0.3	6.9	0.06	0.05
Stationary	38.1	23.0	4.6	4.6
Project	38.4	29.9	4.7	4.6
Thresholds of Significance	54	54	82	54
Exceed?	No	No	No	No

Note: Stationary PM2.5 emissions are not available, used PM10 emissions as conservative estimates.

Annual Average Emissions

Emission Source	Maximum Annual Emissions (tons/yr)				CO2e MTPY
	ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)	
Mobile	0.027	0.6	0.0049	0.0047	316
Stationary	7.0	4.2	0.8	0.8	11,481
Project Net Increase	7.0	4.8	0.8	0.8	-6,177
Thresholds of Significance	10	10	15	10	NA
Exceed?	No	No	No	No	NA

Notes: Stationary PM2.5 emissions are not available, used PM10 emissions as conservative estimates.

GHG offset -17,974 MTPY based on WARM results, see Sheet "GHG offset".

Short tons to metric tons 0.907185

Mass Emissions from AD and BDPS Facilities

Emission Source	Pollutant Type	Pollutant	Emissions Outputs			
			Max lbs/hour	Average lbs/Hour	Average lbs/day	Annual (tons/year)
Flare	Crtieria Air Pollutant	NOx	0.48	0.48	11.54	0.42
	Crtieria Air Pollutant	CO	0.20	0.20	4.81	0.18
	Crtieria Air Pollutant	VOC/ROG	0.00	0.00	0.02	0.00
	Crtieria Air Pollutant	PM10	0.40	0.40	9.50	0.35
	Crtieria Air Pollutant	SOx	0.07	0.07	1.58	0.06
	GHG	CO2e	3886.08	3886.08	93265.92	3404
	TAC	Acetone	2.31E-05	2.31E-05	5.54E-04	2.02E-05
	TAC	Benzene	9.14E-04	9.14E-04	2.19E-02	8.01E-04
	TAC	Chlorobenzene	6.60E-06	6.60E-06	1.58E-04	5.78E-06
	TAC	Ethylbenzene	3.30E-05	3.30E-05	7.92E-04	2.89E-05
	TAC	Ethly Dichloride	4.62E-05	4.62E-05	1.11E-03	4.05E-05
	TAC	Formaldehyde	4.46E-03	4.46E-03	1.07E-01	3.90E-03
	TAC	Hexane	3.33E-04	3.33E-04	8.00E-03	2.92E-04
	TAC	Hydrogen Chloride	2.13E-02	2.13E-02	5.11E-01	1.87E-02
	TAC	Methylene Chloride	3.30E-06	3.30E-06	7.92E-05	2.89E-06
	TAC	Methyl Ethyl Ketone	3.30E-06	3.30E-06	7.92E-05	2.89E-06
	TAC	Perchloroethlylene	1.65E-05	1.65E-05	3.96E-04	1.45E-05
	TAC	Toluene	3.33E-04	3.33E-04	8.00E-03	2.92E-04
	TAC	Trichloroethane	3.30E-06	3.30E-06	7.92E-05	2.89E-06
	TAC	Trichloroethylene	9.90E-06	9.90E-06	2.38E-04	8.67E-06
	TAC	Xylene	2.20E-03	2.20E-03	5.28E-02	1.93E-03
Boiler	Crtieria Air Pollutant	NOx	0.13	0.11	2.75	0.37
	Crtieria Air Pollutant	CO	2.17	1.86	44.60	6.02
	Crtieria Air Pollutant	VOC/ROG	0.05	0.04	0.94	0.13
	Crtieria Air Pollutant	PM10	0.06	0.05	1.29	0.17
	Crtieria Air Pollutant	SOx	0.00	0.00	0.10	0.01
	GHG	CO2e	968	830	19908	2688
	TAC	Acetaldehyde	3.56E-05	3.05E-05	7.32E-04	9.88E-05
	TAC	Acrolein	2.23E-05	1.92E-05	4.60E-04	6.21E-05
	TAC	Arsenic	1.65E-06	1.42E-06	3.40E-05	4.59E-06
	TAC	Benzene	6.61E-05	5.67E-05	1.36E-03	1.84E-04
	TAC	Berylium	4.96E-08	4.25E-08	1.02E-06	1.38E-07
	TAC	Cadmium	9.11E-06	7.81E-06	1.87E-04	2.53E-05
	TAC	Copper	7.03E-06	6.02E-06	1.45E-04	1.95E-05
	TAC	Ethylbenzene	7.85E-05	6.73E-05	1.62E-03	2.18E-04
	TAC	Formaldehyde	1.80E-03	1.55E-03	3.71E-02	5.01E-03
	TAC	Hexane	5.21E-05	4.47E-05	1.07E-03	1.45E-04
	TAC	Lead	4.13E-06	3.54E-06	8.50E-05	1.15E-05
	TAC	Manganese	3.15E-06	2.70E-06	6.47E-05	8.74E-06
	TAC	Mercury	2.15E-06	1.84E-06	4.42E-05	5.97E-06
	TAC	Naphthalene	5.04E-06	4.32E-06	1.04E-04	1.40E-05
	TAC	Nickel	1.74E-05	1.49E-05	3.57E-04	4.82E-05
	TAC	PAH (excl. naphthalene)	5.57E-08	4.77E-08	1.15E-06	1.55E-07
	TAC	Propylene	6.05E-03	5.18E-03	1.24E-01	1.68E-02
	TAC	Selenium	9.95E-08	8.53E-08	2.05E-06	2.76E-07
	TAC	Toluene	3.03E-04	2.60E-04	6.23E-03	8.41E-04
	TAC	Vanadium	1.90E-05	1.63E-05	3.90E-04	5.27E-05
	TAC	Xylene	2.25E-04	1.93E-04	4.63E-03	6.25E-04
Tail Gass from AC Vessel	Crtieria Air Pollutant	NOx	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	CO	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	VOC/ROG	2.39E-06	2.39E-06	5.74E-05	8.38E-06
	Crtieria Air Pollutant	PM10	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	SOx	0.00	0.00	0.00	0.00
	GHG	CO2e	1179	1179	28287	4130
Future AMR	Crtieria Air Pollutant	NOx	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	CO	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	VOC/ROG	1.50E-03	1.50E-03	3.59E-02	6.56E-03
	Crtieria Air Pollutant	PM10	0.00	0.00	0.00	0.00
	Crtieria Air Pollutant	SOx	0.00	0.00	0.00	0.00
	GHG	CO2e	0	0	0	0
Emergency Generator	Crtieria Air Pollutant	NOx	15.43	0.00	15.43	1.16
	Crtieria Air Pollutant	CO	15.43	0.00	15.43	1.16
	Crtieria Air Pollutant	VOC/ROG	0.84	0.00	0.84	0.06283
	Crtieria Air Pollutant	PM10	0.18	0.00	0.18	0.01
	Crtieria Air Pollutant	SOx	0.00	0.00	0.00	0.00
	GHG	CO2e	3111	0	3111	233
	TAC	Acetaldehyde	0.061	0.000	0.061	0.005
	TAC	Acrolein	0.010	0.000	0.010	0.001
	TAC	Benzene	0.058	0.000	0.058	0.004
	TAC	1,3-Butadiene	0.017	0.000	0.017	0.001
	TAC	Formaldehyde	0.122	0.000	0.122	0.009
	TAC	PAH	0.005	0.000	0.005	0.000
	TAC	Propylene	0.022	0.000	0.022	0.002
	TAC	Toluene	0.012	0.000	0.012	0.001
	TAC	Xylene	0.001	0.000	0.001	0.000
BDPS BioDryers emissions from Biofilter (Emission point 1)	Crtieria Air Pollutant	VOC		0.11	2.64	0.48
	TAC	*H2S*		0	0	0
	GHG	CO2e				50
	TAC	*NH3*		0.8	19.4	3.5405
BDPS BioDryers emissions from Biofilter (Emission point 2)	Crtieria Air Pollutant	VOC		0.11	2.64	0.48
	TAC	*H2S*		0	0	0
	GHG	CO2e				50
	TAC	*NH3*		0.8	19.4	3.5405
	Crtieria Air Pollutant	NOx		0.198	4.75	0.748

BDPS Pyrolysis 1 emissions from stack (Emission point 3)	Crtieria Air Pollutant	CO	0.088	2.11	0.3335
	Crtieria Air Pollutant	ROG	0.006	0.144	0.024
	Crtieria Air Pollutant	PM10	0.00475	0.114	0.019
	Crtieria Air Pollutant	PM2.5	0.00475	0.114	0.019
	Crtieria Air Pollutant	SOx	0.044	1.06	0.1665
	GHG	CO2e	187	4488	700
BDPS Pyrolysis 2 emissions from stack (Emission point 4)	Crtieria Air Pollutant	NOx	0.198	4.75	0.748
	Crtieria Air Pollutant	CO	0.088	2.11	0.3335
	Crtieria Air Pollutant	SOx	0.044	1.06	0.1665
	Crtieria Air Pollutant	ROG	0.006	0.144	0.024
	Crtieria Air Pollutant	PM10	0.00475	0.114	0.019
	Crtieria Air Pollutant	PM2.5	0.00475	0.114	0.019
	GHG	CO2e	187	4488	700
BDPS Pyrolysis 3 emissions from stack (Emission point 5)	Crtieria Air Pollutant	NOx	0.198	4.75	0.748
	Crtieria Air Pollutant	ROG	0.006	0.144	0.024
	Crtieria Air Pollutant	PM10	0.00475	0.114	0.019
	Crtieria Air Pollutant	PM2.5	0.00475	0.114	0.019
	Crtieria Air Pollutant	CO	0.088	2.11	0.3335
	Crtieria Air Pollutant	SOx	0.044	1.06	0.1665
	GHG	CO2e	187	4488	700
BDPS Pyrolysis 4 emissions from stack (Emission point 6)	Crtieria Air Pollutant	NOx	0.198	4.75	0.748
	Crtieria Air Pollutant	CO	0.088	2.11	0.3335
	Crtieria Air Pollutant	SOx	0.044	1.06	0.1665
	Crtieria Air Pollutant	ROG	0.006	0.144	0.024
	Crtieria Air Pollutant	PM10	0.00475	0.114	0.019
	Crtieria Air Pollutant	PM2.5	0.00475	0.114	0.019
	GHG	CO2e	187	4488	700
BDPS Pyrolysis 5 emissions from stack (Emission point 7)	Crtieria Air Pollutant	NOx	0.198	4.75	0.748
	Crtieria Air Pollutant	CO	0.088	2.11	0.3335
	Crtieria Air Pollutant	SOx	0.044	1.06	0.1665
	Crtieria Air Pollutant	ROG	0.006	0.144	0.024
	Crtieria Air Pollutant	PM10	0.00475	0.114	0.019
	Crtieria Air Pollutant	PM2.5	0.00475	0.114	0.019
	GHG	CO2e	187	4488	700

Notes:

Entries in red are data added from Bioforcetech Emission Data for CEQA XB9_CEQA_Data_Phase2.pdf.

BDPS Pyrolysis emissions: Anaergia reported combined PM2.5 and PM10 emission rates. These were evenly split (50-50) to derive conservative PM2.5 mass emission rate estimates

Mobile Emission: On-Road

Truck Type	Existing Condition	Project Max	Net Increase	Total One-way	One-way Trip	Total VMT	Total Work Days	Number of Vehicl	Fleet Type	Fuel	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D*	PM2.5_D*	CO2	CH4	N2O	CO2e	
											lb	lb	lb	lb	lb	lb	lb	lb	lb	MT	
Workforce—one way (per day)	21	25	4	1,460	15	21,900	365	4	Worker	Gasoline	17	282	1	1	6	2	111,836	1	18	53	1
Trucks Bringing High Strength Waste (per day)	0	20	20	7,300	50	365,000	365	20	HHDT	Diesel	94	2,392	22	21	92	29	1,436,710	4	226	682	1
Chemical Deliveries (per	0	5	5	260	50	13,000	365	1	HHDT	Diesel	5	99	1	1	3	1	53,804	0	8	26	1
Trucks Hauling Biosolids to Landfill (per day)	**1.5**	**0**	**-1.5**	**548**	**100**	**54,750**	**365**	**1**	**HHDT**	**Diesel**	**6**	**261**	**3**	**3**	**14**	**4**	**197,197**	**0**	**31**	**94**	-1
Trucks Hauling Biochar (per week)	0	1	1	52	100	5,200	365	1	HHDT	Diesel	2	1	0	0	0	0	3,459	0	0	2	1
Trucks Hauling Ammonia Sulfate Fertilizer (per week)	0	3	3	156	100	15,600	365	1	HHDT	Diesel	2	2	0	0	1	0	10,376	0	0	5	1
										Total	114	2515	21	20	88	28				674	
										Avg Daily lbs/day	0.3	6.9	0.1	0.1	0.2	0.1					
										Annual tons/yr	0.0	0.6	0.0	0.0	0.0	0.0			MT/yr	316	

Notes:

*Particulate Matter from vehicle break wear and tire wear only.

**GWP used for quantifying COe Emissions are values from IPCC 4th Assessment Report in Sheet GWP Assumpiton.

Operational days per year 365

Weeks per year 52

The bold font entries indicate an emission reduction.

On-Road Emission rates

Fleet Type	Fuel Type	VMT-Based Emission Rate (g/mi)									Trip-Based Emission Rate (g/trip)									Idle/Diurnal-Based Emission Rate (g/vehicle/day)								
		ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O
HHDT	Diesel	0.0156	1.7419	0.0266	0.0255	0.1148	0.0367	1,558	0.0007	0.2454	0.0000	2.9550	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	5.0796	58.5861	0.0292	0.0279	0.0000	0.0000	11,377	0.2359	1.7924
MHDT	Diesel	0.0204	0.9384	0.0094	0.0090	0.0576	0.0190	1,129	0.0009	0.1779	0.0000	1.6365	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.2126	11.4261	0.0166	0.0159	0.0000	0.0000	2,199	0.0099	0.3464
Worker Fleet	Gasoline	0.0131	0.0662	0.0014	0.0013	0.0165	0.0050	301	0.0032	0.0059	0.8056	0.2968	0.0022	0.0021	0.0000	0.0000	77	0.0781	0.0344	1.8413	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000

Notes

Emission type -specific emission rates are provided in worksheet EMFAC EF.

Project Input - Operational

Mobile Sources

Truck Type	Existing Conditions	Project	Fleet Vehicle Type	Fleet Fuel	One-way Trip Length (mi)
Workforce—one way (per day)	21	22–25	LDA, LDT1, LDT2	gasoline	15
Trucks Bringing High Strength Waste (p	0	10–20	HHDT	100% diesel	50
Chemical Deliveries (per week)	0	5	HHDT	100% diesel	50
Trucks Hauling Biosolids to Landfill (per	1.5	0	HHDT	100% diesel	100
Trucks Hauling Biochar (per week)	0	1	HHDT	100% diesel	100
Trucks Hauling Ammonia Sulfate Fertili	0	2–3	HHDT	100% diesel	100

Stationary Sources

Source of Emission	Type of release	Hours/Days	Days/Year	Annual Fuel Use	Fuel Units (e.g., therms, BTU, gallons)	Stack Height (ft)	Stack Diameter (in)	Exhaust Exit Stack Temperature (F)	Stack exit velocity (ft/s) or Exhaust Flow Rate (cfm)	Stack Exit Type (e.g., flapper cap, rain cap, horizontal outlet. Default: Uncovered)	Stack Height (m)	Stack Diameter (K)	Exhaust Exit Stack Temperature (m)	Stack exit velocity (m3/s)
Flare Stack	Stack	24/7	365, 20%	**175472**	***MMBTU***	***31.74***	***40***	***2500***	***4030 dscfm***	***Uncovered***	9.674225	1644	1.016	1.902
Activated Carbon Tail Gas	stack	24/7	complementary to F	**N/A**	***N/A***	***15***	***6***	***75***	***200 scfm***	***Uncovered***	4.572	297	0.1524	0.094
Boiler NG use	stack	24/7	3 winter month max	**46843**	***MMBTU***	***30***	***14***	***400***	***1145 dscfm***	***Uncovered***	9.144	478	0.3556	0.540
Future AMR	stack	24/7	365	**N/NA**	***N/A***	***30***	***30***	***70-90***	***3000 scfm***	***Uncovered***	9.144		0.762	1.416
Diesel Generator	stack	-	50 hr/yr	**939**	***MMBTU***	***7***	***5***	***365***	***1000 ft/s***	***Uncovered***	2.1336	458	0.127	28.300
Emission point 3 Pyrolysis	stack	24/7	365	**843.26**	**dry tons/year**	**28**	**8**	**150**	257 cfm	**Uncovered**	8.5344	339	0.2032	0.121
Emission point 4 Pyrolysis	stack	24/7	365	**843.26**	**dry tons/year**	**28**	**8**	**150**	257 cfm	**Uncovered**	8.5344	339	0.2032	0.121
Emission point 5 Pyrolysis	stack	24/7	365	**843.26**	**dry tons/year**	**28**	**8**	**150**	257 cfm	**Uncovered**	8.5344	339	0.2032	0.121
Emission point 6 Pyrolysis	stack	24/7	365	**843.26**	**dry tons/year**	**28**	**8**	**150**	257 cfm	**Uncovered**	8.5344	339	0.2032	0.121
Emission point 7 Pyrolysis	stack	24/7	365	**843.26**	**dry tons/year**	**28**	**8**	**150**	257 cfm	**Uncovered**	8.5344	339	0.2032	0.121
Emission point 1 Bofilter	area	24/7	365						22000 cfm		ground			10.383
Emission point 2 Bofilter	area	24/7	365						22000 cfm		ground			10.383

cfm to m3/ 0.000472

Emission Factors based on VMT, Trip, and Idle/Diurnal

Summed columns in EMFAC: AQ = M + X + Q + AB,AC,U,V + AE + AI + AM + AS,AV,AW + O + Z + S + AG + AK + AO + AR,AU,N + Y + R + AF + AJ + AN

Vehicle Category	Fuel	VMT-based (g/mile)									Trip-based (g/trip)									Idle/diurnal-based (g/vehicle/day)								
		ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O	ROG	NOx	PM10_Ex	PM2.5_Ex	PM10_D	PM2.5_D	CO2	CH4	N2O
HHDT	Diesel	0.015636328	1.742	0.027	0.025	0.115	0.037	1558	7E-04	0.245	0	2.955	0	0	0	0	0	0	0	5.08	58.59	0.029	0.028	0	0	11377	0.236	1.792
MHDT	Diesel	0.02044585	0.938	0.009	0.009	0.058	0.019	1129	9E-04	0.178	0	1.636	0	0	0	0	0	0	0	0.213	11.43	0.017	0.016	0	0	2199	0.01	0.346
LDA	Gasoline	0.006653083	0.033	0.001	0.001	0.015	0.005	260.5	0.002	0.004	0.59	0.232	0.002	0.002	0	0	65.84	0.062	0.031	1.37	0	0	0	0	0	0	0	0
LDA	Diesel	0.022596553	0.156	0.013	0.013	0.016	0.005	230.1	0.001	0.036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDA	Electricity	0	0	0	0	0.012	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDA	Plug-in Hybrid	0.001307977	0.003	5E-04	5E-04	0.012	0.003	128.8	4E-04	5E-04	0.259	0.116	0.002	0.002	0	0	62.38	0.042	0.02	0.457	0	0	0	0	0	0	0	0
LDT1	Gasoline	0.018838254	0.091	0.002	0.001	0.017	0.005	312.4	0.004	0.007	1.017	0.336	0.003	0.002	0	0	81.52	0.09	0.036	2.367	0	0	0	0	0	0	0	0
LDT1	Diesel	0.258171859	1.307	0.206	0.197	0.018	0.006	400	0.012	0.063	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT1	Electricity	0	0	0	0	0.012	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT1	Plug-in Hybrid	0.001180162	0.003	3E-04	3E-04	0.012	0.003	116.4	4E-04	5E-04	0.219	0.117	0.001	0.001	0	0	66.02	0.042	0.02	0.271	0	0	0	0	0	0	0	0
LDT2	Gasoline	0.008227355	0.05	0.001	0.001	0.017	0.005	318.3	0.002	0.005	0.597	0.283	0.002	0.002	0	0	80.9	0.071	0.034	1.261	0	0	0	0	0	0	0	0
LDT2	Diesel	0.012882612	0.037	0.005	0.004	0.017	0.005	296.9	6E-04	0.047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT2	Electricity	0	0	0	0	0.012	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT2	Plug-in Hybrid	0.001235721	0.003	4E-04	4E-04	0.012	0.003	121.8	4E-04	5E-04	0.224	0.117	0.002	0.001	0	0	72.14	0.042	0.02	0.294	0	0	0	0	0	0	0	0
Worker Fleet	Gasoline	0.013139237	0.066	0.001	0.001	0.016	0.005	300.9	0.003	0.006	0.806	0.297	0.002	0.002	0	0	77.44	0.078	0.034	1.841	0	0	0	0	0	0	0	0
Worker Fleet	EMFAC default mix	0.137955721	0.705	0.107	0.103	0.017	0.005	344.7	0.007	0.052	0.806	0.297	0.002	0.002	0	0	77.44	0.078	0.034	1.841	0	0	0	0	0	0	0	0

Notes:
Assume Worker Fleet = 25/50/25 percent mix of light duty autos, light duty truck class 1, and light duty truck class 2

EMFAC Emission Types Used to Estimate Onroad Emission Rates

Pollutant group	VMT-based (g/mile)	Trip-based (g/trip)	Idle/Diurnal-based
TOG, ROG	RUNEX	STREX, HOTSOAK,	IDLEX, DIURN
Gases	RUNEX	STREX	IDLEX
PM - Exhaust	RUNEX	STREX	IDLEX
PM - Dust	PMTW, PMBW		

Acronyms:

RUNEX	Running exhaust	g/mile
PMBW	PM brakewear	g/mile
PMTW	PM tirewear	g/mile
STREX	Start exhaust	g/trip
HOTSOAK	Hot Soak evaporative	g/trip
RUNLOSS	Running Loss evaporative	g/trip
IDLEX	Idle exhaust	g/vehicle/day
DIURN	Diurnal Loss evaporative	g/vehicle/day

EMFAC 2021 (On-Road) Emission Query Result

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Air District
Region: Bay Area AQMD
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	NOx_RUNEX	NOx_IDLEX	NOx_STREX	NOx_TOTEX	PM2.5_RUNEX	PM2.5_IDLEX	PM2.5_STREX	PM2.5_TOTEX	PM2.5_PMTW	PM2.5_PMBW	PM2.5_TOTAL
Bay Area	2027	HHDT	Aggregat	Aggregat	Gasoline	15.916	1649.3	1649.3	0	318.44	0	0.007	0	4E-05	0.0071	3E-06	0	2E-07	3E-06	9E-06	6E-05	7E-05
Bay Area	2027	HHDT	Aggregat	Aggregat	Diesel	38307	4E+06	4E+06	0	563080	0	8.3435	2.4739	1.8341	12.651	0.1219	0.0012	0	0.1231	0.0422	0.1334	0.2987
Bay Area	2027	HHDT	Aggregat	Aggregat	Electricity	711.6	75498	0	75498	9377.6	139180	0	0	0	0	0	0	0	0	0.0007	0.0013	0.002
Bay Area	2027	HHDT	Aggregat	Aggregat	Natural G	3624.5	234581	234581	0	32827	0	0.2212	0.05	0	0.2711	0.0004	0.0001	0	0.0005	0.0023	0.0128	0.0157
Bay Area	2027	LDA	Aggregat	Aggregat	Gasoline	2E+06	8E+07	8E+07	0	1E+07	0	2.9196	0	2.5974	5.517	0.0941	0	0.02	0.1141	0.1758	0.2252	0.515
Bay Area	2027	LDA	Aggregat	Aggregat	Diesel	6597.4	177295	177295	0	27686	0	0.0305	0	0	0.0305	0.0025	0	0	0.0025	0.0004	0.0005	0.0034
Bay Area	2027	LDA	Aggregat	Aggregat	Electricity	208558	9E+06	0	9E+06	1E+06	3E+06	0	0	0	0	0	0	0	0	0.0198	0.0152	0.035
Bay Area	2027	LDA	Aggregat	Aggregat	Plug-in H	76509	3E+06	2E+06	2E+06	316366	519336	0.0108	0	0.0406	0.0514	0.0018	0	0.0006	0.0024	0.0071	0.0049	0.0144
Bay Area	2027	LDT1	Aggregat	Aggregat	Gasoline	202254	6E+06	6E+06	0	896513	0	0.651	0	0.3323	0.9833	0.0104	0	0.0023	0.0127	0.0143	0.0224	0.0494
Bay Area	2027	LDT1	Aggregat	Aggregat	Diesel	34.54	410.66	410.66	0	96.272	0	0.0006	0	0	0.0006	9E-05	0	0	9E-05	9E-07	2E-06	9E-05
Bay Area	2027	LDT1	Aggregat	Aggregat	Electricity	1024.8	43368	0	43368	4957	16744	0	0	0	0	0	0	0	0	1E-04	7E-05	0.0002
Bay Area	2027	LDT1	Aggregat	Aggregat	Plug-in H	657.82	29709	12525	17184	2720.1	5190.2	9E-05	0	0.0003	0.0004	1E-05	0	4E-06	1E-05	7E-05	5E-05	0.0001
Bay Area	2027	LDT2	Aggregat	Aggregat	Gasoline	1E+06	4E+07	4E+07	0	5E+06	0	2.2828	0	1.6795	3.9623	0.0511	0	0.0107	0.0618	0.0922	0.1392	0.2932
Bay Area	2027	LDT2	Aggregat	Aggregat	Diesel	4608.7	167519	167519	0	21655	0	0.0068	0	0	0.0068	0.0008	0	0	0.0008	0.0004	0.0006	0.0017
Bay Area	2027	LDT2	Aggregat	Aggregat	Electricity	12843	421078	0	421078	64694	162571	0	0	0	0	0	0	0	0	0.0009	0.0007	0.0016
Bay Area	2027	LDT2	Aggregat	Aggregat	Plug-in H	13373	571302	252133	319169	55298	96398	0.0018	0	0.0071	0.0089	0.0002	0	9E-05	0.0003	0.0013	0.0009	0.0025
Bay Area	2027	MHDT	Aggregat	Aggregat	Gasoline	6299.2	331335	331335	0	126035	0	0.1086	0.0006	0.0555	0.1646	0.0005	0	7E-05	0.0005	0.0011	0.0058	0.0074
Bay Area	2027	MHDT	Aggregat	Aggregat	Diesel	48915	2E+06	2E+06	0	583477	0	2.0568	0.6161	1.0525	3.7254	0.0197	0.0009	0	0.0206	0.0066	0.035	0.0621
Bay Area	2027	MHDT	Aggregat	Aggregat	Electricity	1238.9	64890	0	64890	15852	70892	0	0	0	0	0	0	0	0	0.0002	0.0006	0.0008
Bay Area	2027	MHDT	Aggregat	Aggregat	Natural G	566.01	25524	25524	0	5349.1	0	0.0031	0.004	0	0.0071	4E-05	1E-05	0	5E-05	8E-05	0.0005	0.0006

PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_TOTEX	PM10_PMTW	PM10_PMBW	PM10_TOTAL	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	CH4_TOTEX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	N2O_TOTEX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_TOTEX
3E-06	0	2E-07	3E-06	4E-05	0.0002	0.0002	3.9599	0	0.0181	3.978	0.0002	0	4E-08	0.0002	0.0003	0	1E-06	0.0003	0.001	0	2E-07	0.001
0.1274	0.0012	0	0.1287	0.1687	0.3812	0.6785	7461.9	480.4	0	7942.3	0.0035	0.01	0	0.0134	1.1756	0.0757	0	1.2513	0.0749	0.2145	0	0.2894
0	0	0	0	0.0029	0.0036	0.0065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0005	0.0001	0	0.0006	0.0093	0.0367	0.0465	348.3	41.983	0	390.29	0.4811	0.1333	0	0.6144	0.071	0.0086	0	0.0796	0.01	0.002	0	0.012
0.1023	0	0.0217	0.1241	0.703	0.6435	1.4705	22888	0	738.18	23626	0.1598	0	0.6959	0.8557	0.3584	0	0.347	0.7054	0.5847	0	3.124	3.7087
0.0026	0	0	0.0026	0.0016	0.0015	0.0056	44.972	0	0	44.972	0.0002	0	0	0.0002	0.0071	0	0	0.0071	0.0044	0	0	0.0044
0	0	0	0	0.0793	0.0435	0.1227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0019	0	0.0007	0.0026	0.0284	0.0139	0.0449	457.36	0	21.754	479.12	0.0014	0	0.0147	0.0162	0.0019	0	0.0071	0.009	0.0046	0	0.0611	0.0658
0.0113	0	0.0025	0.0138	0.0572	0.064	0.135	2233.1	0	80.561	2313.7	0.0312	0	0.0888	0.12	0.0524	0	0.0357	0.0881	0.1346	0	0.445	0.5797
9E-05	0	0	9E-05	4E-06	5E-06	0.0001	0.1811	0	0	0.1811	5E-06	0	0	5E-06	3E-05	0	0	3E-05	0.0001	0	0	0.0001
0	0	0	0	0.0004	0.0002	0.0006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1E-05	0	4E-06	2E-05	0.0003	0.0001	0.0004	3.8108	0	0.1979	4.0088	1E-05	0	0.0001	0.0001	2E-05	0	6E-05	8E-05	4E-05	0	0.0005	0.0006
0.0556	0	0.0116	0.0672	0.3689	0.3976	0.8337	14678	0	480.43	15159	0.1016	0	0.4205	0.5221	0.2257	0	0.2033	0.429	0.3794	0	1.8948	2.2742
0.0009	0	0	0.0009	0.0015	0.0016	0.0039	54.831	0	0	54.831	0.0001	0	0	0.0001	0.0086	0	0	0.0086	0.0024	0	0	0.0024
0	0	0	0	0.0037	0.002	0.0057	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0003	0	1E-04	0.0004	0.005	0.0025	0.0079	76.707	0	4.3973	81.104	0.0002	0	0.0026	0.0028	0.0003	0	0.0012	0.0015	0.0008	0	0.0107	0.0115
0.0005	0	7E-05	0.0006	0.0044	0.0164	0.0214	630.16	3.6217	6.1398	639.92	0.0034	0.0018	0.0061	0.0114	0.006	5E-05	0.0045	0.0105	0.0165	0.0071	0.0327	0.0563
0.0206	0.0009	0	0.0215	0.0263	0.0999	0.1477	2475.4	118.54	0	2593.9	0.0021	0.0005	0	0.0026	0.39	0.0187	0	0.4087	0.0448	0.0115	0	0.0563
0	0	0	0	0.0009	0.0016	0.0025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4E-05	1E-05	0	5E-05	0.0003	0.0013	0.0017	27.382	3.2937	0	30.675	0.0214	0.0102	0	0.0316	0.0056	0.0007	0	0.0063	0.0003	0.0001	0	0.0005

ROG_DIURN	ROG_HOTSOAK	ROG_RUNLOSS	ROG_TOTAL	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_TOTEX	TOG_DIURN	TOG_HOTSOAK	TOG_RUNLOSS	TOG_TOTAL	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNEX	SOx_IDLEX	SOx_STREX	SOx_TOTEX	NH3_RUNEX	Fuel Consumption
6E-05	2E-05	0.0001	0.0012	0.0015	0	3E-07	0.0015	6E-05	2E-05	0.0001	0.0017	0.0573	0	0.0016	0.0589	4E-05	0	2E-07	4E-05	8E-05	0.4195
0	0	0	0.2894	0.0853	0.2442	0	0.3294	0	0	0	0.3294	0.346	3.1325	0	3.4784	0.0707	0.0045	0	0.0752	1.034	709.48
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0.012	0.4945	0.1362	0	0.6307	0	0	0	0.6307	3.0544	0.2977	0	3.3521	0	0	0	0	0.2149	45.111
3.3181	0.9419	2.554	10.523	0.8531	0	3.4204	4.2735	3.3181	0.9419	2.554	11.088	54.322	0	31.894	86.216	0.2263	0	0.0073	0.2336	3.2757	2491.3
0	0	0	0.0044	0.005	0	0	0.005	0	0	0	0.005	0.0618	0	0	0.0618	0.0004	0	0	0.0004	0.0006	4.0174
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0385	0.0144	0.0146	0.1333	0.0068	0	0.0669	0.0737	0.0385	0.0144	0.0146	0.1413	0.7003	0	0.4747	1.175	0.0045	0	0.0002	0.0047	0.0665	50.522
0.5277	0.1458	0.4147	1.6679	0.1965	0	0.4872	0.6837	0.5277	0.1458	0.4147	1.7719	7.6824	0	4.4071	12.09	0.0221	0	0.0008	0.0229	0.2651	243.98
0	0	0	0.0001	0.0001	0	0	0.0001	0	0	0	0.0001	0.0008	0	0	0.0008	2E-06	0	0	2E-06	1E-06	0.0162
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0002	7E-05	6E-05	0.0009	6E-05	0	0.0006	0.0006	0.0002	7E-05	6E-05	0.001	0.0058	0	0.0041	0.0099	4E-05	0	2E-06	4E-05	0.0006	0.4227
1.6019	0.4335	1.2179	5.5275	0.5536	0	2.0746	2.6282	1.6019	0.4335	1.2179	5.8815	31.731	0	18.873	50.603	0.1451	0	0.0047	0.1499	1.7734	1598.5
0	0	0	0.0024	0.0027	0	0	0.0027	0	0	0	0.0027	0.0248	0	0	0.0248	0.0005	0	0	0.0005	0.0006	4.898
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0043	0.0016	0.0014	0.0188	0.0011	0	0.0117	0.0128	0.0043	0.0016	0.0014	0.0201	0.1173	0	0.0831	0.2003	0.0008	0	4E-05	0.0008	0.0117	8.5523
0.0164	0.004	0.0329	0.1096	0.0241	0.0103	0.0358	0.0702	0.0164	0.004	0.0329	0.1235	0.3327	0.1055	0.703	1.1412	0.0062	4E-05	6E-05	0.0063	0.0164	67.479
0	0	0	0.0563	0.051	0.0131	0	0.0641	0	0	0	0.0641	0.1945	0.4039	0	0.5984	0.0234	0.0011	0	0.0246	0.4689	231.71
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0.0005	0.0218	0.0104	0	0.0322	0	0	0	0.0322	0.0846	0.0235	0	0.108	0	0	0	0	0.0298	3.5456

Fugitive Dust Emissions

On-road Vehicles

Emission Factors

Trip Purpose	Vehicle Category	Load Capacity (tons)	GVWR (ton)	Avg. Weight (tons)	PM10 EF (lbs/VMT)					
					Unpaved Roads, BMP	Unpaved Roads, BMP, Corrected	Public Roads	Public Roads, Corrected	Industrial Roads	Industrial Roads, Corrected
Workforce—one way	LDA, LDT1, LDT2		2	2	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2
Trucks Bringing High Strength Waste	HHDT	20	17	7	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2
Chemical Deliveries	HHDT	20	17	7	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2
Trucks Hauling Biosolids to Landfill	HHDT	20	17	7	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2
Trucks Hauling Biochar	HHDT	20	17	7	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2
Trucks Hauling Ammonia Sulfate Fertilizer	HHDT	20	17	7	0.000	0.000	4.1E-4	4.0E-4	3.3E-2	3.2E-2

Notes:
Emission factor for travel on paved roads is estimated using Eq 3 and 3a on worksheet "Fugitive Dust EF".
Emission factor for travel on unpaved roads is estimated using Eq 2 and 2a on worksheet "Fugitive Dust EF".
Average weight of worker commute vehicle is calcualted as the average of vehicle category max weight (LDA: 3,190 lbs, LDT1: 3,750 lbs, LDT2: 5,750 lbs, EMFAC2011)
For calculating EF from paved road, the average weight of all vehicles traveling the road is assumped to be 2.4 tons
Assuming BMP watering unpaved road twice daily.

Dust Emissions

Trip Purpose	Total Oneway Trip	One-way Trip Length (mi)	Total VMT	Industrial Road	Public Road	Industrial Road PM10	Industrial Road PM2.5	Public Road PM10	Public Road PM2.5	Total Emissions PM10	Total Emissions PM2.5	Avg Daily PM10	Avg Daily PM2.5	Annual PM10	Annual PM2.5
				(mi)	(mi)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs/day)	(lbs/day)	(tpy)	(tpy)
Workforce—one way	1,460	15	21,900	8,760	13,140	280	70	5	1	286	71	0.78	0.20	0.14	0.04
Trucks Bringing High Strength Waste	7,300	50	365,000	43,800	321,200	1,402	350	127	32	1,529	382	4.19	1.05	0.76	0.19
Chemical Deliveries	260	50	13,000	1,560	11,440	50	12	5	1	54	14	0.15	0.04	0.03	0.01
Trucks Hauling Biosolids to Landfill	**548**	**100**	**54,750**	**3,285**	**51,465**	**105**	**26**	**20**	**5**	**126**	**31**	**0.34**	**0.09**	**0.06**	**0.02**
Trucks Hauling Biochar	52	100	5,200	312	4,888	10	2	2	0	12	3	0.03	0.01	0.01	0.00
Trucks Hauling Ammonia Sulfate Fertilizer	156	100	15,600	936	14,664	30	7	6	1	36	9	0.10	0.02	0.02	0.00
									Project	1,791	448	4.91	1.23	1.02	0.26

Notes:

Unpaved road	0	miles	
Trackout distance	6	miles	EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road.

Industrial Roads are defined as the roads within trackout distance from the project site, to be conservative.
Miles on Industrial Roads is estimated as # of one-way trips multiplied by trackout distance.

Mitigation reduction	61%	Reduction by BMP watering unpaved road twice daily.

The bold font entry indicate a net reduction of emission due to project.

PM2.5 to PM10 Mass Emission Ratio used in Calculation

Fugitive Dust Source	PM2.5/PM10	Reference
Paved road	0.25	EPA. AP-42. Analysis of the Fine Fraction of Particulate Matter in Fugitive Dust, Final
Unpaved road	0.15	EPA. AP-42. Analysis of the Fine Fraction of Particulate Matter in Fugitive Dust, Final

Fugitive Dust Emission Factors

1 Aggregate Storage Piles [1]

Emissions result from several distinct processes within the stockpiling cycle: 1. loading of materials through batch or drop operations, 2. equipment

E(lb/ton)=(k)(0.0032)(U/5)^1.3/(M/2)^1.4

Where:	PM10	Unit	Source
k= Particle Size Multiplier:	0.35	dimensionless	AP-42 Chapter 13.2.4-3, PM10 emissions
U= mean wind speed	6.7	mph	CalEEMod for Contra Costa County
M= moisture content (%)	3.4	constant	AP-42 Chapter 13.2.4-3, Table 13.2.4-1, exposed ground
PM10 Emission factor	**0.49**	**lbs/ton**	

2 Travel on Unpaved Roads (Heavy Duty Trucks)[2]

E(lbs/VMT)=(k)(s/12)^a (W/3)^b

Where:	PM10	Unit	Source
k= Particle Size Multiplier:	1.5	dimensionless	AP-42 Chapter 13.2.2-2, PM10 emissions; industrial roads
s= Silt Content (%)	6.4	constant	AP-42 Chapter 13.2.2-1, municipal solid waste landfills disposal routes
a=	0.9	constant	AP-42 Chapter 13.2.2-2, industrial roads
b=	0.45	constant	AP-42 Chapter 13.2.2-2, industrial roads
W=Vehicle Weight	2.0	tons	Vehicle Weight
PM10 Emission factor	**0.710**	**lbs/VMT**	For above weight truck

2a Correction for Natural Precipitation[3]

E(ext)=E[(365-P)/365]

Where:		Unit	Source
P=#days/yr with >=0.01 inch precipitation during	60	days	AP-42 Chapter 13.2.2, Figure 13.2.2-1
Corrected EF PM10	**0.593**	lbs/VMT	

3 Travel on Paved Roads

E(lbs/VMT)=(k)(sL)^.91 (W)^1.02

Where:	PM10	Unit	Source
k= Particle Size Multiplier:	0.0022	lb/VMT	AP-42 Chapter 13.2.1, Table 13.2.1-1, PM10 emissions
sL= road surface silt loading	0.06	g/m^2	AP-42 Chapter 13.2.1, Table 13.2.1-2 Baseline with ADT category 5,000-10,000
	7.4	g/m^2	AP-42 Chapter 13.2.1, Table 13.2.1-3, Municipal solid waste landfill
W= average weight of the vehicles traveling the road	2.4	tons	Statewide average vehicle weight in CA
PM10 Emission factor	0.00041	lbs/VMT	Public roads
	0.03337	lbs/VMT	Industrial roads

3a Correction for Natural Precipitation[5]

E(ext)=E[(1-P/4N)]

Where:		Unit	Source
Eext = annual or other long-term average emission factor		dimensionless	
P=#days/yr with >=0.01 inch precipitation during	60	days	AP-42 Chapter 13.2.1, Figure 13.2.1-2
N=# days in averaging period	365	days	
Corrected EF PM10	**0.00040**	lbs/VMT	Public roads
	0.03200	lbs/VMT	Industrial roads

4 Bulldozing[6]

Equation is applied to graders and dozers to estimate fugitive dust from grading activity
Emissions factors for P10 from bulldozing are scaled from those of PM15

E(lbs/hr)=1.0*s^1.5/M^1.4 AP-42 Table 11.9-1, PM15,overburden
Where
E(PM10)=E(PM15)*F

				PM15	
Where:				Unit	Source
M=	material moisture content		7.9	%	AP-42 Table 11.9-3,Overburden
s=	material silt content		6.9	%	AP-42 Table 11.9-3,Overburden
F=	scaling factor		0.75	constant	AP-42 Table 11.9-1, PM10
		PM15	0.63	lbs/hr	
		PM10	**0.47**	lbs/hr	

Sources

[1] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.4 Aggregate Handling And Storage Piles, Eqn. 1
[2] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.2 Unpaved Roads, Eqn. 1
[3] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.2 Unpaved Roads, Eqn. 2
[4] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road, Eqn. 1
[5] EPA. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Road, Eqn. 2
[6] EPA. AP 42, Fifth Edition, Volume I Chapter 11: Mineral Products Industry, 11.9 Mineral Products Industry, Table 11.9-1 Bulldozing

AD and BDPS Facilities Emission Calculations

Data and Parameters	
HHV Biogas (Btu/scf)	607
HHV Natural Gas (Btu/scf)	1,020
HHV CO2 (Btu/scf)	0
Molar Volume Digester gas (scf/lb-mc	386
Molar Volume Natural Gas(scf/lb-mol	379
Molar Volume CO2 (scf/lb-mol)	385
Molar Volume Air (scf/lb-mol)	380
MW NOx (lb/lb-mol)	46
MW CO (lb/lb-mol)	28
MW VOC (lb/lb-mol)	16.04
MW SO2 (lb/lb-mol)	64
MW NH3 (lb/lb-mol)	17
MW H2S (lb/lb-mol)	32.02
MW CO2 (lb/lb-mol)	44.01
MW CH4 (lb/lb-mol)	16.04
Fd Biogas (dcuft/MMBTU)	9174.07
Fd Natural Gas (dcuft/MMBTU)	8710
Average Brake-Specific Fuel Consumptio	0.007

(see Fd Factor Calculation Spreadsheet)

Flare

Operation: Average operation is either all the time when Biogas Upgrading is down or 80% when Biogas Upgrading is operating. Assumption is flare active 20% of time, BUG 80% of time.

Flowrate

Parameter	Value
Flow Rate of Digestate (scfm)	550
Heat (mmBtu/hr)	20
Flow Rate of fuel burned (mmscf/hr)	0.033
Maximum operations (hr/day)	24
Maximum operations (hr/month)	720
Maximum operations (hr/yr)	8760
Average operations (hr/day)	24
Average operations (% of max)	20%
Average operations (hr/yr)	8760
Assumed CH4 content in Digester Ga	60%

Natural gas pilot ignition system can be continuous or intermittent. Emissions are negligible

Criteria Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
NOx	Vendor Data Sheet	0.024	14.57	0.5	0.48	11.54	0.42
CO	Vendor Data Sheet	0.0100	6.07	0.20	0.20	4.81	0.18
VOC	Vendor Data Sheet	0.00004	2.35E-02	7.77E-04	7.77E-04	1.86E-02	6.80E-04
PM10	SDAPCD FLARES, DIGESTER		12.00	0.40	0.40	9.50	0.35
SOx	SDAPCD FLARES, DIGESTER		2.00	0.07	0.07	1.58	0.06

VOC Emission Factor Calculation

VOC (ppmv)	Emission Factor (lb/MMBTU)
0.1	0.00004

GHG Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
CO2	AP-42: TABLE 1.4-2. EMISSI			3886	3886	93266	3404
CH4			0.00	0.00	0.00	0.00	0.00
N2O	AP-42: TABLE 1.4-2. EMISSI	0.00063	0.38	0.01	0.01	0.30	0.01
H2S			0.00	0.00	0.00	0.00	0.00
NH3			0.0048	0.00	0.00	0.00	0.00
CO2e Total				3886	3886	93266	3404

CO2 Emission Factor Calculation

(lb/mmscf) = (MW lb/lbmol) / (scf/lb-mol)x 10^6 scf/mmscf

Source	Emission Factor (lb/mmscf)	Flow (scfm)
CO2 From Combustion	120000	330
CO2 in Digester Gas	114400	220

TAC Emission Calculations

Compound	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
Acetone	7.00E-04	2.31E-05	2.31E-05	5.54E-04	2.02E-05
Benzene	2.77E-02	9.14E-04	9.14E-04	2.19E-02	8.01E-04
Chlorobenzene	2.00E-04	6.60E-06	6.60E-06	1.58E-04	5.78E-06
Ethylbenzene	1.00E-03	3.30E-05	3.30E-05	7.92E-04	2.89E-05
Ethly Dichloride	1.40E-03	4.62E-05	4.62E-05	1.11E-03	4.05E-05
Formaldehyde	1.35E-01	4.46E-03	4.46E-03	1.07E-01	3.90E-03
Hexane	1.01E-02	3.33E-04	3.33E-04	8.00E-03	2.92E-04
Hydrogen Chloride	6.46E-01	2.13E-02	2.13E-02	5.11E-01	1.87E-02
Methylene Chloride	1.00E-04	3.30E-06	3.30E-06	7.92E-05	2.89E-06
Methyl Ethyl Ketone	1.00E-04	3.30E-06	3.30E-06	7.92E-05	2.89E-06
Perchloroethlylene	5.00E-04	1.65E-05	1.65E-05	3.96E-04	1.45E-05
Toluene	1.01E-02	3.33E-04	3.33E-04	8.00E-03	2.92E-04
Trichloroethane	1.00E-04	3.30E-06	3.30E-06	7.92E-05	2.89E-06
Trichloroethylene	3.00E-04	9.90E-06	9.90E-06	2.38E-04	8.67E-06
Xylene	6.67E-02	2.20E-03	2.20E-03	5.28E-02	1.93E-03

Reference:

SDAPCD-Flare-Digester-Gas-Fired-Enclosed-F02-template-post-revision2

Boiler

Operation: Maximum conditions are for colder months, Average condition assumes average temperature for Brentwood, CA.

Flowrate

Parameter	Value
Average Heat Demand (MMBTU/h)	6.000
Max Heat Demand (MMBTU/h)	7.000
Boiler Sizing heat transfer (%)	0.830
Average Flow Rate (scfm)	118
Average Flow Rate (mmscf/hr)	0.0071
Max Flow Rate (scfm)	138
Max Flow Rate (mmscf/hr)	0.008
Max Rating (mmBtu/hr)	6
Maximum operations (hr/day)	24
Maximum operations (hr/month)	720
Maximum operations (hr/yr)	2160
Average operations (hr/day)	24
Average operations (hr/month)	720
Average operations (hr/yr)	6480

Criteria Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
NOx	BAAQMD Rule 9-7	0.02	16.15	0.13	0.11	2.75	0.37
CO	BAAQMD Rule 9-7	0.26	262.20	2.17	1.86	44.60	6.02
VOC	SDAPCD Boiler-Natural-		5.50	0.05	0.04	0.94	0.13
PM10	SDAPCD Boiler-Natural-		7.60	0.06	0.05	1.29	0.17
SOx	SDAPCD Boiler-Natural-		0.60	0.00	0.00	0.10	0.01

NOx Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

Nox Limit	Emission Factor (lb/MMBTU)
15	0.02

CO Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

CO Limit	Emission Factor (lb/MMBTU)
400	0.26

GHG Emission Calculations

TAC Emission Calculations

Compound	CAS	Emission Factor (lb/MMBTU)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
Acetaldehyde	75-07-0	4.22E-06	4.30E-03	3.56E-05	3.05E-05	0.00	0.00
Acrolein	107-02-8	2.65E-06	2.70E-03	2.23E-05	1.92E-05	0.00	0.00
Arsenic	7440-38-2	1.96E-07	2.00E-04	1.65E-06	1.42E-06	0.00	0.00
Benzene	71-43-2	7.84E-06	8.00E-03	6.61E-05	5.67E-05	0.00	0.00
Berylium	7440-41-7	5.88E-09	6.00E-06	4.96E-08	4.25E-08	0.00	0.00
Cadmium	7440-43-9	1.08E-06	1.10E-03	9.11E-06	7.81E-06	0.00	0.00
Copper	7440-50-8	8.33E-07	8.50E-04	7.03E-06	6.02E-06	0.00	0.00
Ethylbenzene	100-41-4	9.31E-06	9.50E-03	7.85E-05	6.73E-05	0.00	0.00
Formaldehyde	50-00-0	2.14E-04	2.18E-01	1.80E-03	1.55E-03	0.04	0.01
Hexane	110-54-3	6.18E-06	6.30E-03	5.21E-05	4.47E-05	0.00	0.00
Lead	7439-92-1	4.90E-07	5.00E-04	4.13E-06	3.54E-06	0.00	0.00
Manganese	7439-96-5	3.73E-07	3.80E-04	3.15E-06	2.70E-06	0.00	0.00
Mercury	7439-97-6	2.55E-07	2.60E-04	2.15E-06	1.84E-06	0.00	0.00
Naphthalene	91-20-3	5.98E-07	6.10E-04	5.04E-06	4.32E-06	0.00	0.00
Nickel	7440-02-0	2.06E-06	2.10E-03	1.74E-05	1.49E-05	0.00	0.00
PAH (excl. naphthalene)	1150/1151	6.60E-09	6.73E-06	5.57E-08	4.77E-08	0.00	0.00

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
CO2	Based on AP-42 (table 1.4-2)	114.750	117045	968	830	19908	2688
CH4	Mandatory Reporting Rule, 40	0.0005	0.00	0.00	0.00	0.00	0.00
N2O	andatory Reporting Rule, 40	0.00005	0.00	0.00	0.00	0.00	0.00
H2S		0.000	0.00	0.00	0.00	0.00	0.00
NH3		0.000	0.00	0.00	0.00	0.00	0.00
CO2e Total				968	830	19908	2688

Propylene	115-07-1	7.17E-04	7.31E-01	6.05E-03	5.18E-03	0.12	0.02
Selenium	7782-49-2	1.18E-08	1.20E-05	9.95E-08	8.53E-08	0.00	0.00
Toluene	108-88-3	3.59E-05	3.66E-02	3.03E-04	2.60E-04	0.01	0.00
Vanadium	7440-62-2	2.25E-06	2.30E-03	1.90E-05	1.63E-05	0.00	0.00
Xylene	1330-20-7	2.67E-05	2.72E-02	2.25E-04	1.93E-04	0.00	0.00

Reference:

Emission factors from BAAQMD TAC Emission Factor Guidelines – Appendix A Default TAC Emission Factors for Specific Source Categories, TABLE A-1.1 BOILERS - NATURAL GAS FUEL, NO ADD-ON EMISSION CONTROL

Tail Gas

Operation: In use when flare is not in use. Assumes flare active 20% of the time and BUG active 80% of time.

Flowrate

Parameter	Value
Flow Rate (scfm)	199.2
Flow Rate (mmscf/hr)	0.011952
Maximum operations (hr/day)	24
Maximum operations (hr/month)	720
Maximum operations (hr/yr)	8760
Average operations (hr/day)	24
Average operations (hr/month)	720
Average operations (hr/yr)	8760
Average operations (% of max)	80%
Tail Gas Composition (vol% CO2)	99%
Tail Gas Composition (vol% CH4)	<1%
Tail Gas Composition (vol% H2S)	0.0011%
Tail Gas Composition (vol% VOC)	0.0003%
Activated Carbon removal (% H2S)	98%
Activated Carbon removal (% VOC)	98%

Criteria Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
NOx	Vendor		0.00	0.00	0.00	0.00	0.00
CO	Vendor		0.00	0.00	0.00	0.00	0.00
VOC	Vendor		0.0003	0.00	0.00	0.00	0.00
PM10	Vendor		0.00	0.00	0.00	0.00	0.00
SOx	Vendor		0.00	0.00	0.00	0.00	0.00

VOC Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

VOC (ppm)	Emission Factor (lb/mmscf)
0.006	0.0003

GHG Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
CO2	Vendor		112844	1078.97	1078.97	25895.30	3780.71
CH4	Vendor		417	3.99	3.99	95.68	13.97
N2O	Vendor		0.00	0.00	0.00	0.00	0.00
H2S	Vendor		0.02	0.00	0.00	0.00	0.00
NH3	Vendor		0.00	0.00	0.00	0.00	0.00
CO2e Total				1179	1179	28287	4130

CO2 Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

Co2 (ppm)	Emission Factor (lb/mmscf)
986400	112844

H2S Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

H2S (ppm)	Emission Factor (lb/mmscf)
0.22	0.02

CH4 Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

CH4 (ppm)	Emission Factor (lb/mmscf)
10000	417

AMR Removal (Future)

Operation: Continuous operation 24/7. Exhaust gas is out of Activated Carbon Vessel.

Flowrate	
Parameter	**Value**
Flow Rate (scfm)	3000
Flow Rate (mmscf/hr)	0.18
Maximum operations (hr/day)	24
Maximum operations (hr/month)	720
Maximum operations (hr/yr)	8760
Average operations (hr/day)	24
Average operations (hr/month)	720
Average operations (hr/yr)	8760
Acid Scrubber Removal (% Ammonia)	99.5%
Activated Carbon removal (% H2S)	98%
Activated Carbon removal (% VOC)	98%
Stripped gas Ammonia Conc. (lb/h)	44

Criteria Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
NOx			0.00	0.00	0.00	0.00	0.00
CO			0.00	0.00	0.00	0.00	0.00
VOC	Vendor		0.01	0.00	0.00	0.04	0.01
PM10			0.00	0.00	0.00	0.00	0.00
SOx			0.00	0.00	0.00	0.00	0.00

VOC Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

VOC (ppmv)	Emission Factor (lb/mmscf)
0.2	0.01

GHG Emission Calculations

Pollutant	Reference	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
CO2			0.00	0.00	0.00	0.00	0.00
CH4			0.00	0.00	0.00	0.00	0.00
N2O			0.00	0.00	0.00	0.00	0.00
H2S	Vendor		0.02	0.00	0.00	0.07	0.01
NH3	Vendor		1.23	0.22	0.22	5.34	0.97
CO2e Total				0	0	0	0

H2S Emission Factor Calculation

(lb/mmscf) = (ppm / 10^6) x (MW lb/lbmol) x 10^6 scf/mmscf

H2S (ppm)	Emission Factor (lb/mmscf)
0.2	0.02

NH3 Emission Factor Calculation

Emission Factor (lb/mmscf)
1.23

Emergency Generator

Operation: Assumes testing occurs 50 hr/yr.

Flowrate	
Parameter	**Value**
Generator Power Output (kW)	2000
Generator Power Output (hp)	2682
Average operations (hr/day)	1
Average operations (hr/yr)	150

Criteria Emission Calculations

Pollutant	Reference	Emission Factor (g/kW-hr)	Emission Factor (g/h)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
NOx	EPA Tier 4	3.500	7000	15.43	0.00	15.43	1.16
CO	EPA Tier 4	3.50000	7000	15.43	0.00	15.43	1.16
VOC	EPA Tier 4	0.19000	380	0.84	0.00	0.84	0.06
PM10	EPA Tier 4	0.04000	80	0.18	0.00	0.18	0.013
SOx		0.000	0	0.00	0.00	0.00	0.00

GHG Emission Calculations

Pollutant	Reference	Emission Factor (lb/hp-hr)	Emission Factor (lb/hr)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
CO2	Based on AP-42 (table 3.3-1)	1.160	3111	3111	0	3111	233
CH4		0.0000	0.00	0.00	0.00	0.00	0
N2O		0.00000	0.00	0.00	0.00	0.00	0
H2S		0.000	0.00	0.00	0.00	0.00	0
NH3		0.000	0.00	0.00	0.00	0.00	0

TAC Emission Calculations

Compound	CAS	TOG g/hp-hr	CARB fraction of TOG	Emission Factor (lb/hp-hr)	Maximum Hourly (lb/hr)	Average Hourly (lb/hr)	Average Daily (lb/d)	Average Annual (ton/yr)
Acetaldehyde	75-07-0		0.0735	2.27E-05	6.08E-02	0.00E+00	6.08E-02	4.56E-03
Acrolein	107-02-8		0.012	3.70E-06	9.93E-03	0.00E+00	9.93E-03	7.45E-04
Benzene	71-43-2		0.0705	2.18E-05	5.84E-02	0.00E+00	5.84E-02	4.38E-03
1,3-Butadiene			0.02	6.17E-06	1.66E-02	0.00E+00	1.66E-02	1.24E-03
Formaldehyde	50-00-0		0.1471	4.54E-05	1.22E-01	0.00E+00	1.22E-01	9.13E-03
PAH	1150/1151	0.14	0.0064	1.98E-06	5.30E-03	0.00E+00	5.30E-03	3.97E-04
Propylene	115-07-1		0.026	8.02E-06	2.15E-02	0.00E+00	2.15E-02	1.61E-03
Toluene	108-88-3		0.0147	4.54E-06	1.22E-02	0.00E+00	1.22E-02	9.13E-04
Xylene	1330-20-7		0.0018	5.56E-07	1.49E-03	0.00E+00	1.49E-03	1.12E-04

Notes: Emission factors are adjusted for Tier 4 Diesel Engine Generator using CARB fraction of TOG, based on the following OG sources speciation.
When no exact match was found, the highest weight fractions from similar processes were selected.

Acetaldehyde		818	Farm equipment - diesel - light & heavy - (ems=actual weight)
Acrolein		1403	INDUSTRIAL PROCESSES - AVERAGE (EPA 9003)
Benzene		1403	INDUSTRIAL PROCESSES - AVERAGE (EPA 9003)
1,3-Butadiene		586	Composite jet exhaust JP-5 (EPA 1097-1099)
Formaldehyde		818	Farm equipment - diesel - light & heavy - (ems=actual weight)
PAH	(surrog. Na	586	Composite jet exhaust JP-5 (EPA 1097-1099)
Propylene		818	Farm equipment - diesel - light & heavy - (ems=actual weight)
Toluene		818	Farm equipment - diesel - light & heavy - (ems=actual weight)
Xylene		1403	INDUSTRIAL PROCESSES - AVERAGE (EPA 9003)

Fd Calculation

Variable	Unit	Value
K	Btu/MMBtu	1,000,000
K_{hd}	(scf/lb)%	3.64
H	%	10.2%
K_c	(scf/lb)%	1.53
C	%	46.7%
K_s	(scf/lb)%	0.57
S	%	0.0%
K_n	(scf/lb)%	0.14
N	%	0.0%
K_o	(scf/lb)%	0.46
O	%	43.2%

	Gas Composition	GCV	%/Mass	Density lb/scf	lb/scf	BTU/cf
CH4 %	65.0%	23811	40.54%	0.0415	0.03	1010.00
CO2 %	34.5%	0	58.95%	0.1137	0.04	0.00
H2S %	0.0%	7479	0.00%	0.0888	0.00	672.00
O2 %	0.1%	0	0.11%	0.0827	0.00	0.00
N2%	0.4%	0	0.39%	0.0724	0.00	0.00
	100.0%	9653.4	density of biogas		0.067	656.500
		BTU/Lb	density of air		0.075	
			s.g.		0.888	

Fd	dcuft/MMBtu	9,174.07

$$F_d = \frac{K\left(K_{hd}\%H + K_c\%C + K_s\%S + K_n\%N - K_o\%O\right)}{GCV} \qquad \text{Eq. 19-13}$$

1- K = Conversion factor, 10^{-5}(kJ/J)/(%) [10^6 Btu/million Btu]. Consider using highlighted.

2- K_{hd} = (22.7 scm/kg)/% [(3.64 scf/lb)/%].
%H = Concentration of hydrogen from an ultimate analysis of fuel, weight percent.
For now, this can be considered negligible. However, when we have biogas, then we need to determine % using fuel sample grab analysis for ultimate compliance purposes.

3- K_c = (9.57 scm/kg)/% [(1.53 scf/lb)/%].
%C = Concentration of carbon from an ultimate analysis of fuel, weight percent.
We can consider the % of CO2 as per the gas analyzer reading.

4- K_s = (3.54 scm/kg)/% [(0.57 scf/lb)/%].
%S = Sulfur content of as-fired fuel lot, dry basis, weight percent.
This can be determined by the percentage measured and recorded by the analyzer for the H2S. the % of H2S can be taken form the equation as per Neil's email below.

5- K_n = (0.86 scm/kg)/% [(0.14 scf/lb)/%].
%N = Concentration of nitrogen from an ultimate analysis of fuel, weight percent.
For now, this can be considered negligible. However, when we have biogas, then we need to determine % using fuel sample grab analysis for ultimate compliance purposes.

6- K_o = (2.85 scm/kg)/% [(0.46 scf/lb)/%].
%O = Concentration of oxygen from an ultimate analysis of fuel, weight percent.
This can be determined by the percentage measured and recorded by the gas analyzer.

7- GCV = Gross calorific value of the fuel consistent with the ultimate analysis, kJ/kg (Btu/lb).
This can be computed using the sum of standard Gross Heating values (BTU/LB) for all constituents. Mainly, CH4 (23,811 BTU/LB), CO2 (0 BTU/LB) & H2S (7479 BTU/LB) multiplied by the % of each of those gases.
For example, (60% CH4 X 23,811 + 39.9% CO2 X 0 + 0.1% H2s X 7,479) = xxxxxxxxx

GHG OFFSET CALCULATIONS

GHG Offset

WARM Inputs

WARM Model

GHG Offset Calculations

Material	GHG Emissions per Ton of Material Produced (MTCO2E)	GHG Emissions per Ton of Material Source Reduced (MTCO2E)	GHG Emissions per Ton of Material Recycled (MTCO2E)	GHG Emissions per Ton of Material Landfilled (MTCO2E)	GHG Emissions per Ton of Material Combusted (MTCO2E)	GHG Emissions per Ton of Material Composted (MTCO2E)	GHG Emission per Ton of Material Anaerobically Digested (MTCO2E)
Food Waste	3.66	-3.66	NA	0.34	-0.08	-0.12	0.00
Yard Trimmings	NA	NA	NA	-0.28	-0.10	-0.05	-0.08
Branches	NA	NA	NA	-0.73	-0.10	-0.05	-0.20
Mixed Plastics	1.94	-1.94	-0.93	0.02	1.61	NA	NA
Mixed Metals	6.22	-6.22	-4.39	0.02	-1.03	NA	NA
Mixed Organics	NA	NA	NA	0.05	-0.09	-0.09	-0.03

Material	Baseline Generation of Material (Tons)	Baseline Management (Ton)	Baseline GHG Emissions (MTCO2E)	Alternative Management (Ton)	Alternative GHG Emissions (MTCO2E)	GHG Offset (MTCO2E)
Food Waste	26520.00	Landfilled	8886.77	Anaerobically Digested	113.38	-8773.40
Yard Trimmings	3276.00	Landfilled	-929.79	Composting	-175.46	754.33
Branches	1508.00	Landfilled	-1096.93	Composting	-80.77	1016.16
Mixed Plastics	6474.00	Landfilled	131.13	Recycling	-5991.84	-6122.97
Mixed Metals	962.00	Landfilled	19.48	Recycling	-4224.30	-4243.78
Mixed Organics	6916.00	Landfilled	374.50	Anaerobically Digested	-229.72	-604.21
Total	**45656**		**7,385**		**-10,589**	**-17,974**

WARM Inputs

Inbound	TPY		
MSW	35100		
HSW	53040		
WAS	279225	Total	367365
Outbound	**TPY**		
Metals	962		
Mixed Plastics	6474		
Organics (no dilution)	6916		
Wood (Compostable)	1508		
Green Waste to Compost	3276		
HSW (organics)	26520		
HSW non-organics	26520		
WAS	279225		
Large items	2600		
Trash	13364	Total	367365
Total Check	0		

WARM	TPY
Food Waste	26520
Yard Trimmings	3276
Branches	1508
Mixed Plastics	6474
Mixed Metals	962
Mixed Organics	6916

Color Legend for Cells	
	User inputs
	Calculated or locked cells
NA	Data cannot be entered
Color Legend For Tabs	
	User inputs
	GHG and Energy Impacts
	Economic Impacts

WARM User's Guide

Calculating Greenhouse Gas Emissions, Energy Impacts, and Economic Impacts with the Excel© Version of the Waste Reduction Model

WHAT IS THE WASTE REDUCTION MODEL?
The Waste Reduction Model (WARM) was created by the U.S. Environmental Protection Agency (EPA) to help solid waste planners and organizations estimate greenhouse gas (GHG) emission reductions and economic impacts from several different waste management practices.

WARM calculates GHG emissions, energy, and economic impacts for baseline and alternative waste management practices, including source reduction, recycling, combustion, composting, and landfilling. The model calculates emissions in metric tons of carbon dioxide equivalent (MTCO2E), energy in millions of BTUs (MMBTU), wage impacts, tax impacts, and labor hours supported across a wide range of material types commonly found in municipal solid waste (MSW).

The user can construct various scenarios by simply entering data on the amount of waste handled by material type and by management practice. WARM then automatically applies material-specific emission and economic factors for each management practice to calculate the GHG emissions, energy savings, and economic impacts of each scenario. Several key inputs, such as landfill gas recovery practices and transportation distances to MSW facilities, can be modified by the user.

The GHG emission factors used in WARM are based on a life cycle perspective. The model documentation describes this methodology in detail.

WHO SHOULD USE WARM?
WARM was developed for solid waste managers (from state and local governments and other organizations) who want to calculate the GHG emissions and economic impacts associated with different waste management options. Emissions and economic estimates provided by WARM are intended to support voluntary GHG measurement and reporting initiatives and broader solid waste planning. These initiatives include waste management components of state and local climate change action plans, and other waste management projects for which an understanding of GHG emissions and economic impacts is desired.

USING THE EXCEL© VERSION OF WARM
Before using WARM, you first need to gather data on your baseline waste management practices and an alternative scenario. In order to effectively use the tool, users should know how many tons of waste you manage (or would manage) for a given time period under each scenario by material type and by management practice. The model allows you to customize your results based on project-specific landfill gas recovery practices, anaerobic digestion practices, and transportation distances. Note that you may use default values if you are unsure of landfill gas recovery practices, anaerobic digestion practices and/or transportation distances.

Instructions:
-- Click on the "Analysis Inputs" tab at the bottom center of the screen to open the input sheet. Follow the instructions for Steps 1 and 2. This involves filling in the tables describing your baseline and proposed alternative waste management scenarios. Please enter data in short tons (1 short ton = 2,000 lbs.). The "mixed" material types are defined as the following:

Mixed Metals: Aluminum Cans 35%, Steel Cans 65%
Mixed Plastics: HDPE 40%, PET 60%
Mixed Electronics: Desktop CPUs 11%, Portable Electronic Devices 5%, Flat-Panel Displays 23%, CRT Displays 44%, Electronic Peripherals 2%, Hard-Copy Devices 15%
Mixed Paper (general): Corrugated Containers 48%, Magazines/Third-class Mail 8%, Newspaper 24%, Office Paper 20%
Mixed Paper (primarily residential): Corrugated Containers 53%, Magazines/Third-class Mail 10%, Newspaper 23%, Office Paper 14%
Mixed Paper (primarily from offices): Corrugated Containers 5%, Magazines/Third-class Mail 36%, Newspaper 21%, Office Paper 38%
Mixed Recyclables: Aluminum Cans 1.3%, Steel Cans 2.4%, Glass 6.0%, HDPE 1.2%, PET 1.8%, Corrugated Containers 56.8%, Magazines/Third-class Mail 7.3%, Newspaper 9.6%, Office Paper 7.8%, Phonebooks 0.1%, Textbooks 0.6%, Dimensional Lumber 5.2%
Food Waste: Beef 9%, Poultry 11%, Grains 13%, Fruits and Vegetables 49%, Dairy Products 18%
Food Waste (meat only): Beef 46%, Poultry 54%
Food Waste (non-meat): Grains 16%, Fruits and Vegetables 61%, Dairy Products 22%
Mixed Organics: Food Waste 53%, Yard Trimmings 47%
Mixed MSW: Grass 5.2%, Leaves 6.8%, Branches 5.0%, Wood 5.1%, Food Waste 18.1%, Pastic 10.1%, Metal 2.3%, Glass 4.4%, Magazines/Third-class mail 2.7%, Newsprint 4.5%, Corrugated Cardboard 14.2%, Office Paper 2.4%, Other Paper 10.0%, Other (e.g., Textiles, Rubber/Leather) 8.8%

For more information on these mixed material weightings, please reference the model documentation chapters specific to each material type.

-- Fill in the data requested in Steps 3–9. WARM will use the answers to these questions to customize GHG estimates to reflect your waste management situation and location. For example, you are asked for data on transportation distances and on your landfill gas recovery systems, if applicable. If the requested data are not available, WARM will use the national average defaults.

-- Step 10 allows you to customize your report, with your name, organization, and project period.

-- Once you have completed Steps 1–9 on the "Analysis Inputs" sheet, WARM will calculate the GHG emissions, energy, and economic impacts attributable to the baseline and alternative waste management scenarios you have specified. Emissions, energy, and economic impact calculations are presented on separate output sheets, as described below. From the "Analysis Inputs" sheet, click on a tab at the bottom of the screen for the results sheet you want to view first.

-- The "Summary Report" sheet provides a concise report of GHG emissions, energy, or economic results from the baseline and alternative waste management scenarios, as well as an estimate of net emissions, energy, wages, taxes, or labor hours.

-- The "Analysis Results" sheet shows GHG emissions, energy, or economic results for each scenario in the units selected. You can compare the total impact of the baseline and alternative scenarios, or, if you want more detail, you can scroll down to view GHG emissions, energy, or economic results by material type and management practice. The bottom table shows the relative emissions, energy, wages, taxes, or labor hours difference between the alternative and baseline scenarios for each material type and management pathway.

ASSISTANCE
If you need additional assistance with using WARM, please email orcrWARMquestions@epa.gov.

Version 15

Waste Reduction Model (WARM) -- Inputs

Use this worksheet to describe the baseline and alternative waste management scenarios that you want to compare. The blue shaded areas indicate where you need to enter information.
Please enter data in short tons (1 short ton = 2,000 lbs.)

1. Describe the baseline generation and management for the waste materials listed below.
If the material is not generated in your community or you do not want to analyze it, leave it blank or enter 0. Make sure that the total quantity generated equals the total quantity managed.

2. Describe the alternative management scenario for the waste materials generated in the baseline.
Any decrease in generation should be entered in the Source Reduction column.
Any increase in generation should be entered in the Source Reduction column as a negative value.
Make sure that the total quantity generated equals the total quantity managed.

Material Type	Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Tons Generated	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested
Paper	Corrugated Containers				NA	NA	0.00					NA	NA
	Magazines/Third-class Mail				NA	NA	0.00					NA	NA
	Newspaper				NA	NA	0.00					NA	NA
	Office Paper				NA	NA	0.00					NA	NA
	Phonebooks				NA	NA	0.00					NA	NA
	Textbooks				NA	NA	0.00					NA	NA
	Mixed Paper (general)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily residential)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily from offices)				NA	NA	0.00					NA	NA
Food Waste	Food Waste	NA	26,520.00				26,520.00		NA				26,520.00
	Food Waste (non-meat)	NA					0.00		NA				
	Food Waste (meat only)	NA					0.00		NA				
	Beef	NA					0.00		NA				
	Poultry	NA					0.00		NA				
	Grains	NA					0.00		NA				
	Bread	NA					0.00		NA				
	Fruits and Vegetables	NA					0.00		NA				
	Dairy Products	NA					0.00		NA				
Yard Trimmings	Yard Trimmings	NA	3,276.00				3,276.00	NA	NA			3,276.00	
	Grass	NA					0.00	NA	NA				
	Leaves	NA					0.00	NA	NA				
	Branches	NA	1,508.00				1,508.00	NA	NA			1,508.00	
Mixed Plastics	HDPE				NA	NA	0.00					NA	NA
	LDPE	NA			NA	NA	0.00		NA			NA	NA
	PET				NA	NA	0.00					NA	NA
	LLDPE	NA			NA	NA	0.00		NA			NA	NA
	PP				NA	NA	0.00					NA	NA
	PS	NA			NA	NA	0.00		NA			NA	NA
	PVC	NA			NA	NA	0.00		NA			NA	NA
	Mixed Plastics		6,474.00		NA	NA	6,474.00		6,474.00			NA	NA
Bioplastics	PLA	NA				NA	0.00		NA				NA
Electronics	Desktop CPUs				NA	NA	0.00					NA	NA
	Portable Electronic Devices				NA	NA	0.00					NA	NA
	Flat-Panel Displays				NA	NA	0.00					NA	NA
	CRT Displays				NA	NA	0.00	NA				NA	NA
	Electronic Peripherals				NA	NA	0.00					NA	NA
	Hard-Copy Devices				NA	NA	0.00					NA	NA
	Mixed Electronics				NA	NA	0.00	NA				NA	NA
Metals	Aluminum Cans				NA	NA	0.00					NA	NA
	Aluminum Ingot				NA	NA	0.00					NA	NA
	Steel Cans				NA	NA	0.00					NA	NA
	Copper Wire				NA	NA	0.00					NA	NA
	Mixed Metals		962.00		NA	NA	962.00		962.00			NA	NA
Glass	Glass				NA	NA	0.00					NA	NA
Construction Materials	Asphalt Concrete			NA	NA	NA	0.00				NA	NA	NA
	Asphalt Shingles				NA	NA	0.00					NA	NA
	Carpet				NA	NA	0.00					NA	NA
	Clay Bricks	NA		NA	NA	NA	0.00		NA		NA	NA	NA
	Concrete			NA	NA	NA	0.00	NA			NA	NA	NA
	Dimensional Lumber				NA	NA	0.00					NA	NA
	Drywall			NA	NA	NA	0.00				NA	NA	NA
	Fiberglass Insulation	NA		NA	NA	NA	0.00		NA		NA	NA	NA
	Fly Ash			NA	NA	NA	0.00	NA			NA	NA	NA
	Medium-density Fiberboard	NA			NA	NA	0.00		NA			NA	NA
	Structural Steel			NA	NA	NA	0.00				NA	NA	NA
	Vinyl Flooring	NA			NA	NA	0.00		NA			NA	NA
	Wood Flooring	NA			NA	NA	0.00		NA			NA	NA
Tires	Tires				NA	NA	0.00					NA	NA
Mixed Materials	Mixed Recyclables				NA	NA	0.00	NA				NA	NA
	Mixed Organics	NA	6,916.00				6,916.00	NA	NA				6,916.00
	Mixed MSW	NA			NA	NA	0.00	NA	NA			NA	NA

Please refer to the User's Guide if you need assistance completing this table.

3. In order to account for the avoided electricity-related emissions in the landfilling and combustion pathways, EPA assigns the appropriate regional "marginal" electricity grid mix emission factor based on your location. Select state for which you are conducting this analysis.

Please select state or select national average:	California
Region Location:	Pacific

4. To estimate the benefits from source reduction, EPA usually assumes that the material that is source reduced would have been manufactured from the current mix of virgin and recycled inputs. However, you may choose to estimate the emission reductions from source reduction under the assumption that the material would have been manufactured from 100% virgin inputs in order to obtain an upper bound estimate of the benefits from source reduction. Select which assumption you want to use in the analysis. Note that for materials for which information on the share of recycled inputs used in production is unavailable or is not a common practice; EPA assumes that the current mix is comprised of 100% virgin inputs. Consequently, the source reduction benefits of both the "Current mix" and "100% virgin" inputs are the same.

- ○ Current Mix
- ● 100% Virgin

5. The emissions from landfilling depends on whether the landfill where your waste is disposed has a landfill gas (LFG) control system. If you do not know whether your landfill has LFG control, select "National Average" to calculate emissions based on the estimated proportions of landfills with LFG control in 2012 and proceed to question 7. If your landfill does not have a LFG system, select "No LFG Recovery" and proceed to question 8. If a LFG system is in place at your landfill, select "LFG Recovery" and click one of the options in 6a to indicate whether LFG is recovered for energy or flared.

- ○ National Average
- ● LFG Recovery
- ○ No LFG Recovery

6a. If your landfill has gas recovery, does it recover the methane for energy or flare it?

- ○ Recover for energy
- ● Flare

6b. For landfills that recover gas, the landfill gas collection efficiency will vary throughout the life of the landfill. Based on a literature review of field measurements and expert discussion, a range of collection efficiencies was estimated for a series of different landfill scenarios. The "typical" landfill is judged to represent the average U.S. landfill, although it must be recognized that every landfill is unique and a typical landfill is an approximation of reality. The worst-case collection scenario represents a landfill that is in compliance with EPA's New Source Performance Standards (NSPS). The aggressive gas collection scenario includes landfills where the operator is aggressive in gas collection relative to a typical landfill. Bioreactor landfills, which are operated to accelerate decomposition, are assumed to collect gas aggressively. The California regulatory collection scenario allows users to estimate and view landfill management results based on California regulatory requirements.

- ○ Typical operation - DEFAULT
- ○ Worst-case collection
- ○ Aggressive gas collection
- ● California regulatory collection

	Landfill gas collection efficiency (%) assumptions
Typical	*Years 0-1: 0%; Years 2-4: 50%; Years 5-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
Worst-case	*Years 0-4: 0%; Years 5-9: 50%; Years 10-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
Aggressive	*Year 0: 0%; Years 0.5-2: 50%; Years 3-14: 75%; Years 15 to 1 year before final cover: 82.5%; Final cover: 90%*
California	*Year 0: 0%; Year 1: 50%; Years 2-7: 80%; Years 8 to 1 year before final cover: 85%; Final cover: 90%*

7. Which of the following moisture conditions and associated bulk MSW decay rate (k) most accurately describes the average conditions at the landfill? The decay rates, also referred to as k values, describe the rate of change per year (yr-1) for the decomposition of organic waste in landfills. A higher average decay rate means that waste decomposes faster in the landfill.

- ● National average - DEFAULT
- ○ Dry (k=0.02)
- ○ Moderate (k = 0.04)
- ○ Wet (k = 0.06)
- ○ Bioreactor (k = 0.12)

	Moisture condition assumptions
Dry (k=0.02)	*Less than 20 inches of precipitation per year*
Moderate (k=0.04)	*Between 20 and 40 inches of precipitation per year*
Wet (k=0.06)	*Greater than 40 inches of precipitation per year*
Bioreactor (k=0.12)	*Water is added until the moisture content reaches 40 percent moisture on a wet weight basis*
National average	*Weighted average based on the share of waste received at each landfill type*

8a. For anaerobic digestion of food waste materials (including beef, poultry, grains, bread, fruits and vegetables, and dairy products), please choose the appropriate type of anaerobic digestion process used. Note that for grass, leaves, branches, yard trimmings and mixed organics, wet digestion is not applicable based on current technology and practices in the United States. Therefore, dry digestion is the only digestion type modeled in WARM for these materials. Only one type of digestion process (wet or dry) can be modeled at a time in WARM.

- ○ Wet Digestion
- ● Dry Digestion

8b. WARM assumes that digestate resulting from anaerobic digestion processes will be applied to land. In many cases, the digestate is cured before land application. When digestate is cured, the digestate is dewatered and any liquids are recovered and returned to the reactor (when using a wet digester). Next, the digestate is aerobically cured in turned windrows, then screened and applied to agricultural fields. Select whether the digestate resulting from your anaerobic digester is cured before land application.

- ● Cured - DEFAULT
- ○ Not cured

9a. Emissions that occur during transport of materials to the management facility are included in this model. You may use default transport distances, indicated in the table below, or provide information on the transport distances for the various MSW management options.

- ● Use Default Distances
- ○ Provide Information

9b. If you have chosen to provide information, please fill in the table below. Distances should be from the curb to the landfill, combustor, or material recovery facility (MRF). *Please note that if you chose to provide information, you must provide distances for both the baseline and the alternative scenarios.

Management Option	Default Distance (Miles)	Distance (Miles)
Landfill	20	
Combustion	20	
Recycling	20	
Composting	20	
Anaerobic Digestion	20	

10. If you wish to personalize your results report, input your name & organization, and also specify the project period corresponding to the data you entered above.

Name	Brentwood Solids Waste Organics Diversion
Organization	City of Brentwood

Project Period	From		to	

Congratulations! You have finished all the inputs.
A summary of your results awaits you on the sheet(s) titled "Summary Report."
For more detailed analyses of results, see the sheet(s) titled "Analysis Results."

Waste Reduction Model (WARM) -- Results

Total GHG Emissions from Baseline MSW Generation and Management ($MTCO_2E$):	7,385.16
Total GHG Emissions from Alternative MSW Generation and Management ($MTCO_2E$):	(10,588.71)
Incremental GHG Emissions ($MTCO_2E$):	(17,973.87)

$MTCO_2E$ = metric tons of carbon dioxide equivalent

Per Ton Estimates of GHG Emissions for Baseline and Alternative Management Scenarios

Material	GHG Emissions per Ton of Material Produced ($MTCO_2E$)	GHG Emissions per Ton of Material Source Reduced ($MTCO_2E$)	GHG Emissions per Ton of Material Recycled ($MTCO_2E$)	GHG Emissions per Ton of Material Landfilled ($MTCO_2E$)	GHG Emissions per Ton of Material Combusted ($MTCO_2E$)	GHG Emissions per Ton of Material Composted ($MTCO_2E$)	GHG Emission per Ton of Material Anaerobically Digested ($MTCO_2E$)
Corrugated Containers	8.09	(8.09)	(3.14)	(0.16)	(0.31)	NA	NA
Magazines/third-class mail	8.86	(8.86)	(3.07)	(0.55)	(0.22)	NA	NA
Newspaper	5.74	(5.74)	(2.71)	(0.97)	(0.36)	NA	NA
Office Paper	8.23	(8.23)	(2.86)	0.65	(0.30)	NA	NA
Phonebooks	6.17	(6.17)	(2.62)	(0.97)	(0.36)	NA	NA
Textbooks	9.32	(9.32)	(3.10)	0.65	(0.30)	NA	NA
Mixed Paper (general)	7.61	(7.61)	(3.55)	(0.22)	(0.32)	NA	NA
Mixed Paper (primarily residential)	7.64	(7.64)	(3.55)	(0.27)	(0.31)	NA	NA
Mixed Paper (primarily from offices)	7.93	(7.93)	(3.58)	(0.15)	(0.29)	NA	NA
Food Waste	3.66	(3.66)	NA	0.34	(0.08)	(0.12)	0.00
Food Waste (non-meat)	0.76	(0.76)	NA	0.34	(0.08)	(0.12)	0.00
Food Waste (meat only)	15.10	(15.10)	NA	0.34	(0.08)	(0.12)	0.00
Beef	30.09	(30.09)	NA	0.34	(0.08)	(0.12)	0.00
Poultry	2.45	(2.45)	NA	0.34	(0.08)	(0.12)	0.00
Grains	0.62	(0.62)	NA	0.34	(0.08)	(0.12)	0.00
Bread	0.66	(0.66)	NA	0.34	(0.08)	(0.12)	0.00
Fruits and Vegetables	0.44	(0.44)	NA	0.34	(0.08)	(0.12)	0.00
Dairy Products	1.75	(1.75)	NA	0.34	(0.08)	(0.12)	0.00
Yard Trimmings	NA	NA	NA	(0.28)	(0.10)	(0.05)	(0.08)
Grass	NA	NA	NA	0.06	(0.10)	(0.05)	0.02
Leaves	NA	NA	NA	(0.60)	(0.10)	(0.05)	(0.13)
Branches	NA	NA	NA	(0.73)	(0.10)	(0.05)	(0.20)
HDPE	1.52	(1.52)	(0.76)	0.02	1.78	NA	NA
LDPE	1.80	(1.80)	NA	0.02	1.79	NA	NA
PET	2.21	(2.21)	(1.04)	0.02	1.50	NA	NA
LLDPE	1.58	(1.58)	NA	0.02	1.78	NA	NA
PP	1.54	(1.54)	(0.79)	0.02	1.78	NA	NA
PS	2.50	(2.50)	NA	0.02	2.10	NA	NA
PVC	1.93	(1.93)	NA	0.02	0.86	NA	NA
Mixed Plastics	1.94	(1.94)	(0.93)	0.02	1.61	NA	NA
PLA	2.45	(2.45)	NA	(1.64)	(0.42)	(0.09)	NA
Desktop CPUs	20.86	(20.86)	(1.49)	0.02	(0.62)	NA	NA
Portable Electronic Devices	29.83	(29.83)	(1.06)	0.02	0.69	NA	NA
Flat-Panel Displays	24.19	(24.19)	(0.99)	0.02	0.06	NA	NA
CRT Displays	NA	NA	(0.57)	0.02	0.49	NA	NA
Electronic Peripherals	10.32	(10.32)	(0.36)	0.02	2.12	NA	NA
Hard-Copy Devices	7.65	(7.65)	(0.56)	0.02	1.24	NA	NA
Mixed Electronics	NA	NA	(0.79)	0.02	0.42	NA	NA
Aluminum Cans	10.99	(10.99)	(9.13)	0.02	0.03	NA	NA
Aluminum Ingot	7.48	(7.48)	(7.20)	0.02	0.03	NA	NA
Steel Cans	3.64	(3.64)	(1.83)	0.02	(1.60)	NA	NA
Copper Wire	6.78	(6.78)	(4.49)	0.02	0.02	NA	NA
Mixed Metals	6.22	(6.22)	(4.39)	0.02	(1.03)	NA	NA
Glass	0.60	(0.60)	(0.28)	0.02	0.02	NA	NA
Asphalt Concrete	0.11	(0.11)	(0.08)	0.02	NA	NA	NA
Asphalt Shingles	0.19	(0.19)	(0.09)	0.02	(0.35)	NA	NA
Carpet	3.68	(3.68)	(2.38)	0.02	1.29	NA	NA
Clay Bricks	0.27	(0.27)	NA	0.02	NA	NA	NA
Concrete	NA	NA	(0.01)	0.02	NA	NA	NA
Dimensional Lumber	2.13	(2.13)	(2.66)	(1.03)	(0.38)	NA	NA
Drywall	0.22	(0.22)	0.03	(0.06)	NA	NA	NA
Fiberglass Insulation	0.48	(0.48)	NA	0.02	NA	NA	NA
Fly Ash	NA	NA	(0.87)	0.02	NA	NA	NA
Medium-density Fiberboard	2.41	(2.41)	NA	(0.89)	(0.38)	NA	NA
Structural Steel	3.42	(3.42)	(1.93)	0.02	NA	NA	NA
Vinyl Flooring	0.58	(0.58)	NA	0.02	(0.11)	NA	NA
Wood Flooring	4.03	(4.03)	NA	(0.86)	(0.47)	NA	NA
Tires	4.46	(4.46)	(0.38)	0.02	0.50	NA	NA
Mixed Recyclables	NA	NA	(2.85)	(0.01)	(0.26)	NA	NA
Mixed Organics	NA	NA	NA	0.05	(0.09)	(0.09)	(0.03)
Mixed MSW	NA	NA	NA	0.12	0.13	NA	NA

GHG Emissions from Baseline Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Baseline Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Baseline Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Baseline Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Baseline Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion (MTCO2E)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	26,520.00	NA	NA	26,520.00	8,886.77	0.00	0.00	0.00	0.00	0.00	0.00	8,886.77
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	3,276.00	NA	NA	3,276.00	(929.79)	0.00	0.00	0.00	0.00	0.00	0.00	(929.79)
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	1,508.00	NA	NA	1,508.00	(1,096.93)	0.00	0.00	0.00	0.00	0.00	0.00	(1,096.93)
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	6,474.00	0.00	0.00	6,474.00	131.13	0.00	0.00	NA	NA	NA	NA	131.13
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	962.00	0.00	0.00	962.00	19.48	0.00	0.00	NA	NA	NA	NA	19.48
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	6,916.00	NA	NA	6,916.00	374.50	0.00	0.00	0.00	0.00	0.00	0.00	374.50
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	45,656.00	0.00	0.00	45,656.00	7,385.16	0.00	0.00	0.00	0.00	0.00	0.00	7,385.16

GHG Emissions from Alternative Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	GHG Emissions from Source Reduction ($MTCO_2E$)	Alternative Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Alternative Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Alternative Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Alternative Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Alternative Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion (MTCO2E)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	26,520.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	26,520.00	113.38	113.38
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	3,276.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	3,276.00	(175.46)	0.00	0.00	(175.46)
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	1,508.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	1,508.00	(80.77)	0.00	0.00	(80.77)
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	6,474.00	0.00	0.00	6,474.00	(5,991.84)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(5,991.84)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	962.00	0.00	0.00	962.00	(4,224.30)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(4,224.30)
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	6,916.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	6,916.00	(229.72)	(229.72)
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	45,656.00	0.00	0.00	7,436.00	(10,216.14)	0.00	0.00	0.00	0.00	4,784.00	(256.23)	33,436.00	(116.34)	(10,588.71)

Incremental GHG Emissions from Alternative Alternative Management of Municipal Solid Wastes

Material	Source Reduction (Tons)	Incremental GHG Emissions from Source Reduction ($MTCO_2E$)	Incremental Recycling (Tons)	Incremental GHG Emissions from Recycling ($MTCO_2E$)	Incremental Landfilling (Tons)	Incremental GHG Emissions from Landfilling ($MTCO_2E$)	Incremental Combustion (Tons)	Incremental GHG Emissions from Combustion ($MTCO_2E$)	Incremental Composting (Tons)	Incremental GHG Emissions from Composting ($MTCO_2E$)	Incremental Anaerobic Digestion (Tons)	Incremental GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total Incremental GHG Emissions ($MTCO_2E$)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	(26,520.00)	(8,886.77)	0.00	0.00	0.00	0.00	26,520.00	113.38	(8,773.40)
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	(3,276.00)	929.79	0.00	0.00	3,276.00	(175.46)	0.00	0.00	754.33
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	(1,508.00)	1,096.93	0.00	0.00	1,508.00	(80.77)	0.00	0.00	1,016.16
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	6,474.00	(5,991.84)	(6,474.00)	(131.13)	0.00	0.00	NA	NA	NA	NA	(6,122.97)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	962.00	(4,224.30)	(962.00)	(19.48)	0.00	0.00	NA	NA	NA	NA	(4,243.78)
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	NA	NA	NA	NA	(6,916.00)	(374.50)	0.00	0.00	0.00	0.00	6,916.00	(229.72)	(604.21)
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	0.00	0.00	7,436.00	(10,216.14)	(45,656.00)	(7,385.16)	0.00	0.00	4,784.00	(256.23)	33,436.00	(116.34)	(17,973.87)

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

GHG Emissions Analysis -- Summary Report

Version 15

GHG Emissions Waste Management Analysis for City of Brentwood
Prepared by: Brentwood Solids Waste Organics Diversion
Project Period for this Analysis: 01/00/00 to 01/00/00

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

GHG Emissions from Baseline Waste Management ($MTCO_2E$): **7,385.16**

	Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$
1	Food Waste	NA	26,520.00	-	-	-	8,886.77
2	Yard Trimmings	NA	3,276.00	-	-	-	(929.79)
3	Branches	NA	1,508.00	-	-	-	(1,096.93)
4	Mixed Plastics	-	6,474.00	-	NA	NA	131.13
5	Mixed Metals	-	962.00	-	NA	NA	19.48
6	Mixed Organics	NA	6,916.00	-	-	-	374.50
7							0
8							0
9							0
10							0
11							0
12							0
13							0
14							0
15							0
16							0
17							0
18							0
19							0
20							0
21							0
22							0
23							0
24							0
25							0
26							0
27							0
28							0
29							0
30							0
31							0
32							0
33							0
34							0
35							0
36							0
37							0
38							0
39							0
40							0
41							0
42							0
43							0
44							0
45							0
46							0
47							0
48							0
49							0
50							0
51							0
52							0
53							0
54							0
55							0
56							0
57							0
58							0
59							0
60							0

GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$): **(10,588.71)**

	Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$	Change (Alt - Base) $MTCO_2E$
1	Food Waste	-	NA	-	-	-	26,520.00	113.38	(8,773.40)
2	Yard Trimmings	NA	NA	-	-	3,276.00	-	(175.46)	754.33
3	Branches	NA	NA	-	-	1,508.00	-	(80.77)	1,016.16
4	Mixed Plastics	-	6,474.00	-	-	NA	NA	(5,991.84)	(6,122.97)
5	Mixed Metals	-	962.00	-	-	NA	NA	(4,224.30)	(4,243.78)
6	Mixed Organics	NA	NA	-	-	-	6,916.00	(229.72)	(604.21)
7								0	0.00
8								0	0.00
9								0	0.00
10								0	0.00
11								0	0.00
12								0	0.00
13								0	0.00
14								0	0.00
15								0	0.00
16								0	0.00
17								0	0.00
18								0	0.00
19								0	0.00
20								0	0.00
21								0	0.00
22								0	0.00
23								0	0.00
24								0	0.00
25								0	0.00
26								0	0.00
27								0	0.00
28								0	0.00
29								0	0.00
30								0	0.00
31								0	0.00
32								0	0.00
33								0	0.00
34								0	0.00
35								0	0.00
36								0	0.00
37								0	0.00
38								0	0.00
39								0	0.00
40								0	0.00
41								0	0.00
42								0	0.00
43								0	0.00
44								0	0.00
45								0	0.00
46								0	0.00
47								0	0.00
48								0	0.00
49								0	0.00
50								0	0.00
51								0	0.00
52								0	0.00
53								0	0.00
54								0	0.00
55								0	0.00
56								0	0.00
57								0	0.00
58								0	0.00
59								0	0.00
60								0	0.00

Total Change in GHG Emissions ($MTCO_2E$): **(17,973.87)**

Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

This is equivalent to…		
Removing annual emissions from	**3,816**	Passenger Vehicles
Conserving	**2,022,491**	Gallons of Gasoline
Conserving	**748,911**	Cylinders of Propane Used for Home Barbeques
	0.00101%	Annual CO_2 emissions from the U.S. transportation sector
	0.00099%	Annual CO_2 emissions from the U.S. electricity sector

a) For explanation of methodology, see the EPA WARM Documentation:

Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)

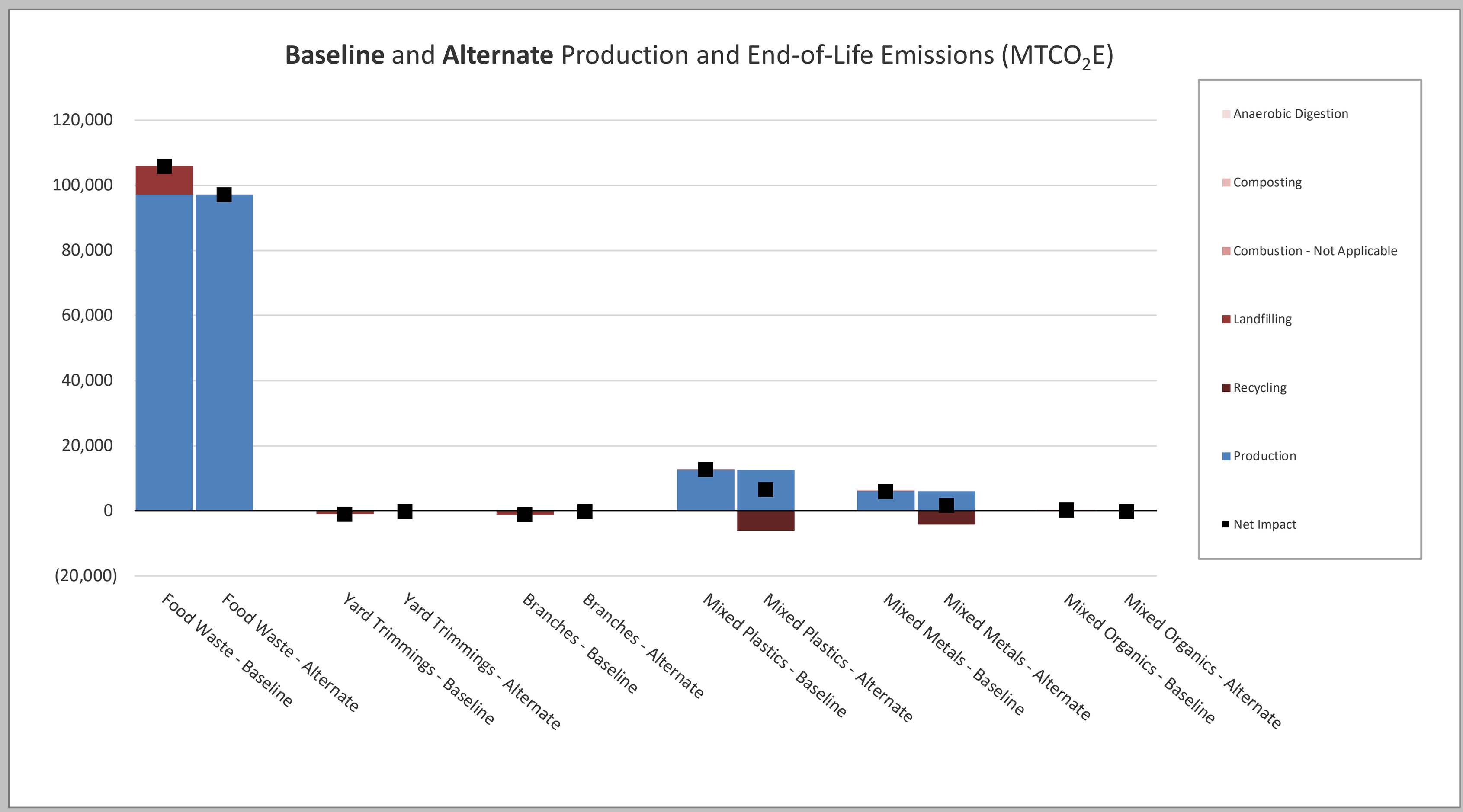
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

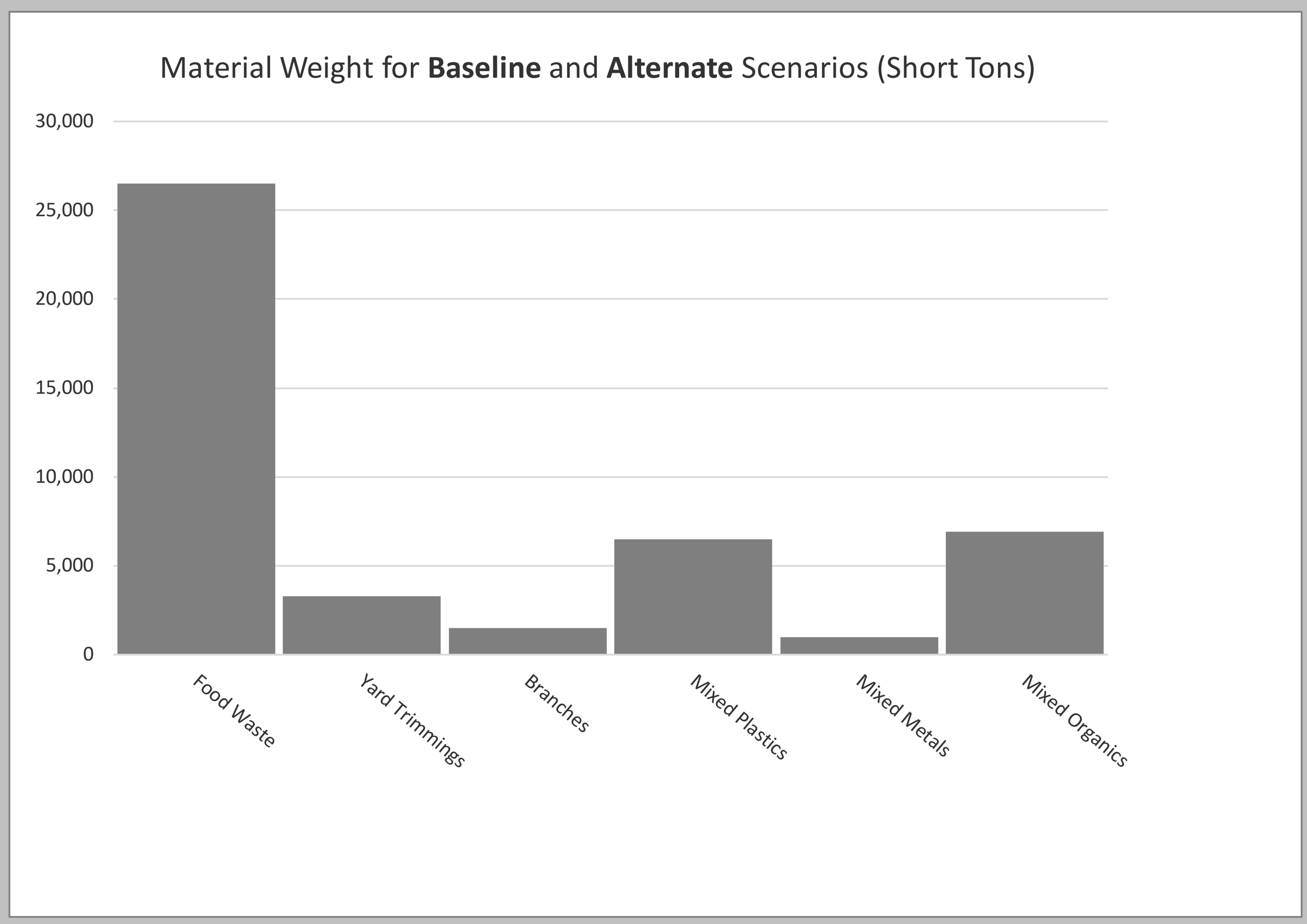
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

c) The GHG emissions results estimated in WARM indicate the full life-cycle benefits waste management alternatives. Due to the timing of the GHG emissions from the waste management pathways, (e.g., avoided landfilling and increased recycling), the actual GHG implications may accrue over the long-term. Therefore, one should not interpret the GHG emissions implications as occurring all in one year, but rather through time.

GHG Emissions Analysis -- Production and End-of-Life Impacts Report

Version 15





Notes: Up to seven materials will display in the figures above. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Baseline Waste Management Scenario

Material	GHG Emissions from Production ($MTCO_2E$)	End-of-Life Impacts ($MTCO_2E$): GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	Production + End-of-Life Impact ($MTCO_2E$)
Food Waste	97,056.52	NA	8,886.77	-	-	-	105,943.29
Yard Trimmings	NA	NA	(929.79)	-	-	-	(929.79)
Branches	NA	NA	(1,096.93)	-	-	-	(1,096.93)
Mixed Plastics	12,541.34	-	131.13	-	NA	NA	12,672.47
Mixed Metals	5,980.48	-	19.48	-	NA	NA	5,999.97
Mixed Organics	NA	NA	374.50	-	-	-	374.50
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-

Alternate Waste Management Scenario

Material	GHG Emissions from Production ($MTCO_2E$)	End-of-Life Impacts ($MTCO_2E$): GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	Production + End-of-Life Impact ($MTCO_2E$)
Food Waste	97,056.52	NA	-	-	-	113.38	97,169.89
Yard Trimmings	NA	NA	-	-	(175.46)	-	(175.46)
Branches	NA	NA	-	-	(80.77)	-	(80.77)
Mixed Plastics	12,541.34	(5,991.84)	-	-	NA	NA	6,549.50
Mixed Metals	5,980.48	(4,224.30)	-	-	NA	NA	1,756.19
Mixed Organics	NA	NA	-	-	-	(229.72)	(229.72)
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-

Energy Analysis -- Summary Report

Version 15

Energy Waste Management Analysis for City of Brentwood
Prepared by: Brentwood Solids Waste Organics Diversion
Project Period for this Analysis: 01/00/00 to 01/00/00

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

Energy Use from Baseline Waste Management (million BTU): 12,248.27

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU
Food Waste	NA	26,520.00	-	-	-	7,114.60
Yard Trimmings	NA	3,276.00	-	-	-	878.86
Branches	NA	1,508.00	-	-	-	404.56
Mixed Plastics	-	6,474.00	-	NA	NA	1,736.80
Mixed Metals	-	962.00	-	NA	NA	258.08
Mixed Organics	NA	6,916.00	-	-	-	1,855.38
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Energy Use from Alternative Waste Management Scenario (million BTU): (326,817.86)

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU	Change (Alt - Base) Million BTU
Food Waste	-	NA	-	-	-	26,520.00	(32,445.97)	(39,560.57)
Yard Trimmings	NA	NA	-	-	3,276.00	-	846.76	(32.10)
Branches	NA	NA	-	-	1,508.00	-	389.78	(14.78)
Mixed Plastics	-	6,474.00	-	-	NA	NA	(226,732.17)	(228,468.97)
Mixed Metals	-	962.00	-	-	NA	NA	(64,020.98)	(64,279.06)
Mixed Organics	NA	NA	-	-	-	6,916.00	(4,855.28)	(6,710.66)
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00
							0	0.00

Total Change in Energy Use (million BTU): (339,066.14)

Note: a negative value (i.e., a value in parentheses) indicates a reduction in energy consumption; a positive value indicates an increase.

This is equivalent to…		
Conserving	**3,701**	Households' Annual Energy Consumption
Conserving	**58,359**	Barrels of Oil
Conserving	**2,814,939**	Gallons of Gasoline

a) For explanation of methodology, see the EPA WARM Documentation:

Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives.

Waste Reduction Model (WARM) -- Results

Total Energy Use from Baseline MSW Generation and Management (million BTU):	12,248.27
Total Energy Use from Alternative MSW Generation and Management (million BTU):	(326,817.86)
Incremental Energy Use (million BTU):	(339,066.14)

BTU = British thermal unit

Per Ton Estimates of Energy Use for Alternative Management Scenarios

Material	Energy Savings per Ton of Material Produced (million BTU)	Energy Savings per Ton of Material Source Reduced (million BTU)	Energy Savings per Ton of Material Recycled (million BTU)	Energy Savings per Ton of Material Landfilled (million BTU)	Energy Savings per Ton of Material Combusted (million BTU)	Energy Savings per Ton of Material Composted (million BTU)	Energy Savings per Ton of Material Anaerobically Digested (million BTU)
Corrugated Containers	27.18	(27.18)	(15.10)	0.27	(5.81)	NA	NA
Magazines/third-class mail	33.27	(33.27)	(0.69)	0.27	(4.33)	NA	NA
Newspaper	40.70	(40.70)	(16.49)	0.27	(6.55)	NA	NA
Office Paper	37.29	(37.29)	(10.08)	0.27	(5.61)	NA	NA
Phonebooks	40.20	(40.20)	(11.93)	0.27	(6.55)	NA	NA
Textbooks	35.66	(35.66)	(1.03)	0.27	(5.61)	NA	NA
Mixed Paper (general)	32.93	(32.93)	(20.56)	0.27	(5.83)	NA	NA
Mixed Paper (primarily residential)	32.31	(32.31)	(20.56)	0.27	(5.80)	NA	NA
Mixed Paper (primarily from offices)	36.05	(36.05)	(20.85)	0.27	(5.36)	NA	NA
Food Waste	14.56	(14.56)	NA	0.27	(1.95)	0.73	(1.22)
Food Waste (non-meat)	7.20	(7.20)	NA	0.27	(1.95)	0.73	(1.22)
Food Waste (meat only)	43.60	(43.60)	NA	0.27	(1.95)	0.73	(1.22)
Beef	63.88	(63.88)	NA	0.27	(1.95)	0.73	(1.22)
Poultry	26.48	(26.48)	NA	0.27	(1.95)	0.73	(1.22)
Grains	5.64	(5.64)	NA	0.27	(1.95)	0.73	(1.22)
Bread	6.52	(6.52)	NA	0.27	(1.95)	0.73	(1.22)
Fruits and Vegetables	5.07	(5.07)	NA	0.27	(1.95)	0.73	(1.22)
Dairy Products	14.27	(14.27)	NA	0.27	(1.95)	0.73	(1.22)
Yard Trimmings	0.00	0.00	NA	0.27	(2.31)	0.26	(0.11)
Grass	0.00	0.00	NA	0.27	(2.31)	0.26	(0.12)
Leaves	0.00	0.00	NA	0.27	(2.31)	0.26	0.11
Branches	0.00	0.00	NA	0.27	(2.31)	0.26	(0.29)
HDPE	66.99	(66.99)	(44.78)	0.27	(16.48)	NA	NA
LDPE	70.92	(70.92)	NA	0.27	(16.39)	NA	NA
PET	51.13	(51.13)	(28.59)	0.27	(8.74)	NA	NA
LLDPE	66.29	(66.29)	NA	0.27	(16.44)	NA	NA
PP	66.49	(66.49)	(44.50)	0.27	(16.44)	NA	NA
PS	74.85	(74.85)	NA	0.27	(14.84)	NA	NA
PVC	48.14	(48.14)	NA	0.27	(6.49)	NA	NA
Mixed Plastics	57.43	(57.43)	(35.02)	0.27	(11.81)	NA	NA
PLA	30.09	(30.09)	NA	0.27	(6.90)	0.51	NA
Desktop CPUs	130.63	(130.63)	(21.21)	0.27	(11.58)	NA	NA
Portable Electronic Devices	163.36	(163.36)	(20.95)	0.27	(2.55)	NA	NA
Flat-Panel Displays	125.66	(125.66)	(15.07)	0.27	(7.78)	NA	NA
CRT Displays	NA	NA	(7.95)	0.27	(2.12)	NA	NA
Electronic Peripherals	106.00	(106.00)	(7.88)	0.27	(1.63)	NA	NA
Hard-Copy Devices	72.53	(72.53)	(7.91)	0.27	(7.85)	NA	NA
Mixed Electronics	NA	NA	(11.69)	0.27	(5.30)	NA	NA
Aluminum Cans	200.57	(200.57)	(152.76)	0.27	0.28	NA	NA
Aluminum Ingot	126.95	(126.95)	(113.85)	0.27	0.28	NA	NA
Steel Cans	36.54	(36.54)	(19.97)	0.27	(17.44)	NA	NA
Copper Wire	123.35	(123.35)	(82.59)	0.27	0.22	NA	NA
Mixed Metals	94.08	(94.08)	(66.55)	0.27	(11.22)	NA	NA
Glass	7.46	(7.46)	(2.13)	0.27	0.19	NA	NA
Asphalt Concrete	1.68	(1.68)	(1.22)	0.27	NA	NA	NA
Asphalt Shingles	3.11	(3.11)	(2.41)	0.27	(8.80)	NA	NA
Carpet	91.06	(91.06)	(21.46)	0.27	(6.27)	NA	NA
Clay Bricks	5.13	(5.13)	NA	0.27	NA	NA	NA
Concrete	NA	NA	(0.11)	0.27	NA	NA	NA
Dimensional Lumber	7.32	(7.32)	(5.40)	0.27	(6.84)	NA	NA
Drywall	3.56	(3.56)	(2.60)	0.27	NA	NA	NA
Fiberglass Insulation	5.56	(5.56)	NA	0.27	NA	NA	NA
Fly Ash	NA	NA	(4.77)	0.27	NA	NA	NA
Medium-density Fiberboard	10.91	(10.91)	NA	0.27	(6.84)	NA	NA
Structural Steel	25.15	(25.15)	(9.25)	0.27	NA	NA	NA
Vinyl Flooring	10.60	(10.60)	NA	0.27	(6.49)	NA	NA
Wood Flooring	14.37	(14.37)	NA	0.27	(8.95)	NA	NA
Tires	74.33	(74.33)	(3.60)	0.27	(28.79)	NA	NA
Mixed Recyclables	NA	NA	(14.95)	0.27	(5.84)	NA	NA
Mixed Organics	NA	NA	NA	0.27	(2.12)	0.51	(0.70)
Mixed MSW	NA	NA	NA	0.27	(4.12)	NA	NA

Energy Use from Baseline Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Baseline Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Baseline Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Baseline Composting (Tons)	Energy Consumption from Composting (million BTU)	Baseline Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	26,520.00	NA	NA	26,520.00	7,114.60	0.00	0.00	0.00	0.00	0.00	0.00	7,114.60
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	3,276.00	NA	NA	3,276.00	878.86	0.00	0.00	0.00	0.00	0.00	0.00	878.86
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	1,508.00	NA	NA	1,508.00	404.56	0.00	0.00	0.00	0.00	0.00	0.00	404.56
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	6,474.00	0.00	0.00	6,474.00	1,736.80	0.00	0.00	NA	NA	NA	NA	1,736.80
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	962.00	0.00	0.00	962.00	258.08	0.00	0.00	NA	NA	NA	NA	258.08
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	6,916.00	NA	NA	6,916.00	1,855.38	0.00	0.00	0.00	0.00	0.00	0.00	1,855.38
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	45,656.00	0.00	0.00	45,656.00	12,248.27	0.00	0.00	0.00	0.00	0.00	0.00	12,248.27

Energy Use from Alternative Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Energy Consumption from Source Reduction (million BTU)	Alternative Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Alternative Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Alternative Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Alternative Composting (Tons)	Energy Consumption from Composting (million BTU)	Alternative Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	26,520.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	26,520.00	(32,445.97)	(32,445.97)
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	3,276.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	3,276.00	846.76	0.00	0.00	846.76
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	1,508.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	1,508.00	389.78	0.00	0.00	389.78
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	6,474.00	0.00	0.00	6,474.00	(226,732.17)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(226,732.17)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	962.00	0.00	0.00	962.00	(64,020.98)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(64,020.98)
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	6,916.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	6,916.00	(4,855.28)	(4,855.28)
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	45,656.00	0.00	0.00	7,436.00	(290,753.15)	0.00	0.00	0.00	0.00	4,784.00	1,236.54	33,436.00	(37,301.25)	(326,817.86)

Incremental Energy Use from Alternative Management of Municipal Solid Wastes

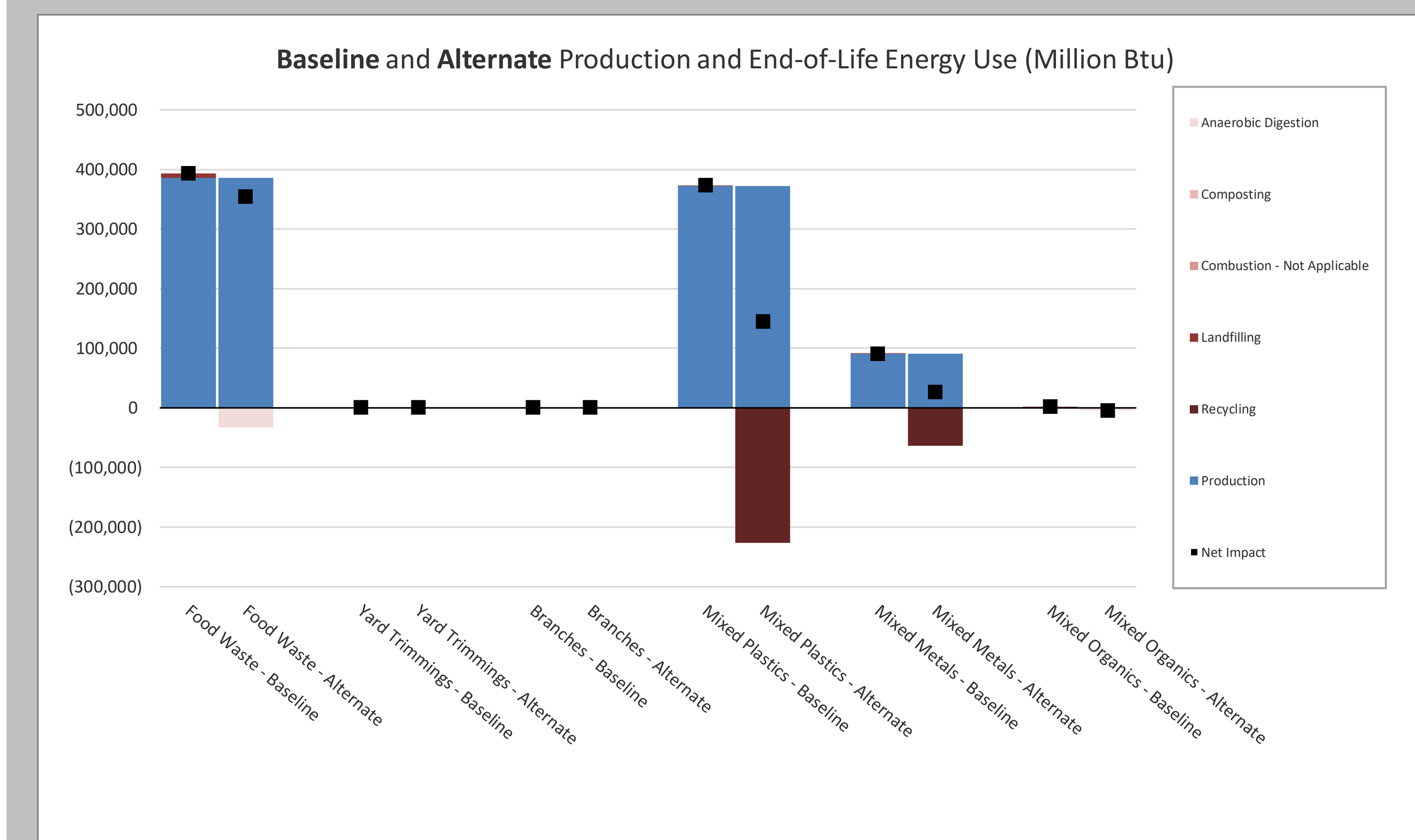
Material	Source Reduction (Tons)	Incremental Energy Consumption from Source Reduction (million BTU)	Incremental Recycling (Tons)	Incremental Energy Consumption from Recycling (million BTU)	Incremental Landfilling (Tons)	Incremental Energy Consumption from Landfilling (million BTU)	Incremental Combustion (Tons)	Incremental Energy Consumption from Combustion (million BTU)	Incremental Composting (Tons)	Incremental Energy Consumption from Composting (million BTU)	Incremental Anaerobic Digestion (Tons)	Incremental Energy Consumption from Anaerobic Digestion (million BTU)	Total Incremental Energy Consumption (million BTU)
Corrugated Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	(26,520.00)	(7,114.60)	0.00	0.00	0.00	0.00	26,520.00	(32,445.97)	(39,560.57)
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	(3,276.00)	(878.86)	0.00	0.00	3,276.00	846.76	0.00	0.00	(32.10)
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	(1,508.00)	(404.56)	0.00	0.00	1,508.00	389.78	0.00	0.00	(14.78)
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	6,474.00	(226,732.17)	(6,474.00)	(1,736.80)	0.00	0.00	NA	NA	NA	NA	(228,468.97)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	962.00	(64,020.98)	(962.00)	(258.08)	0.00	0.00	NA	NA	NA	NA	(64,279.06)
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Recyclables	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Organics	NA	NA	NA	NA	(6,916.00)	(1,855.38)	0.00	0.00	0.00	0.00	6,916.00	(4,855.28)	(6,710.66)
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	0.00	0.00	7,436.00	(290,753.15)	(45,656.00)	(12,248.27)	0.00	0.00	4,784.00	1,236.54	33,436.00	(37,301.25)	(339,066.14)

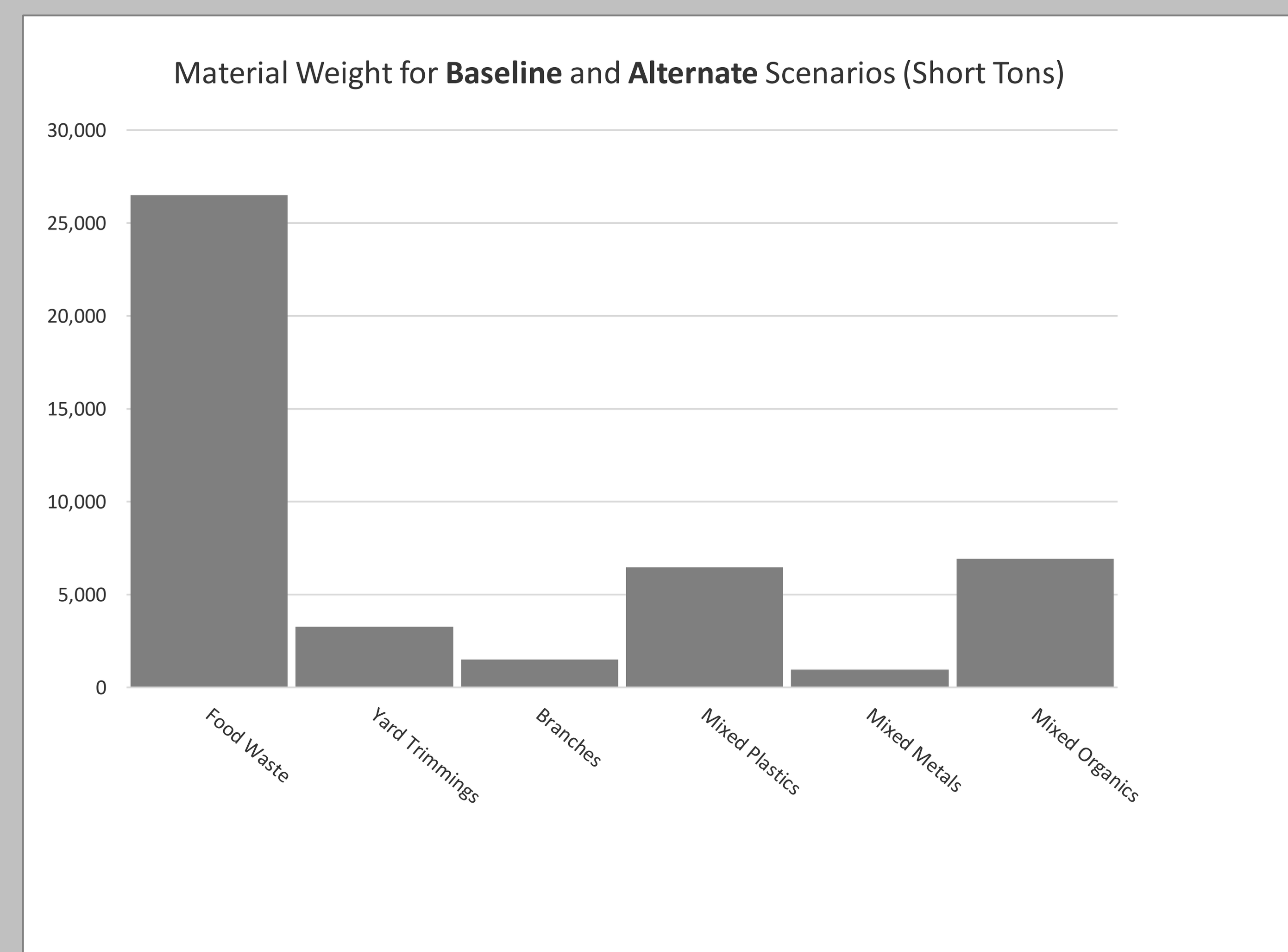
a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives.

Energy Use Analysis -- Production and End-of-Life Impacts Report

Version 15





Notes: Up to seven materials will display in the figures above. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Baseline Waste Management Scenario

Material	Energy Use from Production (Million Btu)	End-of-Life Impacts (Million Btu)					Production + End-of-Life Impact (Million Btu)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Food Waste	386,105.82	NA	7,114.60	-	-	-	393,220.42
Yard Trimmings	-	NA	878.86	-	-	-	878.86
Branches	-	NA	404.56	-	-	-	404.56
Mixed Plastics	371,825.21	-	1,736.80	-	NA	NA	373,562.01
Mixed Metals	90,505.05	-	258.08	-	NA	NA	90,763.12
Mixed Organics	NA	NA	1,855.38	-	-	-	1,855.38
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-

Alternate Waste Management Scenario

Material	Energy Use from Production (Million Btu)	End-of-Life Impacts (Million Btu)					Production + End-of-Life Impact (Million Btu)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Food Waste	386,105.82	NA	-	-	-	(32,445.97)	353,659.85
Yard Trimmings	NA	NA	-	-	846.76	-	846.76
Branches	NA	NA	-	-	389.78	-	389.78
Mixed Plastics	371,825.21	(226,732.17)	-	-	NA	NA	145,093.04
Mixed Metals	90,505.05	(64,020.98)	-	-	NA	NA	26,484.07
Mixed Organics	NA	NA	-	-	-	(4,855.28)	(4,855.28)
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-

Economic Analysis (Labor Hours) -- Summary Report

Version 15

Economic Waste Management Analysis -- employment supported by materials management -- for City of Brentwood
Prepared by: Brentwood Solids Waste Organics Diversion
Project Period for this Analysis: 01/00/00 to 01/00/00

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

Employment from Baseline Waste Management (Labor Hours): 62,677

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Labor Hours
Food Waste	NA	26,520.00	-	-	-	36,407
Yard Trimmings	NA	3,276.00	-	-	-	4,497
Branches	NA	1,508.00	-	-	-	2,070
Mixed Plastics	-	6,474.00	-	NA	NA	8,888
Mixed Metals	-	962.00	-	NA	NA	1,321
Mixed Organics	NA	6,916.00	-	-	-	9,494
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Employment from Alternative Waste Management Scenario (Labor Hours): 539,287

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Labor Hours	Change (Alt - Base) Labor Hours
Food Waste	-	NA	-	-	-	26,520.00	57,368	20,961
Yard Trimmings	NA	NA	-	-	3,276.00	-	4,361	(136)
Branches	NA	NA	-	-	1,508.00	-	2,007	(63)
Mixed Plastics	-	6,474.00	-	-	NA	NA	394,888	386,001
Mixed Metals	-	962.00	-	-	NA	NA	66,062	64,741
Mixed Organics	NA	NA	-	-	-	6,916.00	14,601	5,107
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0
							0	0

Total Change in Employment (Labor Hours): 476,611

Note: a negative value (i.e., a value in parentheses) indicates an economic impact reduction; a positive value indicates an economic impact increase.

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.
c) Economic impacts from source reduction are not modeled in this version of WARM.

d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts. See EPA WARM Documentation for further explanation.

Waste Reduction Model (WARM) -- Results

Total Employment from Baseline MSW Generation and Management (Labor hours):	62,677
Total Employment from Alternative MSW Generation and Management (Labor hours):	539,287
Incremental Employment (Labor hours):	476,611

Per Ton Estimates of Employment for Baseline and Alternative Management Scenarios

Material	Labor Hours per Ton of Material Source Reduced	Labor Hours per Ton of Material Recycled	Labor Hours per Ton of Material Landfilled	Labor Hours per Ton of Material Combusted	Labor Hours per Ton of Material Composted	Labor Hours per Ton of Material Anaerobically Digested
Corrugated Containers	NA	7.88	1.37	1.37	NA	NA
Magazines/third-class mail	NA	7.88	1.37	1.37	NA	NA
Newspaper	NA	7.88	1.37	1.37	NA	NA
Office Paper	NA	7.88	1.37	1.37	NA	NA
Phonebooks	NA	7.88	1.37	1.37	NA	NA
Textbooks	NA	7.88	1.37	1.37	NA	NA
Mixed Paper (general)	NA	7.88	1.37	1.37	NA	NA
Mixed Paper (primarily residential)	NA	7.88	1.37	1.37	NA	NA
Mixed Paper (primarily from offices)	NA	7.88	1.37	1.37	NA	NA
Food Waste	NA	NA	1.37	1.37	1.33	2.16
Food Waste (non-meat)	NA	NA	1.37	1.37	1.33	2.16
Food Waste (meat only)	NA	NA	1.37	1.37	1.33	2.16
Beef	NA	NA	1.37	1.37	1.33	2.16
Poultry	NA	NA	1.37	1.37	1.33	2.16
Grains	NA	NA	1.37	1.37	1.33	2.16
Bread	NA	NA	1.37	1.37	1.33	2.16
Fruits and Vegetables	NA	NA	1.37	1.37	1.33	2.16
Dairy Products	NA	NA	1.37	1.37	1.33	2.16
Yard Trimmings	NA	NA	1.37	1.37	1.33	2.04
Grass	NA	NA	1.37	1.37	1.33	2.04
Leaves	NA	NA	1.37	1.37	1.33	2.02
Branches	NA	NA	1.37	1.37	1.33	2.07
HDPE	NA	62.66	1.37	1.37	NA	NA
LDPE	NA	NA	1.37	1.37	NA	NA
PET	NA	62.66	1.37	1.37	NA	NA
LLDPE	NA	NA	1.37	1.37	NA	NA
PP	NA	62.66	1.37	1.37	NA	NA
PS	NA	NA	1.37	1.37	NA	NA
PVC	NA	NA	1.37	1.37	NA	NA
Mixed Plastics	NA	61.00	1.37	1.37	NA	NA
PLA	NA	NA	1.37	1.37	1.33	NA
Desktop CPUs	NA	79.68	1.37	1.37	NA	NA
Portable Electronic Devices	NA	79.68	1.37	1.37	NA	NA
Flat-Panel Displays	NA	79.68	1.37	1.37	NA	NA
CRT Displays	NA	79.68	1.37	1.37	NA	NA
Electronic Peripherals	NA	79.68	1.37	1.37	NA	NA
Hard-Copy Devices	NA	79.68	1.37	1.37	NA	NA
Mixed Electronics	NA	79.68	1.37	1.37	NA	NA
Aluminum Cans	NA	190.01	1.37	1.37	NA	NA
Aluminum Ingot	NA	190.01	1.37	1.37	NA	NA
Steel Cans	NA	10.07	1.37	1.37	NA	NA
Copper Wire	NA	190.01	1.37	1.37	NA	NA
Mixed Metals	NA	68.67	1.37	1.37	NA	NA
Glass	NA	19.88	1.37	1.37	NA	NA
Asphalt Concrete	NA	2.85	1.37	NA	NA	NA
Asphalt Shingles	NA	2.85	1.37	1.37	NA	NA
Carpet	NA	24.52	1.37	1.37	NA	NA
Clay Bricks	NA	NA	1.37	NA	NA	NA
Concrete	NA	2.85	1.37	NA	NA	NA
Dimensional Lumber	NA	2.85	1.37	1.37	NA	NA
Drywall	NA	2.85	1.37	NA	NA	NA
Fiberglass Insulation	NA	NA	1.37	NA	NA	NA
Fly Ash	NA	2.85	1.37	NA	NA	NA
Medium-density Fiberboard	NA	NA	1.37	1.37	NA	NA
Structural Steel	NA	12.45	1.37	1.37	NA	NA
Vinyl Flooring	NA	NA	1.37	1.37	NA	NA
Wood Flooring	NA	NA	1.37	1.37	NA	NA
Tires	NA	24.91	1.37	1.37	NA	NA
Mixed Recyclables	NA	13.59	1.37	1.37	NA	NA
Mixed Organics	NA	NA	1.37	1.37	1.33	2.11
Mixed MSW	NA	NA	1.37	1.37	NA	NA

Employment from Baseline Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Labor Hours from Recycling	Baseline Landfilling (Tons)	Labor Hours from Landfilling	Baseline Combustion (Tons)	Labor Hours from Combustion	Baseline Composting (Tons)	Labor Hours from Composting	Baseline Anaerobic Digestion (Tons)	Labor Hours from Anaerobic Digestion	Total Labor Hours
Corrugated Containers	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Magazines/third-class mail	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Newspaper	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Office Paper	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Phonebooks	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Textbooks	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (general)	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily residential)	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily from offices)	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Food Waste	26,520.00	NA	NA	26,520.00	36,407	0.00	0	0.00	0	0.00	0	36,407
Food Waste (non-meat)	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Food Waste (meat only)	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Beef	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Poultry	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Grains	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Bread	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Fruits and Vegetables	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Dairy Products	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Yard Trimmings	3,276.00	NA	NA	3,276.00	4,497	0.00	0	0.00	0	0.00	0	4,497
Grass	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Leaves	0.00	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Branches	1,508.00	NA	NA	1,508.00	2,070	0.00	0	0.00	0	0.00	0	2,070
HDPE	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LDPE	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PET	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LLDPE	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PP	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
PS	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PVC	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Plastics	6,474.00	0.00	0	6,474.00	8,888	0.00	0	NA	NA	NA	NA	8,888
PLA	0.00	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	0
Desktop CPUs	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Portable Electronic Devices	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Flat-Panel Displays	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
CRT Displays	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Electronic Peripherals	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Hard-Copy Devices	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Electronics	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Cans	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Ingot	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Steel Cans	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Copper Wire	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Metals	962.00	0.00	0	962.00	1,321	0.00	0	NA	NA	NA	NA	1,321
Glass	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Asphalt Concrete	0.00	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Asphalt Shingles	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Carpet	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Clay Bricks	0.00	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Concrete	0.00	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Dimensional Lumber	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Drywall	0.00	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Fiberglass Insulation	0.00	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Fly Ash	0.00	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Medium-density Fiberboard	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Structural Steel	0.00	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Vinyl Flooring	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Wood Flooring	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Tires	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Recyclables	0.00	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Organics	6,916.00	NA	NA	6,916.00	9,494	0.00	0	0.00	0	0.00	0	9,494
Mixed MSW	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Total	45,656.00	0.00	0	45,656.00	62,677	0.00	0	0.00	0	0.00	0	62,677

Employment from Alternative Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Labor Hours from Source Reduction	Alternative Recycling (Tons)	Labor Hours from Recycling	Alternative Landfilling (Tons)	Labor Hours from Landfilling	Alternative Combustion (Tons)	Labor Hours from Combustion	Alternative Composting (Tons)	Labor Hours from Composting	Alternative Anaerobic Digestion (Tons)	Labor Hours from Anaerobic Digestion	Total Labor Hours
Corrugated Containers	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Magazines/third-class mail	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Newspaper	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Office Paper	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Phonebooks	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Textbooks	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (general)	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily residential)	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily from offices)	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Food Waste	26,520.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	26,520.00	57,368	57,368
Food Waste (non-meat)	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Food Waste (meat only)	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Beef	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Poultry	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Grains	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Bread	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Fruits and Vegetables	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Dairy Products	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Yard Trimmings	3,276.00	NA	NA	NA	NA	0.00	0	0.00	0	3,276.00	4,361	0.00	0	4,361
Grass	0.00	NA	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Leaves	0.00	NA	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Branches	1,508.00	NA	NA	NA	NA	0.00	0	0.00	0	1,508.00	2,007	0.00	0	2,007
HDPE	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LDPE	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PET	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LLDPE	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PP	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
PS	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PVC	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Plastics	6,474.00	0.00	NA	6,474.00	394,888	0.00	0	0.00	0	NA	NA	NA	NA	394,888
PLA	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	0
Desktop CPUs	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Portable Electronic Devices	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Flat-Panel Displays	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
CRT Displays	0.00	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Electronic Peripherals	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Hard-Copy Devices	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Electronics	0.00	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Cans	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Ingot	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Steel Cans	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Copper Wire	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Metals	962.00	0.00	NA	962.00	66,062	0.00	0	0.00	0	NA	NA	NA	NA	66,062
Glass	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Asphalt Concrete	0.00	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Asphalt Shingles	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Carpet	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Clay Bricks	0.00	0.00	NA	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Concrete	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Dimensional Lumber	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Drywall	0.00	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Fiberglass Insulation	0.00	0.00	NA	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Fly Ash	0.00	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Medium-density Fiberboard	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Structural Steel	0.00	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Vinyl Flooring	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Wood Flooring	0.00	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Tires	0.00	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Recyclables	0.00	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Organics	6,916.00	NA	NA	NA	NA	0.00	0	0.00	0	0.00	0	6,916.00	14,601	14,601
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Total	45,656.00	0.00	NA	7,436.00	460,950	0.00	0	0.00	0	4,784.00	6,368	33,436.00	71,969	539,287

Incremental Employment from Alternative Management of Municipal Solid Wastes

Material	Source Reduction (Tons)	Incremental Labor Hours from Source Reduction	Incremental Recycling (Tons)	Incremental Labor Hours from Recycling	Incremental Landfilling (Tons)	Incremental Labor Hours from Landfilling	Incremental Combustion (Tons)	Incremental Labor Hours from Combustion	Incremental Composting (Tons)	Incremental Labor Hours from Composting	Incremental Anaerobic Digestion (Tons)	Incremental Labor Hours from Anaerobic Digestion	Total Incremental Labor Hours
Corrugated Containers	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Magazines/third-class mail	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Newspaper	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Office Paper	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Phonebooks	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Textbooks	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (general)	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily residential)	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Paper (primarily from offices)	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Food Waste	0.00	NA	NA	NA	(26,520.00)	(36,407)	0.00	0	0.00	0	26,520.00	57,368	20,961
Food Waste (non-meat)	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Food Waste (meat only)	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Beef	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Poultry	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Grains	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Bread	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Fruits and Vegetables	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Dairy Products	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Yard Trimmings	NA	NA	NA	NA	(3,276.00)	(4,497)	0.00	0	3,276.00	4,361	0.00	0	(136)
Grass	NA	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Leaves	NA	NA	NA	NA	0.00	0	0.00	0	0.00	0	0.00	0	0
Branches	NA	NA	NA	NA	(1,508.00)	(2,070)	0.00	0	1,508.00	2,007	0.00	0	(63)
HDPE	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LDPE	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PET	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
LLDPE	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PP	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
PS	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
PVC	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Plastics	0.00	NA	6,474.00	394,888	(6,474.00)	(8,888)	0.00	0	NA	NA	NA	NA	386,001
PLA	0.00	NA	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	0
Desktop CPUs	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Portable Electronic Devices	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Flat-Panel Displays	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
CRT Displays	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Electronic Peripherals	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Hard-Copy Devices	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Electronics	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Cans	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Aluminum Ingot	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Steel Cans	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Copper Wire	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Metals	0.00	NA	962.00	66,062	(962.00)	(1,321)	0.00	0	NA	NA	NA	NA	64,741
Glass	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Asphalt Concrete	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Asphalt Shingles	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Carpet	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Clay Bricks	0.00	NA	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Concrete	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Dimensional Lumber	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Drywall	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Fiberglass Insulation	0.00	NA	NA	NA	0.00	0	NA	NA	NA	NA	NA	NA	0
Fly Ash	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Medium-density Fiberboard	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Structural Steel	0.00	NA	0.00	0	0.00	0	NA	NA	NA	NA	NA	NA	0
Vinyl Flooring	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Wood Flooring	0.00	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Tires	0.00	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Recyclables	NA	NA	0.00	0	0.00	0	0.00	0	NA	NA	NA	NA	0
Mixed Organics	NA	NA	NA	NA	(6,916.00)	(9,494)	0.00	0	0.00	0	6,916.00	14,601	5,107
Mixed MSW	NA	NA	NA	NA	0.00	0	0.00	0	NA	NA	NA	NA	0
Total	0.00	NA	7,436.00	460,950	(45,656.00)	(62,677)	0.00	0	4,784.00	6,368	33,436.00	71,969	476,611

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
'-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.

c) Economic impacts from source reduction are not modeled in this version of WARM.

d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts.
See EPA WARM Documentation for further explanation.

Economic Analysis (Wages) -- Summary Report

Version 15

Economic Waste Management Analysis -- all forms of employment income from materials management -- for City of Brentwood
Prepared by: Brentwood Solids Waste Organics Diversion
Project Period for this Analysis: 01/00/00 to 01/00/00

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

Wages from Baseline Waste Management ($): $2,107,024.40

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Wages ($)
Food Waste	NA	26,520.00	-	-	-	$1,223,898.00
Yard Trimmings	NA	3,276.00	-	-	-	$151,187.40
Branches	NA	1,508.00	-	-	-	$69,594.20
Mixed Plastics	-	6,474.00	-	NA	NA	$298,775.10
Mixed Metals	-	962.00	-	NA	NA	$44,396.30
Mixed Organics	NA	6,916.00	-	-	-	$319,173.40
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Wages from Alternative Waste Management Scenario ($): $11,799,875.50

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Wages ($)	Change (Alt - Base) Wages ($)
Food Waste	-	NA	-	-	-	26,520.00	$989,417.97	-$234,480.03
Yard Trimmings	NA	NA	-	-	3,276.00	-	$84,651.84	-$66,535.56
Branches	NA	NA	-	-	1,508.00	-	$38,966.72	-$30,627.48
Mixed Plastics	-	6,474.00	-	-	NA	NA	$8,848,391.49	$8,549,616.39
Mixed Metals	-	962.00	-	-	NA	NA	$1,594,139.30	$1,549,743.00
Mixed Organics	NA	NA	-	-	-	6,916.00	$244,308.18	-$74,865.22
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00

Total Change in Wages ($): $9,692,851.10

Note: a negative value (i.e., a value in parentheses) indicates an economic impact reduction; a positive value indicates an economic impact increase.

a) For explanation of methodology, see the EPA WARM Documentation:

Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.
c) Economic impacts from source reduction are not modeled in this version of WARM.
d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts. See EPA WARM Documentation for further explanation.

Waste Reduction Model (WARM) -- Results

Total Wages from Baseline MSW Generation and Management ($):	$2,107,024.40
Total Wages from Alternative MSW Generation and Management ($):	$11,799,875.50
Incremental Wages ($):	$9,692,851.10

Per Ton Estimates of Wages for Baseline and Alternative Management Scenarios

Material	Wages per Ton of Material Source Reduced ($)	Wages per Ton of Material Recycled ($)	Wages per Ton of Material Landfilled ($)	Wages per Ton of Material Combusted ($)	Wages per Ton of Material Composted ($)	Wages per Ton of Material Anaerobically Digested ($)
Corrugated Containers	NA	$239.32	$46.15	$46.15	NA	NA
Magazines/third-class mail	NA	$239.32	$46.15	$46.15	NA	NA
Newspaper	NA	$239.32	$46.15	$46.15	NA	NA
Office Paper	NA	$239.32	$46.15	$46.15	NA	NA
Phonebooks	NA	$239.32	$46.15	$46.15	NA	NA
Textbooks	NA	$239.32	$46.15	$46.15	NA	NA
Mixed Paper (general)	NA	$239.32	$46.15	$46.15	NA	NA
Mixed Paper (primarily residential)	NA	$239.32	$46.15	$46.15	NA	NA
Mixed Paper (primarily from offices)	NA	$239.32	$46.15	$46.15	NA	NA
Food Waste	NA	NA	$46.15	$46.15	$25.84	$37.31
Food Waste (non-meat)	NA	NA	$46.15	$46.15	$25.84	$37.31
Food Waste (meat only)	NA	NA	$46.15	$46.15	$25.84	$37.31
Beef	NA	NA	$46.15	$46.15	$25.84	$37.31
Poultry	NA	NA	$46.15	$46.15	$25.84	$37.31
Grains	NA	NA	$46.15	$46.15	$25.84	$37.31
Bread	NA	NA	$46.15	$46.15	$25.84	$37.31
Fruits and Vegetables	NA	NA	$46.15	$46.15	$25.84	$37.31
Dairy Products	NA	NA	$46.15	$46.15	$25.84	$37.31
Yard Trimmings	NA	NA	$46.15	$46.15	$25.84	$33.06
Grass	NA	NA	$46.15	$46.15	$25.84	$32.99
Leaves	NA	NA	$46.15	$46.15	$25.84	$32.32
Branches	NA	NA	$46.15	$46.15	$25.84	$33.92
HDPE	NA	$1,420.69	$46.15	$46.15	NA	NA
LDPE	NA	NA	$46.15	$46.15	NA	NA
PET	NA	$1,420.69	$46.15	$46.15	NA	NA
LLDPE	NA	NA	$46.15	$46.15	NA	NA
PP	NA	$1,420.69	$46.15	$46.15	NA	NA
PS	NA	NA	$46.15	$46.15	NA	NA
PVC	NA	NA	$46.15	$46.15	NA	NA
Mixed Plastics	NA	$1,366.76	$46.15	$46.15	NA	NA
PLA	NA	NA	$46.15	$46.15	$25.84	NA
Desktop CPUs	NA	$2,703.13	$46.15	$46.15	NA	NA
Portable Electronic Devices	NA	$2,703.13	$46.15	$46.15	NA	NA
Flat-Panel Displays	NA	$2,703.13	$46.15	$46.15	NA	NA
CRT Displays	NA	$2,703.13	$46.15	$46.15	NA	NA
Electronic Peripherals	NA	$2,703.13	$46.15	$46.15	NA	NA
Hard-Copy Devices	NA	$2,703.13	$46.15	$46.15	NA	NA
Mixed Electronics	NA	$2,703.13	$46.15	$46.15	NA	NA
Aluminum Cans	NA	$4,661.04	$46.15	$46.15	NA	NA
Aluminum Ingot	NA	$4,661.04	$46.15	$46.15	NA	NA
Steel Cans	NA	$250.23	$46.15	$46.15	NA	NA
Copper Wire	NA	$4,661.04	$46.15	$46.15	NA	NA
Mixed Metals	NA	$1,657.11	$46.15	$46.15	NA	NA
Glass	NA	$493.32	$46.15	$46.15	NA	NA
Asphalt Concrete	NA	$78.27	$46.15	NA	NA	NA
Asphalt Shingles	NA	$78.27	$46.15	$46.15	NA	NA
Carpet	NA	$539.09	$46.15	$46.15	NA	NA
Clay Bricks	NA	NA	$46.15	NA	NA	NA
Concrete	NA	$78.27	$46.15	NA	NA	NA
Dimensional Lumber	NA	$78.27	$46.15	$46.15	NA	NA
Drywall	NA	$78.27	$46.15	NA	NA	NA
Fiberglass Insulation	NA	NA	$46.15	NA	NA	NA
Fly Ash	NA	$78.27	$46.15	NA	NA	NA
Medium-density Fiberboard	NA	NA	$46.15	$46.15	NA	NA
Structural Steel	NA	$332.43	$46.15	$46.15	NA	NA
Vinyl Flooring	NA	NA	$46.15	$46.15	NA	NA
Wood Flooring	NA	NA	$46.15	$46.15	NA	NA
Tires	NA	$581.61	$46.15	$46.15	NA	NA
Mixed Recyclables	NA	$376.60	$46.15	$46.15	NA	NA
Mixed Organics	NA	NA	$46.15	$46.15	$25.84	$35.33
Mixed MSW	NA	NA	$46.15	$46.15	NA	NA

Wages from Baseline Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Wages from Recycling ($)	Baseline Landfilling (Tons)	Wages from Landfilling ($)	Baseline Combustion (Tons)	Wages from Combustion ($)	Baseline Composting (Tons)	Wages from Composting ($)	Baseline Anaerobic Digestion (Tons)	Wages from Anaerobic Digestion ($)	Total Wages ($)
Corrugated Containers	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	26,520.00	NA	NA	26,520.00	$1,223,898.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$1,223,898.00
Food Waste (non-meat)	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	3,276.00	NA	NA	3,276.00	$151,187.40	0.00	$0.00	0.00	$0.00	0.00	$0.00	$151,187.40
Grass	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Leaves	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Branches	1,508.00	NA	NA	1,508.00	$69,594.20	0.00	$0.00	0.00	$0.00	0.00	$0.00	$69,594.20
HDPE	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	6,474.00	0.00	$0.00	6,474.00	$298,775.10	0.00	$0.00	NA	NA	NA	NA	$298,775.10
PLA	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	962.00	0.00	$0.00	962.00	$44,396.30	0.00	$0.00	NA	NA	NA	NA	$44,396.30
Glass	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	6,916.00	NA	NA	6,916.00	$319,173.40	0.00	$0.00	0.00	$0.00	0.00	$0.00	$319,173.40
Mixed MSW	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	45,656.00	0.00	$0.00	45,656.00	$2,107,024.40	0.00	$0.00	0.00	$0.00	0.00	$0.00	$2,107,024.40

Wages from Alternative Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Wages from Source Reduction ($)	Alternative Recycling (Tons)	Wages from Recycling ($)	Alternative Landfilling (Tons)	Wages from Landfilling ($)	Alternative Combustion (Tons)	Wages from Combustion ($)	Alternative Composting (Tons)	Wages from Composting ($)	Alternative Anaerobic Digestion (Tons)	Wages from Anaerobic Digestion ($)	Total Wages ($)
Corrugated Containers	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	26,520.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	26,520.00	$989,417.97	$989,417.97
Food Waste (non-meat)	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	3,276.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	3,276.00	$84,651.84	0.00	$0.00	$84,651.84
Grass	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Leaves	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Branches	1,508.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	1,508.00	$38,966.72	0.00	$0.00	$38,966.72
HDPE	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	6,474.00	0.00	NA	6,474.00	$8,848,391.49	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$8,848,391.49
PLA	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	962.00	0.00	NA	962.00	$1,594,139.30	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$1,594,139.30
Glass	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	6,916.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	6,916.00	$244,308.18	$244,308.18
Mixed MSW	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	45,656.00	0.00		7,436.00	$10,442,530.78	0.00	$0.00	0.00	$0.00	4,784.00	$123,618.56	33,436.00	$1,233,726.16	$11,799,875.50

Incremental Wages from Alternative Management of Municipal Solid Wastes

Material	Source Reduction (Tons)	Incremental Wages from Source Reduction ($)	Incremental Recycling (Tons)	Incremental Wages from Recycling ($)	Incremental Landfilling (Tons)	Incremental Wages from Landfilling ($)	Incremental Combustion (Tons)	Incremental Wages from Combustion ($)	Incremental Composting (Tons)	Incremental Wages from Composting ($)	Incremental Anaerobic Digestion (Tons)	Incremental Wages from Anaerobic Digestion ($)	Total Incremental Wages ($)
Corrugated Containers	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	0.00	NA	NA	NA	(26,520.00)	-$1,223,898.00	0.00	$0.00	0.00	$0.00	26,520.00	$989,417.97	-$234,480.03
Food Waste (non-meat)	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	NA	NA	NA	NA	(3,276.00)	-$151,187.40	0.00	$0.00	3,276.00	$84,651.84	0.00	$0.00	-$66,535.56
Grass	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Leaves	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Branches	NA	NA	NA	NA	(1,508.00)	-$69,594.20	0.00	$0.00	1,508.00	$38,966.72	0.00	$0.00	-$30,627.48
HDPE	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	0.00	NA	6,474.00	$8,848,391.49	(6,474.00)	-$298,775.10	0.00	$0.00	NA	NA	NA	NA	$8,549,616.39
PLA	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	0.00	NA	962.00	$1,594,139.30	(962.00)	-$44,396.30	0.00	$0.00	NA	NA	NA	NA	$1,549,743.00
Glass	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	NA	NA	NA	NA	(6,916.00)	-$319,173.40	0.00	$0.00	0.00	$0.00	6,916.00	$244,308.18	-$74,865.22
Mixed MSW	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	0.00	NA	7,436.00	$10,442,530.78	(45,656.00)	-$2,107,024.40	0.00	$0.00	4,784.00	$123,618.56	33,436.00	$1,233,726.16	$9,692,851.10

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.

c) Economic impacts from source reduction are not modeled in this version of WARM.

d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts.
See EPA WARM Documentation for further explanation.

Economic Analysis (Taxes) -- Summary Report

Version 15

Economic Waste Management Analysis -- taxes collected by the federa, state and local government from materials management -- for City of Brentwood
Prepared by: Brentwood Solids Waste Organics Diversion
Project Period for this Analysis: 01/00/00 to 01/00/00

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

Taxes from Baseline Waste Management ($): $781,630.72

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Taxes ($)
Food Waste	NA	26,520.00	-	-	-	$454,022.40
Yard Trimmings	NA	3,276.00	-	-	-	$56,085.12
Branches	NA	1,508.00	-	-	-	$25,816.96
Mixed Plastics	-	6,474.00	-	NA	NA	$110,834.88
Mixed Metals	-	962.00	-	NA	NA	$16,469.44
Mixed Organics	NA	6,916.00	-	-	-	$118,401.92
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Taxes from Alternative Waste Management Scenario ($): $2,154,602.92

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Taxes ($)	Change (Alt - Base) $
Food Waste	-	NA	-	-	-	26,520.00	$196,425.82	-$257,596.58
Yard Trimmings	NA	NA	-	-	3,276.00	-	$16,871.40	-$39,213.72
Branches	NA	NA	-	-	1,508.00	-	$7,766.20	-$18,050.76
Mixed Plastics	-	6,474.00	-	-	NA	NA	$1,499,728.97	$1,388,894.09
Mixed Metals	-	962.00	-	-	NA	NA	$389,627.05	$373,157.61
Mixed Organics	NA	NA	-	-	-	6,916.00	$44,183.49	-$74,218.43
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00
							0	$0.00

Total Change in Taxes ($): $1,372,972.20

Note: a negative value (i.e., a value in parentheses) indicates an economic impact reduction; a positive value indicates an economic impact increase.

a) For explanation of methodology, see the EPA WARM Documentation:

Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.
c) Economic impacts from source reduction are not modeled in this version of WARM.

d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts. See EPA WARM Documentation for further explanation.

Waste Reduction Model (WARM) -- Results

Total Taxes from Baseline MSW Generation and Management ($):	$781,630.72
Total Taxes from Alternative MSW Generation and Management ($):	$2,154,602.92
Incremental Taxes ($):	$1,372,972.20

Per Ton Estimates of Taxes for Baseline and Alternative Management Scenarios

Material	Taxes per Ton of Material Source Reduced ($)	Taxes per Ton of Material Recycled ($)	Taxes per Ton of Material Landfilled ($)	Taxes per Ton of Material Combusted ($)	Taxes per Ton of Material Composted ($)	Taxes per Ton of Material Anaerobically Digested ($)
Corrugated Containers	NA	$73.06	$17.12	$17.12	NA	NA
Magazines/third-class mail	NA	$73.06	$17.12	$17.12	NA	NA
Newspaper	NA	$73.06	$17.12	$17.12	NA	NA
Office Paper	NA	$73.06	$17.12	$17.12	NA	NA
Phonebooks	NA	$73.06	$17.12	$17.12	NA	NA
Textbooks	NA	$73.06	$17.12	$17.12	NA	NA
Mixed Paper (general)	NA	$73.06	$17.12	$17.12	NA	NA
Mixed Paper (primarily residential)	NA	$73.06	$17.12	$17.12	NA	NA
Mixed Paper (primarily from offices)	NA	$73.06	$17.12	$17.12	NA	NA
Food Waste	NA	NA	$17.12	$17.12	$5.15	$7.41
Food Waste (non-meat)	NA	NA	$17.12	$17.12	$5.15	$7.41
Food Waste (meat only)	NA	NA	$17.12	$17.12	$5.15	$7.41
Beef	NA	NA	$17.12	$17.12	$5.15	$7.41
Poultry	NA	NA	$17.12	$17.12	$5.15	$7.41
Grains	NA	NA	$17.12	$17.12	$5.15	$7.41
Bread	NA	NA	$17.12	$17.12	$5.15	$7.41
Fruits and Vegetables	NA	NA	$17.12	$17.12	$5.15	$7.41
Dairy Products	NA	NA	$17.12	$17.12	$5.15	$7.41
Yard Trimmings	NA	NA	$17.12	$17.12	$5.15	$5.22
Grass	NA	NA	$17.12	$17.12	$5.15	$5.19
Leaves	NA	NA	$17.12	$17.12	$5.15	$4.85
Branches	NA	NA	$17.12	$17.12	$5.15	$5.67
HDPE	NA	$251.05	$17.12	$17.12	NA	NA
LDPE	NA	NA	$17.12	$17.12	NA	NA
PET	NA	$251.05	$17.12	$17.12	NA	NA
LLDPE	NA	NA	$17.12	$17.12	NA	NA
PP	NA	$251.05	$17.12	$17.12	NA	NA
PS	NA	NA	$17.12	$17.12	NA	NA
PVC	NA	NA	$17.12	$17.12	NA	NA
Mixed Plastics	NA	$231.65	$17.12	$17.12	NA	NA
PLA	NA	NA	$17.12	$17.12	$5.15	NA
Desktop CPUs	NA	$809.55	$17.12	$17.12	NA	NA
Portable Electronic Devices	NA	$809.55	$17.12	$17.12	NA	NA
Flat-Panel Displays	NA	$809.55	$17.12	$17.12	NA	NA
CRT Displays	NA	$809.55	$17.12	$17.12	NA	NA
Electronic Peripherals	NA	$809.55	$17.12	$17.12	NA	NA
Hard-Copy Devices	NA	$809.55	$17.12	$17.12	NA	NA
Mixed Electronics	NA	$809.55	$17.12	$17.12	NA	NA
Aluminum Cans	NA	$935.95	$17.12	$17.12	NA	NA
Aluminum Ingot	NA	$935.95	$17.12	$17.12	NA	NA
Steel Cans	NA	$58.18	$17.12	$17.12	NA	NA
Copper Wire	NA	$935.95	$17.12	$17.12	NA	NA
Mixed Metals	NA	$405.02	$17.12	$17.12	NA	NA
Glass	NA	$72.87	$17.12	$17.12	NA	NA
Asphalt Concrete	NA	$20.63	$17.12	NA	NA	NA
Asphalt Shingles	NA	$20.63	$17.12	$17.12	NA	NA
Carpet	NA	$85.43	$17.12	$17.12	NA	NA
Clay Bricks	NA	NA	$17.12	NA	NA	NA
Concrete	NA	$20.63	$17.12	NA	NA	NA
Dimensional Lumber	NA	$20.63	$17.12	$17.12	NA	NA
Drywall	NA	$20.63	$17.12	NA	NA	NA
Fiberglass Insulation	NA	NA	$17.12	NA	NA	NA
Fly Ash	NA	$20.63	$17.12	NA	NA	NA
Medium-density Fiberboard	NA	NA	$17.12	$17.12	NA	NA
Structural Steel	NA	$87.95	$17.12	$17.12	NA	NA
Vinyl Flooring	NA	NA	$17.12	$17.12	NA	NA
Wood Flooring	NA	NA	$17.12	$17.12	NA	NA
Tires	NA	$113.97	$17.12	$17.12	NA	NA
Mixed Recyclables	NA	$102.71	$17.12	$17.12	NA	NA
Mixed Organics	NA	NA	$17.12	$17.12	$5.15	$6.39
Mixed MSW	NA	NA	$17.12	$17.12	NA	NA

Taxes from Baseline Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Taxes from Recycling ($)	Baseline Landfilling (Tons)	Taxes from Landfilling ($)	Baseline Combustion (Tons)	Taxes from Combustion ($)	Baseline Composting (Tons)	Taxes from Composting ($)	Baseline Anaerobic Digestion (Tons)	Taxes from Anaerobic Digestion ($)	Total Taxes ($)
Corrugated Containers	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	26,520.00	NA	NA	26,520.00	$454,022.40	0.00	$0.00	0.00	$0.00	0.00	$0.00	$454,022.40
Food Waste (non-meat)	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	3,276.00	NA	NA	3,276.00	$56,085.12	0.00	$0.00	0.00	$0.00	0.00	NA	$56,085.12
Grass	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	NA	$0.00
Leaves	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	NA	$0.00
Branches	1,508.00	NA	NA	1,508.00	$25,816.96	0.00	$0.00	0.00	$0.00	0.00	NA	$25,816.96
HDPE	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	6,474.00	0.00	$0.00	6,474.00	$110,834.88	0.00	$0.00	NA	NA	NA	NA	$110,834.88
PLA	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	962.00	0.00	$0.00	962.00	$16,469.44	0.00	$0.00	NA	NA	NA	NA	$16,469.44
Glass	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	6,916.00	NA	NA	6,916.00	$118,401.92	0.00	$0.00	0.00	$0.00	0.00	$0.00	$118,401.92
Mixed MSW	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	45,656.00	0.00	$0.00	45,656.00	$781,630.72	0.00	$0.00	0.00	$0.00	0.00	$0.00	$781,630.72

Taxes from Alternative Management of Municipal Solid Wastes

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Taxes from Source Reduction ($)	Alternative Recycling (Tons)	Taxes from Recycling ($)	Alternative Landfilling (Tons)	Taxes from Landfilling ($)	Alternative Combustion (Tons)	Taxes from Combustion ($)	Alternative Composting (Tons)	Taxes from Composting ($)	Alternative Anaerobic Digestion (Tons)	Taxes from Anaerobic Digestion ($)	Total Taxes ($)
Corrugated Containers	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	26,520.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	26,520.00	$196,425.82	$196,425.82
Food Waste (non-meat)	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	3,276.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	3,276.00	$16,871.40	0.00	$0.00	$16,871.40
Grass	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Leaves	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Branches	1,508.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	1,508.00	$7,766.20	0.00	$0.00	$7,766.20
HDPE	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	6,474.00	0.00	NA	6,474.00	$1,499,728.97	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$1,499,728.97
PLA	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	962.00	0.00	NA	962.00	$389,627.05	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$389,627.05
Glass	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	0.00	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	0.00	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	6,916.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	6,916.00	$44,183.49	$44,183.49
Mixed MSW	0.00	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	45,656.00	0.00	NA	7,436.00	$1,889,356.02	0.00	$0.00	0.00	$0.00	4,784.00	$24,637.60	33,436.00	$240,609.31	$2,154,602.92

Incremental Taxes from Alternative Management of Municipal Solid Wastes

Material	Source Reduction (Tons)	Incremental Taxes from Source Reduction ($)	Incremental Recycling (Tons)	Incremental Taxes from Recycling ($)	Incremental Landfilling (Tons)	Incremental Taxes from Landfilling ($)	Incremental Combustion (Tons)	Incremental Taxes from Combustion ($)	Incremental Composting (Tons)	Incremental Taxes from Composting ($)	Incremental Anaerobic Digestion (Tons)	Incremental Taxes from Anaerobic Digestion ($)	Total Incremental Taxes ($)
Corrugated Containers	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Magazines/third-class mail	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Newspaper	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Office Paper	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Phonebooks	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Textbooks	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (general)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily residential)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Paper (primarily from offices)	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Food Waste	0.00	NA	NA	NA	(26,520.00)	-$454,022.40	0.00	$0.00	0.00	$0.00	26,520.00	$196,425.82	-$257,596.58
Food Waste (non-meat)	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Food Waste (meat only)	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Beef	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Poultry	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Grains	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Bread	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Fruits and Vegetables	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Dairy Products	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	$0.00
Yard Trimmings	NA	NA	NA	NA	(3,276.00)	-$56,085.12	0.00	$0.00	3,276.00	$16,871.40	0.00	NA	-$39,213.72
Grass	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	NA	$0.00
Leaves	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	NA	$0.00
Branches	NA	NA	NA	NA	(1,508.00)	-$25,816.96	0.00	$0.00	1,508.00	$7,766.20	0.00	NA	-$18,050.76
HDPE	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LDPE	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PET	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
LLDPE	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PP	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PS	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
PVC	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Plastics	0.00	NA	6,474.00	$1,499,728.97	(6,474.00)	-$110,834.88	0.00	$0.00	NA	NA	NA	NA	$1,388,894.09
PLA	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	$0.00
Desktop CPUs	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Portable Electronic Devices	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Flat-Panel Displays	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
CRT Displays	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Electronic Peripherals	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Hard-Copy Devices	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Electronics	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Cans	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Aluminum Ingot	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Steel Cans	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Copper Wire	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Metals	0.00	NA	962.00	$389,627.05	(962.00)	-$16,469.44	0.00	$0.00	NA	NA	NA	NA	$373,157.61
Glass	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Asphalt Concrete	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Asphalt Shingles	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Carpet	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Clay Bricks	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Concrete	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Dimensional Lumber	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Drywall	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fiberglass Insulation	0.00	NA	NA	NA	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Fly Ash	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Medium-density Fiberboard	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Structural Steel	0.00	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	NA	NA	$0.00
Vinyl Flooring	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Wood Flooring	0.00	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Tires	0.00	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Recyclables	NA	NA	0.00	$0.00	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Mixed Organics	NA	NA	NA	NA	(6,916.00)	-$118,401.92	0.00	$0.00	0.00	$0.00	6,916.00	$44,183.49	-$74,218.43
Mixed MSW	NA	NA	NA	NA	0.00	$0.00	0.00	$0.00	NA	NA	NA	NA	$0.00
Total	0.00	NA	7,436.00	$1,889,356.02	(45,656.00)	-$781,630.72	0.00	$0.00	4,784.00	$24,637.60	33,436.00	$240,609.31	$1,372,972.20

a) For explanation of methodology, see the EPA WARM Documentation:
Documentation Chapters for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
-- available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model

b) Economic impact estimates provided by this model are intended to support voluntary waste planning initiatives.

c) Economic impacts from source reduction are not modeled in this version of WARM.

d) EPA acknowledges that composting and anaerobic digestion economic impacts are undervalued in WARM factors because they are not inclusive of life-cycle impacts.
See EPA WARM Documentation for further explanation.

ENERGY CALCULATIONS

Energy Consumption, Construction

On-Road Fuel Consumption Rates (Construction)

Off-Road Fuel Consumption Rates (Construction)

Energy Consumption, Operation

On-Road Fuel Consumption Rates (Operational)

Equipment Energy Load

Energy Consumption, Construction

Offroad Heavy-Duty Equipment Energy Consumption

Element Type	Equipment	HP	Load Factor	Modeled Equipment	Total Equipment Hours	Horsepower-Hour (hp-hr)	Fuel Usage (gallons/hp-hr)	Fuel (gallons of diesel)
Site Prep (excavation, grading, clearing)	Excavators	165	0.38	Excavators	300	49500	0.0512151	2,535
	Rubber Tired Loaders	150	0.36	Rubber Tired Loaders	300	45000	0.0504834	2,272
	Rubber Tired Dozers	367	0.4	Rubber Tired Dozers	300	110100	0.0474548	5,225
	Rollers	367	0.38	Rollers	300	110100	0.0525917	5,790
	Off-Highway Trucks	150	0.38	Off-Highway Trucks	400	60000	0.048931	2,936
	Off-Highway Trucks	350	0.38	Off-Highway Trucks	400	140000	0.048931	6,850
Trenchinig	Excavators	165	0.38	Excavators	450	74250	0.0512151	3,803
	Rollers	165	0.38	Rollers	450	74250	0.0525917	3,905
	Off-Highway Trucks	150	0.38	Off-Highway Trucks	900	135000	0.048931	6,606
	Rubber Tired Loaders	150	0.36	Rubber Tired Loaders	450	67500	0.0504834	3,408
Concrete Work	Off-Highway Trucks	367	0.38	Off-Highway Trucks	800	293600	0.048931	14,366
	Off-Highway Trucks	400	0.38	Off-Highway Trucks	160	64000	0.048931	3,132
	Forklifts	175	0.2	Forklifts	1000	175000	0.053254	9,319
	Cranes	375	0.29	Cranes	400	150000	0.0530124	7,952
	Rubber Tired Loaders	150	0.36	Rubber Tired Loaders	300	45000	0.0504834	2,272
Equipment Installation	Cranes	375	0.29	Cranes	3760	1410000	0.0530124	74,747
	Forklifts	175	0.2	Forklifts	1880	329000	0.053254	17,521
	Welders	84	0.45	Welders	1880	157920	0.0303357	4,791
	Rollers	84	0.38	Rollers	1880	157920	0.0525917	8,305
	Generator Sets	84	0.74	Generator Sets	3760	315840	0.0697088	22,017
Paving/Landscape	Off-Highway Trucks	125	0.38	Off-Highway Trucks	180	22500	0.048931	1,101
	Rollers	40	0.38	Rollers	360	14400	0.0525917	757
	Pavers	300	0.42	Pavers	180	54000	0.0515165	2,782
	Off-Highway Trucks	367	0.38	Off-Highway Trucks	180	66060	0.048931	3,232
	Off-Highway Trucks	367	0.38	Off-Highway Trucks	540	198180	0.048931	9,697
	Excavators	45	0.38	Excavators	180	8100	0.0512151	415
Cleanup/Decomissioning	Rubber Tired Loaders	150	0.36	Rubber Tired Loaders	240	36000	0.0504834	1,817
	Excavators	45	0.38	Excavators	240	10800	0.0512151	553
	Off-Highway Trucks	150	0.38	Off-Highway Trucks	240	36000	0.048931	1,762
	Forklifts	175	0.2	Forklifts	320	56000	0.053254	2,982
								232,849

Notes:
Data queried from OFFROAD 2021.

Onroad Energy Consumption

Trip Type	Fleet	Total VMT	Gallons of Gasoline	Gallons of Diesel	KWh of Electricity
Export (soil/waste)	HHDT	263	-	43	-
Export (trees/veg.)	MHDT	60	-	7	-
Import (soil/fill)	HHDT	1,313	-	215	-
Import (concrete)	HHDT	2,889	-	473	-
Import (material/suppli	HHDT	1,300	-	213	-
Worker Commute	LDA,LDT1,LDT2	416,250	16,142	14,416	160,707
			16,142	15,366	160,707

Notes: Assume haul trucks and vendor trucks are all diesel-fueled.
Consistent with CalEEMod, worker vehicles assumed to be gasoline and 25% LDA, 50% LDT1, and 25% LDT2.
Worker commute energy use in fleet is based on EMFAC statewide dataset for year 2025.

Project Grand Total

Gallons of Gasoline	Gallons of Diesel	KWh of Electricity
16,142	**248,216**	**160,707**

On-Road Fuel Consumption Rates

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	Fuel Consumption	Gallons per mile	KWh per mile
Statewide	2025	HHDT	Aggreg	Aggreg	Gasoline	126.6604	2856125.3	2856125.3	0	828690.239	0	731.486838	0.256	
Statewide	2025	HHDT	Aggreg	Aggreg	Diesel	315961.6	1.357E+10	1.357E+10	0	1603491713	0	2219593.24	0.164	
Statewide	2025	HHDT	Aggreg	Aggreg	Electricity	2016.602	75367156	0	75367156	9281081.05	137234693.2	0		1.821
Statewide	2025	HHDT	Aggreg	Aggreg	Natural Ga	18819.84	380438381	380438381	0	42158224.2	0	68147.9906	0.179	
Statewide	2025	LDA	Aggreg	Aggreg	Gasoline	12837663	1.748E+11	1.748E+11	0	2.064E+10	0	5835115.5	0.033	
Statewide	2025	LDA	Aggreg	Aggreg	Diesel	42627.75	439606135	439606135	0	61856327.8	0	10421.0256	0.024	
Statewide	2025	LDA	Aggreg	Aggreg	Electricity	792351.3	1.322E+10	0	1.322E+10	1364130228	5105753756	0		0.386
Statewide	2025	LDA	Aggreg	Aggreg	Plug-in Hyb	383663.1	6.182E+09	2.983E+09	3.199E+09	550497152	966134756.3	103644.796	0.035	0.302
Statewide	2025	LDT1	Aggreg	Aggreg	Gasoline	1284222	1.517E+10	1.517E+10	0	1938908410	0	612727.449	0.04	
Statewide	2025	LDT1	Aggreg	Aggreg	Diesel	610.9429	2934857.5	2934857.5	0	593416.924	0	123.506623	0.042	
Statewide	2025	LDT1	Aggreg	Aggreg	Electricity	3472.828	53526036	0	53526036	5799515.76	20665467.55	0		0.386
Statewide	2025	LDT1	Aggreg	Aggreg	Plug-in Hyb	2255.843	39689920	17215936	22473985	3236784.66	6787813.206	602.511166	0.035	0.302
Statewide	2025	LDT2	Aggreg	Aggreg	Gasoline	6307224	8.719E+10	8.719E+10	0	1.0221E+10	0	3569404.55	0.041	
Statewide	2025	LDT2	Aggreg	Aggreg	Diesel	22395.21	321461220	321461220	0	37007576.8	0	9857.9929	0.031	
Statewide	2025	LDT2	Aggreg	Aggreg	Electricity	47977.69	598468680	0	598468680	84748119	231058304.8	0		0.386
Statewide	2025	LDT2	Aggreg	Aggreg	Plug-in Hyb	57212.96	962031616	437815495	524216121	82091725.5	158328892.6	15355.1125	0.035	0.302
Statewide	2025	MHDT	Aggreg	Aggreg	Gasoline	47979.48	846727728	846727728	0	313911316	0	168696.65	0.199	
Statewide	2025	MHDT	Aggreg	Aggreg	Diesel	283391.9	3.829E+09	3.829E+09	0	1056911936	0	437252.787	0.114	
Statewide	2025	MHDT	Aggreg	Aggreg	Electricity	2457.805	42973435	0	42973435	9940758.16	46191256.47	0		1.075
Statewide	2025	MHDT	Aggreg	Aggreg	Natural Ga	3268.742	48227573	48227573	0	8986490.19	0	6270.60469	0.13	

Onroad Energy Efficiency

Fleet	Gasoline (gallon/mi)	Diesel (gallon/mi)	Electricity (KWh/mi)
LDA,LDT1,I	0.038778595	0.034634223	0.386082534
MHDT	0.199233643	0.114196302	1.074879312
HHDT	0.256111609	0.163590862	1.82088193

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 25% LDA, 50% LDT1, and 25% LDT2.

OFFROAD Fuel Consumption Rates

Model Output: OFFROAD2021 (v1.0.6) Emissions Inventory
Region Type: Air District
Region: Bay Area AQMD
Calendar Year: 2025
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Y	Vehicle Category	Fuel	Fuel Consumptio	Total_Activity_hr	Total_Populatio	Horsepower_Hours	Equipment Specific Fuel Consumption Gallons per Horsepower-hour Equipment	Gallons per Horsepower-hour
Bay Area AC	2025	Construction and Mining - Cranes	Diesel	458011.1994	102303.6166	404.4546778	8639705.292	Cranes	0.053012364
Bay Area AC	2025	Construction and Mining - Excavators	Diesel	4102537.743	1382781.302	2389.0219	80104080.64	Excavators	0.051215091
Bay Area AC	2025	Construction and Mining - Off-Highway Trucks	Diesel	1708655.381	199472.0513	257.5579426	34919683.47	Off-Highway Trucks	0.0489
Bay Area AC	2025	Construction and Mining - Pavers	Diesel	264105.8481	81320.76301	167.945209	5126622.737	Pavers	0.0515
Bay Area AC	2025	Construction and Mining - Rollers	Diesel	698215.7151	371406.9002	847.8525648	13276166.72	Rollers	0.0526
Bay Area AC	2025	Construction and Mining - Rubber Tired Dozers	Diesel	149927.6901	27874.616	52.7108843	3159379.938	Rubber Tired Dozers	0.0475
Bay Area AC	2025	Construction and Mining - Rubber Tired Loaders	Diesel	2993535.374	760766.3173	1111.333697	59297438.05	Rubber Tired Loaders	0.050483385
Bay Area AC	2025	Industrial - Forklifts	Diesel	2571159.09	2453565.545	5161.794837	48281089.19	Forklifts	0.053253958
Bay Area AC	2025	Light Commercial - Misc - Generator Sets	Diesel	1082845.6	470722.25	3498.506456	15533834.25	Generator Sets	0.069708842
Bay Area AC	2025	Light Commercial - Misc - Welders	Diesel	1286661.064	922044.75	2211.615472	42414058.5	Welders	0.030335721

Energy Consumption, Operation

Onroad Vehicles Energy Consumption

Trip Type	Fleet	Total VMT	Gallons of Gasoline	Gallons of Diesel	
Workforce—one way (per day)	LDA,LDT1,LDT2	21,900	816	637	1
Trucks Bringing High Strength Waste (per day)	HHDT	365,000	88,623	57,770	1
Chemical Deliveries (per week)	HHDT	13,000	3,156	2,058	1
Trucks Hauling Biosolids to Landfill (per day)	HHDT	54,750	13,293	8,665	-1
Trucks Hauling Biochar (per week)	HHDT	5,200	1,263	823	1
Trucks Hauling Ammonia Sulfate Fertilizer (per week)	HHDT	15,600	3,788	2,469	1
		Project	84,353	55,090	

Red indicate net reduction due to project.

Stationary Equipment Energy Consumption

		Average Operation		Maximum Operation			
Equipment	hr/year	MMBTU/hr	hr/year	MMBTU/hr	Annual Heat Demand (MMBTU)	Natural Gas (million cf)	
Boiler	6,480	6	2,160	7	54,000	64	

Assumptions:

Natural Gas	Energy content	1020	BTU/scfm cu	https://www.epa.gov/sites/default/files/2020-09/documents/1.4_natural_gas_combustion.pdf
	Equipment efficiency	83%		

Equipment	Gallons of Diesel
Emergency Generator	939

All other equipment	hr/year	kWh	Annual Electricity Demand (MWh)
	8,760	1,075	9,417

Note: See Energy Load sheet.

Project Operational Energy Demand and Cogeneration

Operational Energy	Gallons of Gasoline	Gallons of Diesel	MWh of Electricity	MCF of Natural Gas
Demand	84,353	56,029	9,417	64
Cogeneration				137

Note: Natural gas co-gen estimate is based on anticipated average of 260 scfm and 24/7, 365 days/yr production.

On-Road Fuel Consumption Rates

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle C	Model Y	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consu	Fuel Consum	Gallons per mile
Statewide	2027	HHDT	Aggreg	Aggreg	Gasoline	90.74515	7752.5551	7752.5551	0	1815.62895	0	1.88233687	0.243
Statewide	2027	HHDT	Aggreg	Aggreg	Diesel	330234.7	44752671	44752671	0	5376906.99	0	7083.14812	0.158
Statewide	2027	LDA	Aggreg	Aggreg	Gasoline	12713197	497958752	497958752	0	58870070.5	0	15956.1124	0.032
Statewide	2027	LDA	Aggreg	Aggreg	Diesel	34811	1027855.4	1027855.4	0	146035.486	0	23.790637	0.023
Statewide	2027	LDT1	Aggreg	Aggreg	Gasoline	1225903	41758053	41758053	0	5335951.78	0	1627.75757	0.039
Statewide	2027	LDT1	Aggreg	Aggreg	Diesel	249.3117	3462.7229	3462.7229	0	693.123122	0	0.14007492	0.04
Statewide	2027	LDT2	Aggreg	Aggreg	Gasoline	6533170	258779164	258779164	0	30476806.2	0	10123.0514	0.039
Statewide	2027	LDT2	Aggreg	Aggreg	Diesel	23723.73	964704.52	964704.52	0	112405.801	0	28.4751758	0.03
Statewide	2027	MHDT	Aggreg	Aggreg	Gasoline	45832.05	2474908.3	2474908.3	0	917007.663	0	483.429698	0.195
Statewide	2027	MHDT	Aggreg	Aggreg	Diesel	292488.2	12389016	12389016	0	3503647.3	0	1400.2356	0.113

Onroad Energy Efficiency

Fleet	Gasoline (gallon/mi)	Diesel (gallon/mi)	Electricity (KWh/mi)
LDA,LDT1,LDT2	0.037280727	0.02906526	0
MHDT	0.195332366	0.113022346	0
HHDT	0.242802127	0.158273194	0

Notes: Consistent with CalEEMod, worker fleet is assumed to be 25% LDA, 50% LDT1, and 25% LDT2.

Anaergia	ELECTRICAL LOAD AND MOTOR LIST	Client: City of Brentwood	Rev:	Date:	Description:	Exe:	Ver:	App:	Key
			0	5/3/2024	Issued for Review	SS	AF	ASD	~~Deleted~~
		Contractor: WM Lyles							Added
	Project: Brentwood Solid Waste Organics Diversion Project								Modified
		DOC: 0183 E006 01 Rev. 0							

Rev	Tag Number	P&ID N° Sheet	Equipment Name	Connected Load [HP]	Connected Load [KW]	Average Power Draw (kW)	Energy Consumption (KWh/year)	Feeder Size (amp)	Voltage (V)	Frequency (Hz)	Operating Time (h/d)	Operating Time (d/wk)	Operating Time (h/yr)	Equipment Up-Time (%)	Driving Method (starter type)	Connected to Emergency Power	Power Supply Location	Comments
			Grinder 1 LCP 11101					**30**									MCC AD	
0	GRI-11101	11	Grinder #1	5	3.7			-	480	60					VFD	Non-critical	LCP 11101	
			Grinder 2 LCP 11201					**30**									MCC AD	
0	GRI-11201	11	Grinder #2	5	3.7			-	480	60					VFD	Non-critical	LCP 11201	
			MCC-AD					**200**									MAIN SWG	AMP included for VFD in the Panel for AMP estimating pur
0	P-11101	11	HSW Receiving Pump #1	20	14.9			-	480	60					VFD	Non-critical	MCC-AD	
0	P-11201	11	HSW Receiving Pump #2	20	14.9			-	480	60					VFD	Non-critical	MCC AD	
1	P-13101	12	Overflow Sump Pump	10	7.5			-	460	60					VFD	Non-critical	MCC AD	
1	P-13201	12	Overflow Sump Pump	10	7.5			-	460	60					VFD	Non-critical	MCC AD	
0	P-40101	19	Buffer Tank #1 Discharge Pump	10	7.5			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	P-40201	19	Buffer Tank #2 Discharge Pump	10	7.5			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	P-40301	19	Buffer Tank #3 Discharge Pump	10	7.5			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	P-41101	20	Digester Recirculation Pump	15	11.2			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	P-41102	21	Digestate Pump #1	15	11.2			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	P-41103	21	Digestate Pump #2	15	11.2			-	480	60					VFD	Non-critical	MCC AD	*Estimated Pump Calc
0	BL-70101	22	Biogas Storage Blower	5	4			-	480	60					VFD	Non-critical	MCC AD	
0	P-06201	34	Ferric Chloride Pump	1.5	1.1			-	480	60					VFD	Non-critical	MCC AD	
	LCP-32101		**SST 1 LCP 32101**					**60**									MCC AD	
0	MX-32101	14	Inline Mixer Flocstirr #1	3	2.2			-	480	60					VFD	Non-critical	LCP-32101	
0	MX-32102	14	Floc Tank Mixer #1	3	2.2			-	480	60					VFD	Non-critical	LCP-32101	
0	SST-32101	14	Prethickening Unit #1	4	3			-	480	60					VFD	Non-critical	LCP-32101	
0	P-32101	14	Prethickening Unit #1 Discharge Pump	15	11.2			-	480	60					VFD	Non-critical	LCP-32101	
	LCP-32201		**SST 2 LCP 32201**					**60**									MCC AD	
0	MX-32201	15	Inline Mixer Flocstirr #2	3	2.2			-	480	60					VFD	Non-critical	LCP-32201	
0	MX-32202	15	Floc Tank Mixer #2	3	2.2			-	480	60					VFD	Non-critical	LCP-32201	
0	SST-32201	15	Prethickening Unit #2	4	3			-	480	60					VFD	Non-critical	LCP-32201	
0	P-32201	15	Prethickening Unit #2 Discharge Pump	15	11.2			-	480	60					VFD	Non-critical	LCP-32201	
			Buffer Tank Mixers LCP (LCP-40000)					**100**									MCC AD	
0	MX-40101	16	Buffer Tank #1 Mixer	17	12.5			-	480	60					VFD	Non-critical	LCP-40000	
0	SB-40101	16	Buffer Tank #1 Service Box	0.5	0.4			-	480	60					VFD	Non-critical	LCP-40000	
0	MX-40201	17	Buffer Tank #2 Mixer	17	12.5			-	480	60					VFD	Non-critical	LCP-40000	
0	SB-40201	17	Buffer Tank #2 Service Box	0.5	0.4			-	480	60					VFD	Non-critical	LCP-40000	
0	MX-40301	18	Buffer Tank #3 Mixer	17	12.5			-	480	60					VFD	Non-critical	LCP-40000	
0	SB-40301	18	Buffer Tank #3 Service Box	0.5	0.4			-	480	60					VFD	Non-critical	LCP-40000	
			AD Mixer LCP (LCP-41100)					**100**									MCC-AD	
0	MX-41101	20	AD Mixer #1	17	12.5			-	480	60					VFD	Non-critical	LCP-41100	
0	SB-41101	20	AD Service Box #1 Actuator	0.5	0.4			-	480	60					VFD	Non-critical	LCP-41100	
0	MX-41102	20	AD Mixer #2	17	12.5			-	480	60					VFD	Non-critical	LCP-41100	
0	SB-41102	20	AD Service Box #2 Actuator	0.5	0.4			-	480	60					VFD	Non-critical	LCP-41100	
0	MX-41103	20	AD Mixer #3	17	12.5			-	480	60					VFD	Non-critical	LCP-41100	
0	SB-41103	20	AD Service Box #3 Actuator	0.5	0.4			-	480	60					VFD	Non-critical	LCP-41100	
			Flare LCP (LCP-76101)					**100**									MCC AD	
0	BL-76101	24	Flare Biogas Blower	26	19.7			-	480	60					VFD	Critical	LCP-76101	
0	BL-76102	24	Flare Purge Air Blower	1.0	0.7			-	480	60					VFD	Critical	LCP-76102	
			Biogas Condition LCP 72101					**150**									MCC AD	
0	BL-72101	25	Biogas Booster Blower #1	40	29.8			-	460	60					VFD	Non-critical	LCP-72101	
0	BL-72102	25	Biogas Booster Blower #2	40	29.8			-	460	60					VFD	Non-critical	LCP-72101	
0	P-72101	25	Condensate Pump	0	0.2			-	460	60					VFD	Non-critical	LCP-72101	
			Chiller LCP 72001					**250**									MCC-AD	
0	CH-72001	26	Biogas Chiller Unit	45	34			-	460	60					VFD	Non-critical	LCP-72001	This is total for the supplied equipment package
0	CH-72002	26	Chiller Pump Skid	-	-			-	-	-					-	-	LCP-72001	Included in Chiller Unit Panel
			Feed Compressor VFD (LCP-74101)					**1200**									MCC-AD	
0	A-74101	28	Biogas Feed Compressor	650	485			-	460	60					VFD	Non-critical	MCC-16	This is total for the supplied equipment package
			RNG System LCP RNG					**300**									MCC-AD	
0		29	Biogas High Pressure Conditioning	100	75			-	460	60					VFD	Non-critical	LCP RNG	This is total for the supplied equipment package
0			**Polymer System LCP 02001**					**30**									MCC-AD	
0	PHU-02002	34	Polymer Activation Chamber #1	0.5	0.2			-	460	60					VFD	Non-critical	LCP-02001	
0	P-02002	34	Polymer Feed Pump #1	1.5	1.1			-	480	60					VFD	Non-critical	LCP-02001	
0			**Polymer System LCP 02022**					**30**									MCC-AD	
1	PHU-02003	34	Polymer Activation Chamber #2	0.5	0.2			-	460	60					VFD	Non-critical	LCP-02022	
1	P-02003	34	Polymer Feed Pump #2	1.5	1.1			-	480	60					VFD	Non-critical	LCP-02022	

Total	1202	896	Amps	2580
Safety Factor (misc)	20%	20%	Safety Factor	20%
Total w/ Safety Factor	**1442**	**1075**	**Total w/ Safety Factor**	**3096**

HEALTH RISK ASSESSMENT MEMORANDUM

HEALTH RISK ASSESSMENT
FOR THE

ADMINISTRATIVE DRAFT INITIAL STUDY
FOR THE
CITY OF BRENTWOOD
SOLID WASTE ORGANICS DIVERSION PROJECT

Prepared for:

CITY OF BRENTWOOD
PUBLIC WORKS-ENGINEERING
150 City Park Way
Brentwood, CA 94513
(925) 516-6000

Prepared *by:*

ASCENT ENVIRONMENTAL, INC.
455 Capitol Mall #300
Sacramento, CA 95814
(916) 444-7301

July 24, 2024

1 INTRODUCTION

This health risk assessment (HRA) evaluates the potential health risks associated with the construction and operation of the proposed City of Brentwood Solid Waste Organics Diversion Project (project) by City of Brentwood Public Works-Engineering, located in the City of Brentwood (City). The focus of this HRA is to evaluate the exposure of nearby residential and worker receptors to project related toxic air contaminants (TACs), primarily diesel particulate matter (DPM), from diesel-powered equipment and vehicles used during construction and the hauling of materials and emissions of fine particulate matter ($PM_{2.5}$), as well as the operational emissions associated with DPM from emergency back-up generators and TACs from stack and area emissions associated with the operation of new facilities. This study was conducted following Bay Area Air Quality Management District's (BAAQMD) *Recommended Methods for Screening and Modeling Local Risks and Hazards* (*Recommended Methods*) (BAAQMD 2011) and BAAQMD's *Air Quality Guidelines Appendix E: Recommended Methods For Screening and Modeling Local Risks and Hazards* (BAAQMD 2022). Additionally, in preparing this HRA, procedures detailed in OEHHA's *Air Toxic Hot Spot Program Guidance Manual for Preparation of Health and Risk Assessments* (OEHHA 2015) were followed to quantify the potential health risks experienced by nearby receptors due to project-generated construction and operational emissions. This report discusses the analysis methodology, thresholds of significance used, and the results of the HRA.

2 INVENTORY OF TOXIC AIR CONTAMINANT EMISSIONS

Construction-related emissions of DPM were determined by conducting detailed construction emissions modeling for the project using Excel Sheets, EMFAC, OFFROAD, BAAQMD-recommended California Emissions Estimator Model (CalEEMod) equivalent methodologies. Construction activities for the project would include site preparation, trenching, concrete work, equipment installation, paving, and landscaping. Construction is anticipated to begin in December of 2024 and would be complete by June 2027. $PM_{2.5}$ exhaust emissions would occur from diesel-powered heavy-duty construction equipment, diesel generators, and diesel trucks used during construction. To estimate risk, average daily and annual construction emissions of exhaust $PM_{2.5}$, used as a proxy for DPM, were computed.

Heavy-duty equipment would be used in areas designated for excavation, grading, and new construction. The DPM emissions generated by off-site vehicle traffic (e.g., vendor and off-hauling trips) were modeled along Sunset Road and then Elkins Way terminating at the project site (see Section 3.3.3 for haul route details). Applicant provided heavy-duty equipment usage, worker, hauling, and vendor trips and trip lengths were used in the model. Emissions estimates from construction equipment and on-road truck trips are shown in Appendix A. In summary, the sources modeled for construction HRA were:

- Heavy-duty construction equipment $PM_{2.5}$ exhaust (DPM) emissions and $PM_{2.5}$ fugitive dust from vehicle movement as adjacent line volume sources, covering the project site where construction activities would occur;
- Construction worker and haul/vendor truck on-road emissions of $PM_{2.5}$ exhaust (DPM from diesel-fueled trucks) and fugitive dust on roadways as volume line sources;
- Onsite truck idling emissions of DPM as area sources.

Operation related emissions of TACs primarily include DPM generated from emissions from stationary sources emission associated with the anaerobic digestion system (ADS) and the biosolid dryer and pyrolysis system (BDPS), emissions from mobile sources such as diesel-fueled onsite equipment for moving material and fuel truck trips for filling a subbase fuel tank onsite. The emission rates of specific TACs associated with the ADS and subsequent BDPS were provided by the applicant. The specific TACs analyzed in this HRA are based on the list provided in the Consolidated Table of OEHHA/ARB

Approved Risk Assessment Health Values (Consolidated Table) (CARB 2023). Any substances in this table that did not have risk values were excluded from the analysis. Emission estimates from stationary sources and mobile sources are shown in Appendix A. In summary, the sources modeled for the operational HRA were:

- Emergency generator as point sources;
- Pyrolysis stack emissions as point sources;
- Emission from Biofilters that connect to biodryers as area sources; and
- Truck exhaust emissions modeled as line volume sources.

3 AIR DISPERSION MODELING

3.1 APPROACH

To determine health risk and pollutant concentrations at specific locations (i.e., receptors), air dispersion modeling was conducted using site-specific parameters (e.g., terrain, meteorological data) to generate the ground-level pollutant concentrations prior to risk calculations. Dispersion modeling was conducted using CARB's approved American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee modeling system (AERMOD) Version 23132, with a unit emission rate of 1 gram per second (g/s) for modeled sources or source groups. This approach is used so that the resulting ground-level concentrations (GLCs) can be easily scaled for various scenarios (e.g., default model runs, reduced emissions scenario) without running AERMOD multiple times. Then, the ground-level concentrations from the AERMOD run at each receptor location were multiplied by actual emission estimates to obtain the actual ground-level concentrations for $PM_{2.5}$ and TACs.

The air dispersion model included all standard regulatory default options, including the use of urban dispersion parameters and local terrain. Terrain in the project vicinity is generally flat. Land uses in urban environment include many multi-story and variable-size buildings, which results in a more convective, turbulent manner during the hours just after sunset due to the urban heat island effect. The urban heat island effect, which results from surface heating of paved and built-up environment, is likely prevalent in some areas of the city and leads to longer periods of mixing and generally lower predicted air concentrations. The AERMOD urban dispersion modeling parameters enable modeling this boundary layer. The City fits the definition of an urban area based on its population; thus, urban dispersion option was used in the AERMOD dispersion runs to estimate air pollutant concentrations.

3.2 AERMOD MODEL CONFIGURATION

The following input parameters were used in the model run:

- Projected Coordinate System: Universal Transverse Mercator (UTM) zone 10;
- Geographic Datum: North American Datum 1983 (NAD83);
- Urban land use based on AERMOD's Land Use Procedure based on the level of development within a 3-kilometer (km) radius of the project site;
- Period (i.e., annual) averaging, and 1-hour maximum of concentrations for construction activity and operation;
- Unit emission rate of 1 grams/second for individual sources or grouped sources; and
- U.S. Geologic Survey North American Datum NAD 27 7.5-minute terrain data.

3.3 INPUTS AND ASSUMPTIONS

3.3.1 METEOROLOGICAL DATA

Pre-processed meteorological data collected at the Contra Costa Power meteorological station from year 2015-2017 were obtained from BAAQMD to represent local weather conditions. The station is located 5.5 miles northwest of the project site, and the wind primarily blows to the east-southeast. Dispersion modeling applied a time-averaged, simplified representation of turbulent, atmospheric transport to approximate how pollutants are carried, mixed, dispersed, and diluted by the local winds.

3.3.2 RECEPTOR GRID

Receptors are specific points within the project impact area where pollutant concentrations and potential health risks are assessed. For this HRA, the project impact area refers to the region extending 1,000 feet from the project site boundaries that would have potential health risks. Within this area, a cartesian grid was established, consisting of 954 receptors (608 residential, 107 worker, and 239 park receptors). Sensitive receptors were spaced 20 meters apart, and park receptors were spaced 40 meters apart. Onsite receptors were excluded from this assessment. To align with BAAQMD guideline, all receptors were assigned a flagpole receptor height of 1.5 meters to represent the average breathing level for individuals exposed at ground level.

3.3.3 EMISSION SOURCES

A total number of 16 sources are modeled for the construction of the project. Construction emission types are onsite exhaust, haul exhaust, onsite idling exhaust, onsite dust, haul dust. A total number of 16 sources are modeled for the operation of the project, including haul exhaust, haul dust, emergency generator exhaust, and stationary emissions from the ADS and BDPS facilities. Typically, all sources are defined with an emission rate of 1 grams/second to generate scalable concentrations (unitized concentration).

Onsite construction activities would occur at four different locations: site 1 for expanding waste receiving facilities, site 2 for building the facilities of the ADS and BDPS, site 3 for connector path realignment, and site 4 for trenching and installing the natural gas pipeline. For these onsite construction activities, construction emission sources (i.e., the use of heavy-duty equipment on site) were modeled as adjacent line volume sources. Each volume source was modeled with a plume height of 2.6 meters and plume width of 8.0 meters. One set of volume sources were modeled with a release height of 0 meter, representing dust emissions, and one set of volume sources with a release height of 1.3 meters, representing DPM exhaust. Source parameters are consistent with the recommended source parameters for non-truck sources (BAAQMD 2022).

Haul truck emissions to and from the site were modeled as adjacent line volume sources with a plume height of 6.8 meters and plume width of 8.0 meters. One set of volume sources were modeled with a release height of 0 meter, representing dust emissions, and one set of volume sources with a release height of 3.4 meters, representing DPM exhaust. Two haul routes (a common one for site 1-3, and one for site 4).

A total of 4 area-sources were used to model truck idling emissions onsite at the four onsite locations. A release height of 3.4 meters was assumed for trucks (BAAQMD 2022).

For operational emissions, stacks of biosolid pyrolysis facilities and generators were modeled as point sources, with specified release height, gas exit temperature, stack inside diameter, and gas exit velocity. Emissions from biofilters that connect to biodryers were modeled as area sources. One haul route for

truck bringing high strength waste and delivering biochar and ammonium fertilizer were modeled as line volume source with plume height of 6.8 meters and plume width of 8.0 meters. Worker commute was modeled as line volume source with plume height of 2.6 meters and plume width of 8.0 meters. There will be no truck idling onsite during operation. A total number of 33 TACs, including DPM, would be released from operational facilities of ADS and BDPS. Source locations, stack specification, truck haul routes, and estimation for source emission rates are included in Appendix A.

4 HEALTH RISK CALCULATIONS

4.1 CANCER, NON-CANCER, AND ACUTE RISKS

The HRA followed OEHHA guideline (OEHHA 2015) to calculate the health risk impacts at all sensitive receptors. For health risks due to construction, spread sheet is used to calculate concentration of $PM_{2.5}$, cancer risks, and noncancer chronic risks at all receptors. The unitized concentrations for each source, determined by AERMOD, were multiplied by annual emission rates to obtain GLCs for $PM_{2.5}$ and DPM. To assess operational health risks, unitized concentrations for each source from AERMOD were imported into CARB's Hotspots Analysis and Reporting Program (HARP) Version 22118. These concentrations were then multiplied by annual emission rates and maximum hourly rates to obtain GLCs for estimating long-term and acute risks, respectively.

Cancer risk, non-cancer chronic hazards and acute hazards were estimated for residential receptors, offsite worker receptors, and park receptors. Park receptor risks were added to residential receptor risk as the final residential receptor risks. Risk for the construction-only scenario was derived based on a total exposure duration of 2.13 years. Operational risk was based on a 30-year exposure duration starting anticipated first year of operation 2027. Input parameters of the risk analysis are consistent with OEEHA guidance (OEHHA 2015), as shown in Table 1. Risk assumptions, calculations, and results are included in Appendix A.

Table 1 Risk Parameters Used for Residential, Offsite Worker, and Park Receptors for Cancer and Non-Cancer Risk from Construction Emissions

Risk Parameters	Residential	Offsite Worker	Park[1]
Construction			
Exposure Duration	2.13 years for construction[2], 30 years for operation	2.13 years for construction, 25 years for operation	2.13 years for construction, 30 years for operation
Averaging Time	70 years	25 years	70 years
Starting Age[2]	0 for construction, 3rd Trimester for operation	16	0
EF (assumption)	0.96 (350 days per year)	0.68 (8 hours per day and worker's schedule overlaps the source's emission schedule)	0.02 (2 visits per week and 2 hours per visit)
FAH	0.85 for 3rd Trimester, 0.72 for 0-2 years old, 0.73 for 2-30 years old	n/a	1

Risk Parameters	Residential	Offsite Worker	Park[1]
DBR	BMP method: the 95th percentile for < 2 years old, and the 80th percentile for >= 2 years old	OEHHA recommendation: the 95th percentile, moderate activity	OEHHA recommendation: the 95th percentile, moderate activity
Exposure Pathway	Inhalation for construction, inhalation, dermal, soil ingestion, mother's milk, and homegrown produce for operation	Inhalation for construction, inhalation, dermal, and soil ingestion for operation	Inhalation for construction, inhalation, dermal, soil ingestion, mother's milk, and homegrown produce for operation

Notes: EF = exposure frequency; FAH = fraction of time at home; DBR = daily breathing rate; BMP = HARP implemented Risk Management Policy.
[1]Park receptor risk is calculated using the same method as residential receptor with adjusted exposure frequency.
[2]The full construction period is used as the exposure duration, to ensure a conservative risk assessment.

4.2 ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS

In addition to cancer and non-cancer health risks resulting from exposure to DPM emissions, potential impacts from $PM_{2.5}$ construction and operational emissions were evaluated. Both exhaust and fugitive $PM_{2.5}$ emissions were included for assessing elevated $PM_{2.5}$ concentrations. Dispersion modeling of $PM_{2.5}$ using the AERMOD model was conducted in the same manner as the DPM modeling, and the unitized annual average $PM_{2.5}$ concentrations were generated from AERMOD runs. The unitized concentrations of $PM_{2.5}$ exhaust and fugitive dust for each source were multiplied by their respective annual mass emission rates to obtain GLCs. The GLCs of $PM_{2.5}$ exhaust and fugitive dust were summed as the total $PM_{2.5}$ concentrations for all receptors. Work schedules, emission rate estimation, and results are included in Appendix A.

4.3 CUMULATIVE ANALYSIS

Health risks from all significant sources (stationary and mobile sources) were aggregated for receptors within the project impact area. Stationary-source health risks (cancer, chronic hazard index, and $PM_{2.5}$ concentrations) were obtained from stationary source screening map, and risk associated with mobile sources were obtained from roadway screening map following BAAQMD Recommended methods (BAAQMD 2011). For mobile source risks, cancer risk dataset, chronic health index dataset, and $PM_{2.5}$ concentrations dataset were downloaded as raster files (.tif) and data at project site were obtained from loading the raster file in GIS software (QGIS 3.32.3). Data source, and calculations are included in Appendix A.

5 HEALTH RISK CEQA THRESHOLDS OF SIGNIFICANCE

According to BAAQMD, a project's impact on health risks would be considered significant under the California Environmental Quality Act (CEQA) if its incremental risks and accumulative risks exceed the following thresholds shown in Table 2. Results of this HRA are compared to the BAAQMD-adopted thresholds of significance.

Table 2 Significant Health Risk Levels

Analysis	Thresholds of Significance
Individual project: construction and/or operations	Compliance with qualified community risk reduction plan, or o increased cancer risk of > 10.0 cases in a million o increased noncancer risk of > 1.0 Hazard Index (Chronic and Acute) o ambient $PM_{2.5}$ increase > 0.3 µg/m^3 annual average
Cumulative Impacts	Compliance with qualified community risk reduction plan, or o cancer risk > 100 cases in a million (from all sources) o noncancer risk > 10.0 Hazard Index (from all local sources) (Chronic) o $PM_{2.5}$ > 0.8 µg/m^3 annual average (from all local sources)

Note: µg/m^3 = micrograms per cubic meter

Source: BAAQMD 2022

6 RESULTS

6.1 DIESEL PM HRA RESULT FOR CONSTRUCTION AND OPERATION

Table 3 summarizes annual average $PM_{2.5}$ concentrations at point of maximum impact (PMI), and cancer risks, noncancer chronic health hazard indexes for the maximumly exposed individual receptors during construction and operation of the project. The annual average increase in ambient $PM_{2.5}$ concentrations in the project vicinity during construction and operation do not exceed the BAAQMD's $PM_{2.5}$ annual average concentration threshold of 0.3 µg/m^3. Comparing to BAAQMD threshold of significance of 10 chances in a million for cancer risk and a non-cancer health index threshold of less than 1.0, the unmitigated construction and operation would result in below-threshold cancer risks and below-threshold chronic hazard indexes. Detailed calculations are included in Appendix A.

Table 3 DPM, $PM_{2.5}$ HRA Result Summary, Unmitigated

Phases[1]	Maximum $PM_{2.5}$ Concentration[2] (µg/m^3)	Cancer Risk[3] (1/million)		Chronic Hazard Index[4]	
		MEIR	MEIW	MEIR	MEIW
Construction	0.12	7.4	5.9	0.005	0.024
Operation	0.20	0.45	0.03	0.10	0.70

NA = Not Applicable. MEIR = Maximumly Exposed Individual Resident. MEIW = Maximumly Exposed Individual Worker.

[1] The construction period is December 2024 through June 2027; Operation starts in 2027.

[2] Maximum $PM_{2.5}$ Concentration includes concentration of DPM and non-DPM $PM_{2.5}$, estimated as the maximum $PM_{2.5}$ concentration over all receptors. An incremental increase ambient $PM_{2.5}$ increase > 0.3 micrograms per cubic meter (µg/m^3) annual average would be a considerable contribution from an individual project.

[3] Cancer Risk is estimated as the maximum lifetime excess cancer risk estimate (per million) estimated over all residential and worker receptors.

[4] Chronic Health Hazard Index (HI) is estimated as the maximum of the ratios of the average annual exposure level of each compound to the compound's Reference Exposure Level (REL). DPM REL = 5 µg/m^3.

X, Y Location, UTM Zone N10: MEIR = 615922.88, 4202171.51 (construction), MEIR = 615922.88, 4202211.51 (operation); MEIW = 615782.88, 4202111.51 (construction and operation).

6.2 TAC HRA RESULT FOR OPERATION

The TACs emitted from the ADS and BDPS operation have life-time cancer risk ranging from 7.8E-7 to 0.01 chances in a million as shown in Table 4. The cancer risk summed over all TACs is 0.21 chance in a million and is below BAAQMD's threshold of significance of 10 chances in a million for cancer risk. Chronic hazard exposure to any of the TACs would not exceed the 1.0 threshold for non-cancer risk. Detailed operational risk calculations are included in Appendix A.

Table 4 HRA Result for TACs Emissions from Project Operation Operation

Pollutant	Cancer Risk (1/million)[1]	Chronic HI[2]	Acute HI[3]
1,1,2TriClEthan	1.3E-05	NA	NA
1,3-Butadiene	5.4E-04	NA	NA
Acetaldehyde	3.1E-04	4.1E-07	1.7E-04
Arsenic	2.1E-01	1.6E-04	NA
Benzene	1.2E-02	NA	NA
Beryllium	3.3E-04	1.0E-05	NA
Cadmium	1.1E-01	6.7E-04	NA
DieselExhPM	3.7E-02	1.2E-05	NA
EDC	2.2E-04	NA	NA
Ethyl Benzene	5.6E-04	NA	NA
Formaldehyde	3.6E-02	3.6E-04	NA
Lead	2.1E-03	NA	NA
Methylene Chlor	7.8E-07	NA	NA
Naphthalene	4.8E-04	8.2E-07	NA
Nickel	1.2E-02	1.8E-03	NA
PAHs-w/o	4.4E-02	NA	NA
Perc	2.3E-05	NA	3.8E-09
TCE	4.7E-06	NA	NA

Notes: NA = Not Applicable

[1] Cancer Risk is estimated as the maximum lifetime excess cancer risk estimate (per million) estimated over all residential and worker receptors for each pollutant.

[2] Chronic Health Hazard Index (Chronic HI) is estimated as the maximum of the ratios of the average annual exposure level of each compound to the compound's chronic reference exposure level in HARP.

[3] Acute Hazard Index (Acute HI) is estimated as the maximum of the ratios of the hourly maximum exposure level of each compound to the compound's acute reference exposure level in HARP.

6.3 CUMULATIVE RISK ANALYSIS

The cumulative health risk values were estimated by combining the health risk values from the project incremental health risk with the screening-level health risk values for various other significant emission sources. Additional significant sources of TACs in the project impact area include stationary sources and nearby roadways. Table 5 shows aggregated cancer risks, chronic HI, and $PM_{2.5}$ concentrations from project and roadway and stationary sources within the project impact area. Detailed cumulative risk calculations are included in Appendix A.

The estimated cumulative cancer risk is below the BAAQMD threshold of 100 in a million for a lifetime cancer risk, and cumulative $PM_{2.5}$ concentration is below BAAQMD's significance threshold of 0.8 µg/m³. The cumulative non-carcinogenic chronic HI is below the threshold of 10.0. In conclusion, the cumulative impacts from the combined project and surrounding sources are below the cumulative thresholds, the project is not cumulatively considerable and no mitigation is needed.

Table 5 Cumulative HRA

Source	Description	Cancer Risk (1/million)	Chronic Hazard Index	$PM_{2.5}$ Concentration (µg/m³)
Cumulative Sources				
FID 1889[1]	Generator	0.15	<0.00	<0.00
FID 2232	Fossil Fuel Electric Power Generation	0.13	<0.00	0.04
FID 3180	Ready-Mix Concrete Manufacturing	<0.00	<0.00	0.29
Roadways[2]	--	1.17	0.00	0.03
Project Sources	Construction	7.38	0.02	0.125
	Operation	0.45	0.70	0.204
Cumulative Risk	Sum of Cancer Risks, Max of HI and Conc.	9.28	0.70	0.57
BAAQMD Cumulative Significance Threshold		**100**	**10**	**0.8**
Threshold Exceeded?		No	No	No

[1] FID = Facility IDs assigned in the BAAQMD Stationary Source Screening Analysis Tool. Available at https://baaqmd.maps.arcgis.com/apps/webappviewer. Last accessed July 7, 2024.

[2] Roadway impacts for cancer risk, chronic hazard index, $PM_{2.5}$ concentration were obtained from BAAQMD Mobile Source Screening Tool. Available at: https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429. Last accessed July 7, 2024.

This table presents the greater cumulative risk for each risk category, which are cancer risk at MEIR, and chronic HI at MEIW. See Appendix A for a comprehensive summarization for cumulative risks.

7 REFERENCES

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2011 (May). *Recommended Methods for Screening and Modeling Local Risks and Hazards*. San Francisco, CA. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/baaqmd-modeling-approach.pdf. Accessed Jan 5, 2024.

———. 2022. *Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards*. San Francisco, CA. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en. Accessed Jan 5, 2024.

CARB. 2023 (October). Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable10062023.pdf. Accessed June 15, 2024.

OEHHA. *See* Office of Environmental Health Hazard Assessment.

Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments.* Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed Oct 12, 2023.

CONSTRUCTION TOXIC AIR CONTAMINANT EMISSION RATES AND RISK CALCULATIONS

DPM Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration

Scaled DPM Concentrations at Receptors

Scaled $PM_{2.5}$ Concentrations at Receptors

AERMOD Outputs

TAC Emission Rates Calculation

Exposure Parameters used in HRA

AERMOD Dispersion Modeling Report

DPM Cancer Risk, Chronic HI, and PM2.5 Concentration

						Concentration (microgram/m3)				Dose (mg/kg-day)			Cancer (1/million)			Chronic HI		
Number	X	Y	Residential	Park	Worker	Summed DPM	Summed PM2.5 Exhaust	Summed PM2.5 Fugitive	Total PM2.5	Residential	Park	Worker	Residential	Recreational	Worker	Residential	Park	Worker
1	614703	4201252	1	0	0	0.000715	0.0008	2.29E-05	0.000823	7.48E-07	0	0	0.213	0	0	1E-04	0	0
2	614723	4201252	1	0	0	0.000732	0.00082	2.36E-05	0.000844	7.65E-07	0	0	0.218	0	0	1E-04	0	0
3	614743	4201252	1	0	0	0.000749	0.000841	2.42E-05	0.000865	7.83E-07	0	0	0.223	0	0	1E-04	0	0
4	614763	4201252	1	0	0	0.000767	0.000862	2.49E-05	0.000887	8.02E-07	0	0	0.228	0	0	2E-04	0	0
5	614783	4201252	1	0	0	0.000785	0.000884	2.55E-05	0.00091	8.21E-07	0	0	0.233	0	0	2E-04	0	0
6	614803	4201252	1	0	0	0.000803	0.000906	2.63E-05	0.000932	8.39E-07	0	0	0.239	0	0	2E-04	0	0
7	614823	4201252	1	0	0	0.000821	0.000928	2.7E-05	0.000955	8.58E-07	0	0	0.244	0	0	2E-04	0	0
8	614843	4201252	1	0	0	0.000838	0.000949	2.77E-05	0.000977	8.76E-07	0	0	0.249	0	0	2E-04	0	0
9	614863	4201252	1	0	0	0.000855	0.000971	2.85E-05	0.000999	8.94E-07	0	0	0.254	0	0	2E-04	0	0
10	614883	4201252	1	0	0	0.000872	0.000992	2.93E-05	0.001021	9.11E-07	0	0	0.259	0	0	2E-04	0	0
11	614903	4201252	1	0	0	0.000888	0.001013	3.02E-05	0.001043	9.28E-07	0	0	0.264	0	0	2E-04	0	0
12	614923	4201252	1	0	0	0.000906	0.001034	3.1E-05	0.001065	9.47E-07	0	0	0.269	0	0	2E-04	0	0
13	614943	4201252	1	0	0	0.000924	0.001057	3.19E-05	0.001089	9.66E-07	0	0	0.275	0	0	2E-04	0	0
14	614963	4201252	1	0	0	0.000944	0.00108	3.28E-05	0.001113	9.87E-07	0	0	0.281	0	0	2E-04	0	0
15	614983	4201252	1	0	0	0.000969	0.001109	3.4E-05	0.001143	1.01E-06	0	0	0.288	0	0	2E-04	0	0
16	615003	4201252	1	0	0	0.000993	0.001136	3.5E-05	0.001171	1.04E-06	0	0	0.295	0	0	2E-04	0	0
17	615023	4201252	1	0	0	0.001018	0.001163	3.6E-05	0.001199	1.06E-06	0	0	0.303	0	0	2E-04	0	0
18	615043	4201252	1	0	0	0.001044	0.001192	3.7E-05	0.001229	1.09E-06	0	0	0.31	0	0	2E-04	0	0
19	615163	4201252	1	0	0	0.001218	0.001382	4.36E-05	0.001426	1.27E-06	0	0	0.362	0	0	2E-04	0	0
20	615183	4201252	1	0	0	0.001246	0.001413	4.47E-05	0.001458	1.3E-06	0	0	0.371	0	0	2E-04	0	0
21	615203	4201252	1	0	0	0.001274	0.001443	4.59E-05	0.001489	1.33E-06	0	0	0.379	0	0	3E-04	0	0
22	615223	4201252	1	0	0	0.001301	0.001472	4.71E-05	0.001519	1.36E-06	0	0	0.387	0	0	3E-04	0	0
23	615243	4201252	1	0	0	0.001328	0.001501	4.84E-05	0.00155	1.39E-06	0	0	0.395	0	0	3E-04	0	0
24	615263	4201252	1	0	0	0.001357	0.001532	4.97E-05	0.001581	1.42E-06	0	0	0.403	0	0	3E-04	0	0
25	615283	4201252	1	0	0	0.001387	0.001563	5.11E-05	0.001614	1.45E-06	0	0	0.412	0	0	3E-04	0	0
26	615303	4201252	1	0	0	0.001418	0.001596	5.25E-05	0.001649	1.48E-06	0	0	0.422	0	0	3E-04	0	0
27	615323	4201252	1	0	0	0.00145	0.001629	5.39E-05	0.001683	1.52E-06	0	0	0.431	0	0	3E-04	0	0
28	615343	4201252	1	0	0	0.001484	0.001664	5.54E-05	0.00172	1.55E-06	0	0	0.441	0	0	3E-04	0	0
29	615363	4201252	1	0	0	0.001519	0.0017	5.68E-05	0.001757	1.59E-06	0	0	0.452	0	0	3E-04	0	0
30	615383	4201252	1	0	0	0.001557	0.001738	5.83E-05	0.001796	1.63E-06	0	0	0.463	0	0	3E-04	0	0
31	615403	4201252	1	0	0	0.001594	0.001776	5.98E-05	0.001836	1.67E-06	0	0	0.474	0	0	3E-04	0	0
32	614703	4201272	1	0	0	0.000723	0.000813	2.34E-05	0.000837	7.56E-07	0	0	0.215	0	0	1E-04	0	0
33	614723	4201272	1	0	0	0.00074	0.000834	2.41E-05	0.000858	7.74E-07	0	0	0.22	0	0	1E-04	0	0
34	614743	4201272	1	0	0	0.000758	0.000856	2.47E-05	0.00088	7.92E-07	0	0	0.225	0	0	2E-04	0	0
35	614763	4201272	1	0	0	0.000776	0.000878	2.54E-05	0.000903	8.11E-07	0	0	0.231	0	0	2E-04	0	0
36	614783	4201272	1	0	0	0.000795	0.000901	2.62E-05	0.000927	8.31E-07	0	0	0.236	0	0	2E-04	0	0
37	614803	4201272	1	0	0	0.000814	0.000925	2.69E-05	0.000952	8.51E-07	0	0	0.242	0	0	2E-04	0	0
38	614823	4201272	1	0	0	0.000833	0.000948	2.77E-05	0.000976	8.7E-07	0	0	0.248	0	0	2E-04	0	0
39	614843	4201272	1	0	0	0.000851	0.000972	2.85E-05	0.001	8.9E-07	0	0	0.253	0	0	2E-04	0	0
40	614863	4201272	1	0	0	0.000869	0.000995	2.94E-05	0.001024	9.08E-07	0	0	0.258	0	0	2E-04	0	0
41	614883	4201272	1	0	0	0.000887	0.001018	3.02E-05	0.001048	9.27E-07	0	0	0.264	0	0	2E-04	0	0
42	614903	4201272	1	0	0	0.000904	0.00104	3.11E-05	0.001071	9.45E-07	0	0	0.269	0	0	2E-04	0	0
43	614923	4201272	1	0	0	0.000923	0.001063	3.2E-05	0.001095	9.64E-07	0	0	0.274	0	0	2E-04	0	0
44	614943	4201272	1	0	0	0.000941	0.001086	3.3E-05	0.001119	9.84E-07	0	0	0.28	0	0	2E-04	0	0
45	614963	4201272	1	0	0	0.000962	0.001111	3.39E-05	0.001144	1.01E-06	0	0	0.286	0	0	2E-04	0	0
46	614983	4201272	1	0	0	0.000988	0.001141	3.52E-05	0.001176	1.03E-06	0	0	0.294	0	0	2E-04	0	0
47	615003	4201272	1	0	0	0.001012	0.001169	3.63E-05	0.001205	1.06E-06	0	0	0.301	0	0	2E-04	0	0
48	615023	4201272	1	0	0	0.001038	0.001198	3.73E-05	0.001235	1.08E-06	0	0	0.309	0	0	2E-04	0	0
49	615043	4201272	1	0	0	0.001065	0.001229	3.85E-05	0.001267	1.11E-06	0	0	0.317	0	0	2E-04	0	0
50	615163	4201272	1	0	0	0.001251	0.001434	4.56E-05	0.001479	1.31E-06	0	0	0.372	0	0	3E-04	0	0
51	615183	4201272	1	0	0	0.001283	0.001467	4.68E-05	0.001514	1.34E-06	0	0	0.381	0	0	3E-04	0	0
52	615203	4201272	1	0	0	0.001313	0.0015	4.81E-05	0.001548	1.37E-06	0	0	0.39	0	0	3E-04	0	0
53	615223	4201272	1	0	0	0.001343	0.001532	4.94E-05	0.001581	1.4E-06	0	0	0.399	0	0	3E-04	0	0
54	615243	4201272	1	0	0	0.001373	0.001564	5.08E-05	0.001615	1.43E-06	0	0	0.408	0	0	3E-04	0	0
55	615263	4201272	1	0	0	0.001403	0.001597	5.22E-05	0.001649	1.47E-06	0	0	0.417	0	0	3E-04	0	0
56	615283	4201272	1	0	0	0.001436	0.001631	5.37E-05	0.001685	1.5E-06	0	0	0.427	0	0	3E-04	0	0
57	615303	4201272	1	0	0	0.00147	0.001667	5.52E-05	0.001722	1.54E-06	0	0	0.437	0	0	3E-04	0	0
58	615323	4201272	1	0	0	0.001506	0.001703	5.68E-05	0.00176	1.57E-06	0	0	0.448	0	0	3E-04	0	0
59	615343	4201272	1	0	0	0.001543	0.001741	5.84E-05	0.0018	1.61E-06	0	0	0.459	0	0	3E-04	0	0
60	615363	4201272	1	0	0	0.001582	0.001781	6E-05	0.001841	1.65E-06	0	0	0.47	0	0	3E-04	0	0
61	615383	4201272	1	0	0	0.001623	0.001822	6.16E-05	0.001883	1.7E-06	0	0	0.483	0	0	3E-04	0	0
62	614703	4201292	1	0	0	0.000732	0.000828	2.39E-05	0.000852	7.65E-07	0	0	0.218	0	0	1E-04	0	0
63	614723	4201292	1	0	0	0.000749	0.000849	2.46E-05	0.000874	7.83E-07	0	0	0.223	0	0	1E-04	0	0
64	614743	4201292	1	0	0	0.000767	0.000871	2.53E-05	0.000897	8.01E-07	0	0	0.228	0	0	2E-04	0	0
65	614763	4201292	1	0	0	0.000785	0.000895	2.61E-05	0.000921	8.21E-07	0	0	0.234	0	0	2E-04	0	0
66	614783	4201292	1	0	0	0.000805	0.000919	2.69E-05	0.000946	8.41E-07	0	0	0.239	0	0	2E-04	0	0
67	614803	4201292	1	0	0	0.000824	0.000944	2.77E-05	0.000972	8.62E-07	0	0	0.245	0	0	2E-04	0	0
68	614823	4201292	1	0	0	0.000844	0.00097	2.85E-05	0.000998	8.82E-07	0	0	0.251	0	0	2E-04	0	0
69	614843	4201292	1	0	0	0.000864	0.000995	2.94E-05	0.001025	9.03E-07	0	0	0.257	0	0	2E-04	0	0
70	614863	4201292	1	0	0	0.000883	0.001021	3.03E-05	0.001051	9.23E-07	0	0	0.263	0	0	2E-04	0	0
71	614883	4201292	1	0	0	0.000902	0.001045	3.12E-05	0.001077	9.43E-07	0	0	0.268	0	0	2E-04	0	0
72	614903	4201292	1	0	0	0.000921	0.00107	3.22E-05	0.001102	9.62E-07	0	0	0.274	0	0	2E-04	0	0
73	614923	4201292	1	0	0	0.00094	0.001094	3.31E-05	0.001127	9.82E-07	0	0	0.279	0	0	2E-04	0	0
74	614943	4201292	1	0	0	0.00096	0.001119	3.42E-05	0.001154	1E-06	0	0	0.286	0	0	2E-04	0	0
75	614963	4201292	1	0	0	0.000983	0.001148	3.54E-05	0.001183	1.03E-06	0	0	0.292	0	0	2E-04	0	0
76	614983	4201292	1	0	0	0.001007	0.001176	3.65E-05	0.001212	1.05E-06	0	0	0.299	0	0	2E-04	0	0
77	615003	4201292	1	0	0	0.001031	0.001205	3.77E-05	0.001243	1.08E-06	0	0	0.307	0	0	2E-04	0	0
78	615023	4201292	1	0	0	0.001058	0.001236	3.89E-05	0.001275	1.11E-06	0	0	0.315	0	0	2E-04	0	0
79	615043	4201292	1	0	0	0.001086	0.001268	4.01E-05	0.001308	1.14E-06	0	0	0.323	0	0	2E-04	0	0
80	615063	4201292	1	0	0	0.001116	0.001303	4.13E-05	0.001344	1.17E-06	0	0	0.332	0	0	2E-04	0	0
81	615083	4201292	1	0	0	0.001148	0.001338	4.25E-05	0.001381	1.2E-06	0	0	0.341	0	0	2E-04	0	0
82	615103	4201292	1	0	0	0.001181	0.001375	4.38E-05	0.001419	1.23E-06	0	0	0.351	0	0	2E-04	0	0
83	615123	4201292	1	0	0	0.001215	0.001413	4.51E-05	0.001458	1.27E-06	0	0	0.361	0	0	2E-04	0	0
84	615143	4201292	1	0	0	0.00125	0.001451	4.64E-05	0.001497	1.31E-06	0	0	0.372	0	0	2E-04	0	0
85	615163	4201292	1	0	0	0.001285	0.001488	4.77E-05	0.001536	1.34E-06	0	0	0.382	0	0	3E-04	0	0
86	615183	4201292	1	0	0	0.001319	0.001526	4.91E-05	0.001575	1.38E-06	0	0	0.392	0	0	3E-04	0	0
87	615203	4201292	1	0	0	0.001353	0.001562	5.05E-05	0.001612	1.41E-06	0	0	0.402	0	0	3E-04	0	0
88	615223	4201292	1	0	0	0.001386	0.001597	5.19E-05	0.001649	1.45E-06	0	0	0.412	0	0	3E-04	0	0
89	615243	4201292	1	0	0	0.001419	0.001632	5.34E-05	0.001685	1.48E-06	0	0	0.422	0	0	3E-04	0	0
90	615263	4201292	1	0	0	0.001453	0.001668	5.49E-05	0.001722	1.52E-06	0	0	0.432	0	0	3E-04	0	0
91	615283	4201292	1	0	0	0.001488	0.001705	5.65E-05	0.001761	1.56E-06	0	0	0.442	0	0	3E-04	0	0
92	615303	4201292	1	0	0	0.001526	0.001743	5.82E-05	0.001801	1.59E-06	0	0	0.454	0	0	3E-04	0	0
93	615323	4201292	1	0	0	0.001565	0.001783	5.99E-05	0.001843	1.64E-06	0	0	0.465	0	0	3E-04	0	0

Maximally exposured receptor

Cancer Risk (1/millio	Residential	Recreational	Worker
value	7.1	0.3	5.6
X	615922.88	615742.88	615782.88
Y	4202171.5	4201791.51	4202111.5

Chronic HI	Residential	Recreational	Worker
value	0.005	0.009	0.024
X	615922.88	615742.88	615782.88
Y	4202171.5	4201791.51	4202111.5

Note:

DPM REL (ug/m3) = 5

Chronic Hazard = DPM conc/DPM REL

Max PM2.5 Concentration	
Value	0.125
X	615782.88
Y	4202111.5

Cancer Risk (1/millior	Residential	Worker
value	7.4	5.9
X	615922.88	615782.88
Y	4202171.5	4202111.51

Note: Cancer risk for maximally exposured park receptor is added to both MEIR and MEIW for conservative estimation.

94	615343	4201292	1	0	0	0.001606	0.001825	6.17E-05	0.001886	1.68E-06	0	0	0.478	0	0	3E-04	0	0
95	615363	4201292	1	0	0	0.00165	0.001868	6.35E-05	0.001932	1.72E-06	0	0	0.491	0	0	3E-04	0	0
96	615383	4201292	1	0	0	0.001697	0.001916	6.54E-05	0.001981	1.77E-06	0	0	0.505	0	0	3E-04	0	0
97	614703	4201312	1	0	0	0.00074	0.000843	2.45E-05	0.000868	7.74E-07	0	0	0.22	0	0	1E-04	0	0
98	614723	4201312	1	0	0	0.000758	0.000865	2.52E-05	0.00089	7.92E-07	0	0	0.225	0	0	2E-04	0	0
99	614743	4201312	1	0	0	0.000776	0.000889	2.6E-05	0.000915	8.11E-07	0	0	0.231	0	0	2E-04	0	0
100	614763	4201312	1	0	0	0.000795	0.000913	2.68E-05	0.00094	8.31E-07	0	0	0.236	0	0	2E-04	0	0
101	614783	4201312	1	0	0	0.000815	0.000939	2.76E-05	0.000967	8.51E-07	0	0	0.242	0	0	2E-04	0	0
102	614803	4201312	1	0	0	0.000835	0.000966	2.85E-05	0.000994	8.73E-07	0	0	0.248	0	0	2E-04	0	0
103	614823	4201312	1	0	0	0.000856	0.000993	2.94E-05	0.001022	8.95E-07	0	0	0.255	0	0	2E-04	0	0
104	614843	4201312	1	0	0	0.000877	0.001021	3.04E-05	0.001051	9.16E-07	0	0	0.261	0	0	2E-04	0	0
105	614863	4201312	1	0	0	0.000897	0.001048	3.13E-05	0.00108	9.38E-07	0	0	0.267	0	0	2E-04	0	0
106	614883	4201312	1	0	0	0.000917	0.001075	3.23E-05	0.001108	9.59E-07	0	0	0.273	0	0	2E-04	0	0
107	614903	4201312	1	0	0	0.000937	0.001102	3.33E-05	0.001135	9.8E-07	0	0	0.279	0	0	2E-04	0	0
108	614923	4201312	1	0	0	0.000958	0.001128	3.44E-05	0.001163	1E-06	0	0	0.285	0	0	2E-04	0	0
109	614943	4201312	1	0	0	0.00098	0.001157	3.56E-05	0.001192	1.02E-06	0	0	0.291	0	0	2E-04	0	0
110	614963	4201312	1	0	0	0.001003	0.001185	3.69E-05	0.001222	1.05E-06	0	0	0.298	0	0	2E-04	0	0
111	614983	4201312	1	0	0	0.001026	0.001214	3.81E-05	0.001252	1.07E-06	0	0	0.305	0	0	2E-04	0	0
112	615003	4201312	1	0	0	0.001051	0.001245	3.93E-05	0.001284	1.1E-06	0	0	0.312	0	0	2E-04	0	0
113	615023	4201312	1	0	0	0.001078	0.001277	4.05E-05	0.001318	1.13E-06	0	0	0.321	0	0	2E-04	0	0
114	615043	4201312	1	0	0	0.001107	0.001312	4.18E-05	0.001354	1.16E-06	0	0	0.329	0	0	2E-04	0	0
115	615063	4201312	1	0	0	0.001139	0.001348	4.32E-05	0.001392	1.19E-06	0	0	0.339	0	0	2E-04	0	0
116	615083	4201312	1	0	0	0.001172	0.001386	4.45E-05	0.001431	1.23E-06	0	0	0.349	0	0	2E-04	0	0
117	615103	4201312	1	0	0	0.001207	0.001426	4.59E-05	0.001472	1.26E-06	0	0	0.359	0	0	2E-04	0	0
118	615123	4201312	1	0	0	0.001243	0.001466	4.73E-05	0.001513	1.3E-06	0	0	0.37	0	0	2E-04	0	0
119	615143	4201312	1	0	0	0.001281	0.001507	4.87E-05	0.001555	1.34E-06	0	0	0.381	0	0	3E-04	0	0
120	615163	4201312	1	0	0	0.001319	0.001547	5.01E-05	0.001598	1.38E-06	0	0	0.392	0	0	3E-04	0	0
121	615183	4201312	1	0	0	0.001356	0.001588	5.16E-05	0.00164	1.42E-06	0	0	0.403	0	0	3E-04	0	0
122	615203	4201312	1	0	0	0.001394	0.001628	5.31E-05	0.001681	1.46E-06	0	0	0.414	0	0	3E-04	0	0
123	615223	4201312	1	0	0	0.001431	0.001667	5.46E-05	0.001721	1.5E-06	0	0	0.425	0	0	3E-04	0	0
124	615243	4201312	1	0	0	0.001467	0.001705	5.62E-05	0.001761	1.53E-06	0	0	0.436	0	0	3E-04	0	0
125	615263	4201312	1	0	0	0.001504	0.001744	5.79E-05	0.001802	1.57E-06	0	0	0.447	0	0	3E-04	0	0
126	615283	4201312	1	0	0	0.001543	0.001784	5.96E-05	0.001844	1.61E-06	0	0	0.459	0	0	3E-04	0	0
127	615303	4201312	1	0	0	0.001585	0.001827	6.15E-05	0.001888	1.66E-06	0	0	0.471	0	0	3E-04	0	0
128	615323	4201312	1	0	0	0.001629	0.001871	6.34E-05	0.001935	1.7E-06	0	0	0.484	0	0	3E-04	0	0
129	615343	4201312	1	0	0	0.001675	0.001917	6.54E-05	0.001982	1.75E-06	0	0	0.498	0	0	3E-04	0	0
130	615363	4201312	1	0	0	0.001724	0.001966	6.74E-05	0.002033	1.8E-06	0	0	0.513	0	0	3E-04	0	0
131	615383	4201312	1	0	0	0.001778	0.002018	6.96E-05	0.002088	1.86E-06	0	0	0.529	0	0	4E-04	0	0
132	615403	4201312	1	0	0	0.001831	0.00207	7.17E-05	0.002142	1.91E-06	0	0	0.544	0	0	4E-04	0	0
133	614703	4201332	1	0	0	0.00075	0.00086	2.51E-05	0.000885	7.83E-07	0	0	0.223	0	0	1E-04	0	0
134	614723	4201332	1	0	0	0.000767	0.000883	2.59E-05	0.000909	8.01E-07	0	0	0.228	0	0	2E-04	0	0
135	614743	4201332	1	0	0	0.000785	0.000907	2.67E-05	0.000934	8.2E-07	0	0	0.233	0	0	2E-04	0	0
136	614763	4201332	1	0	0	0.000804	0.000933	2.76E-05	0.000961	8.41E-07	0	0	0.239	0	0	2E-04	0	0
137	614783	4201332	1	0	0	0.000824	0.000961	2.85E-05	0.000989	8.62E-07	0	0	0.245	0	0	2E-04	0	0
138	614803	4201332	1	0	0	0.000846	0.000989	2.95E-05	0.001019	8.84E-07	0	0	0.251	0	0	2E-04	0	0
139	614823	4201332	1	0	0	0.000867	0.001019	3.05E-05	0.001049	9.06E-07	0	0	0.258	0	0	2E-04	0	0
140	614843	4201332	1	0	0	0.000889	0.001049	3.15E-05	0.00108	9.29E-07	0	0	0.264	0	0	2E-04	0	0
141	614863	4201332	1	0	0	0.000911	0.001079	3.25E-05	0.001111	9.52E-07	0	0	0.271	0	0	2E-04	0	0
142	614883	4201332	1	0	0	0.000933	0.001108	3.36E-05	0.001142	9.75E-07	0	0	0.277	0	0	2E-04	0	0
143	614903	4201332	1	0	0	0.000954	0.001137	3.47E-05	0.001171	9.97E-07	0	0	0.284	0	0	2E-04	0	0
144	614923	4201332	1	0	0	0.000978	0.001169	3.61E-05	0.001205	1.02E-06	0	0	0.291	0	0	2E-04	0	0
145	614943	4201332	1	0	0	0.001	0.001198	3.73E-05	0.001235	1.04E-06	0	0	0.297	0	0	2E-04	0	0
146	614963	4201332	1	0	0	0.001022	0.001227	3.86E-05	0.001266	1.07E-06	0	0	0.304	0	0	2E-04	0	0
147	614983	4201332	1	0	0	0.001045	0.001257	3.98E-05	0.001297	1.09E-06	0	0	0.311	0	0	2E-04	0	0
148	615003	4201332	1	0	0	0.001071	0.00129	4.11E-05	0.001331	1.12E-06	0	0	0.318	0	0	2E-04	0	0
149	615023	4201332	1	0	0	0.001098	0.001325	4.25E-05	0.001367	1.15E-06	0	0	0.327	0	0	2E-04	0	0
150	615043	4201332	1	0	0	0.001128	0.001361	4.39E-05	0.001405	1.18E-06	0	0	0.336	0	0	2E-04	0	0
151	615063	4201332	1	0	0	0.001161	0.001399	4.53E-05	0.001445	1.21E-06	0	0	0.345	0	0	2E-04	0	0
152	615083	4201332	1	0	0	0.001196	0.00144	4.68E-05	0.001486	1.25E-06	0	0	0.356	0	0	2E-04	0	0
153	615103	4201332	1	0	0	0.001233	0.001481	4.82E-05	0.00153	1.29E-06	0	0	0.367	0	0	2E-04	0	0
154	615123	4201332	1	0	0	0.001272	0.001524	4.97E-05	0.001574	1.33E-06	0	0	0.378	0	0	3E-04	0	0
155	615143	4201332	1	0	0	0.001312	0.001568	5.13E-05	0.001619	1.37E-06	0	0	0.39	0	0	3E-04	0	0
156	615163	4201332	1	0	0	0.001352	0.001612	5.28E-05	0.001664	1.41E-06	0	0	0.402	0	0	3E-04	0	0
157	615183	4201332	1	0	0	0.001394	0.001655	5.44E-05	0.00171	1.46E-06	0	0	0.414	0	0	3E-04	0	0
158	615203	4201332	1	0	0	0.001435	0.001699	5.6E-05	0.001755	1.5E-06	0	0	0.427	0	0	3E-04	0	0
159	615223	4201332	1	0	0	0.001476	0.001742	5.76E-05	0.001799	1.54E-06	0	0	0.439	0	0	3E-04	0	0
160	615243	4201332	1	0	0	0.001516	0.001784	5.93E-05	0.001843	1.59E-06	0	0	0.451	0	0	3E-04	0	0
161	615263	4201332	1	0	0	0.001558	0.001827	6.11E-05	0.001888	1.63E-06	0	0	0.463	0	0	3E-04	0	0
162	615283	4201332	1	0	0	0.001601	0.00187	6.3E-05	0.001933	1.67E-06	0	0	0.476	0	0	3E-04	0	0
163	615303	4201332	1	0	0	0.001648	0.001918	6.51E-05	0.001983	1.72E-06	0	0	0.49	0	0	3E-04	0	0
164	615323	4201332	1	0	0	0.001699	0.00197	6.74E-05	0.002037	1.78E-06	0	0	0.505	0	0	3E-04	0	0
165	615343	4201332	1	0	0	0.001752	0.002021	6.96E-05	0.002091	1.83E-06	0	0	0.521	0	0	4E-04	0	0
166	615363	4201332	1	0	0	0.001806	0.002074	7.19E-05	0.002146	1.89E-06	0	0	0.537	0	0	4E-04	0	0
167	615383	4201332	1	0	0	0.001863	0.002129	7.42E-05	0.002203	1.95E-06	0	0	0.554	0	0	4E-04	0	0
168	615403	4201332	1	0	0	0.001922	0.002186	7.66E-05	0.002263	2.01E-06	0	0	0.572	0	0	4E-04	0	0
169	615423	4201332	1	0	0	0.001984	0.002245	7.9E-05	0.002324	2.07E-06	0	0	0.59	0	0	4E-04	0	0
170	614703	4201352	1	0	0	0.000759	0.000878	2.58E-05	0.000904	7.93E-07	0	0	0.226	0	0	2E-04	0	0
171	614723	4201352	1	0	0	0.000776	0.000902	2.66E-05	0.000929	8.11E-07	0	0	0.231	0	0	2E-04	0	0
172	614743	4201352	1	0	0	0.000795	0.000928	2.76E-05	0.000956	8.31E-07	0	0	0.236	0	0	2E-04	0	0
173	614763	4201352	1	0	0	0.000814	0.000956	2.85E-05	0.000984	8.51E-07	0	0	0.242	0	0	2E-04	0	0
174	614783	4201352	1	0	0	0.000835	0.000985	2.95E-05	0.001014	8.72E-07	0	0	0.248	0	0	2E-04	0	0
175	614803	4201352	1	0	0	0.000856	0.001015	3.06E-05	0.001046	8.95E-07	0	0	0.255	0	0	2E-04	0	0
176	614823	4201352	1	0	0	0.000879	0.001047	3.17E-05	0.001079	9.18E-07	0	0	0.261	0	0	2E-04	0	0
177	614843	4201352	1	0	0	0.000902	0.00108	3.28E-05	0.001113	9.42E-07	0	0	0.268	0	0	2E-04	0	0
178	614863	4201352	1	0	0	0.000925	0.001113	3.4E-05	0.001147	9.67E-07	0	0	0.275	0	0	2E-04	0	0
179	614883	4201352	1	0	0	0.000949	0.001146	3.52E-05	0.001181	9.92E-07	0	0	0.282	0	0	2E-04	0	0
180	614903	4201352	1	0	0	0.000973	0.00118	3.66E-05	0.001216	1.02E-06	0	0	0.289	0	0	2E-04	0	0
181	614923	4201352	1	0	0	0.000996	0.001212	3.79E-05	0.00125	1.04E-06	0	0	0.296	0	0	2E-04	0	0
182	614943	4201352	1	0	0	0.001019	0.001243	3.92E-05	0.001283	1.06E-06	0	0	0.303	0	0	2E-04	0	0
183	614963	4201352	1	0	0	0.001042	0.001275	4.06E-05	0.001316	1.09E-06	0	0	0.31	0	0	2E-04	0	0
184	614983	4201352	1	0	0	0.001066	0.001308	4.19E-05	0.00135	1.11E-06	0	0	0.317	0	0	2E-04	0	0
185	615003	4201352	1	0	0	0.001091	0.001342	4.33E-05	0.001386	1.14E-06	0	0	0.324	0	0	2E-04	0	0
186	615023	4201352	1	0	0	0.001119	0.001379	4.48E-05	0.001424	1.17E-06	0	0	0.333	0	0	2E-04	0	0
187	615043	4201352	1	0	0	0.00115	0.001417	4.62E-05	0.001463	1.2E-06	0	0	0.342	0	0	2E-04	0	0
188	615063	4201352	1	0	0	0.001183	0.001457	4.77E-05	0.001505	1.24E-06	0	0	0.352	0	0	2E-04	0	0
189	615083	4201352	1	0	0	0.001219	0.001499	4.93E-05	0.001549	1.27E-06	0	0	0.363	0	0	2E-04	0	0
190	615103	4201352	1	0	0	0.001258	0.001543	5.09E-05	0.001594	1.31E-06	0	0	0.374	0	0	3E-04	0	0
191	615123	4201352	1	0	0	0.001299	0.001589	5.25E-05	0.001641	1.36E-06	0	0	0.386	0	0	3E-04	0	0
192	615143	4201352	1	0	0	0.001342	0.001635	5.41E-05	0.001689	1.4E-06	0	0	0.399	0	0	3E-04	0	0
193	615163	4201352	1	0	0	0.001386	0.001682	5.58E-05	0.001738	1.45E-06	0	0	0.412	0	0	3E-04	0	0
194	615183	4201352	1	0	0	0.001431	0.001729	5.74E-05	0.001786	1.5E-06	0	0	0.426	0	0	3E-04	0	0

195	615203	4201352	1	0	0	0.001476	0.001776	5.92E-05	0.001835	1.54E-06	0	0	0.439	0	0	3E-04	0	0
196	615223	4201352	1	0	0	0.001521	0.001822	6.1E-05	0.001883	1.59E-06	0	0	0.452	0	0	3E-04	0	0
197	615243	4201352	1	0	0	0.001567	0.001869	6.28E-05	0.001931	1.64E-06	0	0	0.466	0	0	3E-04	0	0
198	615263	4201352	1	0	0	0.001613	0.001916	6.47E-05	0.00198	1.69E-06	0	0	0.48	0	0	3E-04	0	0
199	615283	4201352	1	0	0	0.00166	0.001963	6.68E-05	0.00203	1.74E-06	0	0	0.494	0	0	3E-04	0	0
200	615303	4201352	1	0	0	0.001713	0.002015	6.91E-05	0.002084	1.79E-06	0	0	0.509	0	0	3E-04	0	0
201	615323	4201352	1	0	0	0.001771	0.002074	7.16E-05	0.002145	1.85E-06	0	0	0.527	0	0	4E-04	0	0
202	615343	4201352	1	0	0	0.001831	0.002131	7.42E-05	0.002205	1.91E-06	0	0	0.544	0	0	4E-04	0	0
203	615363	4201352	1	0	0	0.001892	0.00219	7.67E-05	0.002267	1.98E-06	0	0	0.563	0	0	4E-04	0	0
204	615383	4201352	1	0	0	0.001956	0.002251	7.94E-05	0.00233	2.04E-06	0	0	0.582	0	0	4E-04	0	0
205	615403	4201352	1	0	0	0.002024	0.002315	8.21E-05	0.002397	2.12E-06	0	0	0.602	0	0	4E-04	0	0
206	615423	4201352	1	0	0	0.002094	0.002382	8.49E-05	0.002467	2.19E-06	0	0	0.623	0	0	4E-04	0	0
207	614763	4201372	1	0	0	0.000824	0.000981	2.96E-05	0.001011	8.62E-07	0	0	0.245	0	0	2E-04	0	0
208	614783	4201372	1	0	0	0.000845	0.001012	3.07E-05	0.001043	8.83E-07	0	0	0.251	0	0	2E-04	0	0
209	614803	4201372	1	0	0	0.000867	0.001046	3.19E-05	0.001078	9.06E-07	0	0	0.258	0	0	2E-04	0	0
210	614823	4201372	1	0	0	0.00089	0.001081	3.31E-05	0.001114	9.3E-07	0	0	0.265	0	0	2E-04	0	0
211	614843	4201372	1	0	0	0.000914	0.001116	3.44E-05	0.001151	9.55E-07	0	0	0.272	0	0	2E-04	0	0
212	614863	4201372	1	0	0	0.000939	0.001153	3.57E-05	0.001189	9.81E-07	0	0	0.279	0	0	2E-04	0	0
213	614883	4201372	1	0	0	0.000965	0.00119	3.72E-05	0.001228	1.01E-06	0	0	0.287	0	0	2E-04	0	0
214	614903	4201372	1	0	0	0.00099	0.001227	3.87E-05	0.001266	1.04E-06	0	0	0.295	0	0	2E-04	0	0
215	614923	4201372	1	0	0	0.001014	0.001262	4.01E-05	0.001302	1.06E-06	0	0	0.302	0	0	2E-04	0	0
216	614943	4201372	1	0	0	0.001038	0.001297	4.16E-05	0.001339	1.09E-06	0	0	0.309	0	0	2E-04	0	0
217	614963	4201372	1	0	0	0.001062	0.001332	4.3E-05	0.001375	1.11E-06	0	0	0.316	0	0	2E-04	0	0
218	614983	4201372	1	0	0	0.001087	0.001368	4.45E-05	0.001412	1.14E-06	0	0	0.323	0	0	2E-04	0	0
219	615003	4201372	1	0	0	0.001113	0.001405	4.6E-05	0.001451	1.16E-06	0	0	0.331	0	0	2E-04	0	0
220	615023	4201372	1	0	0	0.001141	0.001443	4.75E-05	0.00149	1.19E-06	0	0	0.339	0	0	2E-04	0	0
221	615043	4201372	1	0	0	0.001172	0.001483	4.91E-05	0.001532	1.22E-06	0	0	0.348	0	0	2E-04	0	0
222	615063	4201372	1	0	0	0.001206	0.001524	5.06E-05	0.001575	1.26E-06	0	0	0.359	0	0	2E-04	0	0
223	615083	4201372	1	0	0	0.001243	0.001568	5.22E-05	0.00162	1.3E-06	0	0	0.37	0	0	2E-04	0	0
224	615103	4201372	1	0	0	0.001283	0.001613	5.39E-05	0.001667	1.34E-06	0	0	0.381	0	0	3E-04	0	0
225	615123	4201372	1	0	0	0.001326	0.00166	5.56E-05	0.001716	1.39E-06	0	0	0.394	0	0	3E-04	0	0
226	615143	4201372	1	0	0	0.001372	0.001709	5.73E-05	0.001767	1.43E-06	0	0	0.408	0	0	3E-04	0	0
227	615163	4201372	1	0	0	0.001419	0.001759	5.91E-05	0.001818	1.48E-06	0	0	0.422	0	0	3E-04	0	0
228	615183	4201372	1	0	0	0.001468	0.001809	6.09E-05	0.00187	1.53E-06	0	0	0.437	0	0	3E-04	0	0
229	615203	4201372	1	0	0	0.001518	0.00186	6.28E-05	0.001922	1.59E-06	0	0	0.451	0	0	3E-04	0	0
230	615223	4201372	1	0	0	0.001567	0.00191	6.47E-05	0.001975	1.64E-06	0	0	0.466	0	0	3E-04	0	0
231	615243	4201372	1	0	0	0.001618	0.001961	6.67E-05	0.002028	1.69E-06	0	0	0.481	0	0	3E-04	0	0
232	615263	4201372	1	0	0	0.001669	0.002013	6.88E-05	0.002082	1.74E-06	0	0	0.496	0	0	3E-04	0	0
233	615283	4201372	1	0	0	0.001723	0.002066	7.1E-05	0.002137	1.8E-06	0	0	0.512	0	0	3E-04	0	0
234	615303	4201372	1	0	0	0.00178	0.002122	7.35E-05	0.002196	1.86E-06	0	0	0.529	0	0	4E-04	0	0
235	615323	4201372	1	0	0	0.001845	0.002185	7.63E-05	0.002261	1.93E-06	0	0	0.549	0	0	4E-04	0	0
236	615343	4201372	1	0	0	0.001913	0.002249	7.92E-05	0.002328	2E-06	0	0	0.569	0	0	4E-04	0	0
237	615363	4201372	1	0	0	0.001985	0.002317	8.22E-05	0.002399	2.07E-06	0	0	0.59	0	0	4E-04	0	0
238	615383	4201372	1	0	0	0.002059	0.002387	8.52E-05	0.002472	2.15E-06	0	0	0.612	0	0	4E-04	0	0
239	615403	4201372	1	0	0	0.002136	0.002459	8.84E-05	0.002548	2.23E-06	0	0	0.635	0	0	4E-04	0	0
240	615423	4201372	1	0	0	0.002218	0.002535	9.16E-05	0.002627	2.32E-06	0	0	0.659	0	0	4E-04	0	0
241	615443	4201372	1	0	0	0.002301	0.002614	9.49E-05	0.002709	2.41E-06	0	0	0.684	0	0	5E-04	0	0
242	614603	4201392	0	1	0	0.000708	0.000804	2.3E-05	0.000827	0	2E-08	0	0	0.005	0	0	1E-04	0
243	614803	4201392	1	0	0	0.000878	0.001082	3.35E-05	0.001115	9.18E-07	0	0	0.261	0	0	2E-04	0	0
244	614823	4201392	1	0	0	0.000902	0.00112	3.49E-05	0.001155	9.43E-07	0	0	0.268	0	0	2E-04	0	0
245	614843	4201392	1	0	0	0.000926	0.001159	3.64E-05	0.001195	9.68E-07	0	0	0.276	0	0	2E-04	0	0
246	614863	4201392	1	0	0	0.000954	0.001202	3.81E-05	0.00124	9.98E-07	0	0	0.284	0	0	2E-04	0	0
247	614883	4201392	1	0	0	0.000981	0.001243	3.97E-05	0.001283	1.03E-06	0	0	0.292	0	0	2E-04	0	0
248	614903	4201392	1	0	0	0.001007	0.001283	4.13E-05	0.001324	1.05E-06	0	0	0.299	0	0	2E-04	0	0
249	614923	4201392	1	0	0	0.001032	0.001323	4.29E-05	0.001366	1.08E-06	0	0	0.307	0	0	2E-04	0	0
250	614943	4201392	1	0	0	0.001058	0.001362	4.45E-05	0.001407	1.11E-06	0	0	0.315	0	0	2E-04	0	0
251	614963	4201392	1	0	0	0.001083	0.001401	4.61E-05	0.001448	1.13E-06	0	0	0.322	0	0	2E-04	0	0
252	614983	4201392	1	0	0	0.001108	0.00144	4.77E-05	0.001488	1.16E-06	0	0	0.33	0	0	2E-04	0	0
253	615003	4201392	1	0	0	0.001135	0.00148	4.93E-05	0.001529	1.19E-06	0	0	0.338	0	0	2E-04	0	0
254	615023	4201392	1	0	0	0.001164	0.00152	5.09E-05	0.00157	1.22E-06	0	0	0.346	0	0	2E-04	0	0
255	615043	4201392	1	0	0	0.001195	0.001561	5.25E-05	0.001613	1.25E-06	0	0	0.355	0	0	2E-04	0	0
256	615063	4201392	1	0	0	0.001229	0.001604	5.41E-05	0.001658	1.28E-06	0	0	0.366	0	0	2E-04	0	0
257	615083	4201392	1	0	0	0.001267	0.001648	5.58E-05	0.001704	1.32E-06	0	0	0.377	0	0	3E-04	0	0
258	615103	4201392	1	0	0	0.001308	0.001694	5.75E-05	0.001752	1.37E-06	0	0	0.389	0	0	3E-04	0	0
259	615123	4201392	1	0	0	0.001353	0.001742	5.92E-05	0.001802	1.41E-06	0	0	0.402	0	0	3E-04	0	0
260	615143	4201392	1	0	0	0.001401	0.001793	6.1E-05	0.001854	1.46E-06	0	0	0.416	0	0	3E-04	0	0
261	615163	4201392	1	0	0	0.001451	0.001845	6.29E-05	0.001908	1.52E-06	0	0	0.432	0	0	3E-04	0	0
262	615183	4201392	1	0	0	0.001504	0.001898	6.48E-05	0.001963	1.57E-06	0	0	0.447	0	0	3E-04	0	0
263	615203	4201392	1	0	0	0.001559	0.001952	6.68E-05	0.002019	1.63E-06	0	0	0.463	0	0	3E-04	0	0
264	615223	4201392	1	0	0	0.001613	0.002007	6.89E-05	0.002076	1.69E-06	0	0	0.48	0	0	3E-04	0	0
265	615243	4201392	1	0	0	0.00167	0.002063	7.11E-05	0.002135	1.75E-06	0	0	0.497	0	0	3E-04	0	0
266	615263	4201392	1	0	0	0.001729	0.002123	7.36E-05	0.002197	1.81E-06	0	0	0.514	0	0	3E-04	0	0
267	615283	4201392	1	0	0	0.001789	0.002181	7.6E-05	0.002257	1.87E-06	0	0	0.532	0	0	4E-04	0	0
268	615303	4201392	1	0	0	0.001852	0.002241	7.86E-05	0.00232	1.94E-06	0	0	0.551	0	0	4E-04	0	0
269	615323	4201392	1	0	0	0.001922	0.002306	8.16E-05	0.002388	2.01E-06	0	0	0.571	0	0	4E-04	0	0
270	615343	4201392	1	0	0	0.001998	0.002377	8.47E-05	0.002462	2.09E-06	0	0	0.594	0	0	4E-04	0	0
271	615363	4201392	1	0	0	0.002081	0.002454	8.82E-05	0.002543	2.18E-06	0	0	0.619	0	0	4E-04	0	0
272	615383	4201392	1	0	0	0.00217	0.002536	9.18E-05	0.002628	2.27E-06	0	0	0.645	0	0	4E-04	0	0
273	615403	4201392	1	0	0	0.002261	0.002621	9.56E-05	0.002717	2.36E-06	0	0	0.672	0	0	5E-04	0	0
274	615423	4201392	1	0	0	0.002357	0.00271	9.94E-05	0.002809	2.46E-06	0	0	0.701	0	0	5E-04	0	0
275	615443	4201392	1	0	0	0.002456	0.002802	0.000103	0.002905	2.57E-06	0	0	0.73	0	0	5E-04	0	0
276	614603	4201412	0	1	0	0.000717	0.000816	2.33E-05	0.00084	0	2E-08	0	0	0.005	0	0	1E-04	0
277	614623	4201412	0	1	0	0.000732	0.000841	2.43E-05	0.000865	0	2E-08	0	0	0.005	0	0	1E-04	0
278	614803	4201412	1	0	0	0.00089	0.001126	3.55E-05	0.001161	9.3E-07	0	0	0.265	0	0	2E-04	0	0
279	614823	4201412	1	0	0	0.000915	0.00117	3.73E-05	0.001207	9.56E-07	0	0	0.272	0	0	2E-04	0	0
280	614843	4201412	1	0	0	0.000942	0.001216	3.92E-05	0.001255	9.84E-07	0	0	0.28	0	0	2E-04	0	0
281	614863	4201412	1	0	0	0.000969	0.001261	4.11E-05	0.001302	1.01E-06	0	0	0.288	0	0	2E-04	0	0
282	614883	4201412	1	0	0	0.000996	0.001307	4.29E-05	0.00135	1.04E-06	0	0	0.296	0	0	2E-04	0	0
283	614903	4201412	1	0	0	0.001023	0.001353	4.47E-05	0.001398	1.07E-06	0	0	0.304	0	0	2E-04	0	0
284	614923	4201412	1	0	0	0.00105	0.001399	4.65E-05	0.001446	1.1E-06	0	0	0.312	0	0	2E-04	0	0
285	614943	4201412	1	0	0	0.001077	0.001444	4.83E-05	0.001492	1.13E-06	0	0	0.32	0	0	2E-04	0	0
286	614963	4201412	1	0	0	0.001104	0.001487	5E-05	0.001537	1.15E-06	0	0	0.328	0	0	2E-04	0	0
287	614983	4201412	1	0	0	0.001131	0.00153	5.17E-05	0.001581	1.18E-06	0	0	0.336	0	0	2E-04	0	0
288	615003	4201412	1	0	0	0.001159	0.001571	5.34E-05	0.001625	1.21E-06	0	0	0.345	0	0	2E-04	0	0
289	615023	4201412	1	0	0	0.001188	0.001613	5.5E-05	0.001668	1.24E-06	0	0	0.353	0	0	2E-04	0	0
290	615043	4201412	1	0	0	0.001219	0.001655	5.67E-05	0.001712	1.27E-06	0	0	0.363	0	0	2E-04	0	0
291	615063	4201412	1	0	0	0.001254	0.001699	5.84E-05	0.001757	1.31E-06	0	0	0.373	0	0	3E-04	0	0
292	615083	4201412	1	0	0	0.001292	0.001744	6E-05	0.001804	1.35E-06	0	0	0.384	0	0	3E-04	0	0
293	615103	4201412	1	0	0	0.001334	0.001791	6.18E-05	0.001853	1.39E-06	0	0	0.397	0	0	3E-04	0	0
294	615123	4201412	1	0	0	0.001379	0.001839	6.36E-05	0.001903	1.44E-06	0	0	0.41	0	0	3E-04	0	0
295	615143	4201412	1	0	0	0.001429	0.00189	6.54E-05	0.001955	1.49E-06	0	0	0.425	0	0	3E-04	0	0

296	615163	4201412	1	0	0	0.001483	0.001944	6.74E-05	0.002011	1.55E-06	0	0	0.441	0	0	3E-04	0	0
297	615183	4201412	1	0	0	0.001539	0.001999	6.94E-05	0.002068	1.61E-06	0	0	0.458	0	0	3E-04	0	0
298	615203	4201412	1	0	0	0.001598	0.002056	7.15E-05	0.002128	1.67E-06	0	0	0.475	0	0	3E-04	0	0
299	615223	4201412	1	0	0	0.00166	0.002117	7.38E-05	0.002191	1.74E-06	0	0	0.494	0	0	3E-04	0	0
300	615243	4201412	1	0	0	0.001723	0.00218	7.63E-05	0.002256	1.8E-06	0	0	0.512	0	0	3E-04	0	0
301	615263	4201412	1	0	0	0.001787	0.002242	7.88E-05	0.002321	1.87E-06	0	0	0.531	0	0	4E-04	0	0
302	615283	4201412	1	0	0	0.001853	0.002304	8.15E-05	0.002385	1.94E-06	0	0	0.551	0	0	4E-04	0	0
303	615303	4201412	1	0	0	0.001924	0.002369	8.44E-05	0.002453	2.01E-06	0	0	0.572	0	0	4E-04	0	0
304	615323	4201412	1	0	0	0.002001	0.002439	8.75E-05	0.002526	2.09E-06	0	0	0.595	0	0	4E-04	0	0
305	615343	4201412	1	0	0	0.002086	0.002516	9.11E-05	0.002607	2.18E-06	0	0	0.62	0	0	4E-04	0	0
306	615363	4201412	1	0	0	0.002182	0.002604	9.5E-05	0.002699	2.28E-06	0	0	0.649	0	0	4E-04	0	0
307	615383	4201412	1	0	0	0.002288	0.0027	9.93E-05	0.0028	2.39E-06	0	0	0.68	0	0	5E-04	0	0
308	615403	4201412	1	0	0	0.002398	0.002802	0.000104	0.002906	2.51E-06	0	0	0.713	0	0	5E-04	0	0
309	615423	4201412	1	0	0	0.002513	0.002907	0.000109	0.003016	2.63E-06	0	0	0.747	0	0	5E-04	0	0
310	615443	4201412	1	0	0	0.002633	0.003018	0.000113	0.003131	2.75E-06	0	0	0.783	0	0	5E-04	0	0
311	615463	4201412	1	0	0	0.002756	0.003131	0.000118	0.003249	2.88E-06	0	0	0.819	0	0	6E-04	0	0
312	614623	4201432	0	1	0	0.000741	0.000856	2.47E-05	0.00088	0	2E-08	0	0	0.005	0	0	1E-04	0
313	614643	4201432	0	1	0	0.000757	0.000885	2.59E-05	0.000911	0	2E-08	0	0	0.006	0	0	2E-04	0
314	614663	4201432	0	1	0	0.000772	0.000916	2.72E-05	0.000943	0	2E-08	0	0	0.006	0	0	2E-04	0
315	614803	4201432	1	0	0	0.000903	0.001185	3.83E-05	0.001223	9.44E-07	0	0	0.269	0	0	2E-04	0	0
316	614823	4201432	1	0	0	0.000929	0.001235	4.05E-05	0.001276	9.71E-07	0	0	0.276	0	0	2E-04	0	0
317	614843	4201432	1	0	0	0.000956	0.001288	4.29E-05	0.001331	9.99E-07	0	0	0.284	0	0	2E-04	0	0
318	614863	4201432	1	0	0	0.000983	0.00134	4.51E-05	0.001385	1.03E-06	0	0	0.292	0	0	2E-04	0	0
319	614883	4201432	1	0	0	0.001011	0.001393	4.72E-05	0.00144	1.06E-06	0	0	0.301	0	0	2E-04	0	0
320	614903	4201432	1	0	0	0.00104	0.001446	4.93E-05	0.001496	1.09E-06	0	0	0.309	0	0	2E-04	0	0
321	614923	4201432	1	0	0	0.001068	0.001499	5.14E-05	0.00155	1.12E-06	0	0	0.318	0	0	2E-04	0	0
322	614943	4201432	1	0	0	0.001097	0.001549	5.33E-05	0.001602	1.15E-06	0	0	0.326	0	0	2E-04	0	0
323	614963	4201432	1	0	0	0.001126	0.001597	5.52E-05	0.001652	1.18E-06	0	0	0.335	0	0	2E-04	0	0
324	614983	4201432	1	0	0	0.001154	0.001642	5.69E-05	0.001699	1.21E-06	0	0	0.343	0	0	2E-04	0	0
325	615003	4201432	1	0	0	0.001183	0.001686	5.87E-05	0.001744	1.24E-06	0	0	0.352	0	0	2E-04	0	0
326	615023	4201432	1	0	0	0.001213	0.001729	6.03E-05	0.001789	1.27E-06	0	0	0.361	0	0	2E-04	0	0
327	615043	4201432	1	0	0	0.001245	0.001772	6.2E-05	0.001834	1.3E-06	0	0	0.37	0	0	2E-04	0	0
328	615063	4201432	1	0	0	0.00128	0.001816	6.37E-05	0.00188	1.34E-06	0	0	0.381	0	0	3E-04	0	0
329	615083	4201432	1	0	0	0.001319	0.001862	6.54E-05	0.001927	1.38E-06	0	0	0.392	0	0	3E-04	0	0
330	615103	4201432	1	0	0	0.001361	0.001909	6.71E-05	0.001976	1.42E-06	0	0	0.405	0	0	3E-04	0	0
331	615123	4201432	1	0	0	0.001407	0.001957	6.89E-05	0.002026	1.47E-06	0	0	0.419	0	0	3E-04	0	0
332	615143	4201432	1	0	0	0.001458	0.002008	7.08E-05	0.002079	1.52E-06	0	0	0.434	0	0	3E-04	0	0
333	615163	4201432	1	0	0	0.001514	0.002061	7.28E-05	0.002134	1.58E-06	0	0	0.45	0	0	3E-04	0	0
334	615183	4201432	1	0	0	0.001573	0.002117	7.49E-05	0.002192	1.64E-06	0	0	0.468	0	0	3E-04	0	0
335	615203	4201432	1	0	0	0.001636	0.002176	7.71E-05	0.002253	1.71E-06	0	0	0.487	0	0	3E-04	0	0
336	615223	4201432	1	0	0	0.001705	0.002244	7.97E-05	0.002323	1.78E-06	0	0	0.507	0	0	3E-04	0	0
337	615243	4201432	1	0	0	0.001774	0.002311	8.23E-05	0.002393	1.85E-06	0	0	0.528	0	0	4E-04	0	0
338	615263	4201432	1	0	0	0.001845	0.002376	8.5E-05	0.002461	1.93E-06	0	0	0.549	0	0	4E-04	0	0
339	615283	4201432	1	0	0	0.001918	0.002442	8.79E-05	0.00253	2E-06	0	0	0.57	0	0	4E-04	0	0
340	615303	4201432	1	0	0	0.001996	0.002511	9.1E-05	0.002602	2.09E-06	0	0	0.594	0	0	4E-04	0	0
341	615323	4201432	1	0	0	0.002082	0.002585	9.45E-05	0.00268	2.18E-06	0	0	0.619	0	0	4E-04	0	0
342	615343	4201432	1	0	0	0.002178	0.00267	9.84E-05	0.002768	2.28E-06	0	0	0.648	0	0	4E-04	0	0
343	615363	4201432	1	0	0	0.002287	0.002767	0.000103	0.00287	2.39E-06	0	0	0.68	0	0	5E-04	0	0
344	615383	4201432	1	0	0	0.002411	0.002879	0.000108	0.002987	2.52E-06	0	0	0.717	0	0	5E-04	0	0
345	615403	4201432	1	0	0	0.002547	0.003002	0.000113	0.003115	2.66E-06	0	0	0.757	0	0	5E-04	0	0
346	615423	4201432	1	0	0	0.002689	0.003131	0.000119	0.00325	2.81E-06	0	0	0.8	0	0	5E-04	0	0
347	615443	4201432	1	0	0	0.002838	0.003268	0.000125	0.003393	2.97E-06	0	0	0.844	0	0	6E-04	0	0
348	615463	4201432	1	0	0	0.002992	0.00341	0.000131	0.003541	3.13E-06	0	0	0.89	0	0	6E-04	0	0
349	614663	4201452	0	1	0	0.000783	0.00094	2.81E-05	0.000968	0	2E-08	0	0	0.006	0	0	2E-04	0
350	614683	4201452	0	1	0	0.0008	0.000978	2.97E-05	0.001008	0	2E-08	0	0	0.006	0	0	2E-04	0
351	614823	4201452	1	0	0	0.000943	0.001327	4.54E-05	0.001372	9.86E-07	0	0	0.28	0	0	2E-04	0	0
352	614843	4201452	1	0	0	0.000969	0.001388	4.81E-05	0.001436	1.01E-06	0	0	0.288	0	0	2E-04	0	0
353	614863	4201452	1	0	0	0.000997	0.001451	5.08E-05	0.001502	1.04E-06	0	0	0.296	0	0	2E-04	0	0
354	614883	4201452	1	0	0	0.001026	0.001514	5.34E-05	0.001567	1.07E-06	0	0	0.305	0	0	2E-04	0	0
355	614903	4201452	1	0	0	0.001056	0.001575	5.58E-05	0.001631	1.1E-06	0	0	0.314	0	0	2E-04	0	0
356	614923	4201452	1	0	0	0.001087	0.001633	5.8E-05	0.001691	1.14E-06	0	0	0.323	0	0	2E-04	0	0
357	614943	4201452	1	0	0	0.001117	0.001688	6.01E-05	0.001748	1.17E-06	0	0	0.332	0	0	2E-04	0	0
358	614963	4201452	1	0	0	0.001148	0.001739	6.2E-05	0.001801	1.2E-06	0	0	0.341	0	0	2E-04	0	0
359	614983	4201452	1	0	0	0.001178	0.001787	6.38E-05	0.001851	1.23E-06	0	0	0.35	0	0	2E-04	0	0
360	615003	4201452	1	0	0	0.001208	0.001833	6.56E-05	0.001898	1.26E-06	0	0	0.359	0	0	2E-04	0	0
361	615023	4201452	1	0	0	0.001239	0.001876	6.73E-05	0.001944	1.3E-06	0	0	0.369	0	0	2E-04	0	0
362	615043	4201452	1	0	0	0.001272	0.00192	6.89E-05	0.001989	1.33E-06	0	0	0.378	0	0	3E-04	0	0
363	615063	4201452	1	0	0	0.001308	0.001964	7.06E-05	0.002035	1.37E-06	0	0	0.389	0	0	3E-04	0	0
364	615083	4201452	1	0	0	0.001347	0.00201	7.23E-05	0.002083	1.41E-06	0	0	0.4	0	0	3E-04	0	0
365	615103	4201452	1	0	0	0.00139	0.002058	7.4E-05	0.002132	1.45E-06	0	0	0.413	0	0	3E-04	0	0
366	615123	4201452	1	0	0	0.001437	0.002107	7.58E-05	0.002182	1.5E-06	0	0	0.427	0	0	3E-04	0	0
367	615143	4201452	1	0	0	0.001489	0.002156	7.77E-05	0.002234	1.56E-06	0	0	0.443	0	0	3E-04	0	0
368	615163	4201452	1	0	0	0.001546	0.002208	7.96E-05	0.002288	1.62E-06	0	0	0.46	0	0	3E-04	0	0
369	615183	4201452	1	0	0	0.001607	0.002264	8.17E-05	0.002345	1.68E-06	0	0	0.478	0	0	3E-04	0	0
370	615203	4201452	1	0	0	0.001674	0.002322	8.4E-05	0.002406	1.75E-06	0	0	0.498	0	0	3E-04	0	0
371	615223	4201452	1	0	0	0.001746	0.002392	8.67E-05	0.002478	1.83E-06	0	0	0.519	0	0	3E-04	0	0
372	615243	4201452	1	0	0	0.001822	0.002462	8.95E-05	0.002552	1.9E-06	0	0	0.542	0	0	4E-04	0	0
373	615263	4201452	1	0	0	0.0019	0.00253	9.24E-05	0.002623	1.99E-06	0	0	0.565	0	0	4E-04	0	0
374	615283	4201452	1	0	0	0.001982	0.0026	9.55E-05	0.002696	2.07E-06	0	0	0.589	0	0	4E-04	0	0
375	615303	4201452	1	0	0	0.002069	0.002672	9.89E-05	0.002771	2.16E-06	0	0	0.615	0	0	4E-04	0	0
376	615323	4201452	1	0	0	0.002165	0.002751	0.000103	0.002854	2.26E-06	0	0	0.644	0	0	4E-04	0	0
377	615343	4201452	1	0	0	0.002272	0.002841	0.000107	0.002948	2.37E-06	0	0	0.676	0	0	5E-04	0	0
378	615363	4201452	1	0	0	0.002395	0.002947	0.000112	0.003059	2.5E-06	0	0	0.712	0	0	5E-04	0	0
379	615383	4201452	1	0	0	0.00254	0.003073	0.000118	0.003191	2.65E-06	0	0	0.755	0	0	5E-04	0	0
380	615403	4201452	1	0	0	0.002706	0.003222	0.000125	0.003346	2.83E-06	0	0	0.805	0	0	5E-04	0	0
381	615423	4201452	1	0	0	0.002885	0.003384	0.000132	0.003516	3.02E-06	0	0	0.858	0	0	6E-04	0	0
382	615443	4201452	1	0	0	0.003075	0.003559	0.00014	0.003698	3.21E-06	0	0	0.915	0	0	6E-04	0	0
383	615463	4201452	1	0	0	0.003275	0.003743	0.000148	0.003891	3.42E-06	0	0	0.974	0	0	7E-04	0	0
384	614683	4201472	0	1	0	0.000811	0.001011	3.1E-05	0.001042	0	2E-08	0	0	0.006	0	0	2E-04	0
385	614703	4201472	0	1	0	0.000829	0.001061	3.33E-05	0.001095	0	2E-08	0	0	0.006	0	0	2E-04	0
386	614823	4201472	1	0	0	0.000958	0.001469	5.29E-05	0.001522	1E-06	0	0	0.285	0	0	2E-04	0	0
387	614843	4201472	1	0	0	0.000985	0.001548	5.65E-05	0.001605	1.03E-06	0	0	0.293	0	0	2E-04	0	0
388	614863	4201472	1	0	0	0.001012	0.001621	5.96E-05	0.001681	1.06E-06	0	0	0.301	0	0	2E-04	0	0
389	614883	4201472	1	0	0	0.001042	0.001692	6.24E-05	0.001754	1.09E-06	0	0	0.31	0	0	2E-04	0	0
390	614903	4201472	1	0	0	0.001073	0.001759	6.5E-05	0.001824	1.12E-06	0	0	0.319	0	0	2E-04	0	0
391	614923	4201472	1	0	0	0.001105	0.001822	6.74E-05	0.001889	1.15E-06	0	0	0.329	0	0	2E-04	0	0
392	614943	4201472	1	0	0	0.001137	0.001879	6.95E-05	0.001949	1.19E-06	0	0	0.338	0	0	2E-04	0	0
393	614963	4201472	1	0	0	0.00117	0.001932	7.14E-05	0.002004	1.22E-06	0	0	0.348	0	0	2E-04	0	0
394	614983	4201472	1	0	0	0.001202	0.001982	7.33E-05	0.002055	1.26E-06	0	0	0.357	0	0	2E-04	0	0
395	615003	4201472	1	0	0	0.001234	0.002029	7.5E-05	0.002104	1.29E-06	0	0	0.367	0	0	2E-04	0	0
396	615023	4201472	1	0	0	0.001267	0.002074	7.67E-05	0.00215	1.32E-06	0	0	0.377	0	0	3E-04	0	0

397	615043	4201472	1	0	0	0.001301	0.002118	7.83E-05	0.002196	1.36E-06	0	0	0.387	0	0	3E-04	0	0
398	615063	4201472	1	0	0	0.001337	0.002162	7.99E-05	0.002241	1.4E-06	0	0	0.398	0	0	3E-04	0	0
399	615083	4201472	1	0	0	0.001377	0.002207	8.15E-05	0.002289	1.44E-06	0	0	0.409	0	0	3E-04	0	0
400	615103	4201472	1	0	0	0.00142	0.002254	8.32E-05	0.002338	1.48E-06	0	0	0.422	0	0	3E-04	0	0
401	615123	4201472	1	0	0	0.001468	0.002304	8.49E-05	0.002389	1.53E-06	0	0	0.437	0	0	3E-04	0	0
402	615143	4201472	1	0	0	0.001521	0.002353	8.68E-05	0.00244	1.59E-06	0	0	0.452	0	0	3E-04	0	0
403	615163	4201472	1	0	0	0.00158	0.002403	8.87E-05	0.002492	1.65E-06	0	0	0.47	0	0	3E-04	0	0
404	615183	4201472	1	0	0	0.001644	0.002457	9.09E-05	0.002548	1.72E-06	0	0	0.489	0	0	3E-04	0	0
405	615203	4201472	1	0	0	0.001714	0.002518	9.34E-05	0.002611	1.79E-06	0	0	0.51	0	0	3E-04	0	0
406	615223	4201472	1	0	0	0.001789	0.002582	9.6E-05	0.002678	1.87E-06	0	0	0.532	0	0	4E-04	0	0
407	615243	4201472	1	0	0	0.001869	0.00265	9.88E-05	0.002749	1.95E-06	0	0	0.556	0	0	4E-04	0	0
408	615263	4201472	1	0	0	0.001953	0.002717	0.000102	0.002819	2.04E-06	0	0	0.581	0	0	4E-04	0	0
409	615283	4201472	1	0	0	0.002043	0.002786	0.000105	0.002891	2.14E-06	0	0	0.608	0	0	4E-04	0	0
410	615303	4201472	1	0	0	0.002141	0.002858	0.000109	0.002967	2.24E-06	0	0	0.637	0	0	4E-04	0	0
411	615323	4201472	1	0	0	0.002248	0.002939	0.000113	0.003052	2.35E-06	0	0	0.668	0	0	4E-04	0	0
412	615343	4201472	1	0	0	0.002368	0.003033	0.000118	0.003151	2.48E-06	0	0	0.704	0	0	5E-04	0	0
413	615363	4201472	1	0	0	0.002508	0.003146	0.000123	0.003269	2.62E-06	0	0	0.746	0	0	5E-04	0	0
414	615383	4201472	1	0	0	0.002673	0.003287	0.00013	0.003417	2.79E-06	0	0	0.795	0	0	5E-04	0	0
415	615403	4201472	1	0	0	0.002873	0.003463	0.000138	0.003601	3E-06	0	0	0.854	0	0	6E-04	0	0
416	615423	4201472	1	0	0	0.003104	0.003673	0.000147	0.00382	3.24E-06	0	0	0.923	0	0	6E-04	0	0
417	615443	4201472	1	0	0	0.003354	0.003903	0.000158	0.004061	3.51E-06	0	0	0.997	0	0	7E-04	0	0
418	615463	4201472	1	0	0	0.00362	0.004152	0.000168	0.00432	3.78E-06	0	0	1.076	0	0	7E-04	0	0
419	614703	4201492	0	1	0	0.000841	0.001118	3.59E-05	0.001154	0	2E-08	0	0	0.006	0	0	2E-04	0
420	614823	4201492	1	0	0	0.000974	0.001716	6.58E-05	0.001782	1.02E-06	0	0	0.29	0	0	2E-04	0	0
421	614843	4201492	1	0	0	0.001001	0.001816	7.03E-05	0.001887	1.05E-06	0	0	0.298	0	0	2E-04	0	0
422	614863	4201492	1	0	0	0.001029	0.001897	7.36E-05	0.001971	1.08E-06	0	0	0.306	0	0	2E-04	0	0
423	614883	4201492	1	0	0	0.001059	0.00197	7.65E-05	0.002047	1.11E-06	0	0	0.315	0	0	2E-04	0	0
424	614903	4201492	1	0	0	0.001091	0.00204	7.91E-05	0.002119	1.14E-06	0	0	0.324	0	0	2E-04	0	0
425	614923	4201492	1	0	0	0.001124	0.002101	8.14E-05	0.002183	1.17E-06	0	0	0.334	0	0	2E-04	0	0
426	614943	4201492	1	0	0	0.001158	0.002159	8.34E-05	0.002242	1.21E-06	0	0	0.344	0	0	2E-04	0	0
427	614963	4201492	1	0	0	0.001192	0.002213	8.53E-05	0.002298	1.25E-06	0	0	0.355	0	0	2E-04	0	0
428	614983	4201492	1	0	0	0.001227	0.002264	8.71E-05	0.002351	1.28E-06	0	0	0.365	0	0	2E-04	0	0
429	615003	4201492	1	0	0	0.001261	0.002311	8.87E-05	0.0024	1.32E-06	0	0	0.375	0	0	3E-04	0	0
430	615023	4201492	1	0	0	0.001295	0.002356	9.03E-05	0.002446	1.35E-06	0	0	0.385	0	0	3E-04	0	0
431	615043	4201492	1	0	0	0.001331	0.002399	9.18E-05	0.002491	1.39E-06	0	0	0.396	0	0	3E-04	0	0
432	615063	4201492	1	0	0	0.001368	0.002442	9.33E-05	0.002536	1.43E-06	0	0	0.407	0	0	3E-04	0	0
433	615083	4201492	1	0	0	0.001408	0.002487	9.47E-05	0.002582	1.47E-06	0	0	0.419	0	0	3E-04	0	0
434	615103	4201492	1	0	0	0.001452	0.002533	9.63E-05	0.002629	1.52E-06	0	0	0.432	0	0	3E-04	0	0
435	615123	4201492	1	0	0	0.001501	0.002581	9.79E-05	0.002679	1.57E-06	0	0	0.446	0	0	3E-04	0	0
436	615143	4201492	1	0	0	0.001555	0.002631	9.96E-05	0.00273	1.63E-06	0	0	0.463	0	0	3E-04	0	0
437	615163	4201492	1	0	0	0.001616	0.00268	0.000101	0.002782	1.69E-06	0	0	0.48	0	0	3E-04	0	0
438	615183	4201492	1	0	0	0.001683	0.002732	0.000104	0.002836	1.76E-06	0	0	0.5	0	0	3E-04	0	0
439	615203	4201492	1	0	0	0.001757	0.002789	0.000106	0.002896	1.84E-06	0	0	0.522	0	0	4E-04	0	0
440	615223	4201492	1	0	0	0.001834	0.002843	0.000109	0.002952	1.92E-06	0	0	0.545	0	0	4E-04	0	0
441	615243	4201492	1	0	0	0.001917	0.002901	0.000112	0.003013	2E-06	0	0	0.57	0	0	4E-04	0	0
442	615263	4201492	1	0	0	0.002006	0.002958	0.000115	0.003072	2.1E-06	0	0	0.596	0	0	4E-04	0	0
443	615283	4201492	1	0	0	0.002102	0.003014	0.000118	0.003132	2.2E-06	0	0	0.625	0	0	4E-04	0	0
444	615303	4201492	1	0	0	0.002208	0.003078	0.000122	0.0032	2.31E-06	0	0	0.657	0	0	4E-04	0	0
445	615323	4201492	1	0	0	0.002328	0.003154	0.000126	0.003281	2.43E-06	0	0	0.692	0	0	5E-04	0	0
446	615343	4201492	1	0	0	0.002464	0.00325	0.000132	0.003381	2.58E-06	0	0	0.733	0	0	5E-04	0	0
447	615363	4201492	1	0	0	0.002622	0.00337	0.000138	0.003508	2.74E-06	0	0	0.78	0	0	5E-04	0	0
448	615383	4201492	1	0	0	0.002812	0.003526	0.000145	0.003672	2.94E-06	0	0	0.836	0	0	6E-04	0	0
449	615403	4201492	1	0	0	0.003048	0.003733	0.000155	0.003888	3.19E-06	0	0	0.906	0	0	6E-04	0	0
450	615423	4201492	1	0	0	0.003343	0.004002	0.000167	0.004169	3.49E-06	0	0	0.994	0	0	7E-04	0	0
451	615443	4201492	1	0	0	0.003685	0.00432	0.000181	0.004501	3.85E-06	0	0	1.096	0	0	7E-04	0	0
452	615463	4201492	1	0	0	0.004057	0.004671	0.000196	0.004867	4.24E-06	0	0	1.206	0	0	8E-04	0	0
453	614723	4201512	0	1	0	0.000873	0.001324	4.57E-05	0.00137	0	2E-08	0	0	0.006	0	0	2E-04	0
454	614903	4201512	1	0	0	0.00111	0.002518	0.000103	0.002621	1.16E-06	0	0	0.33	0	0	2E-04	0	0
455	614923	4201512	1	0	0	0.001144	0.002565	0.000104	0.002669	1.2E-06	0	0	0.34	0	0	2E-04	0	0
456	614943	4201512	1	0	0	0.001179	0.002613	0.000106	0.002719	1.23E-06	0	0	0.351	0	0	2E-04	0	0
457	614963	4201512	1	0	0	0.001215	0.002666	0.000107	0.002774	1.27E-06	0	0	0.361	0	0	2E-04	0	0
458	614983	4201512	1	0	0	0.001252	0.002716	0.000109	0.002825	1.31E-06	0	0	0.372	0	0	3E-04	0	0
459	615003	4201512	1	0	0	0.001289	0.002761	0.00011	0.002872	1.35E-06	0	0	0.383	0	0	3E-04	0	0
460	615023	4201512	1	0	0	0.001325	0.002804	0.000112	0.002915	1.39E-06	0	0	0.394	0	0	3E-04	0	0
461	615043	4201512	1	0	0	0.001362	0.002844	0.000113	0.002957	1.42E-06	0	0	0.405	0	0	3E-04	0	0
462	615063	4201512	1	0	0	0.001401	0.002884	0.000114	0.002998	1.46E-06	0	0	0.417	0	0	3E-04	0	0
463	615083	4201512	1	0	0	0.001442	0.002925	0.000115	0.00304	1.51E-06	0	0	0.429	0	0	3E-04	0	0
464	615103	4201512	1	0	0	0.001487	0.002967	0.000116	0.003083	1.55E-06	0	0	0.442	0	0	3E-04	0	0
465	615123	4201512	1	0	0	0.001537	0.003011	0.000118	0.003129	1.61E-06	0	0	0.457	0	0	3E-04	0	0
466	615143	4201512	1	0	0	0.001592	0.003058	0.000119	0.003177	1.66E-06	0	0	0.473	0	0	3E-04	0	0
467	615163	4201512	1	0	0	0.001655	0.003119	0.000121	0.003241	1.73E-06	0	0	0.492	0	0	3E-04	0	0
468	615183	4201512	1	0	0	0.001724	0.003164	0.000124	0.003288	1.8E-06	0	0	0.513	0	0	3E-04	0	0
469	615203	4201512	1	0	0	0.001799	0.003197	0.000126	0.003323	1.88E-06	0	0	0.535	0	0	4E-04	0	0
470	615223	4201512	1	0	0	0.00188	0.003233	0.000128	0.003361	1.96E-06	0	0	0.559	0	0	4E-04	0	0
471	615243	4201512	1	0	0	0.001967	0.003268	0.000131	0.003399	2.06E-06	0	0	0.585	0	0	4E-04	0	0
472	615263	4201512	1	0	0	0.002061	0.003292	0.000134	0.003426	2.15E-06	0	0	0.613	0	0	4E-04	0	0
473	615283	4201512	1	0	0	0.002162	0.003316	0.000137	0.003453	2.26E-06	0	0	0.643	0	0	4E-04	0	0
474	615303	4201512	1	0	0	0.002275	0.003351	0.000141	0.003492	2.38E-06	0	0	0.676	0	0	5E-04	0	0
475	615323	4201512	1	0	0	0.002403	0.00341	0.000145	0.003555	2.51E-06	0	0	0.714	0	0	5E-04	0	0
476	615343	4201512	1	0	0	0.002553	0.0035	0.000151	0.003651	2.67E-06	0	0	0.759	0	0	5E-04	0	0
477	615363	4201512	1	0	0	0.002733	0.00363	0.000158	0.003788	2.86E-06	0	0	0.813	0	0	5E-04	0	0
478	615383	4201512	1	0	0	0.002952	0.003807	0.000166	0.003974	3.09E-06	0	0	0.878	0	0	6E-04	0	0
479	615403	4201512	1	0	0	0.00323	0.004048	0.000178	0.004226	3.38E-06	0	0	0.96	0	0	6E-04	0	0
480	615423	4201512	1	0	0	0.003598	0.004386	0.000192	0.004578	3.76E-06	0	0	1.07	0	0	7E-04	0	0
481	615443	4201512	1	0	0	0.004079	0.004839	0.000212	0.005051	4.26E-06	0	0	1.213	0	0	8E-04	0	0
482	615463	4201512	1	0	0	0.004635	0.005372	0.000235	0.005607	4.85E-06	0	0	1.378	0	0	9E-04	0	0
483	614723	4201532	0	1	0	0.000885	0.001561	5.64E-05	0.001617	0	2E-08	0	0	0.007	0	0	2E-04	0
484	614743	4201532	0	1	0	0.000908	0.001961	7.64E-05	0.002037	0	2E-08	0	0	0.007	0	0	2E-04	0
485	614743	4201552	0	1	0	0.000928	0.003804	0.000105	0.00391	0	2E-08	0	0	0.007	0	0	2E-04	0
486	614763	4201572	0	1	0	0.000962	0.003183	0.000117	0.003299	0	2E-08	0	0	0.007	0	0	2E-04	0
487	614763	4201592	0	1	0	0.000967	0.001872	6.74E-05	0.001939	0	3E-08	0	0	0.007	0	0	2E-04	0
488	614783	4201592	0	1	0	0.000994	0.001992	7.31E-05	0.002065	0	3E-08	0	0	0.007	0	0	2E-04	0
489	614803	4201592	1	0	0	0.001021	0.002076	7.7E-05	0.002153	1.07E-06	0	0	0.304	0	0	2E-04	0	0
490	614823	4201592	1	0	0	0.001048	0.002146	8.02E-05	0.002226	1.1E-06	0	0	0.312	0	0	2E-04	0	0
491	614843	4201592	1	0	0	0.001077	0.002208	8.29E-05	0.002291	1.13E-06	0	0	0.32	0	0	2E-04	0	0
492	614863	4201592	1	0	0	0.001108	0.002273	8.58E-05	0.002359	1.16E-06	0	0	0.33	0	0	2E-04	0	0
493	614883	4201592	1	0	0	0.001141	0.002339	8.86E-05	0.002427	1.19E-06	0	0	0.339	0	0	2E-04	0	0
494	614903	4201592	1	0	0	0.001176	0.002406	9.14E-05	0.002498	1.23E-06	0	0	0.35	0	0	2E-04	0	0
495	614923	4201592	1	0	0	0.001213	0.00246	9.34E-05	0.002554	1.27E-06	0	0	0.361	0	0	2E-04	0	0
496	614943	4201592	1	0	0	0.001252	0.002523	9.56E-05	0.002619	1.31E-06	0	0	0.372	0	0	3E-04	0	0
497	614963	4201592	1	0	0	0.001296	0.002595	9.83E-05	0.002693	1.35E-06	0	0	0.385	0	0	3E-04	0	0

498	614983	4201592	1	0	0	0.001341	0.002668	0.000101	0.002769	1.4E-06	0	0	0.399	0	0	3E-04	0	0
499	615003	4201592	1	0	0	0.001389	0.002746	0.000104	0.00285	1.45E-06	0	0	0.413	0	0	3E-04	0	0
500	615023	4201592	1	0	0	0.001438	0.002831	0.000107	0.002938	1.5E-06	0	0	0.428	0	0	3E-04	0	0
501	615043	4201592	1	0	0	0.001487	0.002906	0.00011	0.003015	1.55E-06	0	0	0.442	0	0	3E-04	0	0
502	615083	4201592	0	0	1	0.001586	0.003068	0.000116	0.003184	0	0	8E-07	0	0	0.073	0	0	3E-04
503	615103	4201592	0	0	1	0.001637	0.00315	0.000118	0.003268	0	0	8E-07	0	0	0.076	0	0	3E-04
504	615123	4201592	0	0	1	0.001692	0.003243	0.000122	0.003364	0	0	8E-07	0	0	0.078	0	0	3E-04
505	615143	4201592	0	0	1	0.001751	0.003356	0.000125	0.003481	0	0	9E-07	0	0	0.081	0	0	4E-04
506	615163	4201592	0	0	1	0.001817	0.003511	0.000128	0.003639	0	0	9E-07	0	0	0.084	0	0	4E-04
507	615343	4201592	0	1	0	0.002892	0.004009	0.00018	0.004189	0	7E-08	0	0	0.021	0	0	6E-04	0
508	615383	4201592	0	1	0	0.003417	0.00447	0.000205	0.004674	0	9E-08	0	0	0.025	0	0	7E-04	0
509	615423	4201592	0	1	0	0.004459	0.005484	0.000251	0.005735	0	1E-07	0	0	0.033	0	0	9E-04	0
510	614783	4201612	0	1	0	0.001005	0.001614	5.56E-05	0.001669	0	3E-08	0	0	0.007	0	0	2E-04	0
511	614803	4201612	0	1	0	0.001033	0.001684	5.86E-05	0.001742	0	3E-08	0	0	0.008	0	0	2E-04	0
512	614823	4201612	1	0	0	0.001062	0.001743	6.11E-05	0.001804	1.11E-06	0	0	0.316	0	0	2E-04	0	0
513	614843	4201612	1	0	0	0.001091	0.001794	6.31E-05	0.001857	1.14E-06	0	0	0.324	0	0	2E-04	0	0
514	614863	4201612	1	0	0	0.001122	0.001847	6.51E-05	0.001912	1.17E-06	0	0	0.334	0	0	2E-04	0	0
515	614883	4201612	1	0	0	0.001156	0.0019	6.71E-05	0.001967	1.21E-06	0	0	0.344	0	0	2E-04	0	0
516	614903	4201612	1	0	0	0.001191	0.001955	6.91E-05	0.002025	1.25E-06	0	0	0.354	0	0	2E-04	0	0
517	614923	4201612	1	0	0	0.001228	0.002006	7.08E-05	0.002076	1.28E-06	0	0	0.365	0	0	2E-04	0	0
518	614943	4201612	1	0	0	0.001269	0.00206	7.25E-05	0.002132	1.33E-06	0	0	0.377	0	0	3E-04	0	0
519	614963	4201612	1	0	0	0.001312	0.002119	7.45E-05	0.002194	1.37E-06	0	0	0.39	0	0	3E-04	0	0
520	614983	4201612	1	0	0	0.00136	0.002184	7.66E-05	0.002261	1.42E-06	0	0	0.404	0	0	3E-04	0	0
521	615003	4201612	1	0	0	0.00141	0.002254	7.89E-05	0.002333	1.47E-06	0	0	0.419	0	0	3E-04	0	0
522	615023	4201612	1	0	0	0.001463	0.002329	8.14E-05	0.002411	1.53E-06	0	0	0.435	0	0	3E-04	0	0
523	615043	4201612	1	0	0	0.001515	0.002398	8.35E-05	0.002482	1.58E-06	0	0	0.45	0	0	3E-04	0	0
524	615163	4201612	0	0	1	0.001858	0.002996	9.8E-05	0.003094	0	0	9E-07	0	0	0.086	0	0	4E-04
525	614803	4201632	0	1	0	0.001044	0.001509	4.96E-05	0.001558	0	3E-08	0	0	0.008	0	0	2E-04	0
526	614823	4201632	0	1	0	0.001075	0.001565	5.18E-05	0.001617	0	3E-08	0	0	0.008	0	0	2E-04	0
527	614843	4201632	1	0	0	0.001106	0.001616	5.37E-05	0.001669	1.16E-06	0	0	0.329	0	0	2E-04	0	0
528	614863	4201632	1	0	0	0.001138	0.001662	5.53E-05	0.001717	1.19E-06	0	0	0.338	0	0	2E-04	0	0
529	614883	4201632	1	0	0	0.001171	0.00171	5.69E-05	0.001767	1.22E-06	0	0	0.348	0	0	2E-04	0	0
530	614903	4201632	1	0	0	0.001208	0.001761	5.87E-05	0.001819	1.26E-06	0	0	0.359	0	0	2E-04	0	0
531	614923	4201632	1	0	0	0.001246	0.001813	6.04E-05	0.001873	1.3E-06	0	0	0.371	0	0	2E-04	0	0
532	614943	4201632	1	0	0	0.001287	0.001865	6.2E-05	0.001927	1.35E-06	0	0	0.383	0	0	3E-04	0	0
533	614963	4201632	1	0	0	0.001331	0.001918	6.34E-05	0.001981	1.39E-06	0	0	0.396	0	0	3E-04	0	0
534	614983	4201632	1	0	0	0.00138	0.001984	6.55E-05	0.00205	1.44E-06	0	0	0.41	0	0	3E-04	0	0
535	615003	4201632	1	0	0	0.001432	0.002052	6.75E-05	0.00212	1.5E-06	0	0	0.426	0	0	3E-04	0	0
536	615023	4201632	1	0	0	0.001486	0.002121	6.95E-05	0.002191	1.55E-06	0	0	0.442	0	0	3E-04	0	0
537	615043	4201632	1	0	0	0.001542	0.002192	7.14E-05	0.002263	1.61E-06	0	0	0.458	0	0	3E-04	0	0
538	615163	4201632	0	0	1	0.001901	0.002833	8.5E-05	0.002918	0	0	9E-07	0	0	0.088	0	0	4E-04
539	615343	4201632	0	1	0	0.003026	0.003705	0.000127	0.003832	0	8E-08	0	0	0.022	0	0	6E-04	0
540	615383	4201632	0	1	0	0.003546	0.004138	0.000148	0.004287	0	9E-08	0	0	0.026	0	0	7E-04	0
541	615423	4201632	0	1	0	0.004457	0.004997	0.000186	0.005183	0	1E-07	0	0	0.033	0	0	9E-04	0
542	615463	4201632	0	1	0	0.006525	0.00703	0.000272	0.007302	0	2E-07	0	0	0.048	0	0	0.001	0
543	615503	4201632	0	1	0	0.009589	0.010068	0.000401	0.010469	0	2E-07	0	0	0.071	0	0	0.002	0
544	615543	4201632	0	1	0	0.01154	0.012	0.000482	0.012482	0	3E-07	0	0	0.085	0	0	0.002	0
545	615583	4201632	0	1	0	0.012713	0.013156	0.000531	0.013687	0	3E-07	0	0	0.094	0	0	0.003	0
546	615623	4201632	0	1	0	0.013675	0.014102	0.00057	0.014672	0	4E-07	0	0	0.101	0	0	0.003	0
547	615663	4201632	0	1	0	0.014993	0.015404	0.000625	0.016029	0	4E-07	0	0	0.11	0	0	0.003	0
548	615703	4201632	0	1	0	0.017379	0.017757	0.000722	0.01848	0	4E-07	0	0	0.128	0	0	0.003	0
549	615743	4201632	0	1	0	0.033331	0.033644	0.001381	0.035026	0	9E-07	0	0	0.245	0	0	0.007	0
550	614823	4201652	0	1	0	0.001088	0.001469	4.64E-05	0.001515	0	3E-08	0	0	0.008	0	0	2E-04	0
551	614843	4201652	0	1	0	0.00112	0.001518	4.81E-05	0.001566	0	3E-08	0	0	0.008	0	0	2E-04	0
552	614863	4201652	1	0	0	0.001153	0.001563	4.96E-05	0.001612	1.21E-06	0	0	0.343	0	0	2E-04	0	0
553	614883	4201652	1	0	0	0.001188	0.001609	5.11E-05	0.00166	1.24E-06	0	0	0.353	0	0	2E-04	0	0
554	614903	4201652	1	0	0	0.001225	0.001658	5.27E-05	0.001711	1.28E-06	0	0	0.364	0	0	2E-04	0	0
555	614923	4201652	1	0	0	0.001264	0.00171	5.43E-05	0.001764	1.32E-06	0	0	0.376	0	0	3E-04	0	0
556	614943	4201652	1	0	0	0.001306	0.001761	5.58E-05	0.001817	1.36E-06	0	0	0.388	0	0	3E-04	0	0
557	614963	4201652	1	0	0	0.001349	0.001813	5.72E-05	0.00187	1.41E-06	0	0	0.401	0	0	3E-04	0	0
558	614983	4201652	1	0	0	0.001399	0.001876	5.9E-05	0.001935	1.46E-06	0	0	0.416	0	0	3E-04	0	0
559	615003	4201652	1	0	0	0.001452	0.001943	6.09E-05	0.002004	1.52E-06	0	0	0.432	0	0	3E-04	0	0
560	615023	4201652	1	0	0	0.001509	0.002016	6.28E-05	0.002078	1.58E-06	0	0	0.449	0	0	3E-04	0	0
561	615043	4201652	1	0	0	0.001568	0.002089	6.47E-05	0.002154	1.64E-06	0	0	0.466	0	0	3E-04	0	0
562	614823	4201672	0	1	0	0.0011	0.001411	4.3E-05	0.001454	0	3E-08	0	0	0.008	0	0	2E-04	0
563	614843	4201672	0	1	0	0.001134	0.00146	4.45E-05	0.001504	0	3E-08	0	0	0.008	0	0	2E-04	0
564	614863	4201672	1	0	0	0.001168	0.001505	4.6E-05	0.001551	1.22E-06	0	0	0.347	0	0	2E-04	0	0
565	614883	4201672	1	0	0	0.001204	0.001551	4.74E-05	0.001599	1.26E-06	0	0	0.358	0	0	2E-04	0	0
566	614903	4201672	1	0	0	0.001242	0.0016	4.89E-05	0.001649	1.3E-06	0	0	0.369	0	0	2E-04	0	0
567	614923	4201672	1	0	0	0.001282	0.00165	5.04E-05	0.001701	1.34E-06	0	0	0.381	0	0	3E-04	0	0
568	614943	4201672	1	0	0	0.001324	0.001702	5.19E-05	0.001754	1.38E-06	0	0	0.394	0	0	3E-04	0	0
569	614963	4201672	1	0	0	0.001369	0.001754	5.33E-05	0.001808	1.43E-06	0	0	0.407	0	0	3E-04	0	0
570	614983	4201672	1	0	0	0.001418	0.001815	5.49E-05	0.00187	1.48E-06	0	0	0.422	0	0	3E-04	0	0
571	615003	4201672	1	0	0	0.001473	0.001882	5.67E-05	0.001939	1.54E-06	0	0	0.438	0	0	3E-04	0	0
572	615023	4201672	1	0	0	0.001532	0.001958	5.87E-05	0.002017	1.6E-06	0	0	0.456	0	0	3E-04	0	0
573	615043	4201672	1	0	0	0.001593	0.002034	6.05E-05	0.002095	1.67E-06	0	0	0.474	0	0	3E-04	0	0
574	615103	4201672	0	0	1	0.001787	0.002301	6.66E-05	0.002367	0	0	9E-07	0	0	0.083	0	0	4E-04
575	615283	4201672	0	0	1	0.002625	0.003506	9.59E-05	0.003602	0	0	1E-06	0	0	0.121	0	0	5E-04
576	615303	4201672	0	0	1	0.002777	0.003518	0.000101	0.00362	0	0	1E-06	0	0	0.128	0	0	6E-04
577	615343	4201672	0	1	0	0.00314	0.003722	0.000115	0.003837	0	8E-08	0	0	0.023	0	0	6E-04	0
578	615383	4201672	0	1	0	0.003624	0.00412	0.000133	0.004253	0	9E-08	0	0	0.027	0	0	7E-04	0
579	615423	4201672	0	1	0	0.004333	0.004775	0.000161	0.004936	0	1E-07	0	0	0.032	0	0	9E-04	0
580	615463	4201672	0	1	0	0.005338	0.005744	0.000202	0.005946	0	1E-07	0	0	0.039	0	0	0.001	0
581	615503	4201672	0	1	0	0.006418	0.006796	0.000246	0.007042	0	2E-07	0	0	0.047	0	0	0.001	0
582	615543	4201672	0	1	0	0.007401	0.007758	0.000285	0.008043	0	2E-07	0	0	0.054	0	0	0.001	0
583	615583	4201672	0	1	0	0.008249	0.008588	0.000319	0.008907	0	2E-07	0	0	0.061	0	0	0.002	0
584	615623	4201672	0	1	0	0.009178	0.0095	0.000356	0.009857	0	2E-07	0	0	0.068	0	0	0.002	0
585	615663	4201672	0	1	0	0.010427	0.010731	0.000407	0.011138	0	3E-07	0	0	0.077	0	0	0.002	0
586	615703	4201672	0	1	0	0.013352	0.013631	0.000528	0.014159	0	3E-07	0	0	0.098	0	0	0.003	0
587	615743	4201672	0	1	0	0.031784	0.032035	0.001295	0.03333	0	8E-07	0	0	0.234	0	0	0.006	0
588	614843	4201692	0	1	0	0.001146	0.001423	4.21E-05	0.001465	0	3E-08	0	0	0.008	0	0	2E-04	0
589	614863	4201692	0	1	0	0.001183	0.00147	4.35E-05	0.001514	0	3E-08	0	0	0.009	0	0	2E-04	0
590	614883	4201692	1	0	0	0.00122	0.001517	4.49E-05	0.001562	1.28E-06	0	0	0.363	0	0	2E-04	0	0
591	614903	4201692	1	0	0	0.001259	0.001565	4.63E-05	0.001611	1.32E-06	0	0	0.374	0	0	3E-04	0	0
592	614923	4201692	1	0	0	0.0013	0.001616	4.78E-05	0.001663	1.36E-06	0	0	0.387	0	0	3E-04	0	0
593	614943	4201692	1	0	0	0.001344	0.001668	4.92E-05	0.001717	1.4E-06	0	0	0.4	0	0	3E-04	0	0
594	614963	4201692	1	0	0	0.001389	0.001721	5.07E-05	0.001772	1.45E-06	0	0	0.413	0	0	3E-04	0	0
595	614983	4201692	1	0	0	0.001439	0.001782	5.22E-05	0.001834	1.5E-06	0	0	0.428	0	0	3E-04	0	0
596	615003	4201692	1	0	0	0.001494	0.00185	5.4E-05	0.001904	1.56E-06	0	0	0.444	0	0	3E-04	0	0
597	615023	4201692	1	0	0	0.001555	0.001926	5.59E-05	0.001982	1.63E-06	0	0	0.462	0	0	3E-04	0	0
598	615043	4201692	1	0	0	0.001618	0.002005	5.77E-05	0.002063	1.69E-06	0	0	0.481	0	0	3E-04	0	0

599	615103	4201692	0	0	1	0.001823	0.002288	6.39E-05	0.002352	0	0	9E-07	0	0	0.084	0	0	4E-04
600	615143	4201692	0	0	1	0.001967	0.00256	6.86E-05	0.002629	0	0	1E-06	0	0	0.091	0	0	4E-04
601	615163	4201692	0	0	1	0.002043	0.002782	7.13E-05	0.002854	0	0	1E-06	0	0	0.094	0	0	4E-04
602	615183	4201692	0	0	1	0.002125	0.0032	7.41E-05	0.003274	0	0	1E-06	0	0	0.098	0	0	4E-04
603	615223	4201692	0	0	1	0.002317	0.004817	8.06E-05	0.004897	0	0	1E-06	0	0	0.107	0	0	5E-04
604	615243	4201692	0	0	1	0.002422	0.003918	8.43E-05	0.004003	0	0	1E-06	0	0	0.112	0	0	5E-04
605	615263	4201692	0	0	1	0.002543	0.003621	8.85E-05	0.003709	0	0	1E-06	0	0	0.118	0	0	5E-04
606	615283	4201692	0	0	1	0.00268	0.003533	9.32E-05	0.003627	0	0	1E-06	0	0	0.124	0	0	5E-04
607	615303	4201692	0	0	1	0.002833	0.003549	9.85E-05	0.003648	0	0	1E-06	0	0	0.131	0	0	6E-04
608	614863	4201712	0	1	0	0.001196	0.001447	4.17E-05	0.001489	0	3E-08	0	0	0.009	0	0	2E-04	0
609	614883	4201712	0	1	0	0.001236	0.001496	4.31E-05	0.001539	0	3E-08	0	0	0.009	0	0	2E-04	0
610	614903	4201712	1	0	0	0.001275	0.001543	4.45E-05	0.001588	1.33E-06	0	0	0.379	0	0	3E-04	0	0
611	614923	4201712	1	0	0	0.001318	0.001594	4.59E-05	0.00164	1.38E-06	0	0	0.392	0	0	3E-04	0	0
612	614943	4201712	1	0	0	0.001362	0.001647	4.73E-05	0.001695	1.42E-06	0	0	0.405	0	0	3E-04	0	0
613	614963	4201712	1	0	0	0.00141	0.001705	4.89E-05	0.001754	1.47E-06	0	0	0.419	0	0	3E-04	0	0
614	614983	4201712	1	0	0	0.001462	0.001767	5.04E-05	0.001817	1.53E-06	0	0	0.435	0	0	3E-04	0	0
615	615003	4201712	1	0	0	0.001517	0.001835	5.21E-05	0.001887	1.59E-06	0	0	0.451	0	0	3E-04	0	0
616	615023	4201712	1	0	0	0.001578	0.00191	5.39E-05	0.001964	1.65E-06	0	0	0.469	0	0	3E-04	0	0
617	615043	4201712	1	0	0	0.001642	0.001991	5.58E-05	0.002047	1.72E-06	0	0	0.488	0	0	3E-04	0	0
618	615103	4201712	0	0	1	0.001858	0.002288	6.2E-05	0.00235	0	0	9E-07	0	0	0.086	0	0	4E-04
619	615283	4201712	0	0	1	0.002738	0.003571	9.14E-05	0.003662	0	0	1E-06	0	0	0.127	0	0	5E-04
620	615303	4201712	0	0	1	0.002892	0.00359	9.66E-05	0.003686	0	0	1E-06	0	0	0.134	0	0	6E-04
621	615343	4201712	0	1	0	0.003252	0.003794	0.000109	0.003903	0	8E-08	0	0	0.024	0	0	7E-04	0
622	615383	4201712	0	1	0	0.003705	0.004163	0.000126	0.004289	0	1E-07	0	0	0.027	0	0	7E-04	0
623	615423	4201712	0	1	0	0.004284	0.00469	0.000148	0.004838	0	1E-07	0	0	0.032	0	0	9E-04	0
624	615463	4201712	0	1	0	0.004954	0.005326	0.000174	0.005499	0	1E-07	0	0	0.036	0	0	1E-03	0
625	615503	4201712	0	1	0	0.005668	0.006014	0.000201	0.006214	0	1E-07	0	0	0.042	0	0	0.001	0
626	615543	4201712	0	1	0	0.006413	0.006737	0.000229	0.006967	0	2E-07	0	0	0.047	0	0	0.001	0
627	615583	4201712	0	1	0	0.007197	0.007504	0.00026	0.007764	0	2E-07	0	0	0.053	0	0	0.001	0
628	615623	4201712	0	1	0	0.00812	0.008411	0.000296	0.008707	0	2E-07	0	0	0.06	0	0	0.002	0
629	615663	4201712	0	1	0	0.009545	0.009819	0.000354	0.010174	0	2E-07	0	0	0.07	0	0	0.002	0
630	615703	4201712	0	1	0	0.012776	0.013034	0.000489	0.013522	0	3E-07	0	0	0.094	0	0	0.003	0
631	615743	4201712	0	1	0	0.028512	0.028752	0.001146	0.029898	0	7E-07	0	0	0.21	0	0	0.006	0
632	614883	4201732	0	1	0	0.00125	0.001481	4.17E-05	0.001523	0	3E-08	0	0	0.009	0	0	2E-04	0
633	614923	4201732	1	0	0	0.001335	0.001582	4.45E-05	0.001627	1.4E-06	0	0	0.397	0	0	3E-04	0	0
634	614943	4201732	1	0	0	0.001381	0.001637	4.59E-05	0.001683	1.44E-06	0	0	0.411	0	0	3E-04	0	0
635	614963	4201732	1	0	0	0.001432	0.001698	4.75E-05	0.001746	1.5E-06	0	0	0.426	0	0	3E-04	0	0
636	614983	4201732	1	0	0	0.001484	0.001761	4.91E-05	0.00181	1.55E-06	0	0	0.441	0	0	3E-04	0	0
637	615003	4201732	1	0	0	0.00154	0.001829	5.08E-05	0.00188	1.61E-06	0	0	0.458	0	0	3E-04	0	0
638	615023	4201732	1	0	0	0.001601	0.001904	5.25E-05	0.001956	1.67E-06	0	0	0.476	0	0	3E-04	0	0
639	615043	4201732	1	0	0	0.001667	0.001986	5.43E-05	0.002041	1.74E-06	0	0	0.496	0	0	3E-04	0	0
640	615903	4201732	0	0	1	0.010885	0.011069	0.000383	0.011453	0	0	5E-06	0	0	0.503	0	0	0.002
641	615923	4201732	0	0	1	0.009986	0.010164	0.000346	0.01051	0	0	5E-06	0	0	0.462	0	0	0.002
642	614883	4201752	0	1	0	0.001262	0.001471	4.06E-05	0.001512	0	3E-08	0	0	0.009	0	0	3E-04	0
643	614903	4201752	0	1	0	0.001307	0.001525	4.21E-05	0.001568	0	3E-08	0	0	0.01	0	0	3E-04	0
644	614923	4201752	1	0	0	0.001353	0.001578	4.34E-05	0.001622	1.41E-06	0	0	0.402	0	0	3E-04	0	0
645	614943	4201752	1	0	0	0.0014	0.001634	4.49E-05	0.001679	1.46E-06	0	0	0.416	0	0	3E-04	0	0
646	614963	4201752	1	0	0	0.001452	0.001695	4.64E-05	0.001741	1.52E-06	0	0	0.432	0	0	3E-04	0	0
647	614983	4201752	1	0	0	0.001505	0.001759	4.8E-05	0.001807	1.57E-06	0	0	0.448	0	0	3E-04	0	0
648	615003	4201752	1	0	0	0.001563	0.001828	4.97E-05	0.001878	1.63E-06	0	0	0.465	0	0	3E-04	0	0
649	615023	4201752	1	0	0	0.001624	0.001904	5.14E-05	0.001955	1.7E-06	0	0	0.483	0	0	3E-04	0	0
650	615043	4201752	1	0	0	0.001691	0.001988	5.33E-05	0.002041	1.77E-06	0	0	0.503	0	0	3E-04	0	0
651	615163	4201752	0	0	1	0.002186	0.002879	6.72E-05	0.002946	0	0	1E-06	0	0	0.101	0	0	4E-04
652	615343	4201752	0	1	0	0.003378	0.003904	0.000107	0.00401	0	9E-08	0	0	0.025	0	0	7E-04	0
653	615383	4201752	0	1	0	0.003814	0.00426	0.000122	0.004382	0	1E-07	0	0	0.028	0	0	8E-04	0
654	615423	4201752	0	1	0	0.004329	0.004726	0.00014	0.004866	0	1E-07	0	0	0.032	0	0	9E-04	0
655	615463	4201752	0	1	0	0.004906	0.005271	0.000161	0.005432	0	1E-07	0	0	0.036	0	0	1E-03	0
656	615503	4201752	0	1	0	0.005546	0.005888	0.000184	0.006072	0	1E-07	0	0	0.041	0	0	0.001	0
657	615543	4201752	0	1	0	0.006271	0.006596	0.000211	0.006806	0	2E-07	0	0	0.046	0	0	0.001	0
658	615583	4201752	0	1	0	0.007109	0.007417	0.000242	0.007659	0	2E-07	0	0	0.052	0	0	0.001	0
659	615623	4201752	0	1	0	0.008171	0.008465	0.000283	0.008748	0	2E-07	0	0	0.06	0	0	0.002	0
660	615663	4201752	0	1	0	0.009796	0.010075	0.00035	0.010425	0	3E-07	0	0	0.072	0	0	0.002	0
661	615703	4201752	0	1	0	0.013496	0.013761	0.000504	0.014265	0	3E-07	0	0	0.099	0	0	0.003	0
662	615743	4201752	0	1	0	0.030715	0.030967	0.001224	0.032191	0	8E-07	0	0	0.226	0	0	0.006	0
663	615903	4201752	0	0	1	0.011245	0.011438	0.000392	0.011829	0	0	6E-06	0	0	0.52	0	0	0.002
664	615923	4201752	0	0	1	0.010326	0.010511	0.000355	0.010865	0	0	5E-06	0	0	0.477	0	0	0.002
665	614903	4201772	0	1	0	0.00132	0.00152	4.12E-05	0.001561	0	3E-08	0	0	0.01	0	0	3E-04	0
666	614923	4201772	0	1	0	0.001368	0.001576	4.26E-05	0.001619	0	4E-08	0	0	0.01	0	0	3E-04	0
667	614943	4201772	1	0	0	0.001419	0.001635	4.41E-05	0.001679	1.48E-06	0	0	0.422	0	0	3E-04	0	0
668	614963	4201772	1	0	0	0.001472	0.001697	4.56E-05	0.001743	1.54E-06	0	0	0.438	0	0	3E-04	0	0
669	614983	4201772	1	0	0	0.001526	0.001762	4.72E-05	0.001809	1.6E-06	0	0	0.454	0	0	3E-04	0	0
670	615003	4201772	1	0	0	0.001585	0.001832	4.88E-05	0.001881	1.66E-06	0	0	0.471	0	0	3E-04	0	0
671	615023	4201772	1	0	0	0.001648	0.001909	5.06E-05	0.00196	1.72E-06	0	0	0.49	0	0	3E-04	0	0
672	615043	4201772	1	0	0	0.001715	0.001994	5.24E-05	0.002047	1.79E-06	0	0	0.51	0	0	3E-04	0	0
673	615163	4201772	0	0	1	0.002232	0.00292	6.65E-05	0.002986	0	0	1E-06	0	0	0.103	0	0	4E-04
674	615223	4201772	0	0	1	0.002545	0.004813	7.63E-05	0.004889	0	0	1E-06	0	0	0.118	0	0	5E-04
675	615243	4201772	0	0	1	0.002658	0.004042	8.01E-05	0.004122	0	0	1E-06	0	0	0.123	0	0	5E-04
676	615263	4201772	0	0	1	0.002785	0.003788	8.42E-05	0.003872	0	0	1E-06	0	0	0.129	0	0	6E-04
677	615283	4201772	0	0	1	0.002928	0.003724	8.88E-05	0.003813	0	0	1E-06	0	0	0.135	0	0	6E-04
678	615303	4201772	0	0	1	0.003087	0.003755	9.39E-05	0.003849	0	0	2E-06	0	0	0.143	0	0	6E-04
679	615903	4201772	0	0	1	0.011685	0.011887	0.000403	0.01229	0	0	6E-06	0	0	0.54	0	0	0.002
680	615923	4201772	0	0	1	0.01083	0.011025	0.000368	0.011393	0	0	5E-06	0	0	0.501	0	0	0.002
681	614923	4201792	0	1	0	0.001382	0.001575	4.19E-05	0.001617	0	4E-08	0	0	0.01	0	0	3E-04	0
682	614943	4201792	0	1	0	0.001436	0.001637	4.34E-05	0.00168	0	4E-08	0	0	0.011	0	0	3E-04	0
683	614963	4201792	1	0	0	0.001491	0.001701	4.49E-05	0.001746	1.56E-06	0	0	0.443	0	0	3E-04	0	0
684	614983	4201792	1	0	0	0.001547	0.001767	4.65E-05	0.001813	1.62E-06	0	0	0.46	0	0	3E-04	0	0
685	615003	4201792	1	0	0	0.001606	0.001838	4.81E-05	0.001886	1.68E-06	0	0	0.478	0	0	3E-04	0	0
686	615023	4201792	1	0	0	0.001671	0.001917	4.99E-05	0.001967	1.75E-06	0	0	0.497	0	0	3E-04	0	0
687	615043	4201792	1	0	0	0.00174	0.002004	5.18E-05	0.002056	1.82E-06	0	0	0.517	0	0	3E-04	0	0
688	615163	4201792	0	0	1	0.002278	0.002962	6.61E-05	0.003028	0	0	1E-06	0	0	0.105	0	0	5E-04
689	615223	4201792	0	0	1	0.002606	0.004828	7.59E-05	0.004903	0	0	1E-06	0	0	0.12	0	0	5E-04
690	615243	4201792	0	0	1	0.002721	0.004086	7.97E-05	0.004165	0	0	1E-06	0	0	0.126	0	0	5E-04
691	615263	4201792	0	0	1	0.002851	0.003842	8.39E-05	0.003926	0	0	1E-06	0	0	0.132	0	0	6E-04
692	615283	4201792	0	0	1	0.002996	0.003785	8.85E-05	0.003874	0	0	1E-06	0	0	0.138	0	0	6E-04
693	615303	4201792	0	0	1	0.003158	0.003823	9.36E-05	0.003916	0	0	2E-06	0	0	0.146	0	0	6E-04
694	615343	4201792	0	1	0	0.00353	0.004054	0.000106	0.00416	0	9E-08	0	0	0.026	0	0	7E-04	0
695	615383	4201792	0	1	0	0.003961	0.004412	0.00012	0.004532	0	1E-07	0	0	0.029	0	0	8E-04	0
696	615423	4201792	0	1	0	0.004459	0.004867	0.000137	0.005004	0	1E-07	0	0	0.033	0	0	9E-04	0
697	615463	4201792	0	1	0	0.005033	0.005414	0.000157	0.00557	0	1E-07	0	0	0.037	0	0	0.001	0
698	615503	4201792	0	1	0	0.005702	0.006065	0.00018	0.006245	0	1E-07	0	0	0.042	0	0	0.001	0
699	615543	4201792	0	1	0	0.006506	0.006857	0.000207	0.007064	0	2E-07	0	0	0.048	0	0	0.001	0

700	615583	4201792	0	1	0	0.007492	0.00783	0.000242	0.008072	0	2E-07	0	0	0.055	0	0	0.001	0
701	615623	4201792	0	1	0	0.008764	0.009088	0.000291	0.009379	0	2E-07	0	0	0.065	0	0	0.002	0
702	615663	4201792	0	1	0	0.010787	0.011096	0.000374	0.01147	0	3E-07	0	0	0.079	0	0	0.002	0
703	615703	4201792	0	1	0	0.015591	0.015887	0.000574	0.016461	0	4E-07	0	0	0.115	0	0	0.003	0
704	615743	4201792	0	1	0	0.0427	0.042984	0.0017	0.044684	0	1E-06	0	0	0.314	0	0	0.009	0
705	615883	4201792	0	0	1	0.013343	0.013567	0.000462	0.014029	0	0	7E-06	0	0	0.617	0	0	0.003
706	615903	4201792	0	0	1	0.012302	0.012516	0.00042	0.012936	0	0	6E-06	0	0	0.569	0	0	0.002
707	615923	4201792	0	0	1	0.011501	0.011706	0.000387	0.012093	0	0	6E-06	0	0	0.532	0	0	0.002
708	614943	4201812	0	1	0	0.00145	0.001638	4.28E-05	0.001681	0	4E-08	0	0	0.011	0	0	3E-04	0
709	614963	4201812	0	1	0	0.001507	0.001704	4.43E-05	0.001748	0	4E-08	0	0	0.011	0	0	3E-04	0
710	614983	4201812	1	0	0	0.001565	0.001772	4.59E-05	0.001818	1.64E-06	0	0	0.465	0	0	3E-04	0	0
711	615003	4201812	1	0	0	0.001627	0.001846	4.76E-05	0.001893	1.7E-06	0	0	0.484	0	0	3E-04	0	0
712	615023	4201812	1	0	0	0.001693	0.001927	4.93E-05	0.001976	1.77E-06	0	0	0.504	0	0	3E-04	0	0
713	615043	4201812	1	0	0	0.001764	0.002016	5.12E-05	0.002067	1.84E-06	0	0	0.525	0	0	4E-04	0	0
714	615083	4201812	0	0	1	0.001924	0.002229	5.54E-05	0.002284	0	0	9E-07	0	0	0.089	0	0	4E-04
715	615283	4201812	0	0	1	0.003068	0.003853	8.83E-05	0.003941	0	0	2E-06	0	0	0.142	0	0	6E-04
716	615303	4201812	0	0	1	0.003233	0.003898	9.34E-05	0.003991	0	0	2E-06	0	0	0.149	0	0	6E-04
717	615863	4201812	0	0	1	0.015451	0.0157	0.000538	0.016238	0	0	8E-06	0	0	0.714	0	0	0.003
718	615883	4201812	0	0	1	0.014179	0.014417	0.000486	0.014903	0	0	7E-06	0	0	0.655	0	0	0.003
719	615903	4201812	0	0	1	0.013183	0.01341	0.000445	0.013855	0	0	7E-06	0	0	0.609	0	0	0.003
720	615923	4201812	0	0	1	0.012378	0.012595	0.000411	0.013006	0	0	6E-06	0	0	0.572	0	0	0.002
721	614943	4201832	0	1	0	0.001462	0.001639	4.22E-05	0.001681	0	4E-08	0	0	0.011	0	0	3E-04	0
722	614963	4201832	0	1	0	0.001522	0.001707	4.38E-05	0.001751	0	4E-08	0	0	0.011	0	0	3E-04	0
723	615003	4201832	1	0	0	0.001647	0.001855	4.71E-05	0.001902	1.72E-06	0	0	0.49	0	0	3E-04	0	0
724	615023	4201832	1	0	0	0.001715	0.001938	4.89E-05	0.001986	1.79E-06	0	0	0.51	0	0	3E-04	0	0
725	615043	4201832	1	0	0	0.001789	0.002029	5.08E-05	0.00208	1.87E-06	0	0	0.532	0	0	4E-04	0	0
726	615083	4201832	0	0	1	0.001952	0.002246	5.5E-05	0.002301	0	0	1E-06	0	0	0.09	0	0	4E-04
727	615123	4201832	0	0	1	0.002145	0.002545	5.98E-05	0.002605	0	0	1E-06	0	0	0.099	0	0	4E-04
728	615143	4201832	0	0	1	0.002252	0.002753	6.25E-05	0.002816	0	0	1E-06	0	0	0.104	0	0	5E-04
729	615163	4201832	0	0	1	0.002366	0.003047	6.54E-05	0.003112	0	0	1E-06	0	0	0.109	0	0	5E-04
730	615183	4201832	0	0	1	0.002485	0.003591	6.85E-05	0.00366	0	0	1E-06	0	0	0.115	0	0	5E-04
731	615343	4201832	0	1	0	0.003698	0.004242	0.000105	0.004348	0	1E-07	0	0	0.027	0	0	7E-04	0
732	615383	4201832	0	1	0	0.004146	0.004628	0.00012	0.004748	0	1E-07	0	0	0.031	0	0	8E-04	0
733	615423	4201832	0	1	0	0.004667	0.005117	0.000137	0.005253	0	1E-07	0	0	0.034	0	0	9E-04	0
734	615463	4201832	0	1	0	0.00527	0.0057	0.000156	0.005857	0	1E-07	0	0	0.039	0	0	0.001	0
735	615503	4201832	0	1	0	0.006006	0.006426	0.000181	0.006607	0	2E-07	0	0	0.044	0	0	0.001	0
736	615543	4201832	0	1	0	0.006953	0.007365	0.000212	0.007577	0	2E-07	0	0	0.051	0	0	0.001	0
737	615583	4201832	0	1	0	0.008179	0.008581	0.000253	0.008834	0	2E-07	0	0	0.06	0	0	0.002	0
738	615623	4201832	0	1	0	0.009772	0.01016	0.000312	0.010472	0	3E-07	0	0	0.072	0	0	0.002	0
739	615663	4201832	0	1	0	0.012423	0.012797	0.000419	0.013216	0	3E-07	0	0	0.091	0	0	0.002	0
740	615703	4201832	0	1	0	0.019261	0.01962	0.000703	0.020323	0	5E-07	0	0	0.142	0	0	0.004	0
741	615863	4201832	0	0	1	0.016554	0.016821	0.00057	0.017392	0	0	8E-06	0	0	0.765	0	0	0.003
742	615883	4201832	0	0	1	0.015344	0.015598	0.000519	0.016118	0	0	8E-06	0	0	0.709	0	0	0.003
743	615903	4201832	0	0	1	0.014328	0.014569	0.000476	0.015046	0	0	7E-06	0	0	0.662	0	0	0.003
744	615923	4201832	0	0	1	0.013444	0.013673	0.000439	0.014111	0	0	7E-06	0	0	0.621	0	0	0.003
745	615943	4201832	0	0	1	0.012715	0.012931	0.000407	0.013338	0	0	6E-06	0	0	0.588	0	0	0.003
746	614963	4201852	0	1	0	0.001535	0.001711	4.33E-05	0.001754	0	4E-08	0	0	0.011	0	0	3E-04	0
747	614983	4201852	0	1	0	0.0016	0.001786	4.5E-05	0.001831	0	4E-08	0	0	0.012	0	0	3E-04	0
748	615003	4201852	1	0	0	0.001667	0.001865	4.67E-05	0.001912	1.74E-06	0	0	0.496	0	0	3E-04	0	0
749	615023	4201852	1	0	0	0.001737	0.001949	4.85E-05	0.001997	1.82E-06	0	0	0.516	0	0	3E-04	0	0
750	615043	4201852	1	0	0	0.001812	0.002043	5.04E-05	0.002093	1.89E-06	0	0	0.539	0	0	4E-04	0	0
751	615083	4201852	0	0	1	0.001981	0.002264	5.47E-05	0.002319	0	0	1E-06	0	0	0.092	0	0	4E-04
752	615123	4201852	0	0	1	0.002178	0.002568	5.96E-05	0.002627	0	0	1E-06	0	0	0.101	0	0	4E-04
753	615143	4201852	0	0	1	0.002289	0.002782	6.23E-05	0.002844	0	0	1E-06	0	0	0.106	0	0	5E-04
754	615163	4201852	0	0	1	0.002408	0.003087	6.52E-05	0.003153	0	0	1E-06	0	0	0.111	0	0	5E-04
755	615183	4201852	0	0	1	0.002534	0.003655	6.84E-05	0.003723	0	0	1E-06	0	0	0.117	0	0	5E-04
756	615243	4201852	0	0	1	0.002929	0.004248	7.94E-05	0.004327	0	0	1E-06	0	0	0.135	0	0	6E-04
757	615263	4201852	0	0	1	0.00307	0.004045	8.37E-05	0.004129	0	0	2E-06	0	0	0.142	0	0	6E-04
758	615283	4201852	0	0	1	0.003225	0.004017	8.84E-05	0.004106	0	0	2E-06	0	0	0.149	0	0	6E-04
759	615303	4201852	0	0	1	0.003396	0.004079	9.35E-05	0.004173	0	0	2E-06	0	0	0.157	0	0	7E-04
760	615843	4201852	0	0	1	0.019871	0.020177	0.00069	0.020867	0	0	1E-05	0	0	0.918	0	0	0.004
761	615863	4201852	0	0	1	0.018165	0.018454	0.000618	0.019072	0	0	9E-06	0	0	0.84	0	0	0.004
762	615883	4201852	0	0	1	0.01689	0.017162	0.000563	0.017725	0	0	8E-06	0	0	0.781	0	0	0.003
763	615903	4201852	0	0	1	0.015776	0.016033	0.000515	0.016547	0	0	8E-06	0	0	0.729	0	0	0.003
764	615923	4201852	0	0	1	0.01476	0.015	0.000471	0.015471	0	0	7E-06	0	0	0.682	0	0	0.003
765	615943	4201852	0	0	1	0.013914	0.014139	0.000435	0.014575	0	0	7E-06	0	0	0.643	0	0	0.003
766	614983	4201872	0	1	0	0.001616	0.001793	4.46E-05	0.001838	0	4E-08	0	0	0.012	0	0	3E-04	0
767	615003	4201872	0	1	0	0.001687	0.001876	4.64E-05	0.001922	0	4E-08	0	0	0.012	0	0	3E-04	0
768	615023	4201872	1	0	0	0.001759	0.001962	4.82E-05	0.00201	1.84E-06	0	0	0.523	0	0	4E-04	0	0
769	615043	4201872	1	0	0	0.001836	0.002056	5.01E-05	0.002107	1.92E-06	0	0	0.546	0	0	4E-04	0	0
770	615083	4201872	0	0	1	0.002009	0.002282	5.44E-05	0.002337	0	0	1E-06	0	0	0.093	0	0	4E-04
771	615123	4201872	0	0	1	0.002211	0.002589	5.94E-05	0.002648	0	0	1E-06	0	0	0.102	0	0	4E-04
772	615143	4201872	0	0	1	0.002326	0.002807	6.21E-05	0.002869	0	0	1E-06	0	0	0.107	0	0	5E-04
773	615163	4201872	0	0	1	0.002449	0.003125	6.5E-05	0.00319	0	0	1E-06	0	0	0.113	0	0	5E-04
774	615183	4201872	0	0	1	0.002582	0.003717	6.82E-05	0.003786	0	0	1E-06	0	0	0.119	0	0	5E-04
775	615343	4201872	0	1	0	0.003889	0.004501	0.000106	0.004606	0	1E-07	0	0	0.029	0	0	8E-04	0
776	615383	4201872	0	1	0	0.004365	0.004938	0.00012	0.005058	0	1E-07	0	0	0.032	0	0	9E-04	0
777	615423	4201872	0	1	0	0.00491	0.005464	0.000137	0.005602	0	1E-07	0	0	0.036	0	0	1E-03	0
778	615463	4201872	0	1	0	0.005601	0.006149	0.000159	0.006308	0	1E-07	0	0	0.041	0	0	0.001	0
779	615503	4201872	0	1	0	0.006475	0.00702	0.000186	0.007207	0	2E-07	0	0	0.048	0	0	0.001	0
780	615543	4201872	0	1	0	0.007619	0.008161	0.000223	0.008384	0	2E-07	0	0	0.056	0	0	0.002	0
781	615583	4201872	0	1	0	0.009189	0.009725	0.000273	0.009998	0	2E-07	0	0	0.068	0	0	0.002	0
782	615623	4201872	0	1	0	0.011365	0.011887	0.000349	0.012236	0	3E-07	0	0	0.084	0	0	0.002	0
783	615843	4201872	0	0	1	0.02238	0.022714	0.000769	0.023483	0	0	1E-05	0	0	1.034	0	0	0.004
784	615863	4201872	0	0	1	0.020401	0.020713	0.000683	0.021396	0	0	1E-05	0	0	0.943	0	0	0.004
785	615883	4201872	0	0	1	0.018844	0.019135	0.000615	0.01975	0	0	9E-06	0	0	0.871	0	0	0.004
786	615903	4201872	0	0	1	0.017525	0.017795	0.000558	0.018353	0	0	9E-06	0	0	0.81	0	0	0.004
787	615923	4201872	0	0	1	0.016353	0.016604	0.000509	0.017112	0	0	8E-06	0	0	0.756	0	0	0.003
788	615943	4201872	0	0	1	0.015319	0.015553	0.000467	0.01602	0	0	8E-06	0	0	0.708	0	0	0.003
789	615003	4201892	0	1	0	0.001702	0.001883	4.6E-05	0.001929	0	4E-08	0	0	0.013	0	0	3E-04	0
790	615023	4201892	0	1	0	0.001779	0.001973	4.79E-05	0.002021	0	5E-08	0	0	0.013	0	0	4E-04	0
791	615863	4201892	0	0	1	0.02311	0.023444	0.000755	0.024199	0	0	1E-05	0	0	1.068	0	0	0.005
792	615883	4201892	0	0	1	0.021166	0.021472	0.000671	0.022144	0	0	1E-05	0	0	0.978	0	0	0.004
793	615003	4201912	0	1	0	0.001719	0.001891	4.57E-05	0.001936	0	4E-08	0	0	0.013	0	0	3E-04	0
794	615023	4201912	0	1	0	0.001798	0.001984	4.76E-05	0.002031	0	5E-08	0	0	0.013	0	0	4E-04	0
795	615343	4201912	0	1	0	0.004113	0.00496	0.000106	0.005067	0	1E-07	0	0	0.03	0	0	8E-04	0
796	615383	4201912	0	1	0	0.004608	0.005442	0.000121	0.005562	0	1E-07	0	0	0.034	0	0	9E-04	0
797	615423	4201912	0	1	0	0.005217	0.006051	0.000139	0.006191	0	1E-07	0	0	0.038	0	0	0.001	0
798	615463	4201912	0	1	0	0.005991	0.006825	0.000163	0.006988	0	2E-07	0	0	0.044	0	0	0.001	0
799	615503	4201912	0	1	0	0.007046	0.007884	0.000195	0.008078	0	2E-07	0	0	0.052	0	0	0.001	0
800	615543	4201912	0	1	0	0.008475	0.009313	0.000237	0.009551	0	2E-07	0	0	0.062	0	0	0.002	0

801	615583	4201912	0	1	0	0.010496	0.011333	0.0003	0.011633	0	3E-07	0	0	0.077	0	0	0.002	0
802	615623	4201912	0	1	0	0.013568	0.014397	0.000401	0.014798	0	4E-07	0	0	0.1	0	0	0.003	0
803	615023	4201932	0	1	0	0.001819	0.001996	4.74E-05	0.002044	0	5E-08	0	0	0.013	0	0	4E-04	0
804	615043	4201932	0	1	0	0.001903	0.002096	4.94E-05	0.002145	0	5E-08	0	0	0.014	0	0	4E-04	0
805	615043	4201952	0	1	0	0.001925	0.002109	4.91E-05	0.002158	0	5E-08	0	0	0.014	0	0	4E-04	0
806	615063	4201952	0	1	0	0.002017	0.00222	5.12E-05	0.002271	0	5E-08	0	0	0.015	0	0	4E-04	0
807	615343	4201952	0	1	0	0.004376	0.006272	0.000107	0.006379	0	1E-07	0	0	0.032	0	0	9E-04	0
808	615383	4201952	0	1	0	0.004923	0.006806	0.000122	0.006928	0	1E-07	0	0	0.036	0	0	1E-03	0
809	615423	4201952	0	1	0	0.005566	0.007412	0.00014	0.007553	0	1E-07	0	0	0.041	0	0	0.001	0
810	615463	4201952	0	1	0	0.006424	0.008253	0.000166	0.008418	0	2E-07	0	0	0.047	0	0	0.001	0
811	616103	4201952	1	0	0	0.011446	0.011581	0.000292	0.011872	1.2E-05	0	0	3.404	0	0	0.002	0	0
812	615063	4201972	0	1	0	0.002043	0.002236	5.1E-05	0.002286	0	5E-08	0	0	0.015	0	0	4E-04	0
813	615083	4201972	0	1	0	0.002145	0.002359	5.33E-05	0.002412	0	6E-08	0	0	0.016	0	0	4E-04	0
814	615063	4201992	0	1	0	0.002069	0.002251	5.07E-05	0.002301	0	5E-08	0	0	0.015	0	0	4E-04	0
815	615083	4201992	0	1	0	0.002174	0.002375	5.3E-05	0.002428	0	6E-08	0	0	0.016	0	0	4E-04	0
816	615103	4201992	0	1	0	0.002283	0.002508	5.54E-05	0.002563	0	6E-08	0	0	0.017	0	0	5E-04	0
817	615083	4202012	0	1	0	0.002209	0.002397	5.28E-05	0.00245	0	6E-08	0	0	0.016	0	0	4E-04	0
818	615103	4202012	0	1	0	0.002319	0.002528	5.52E-05	0.002583	0	6E-08	0	0	0.017	0	0	5E-04	0
819	615783	4202012	0	0	1	0.11348	0.114067	0.003359	0.117426	0	0	6E-05	0	0	5.245	0	0	0.023
820	615803	4202012	0	0	1	0.07492	0.075406	0.002148	0.077554	0	0	4E-05	0	0	3.463	0	0	0.015
821	615823	4202012	0	0	1	0.056663	0.057078	0.001588	0.058665	0	0	3E-05	0	0	2.619	0	0	0.011
822	615103	4202032	0	1	0	0.002359	0.002552	5.5E-05	0.002607	0	6E-08	0	0	0.017	0	0	5E-04	0
823	615123	4202032	0	1	0	0.002483	0.002696	5.76E-05	0.002754	0	6E-08	0	0	0.018	0	0	5E-04	0
824	615783	4202032	0	0	1	0.114677	0.115241	0.003352	0.118594	0	0	6E-05	0	0	5.3	0	0	0.023
825	615803	4202032	0	0	1	0.076151	0.076621	0.002156	0.078777	0	0	4E-05	0	0	3.52	0	0	0.015
826	615823	4202032	0	0	1	0.057998	0.0584	0.001604	0.060004	0	0	3E-05	0	0	2.681	0	0	0.012
827	615123	4202052	0	1	0	0.002529	0.002722	5.75E-05	0.00278	0	7E-08	0	0	0.019	0	0	5E-04	0
828	615143	4202052	0	1	0	0.002669	0.00288	6.03E-05	0.002941	0	7E-08	0	0	0.02	0	0	5E-04	0
829	615243	4202052	0	0	1	0.00366	0.003978	7.9E-05	0.004057	0	0	2E-06	0	0	0.169	0	0	7E-04
830	615263	4202052	0	0	1	0.00394	0.004274	8.4E-05	0.004358	0	0	2E-06	0	0	0.182	0	0	8E-04
831	615283	4202052	0	0	1	0.004241	0.004586	8.93E-05	0.004675	0	0	2E-06	0	0	0.196	0	0	8E-04
832	615303	4202052	0	0	1	0.004571	0.004923	9.52E-05	0.005019	0	0	2E-06	0	0	0.211	0	0	9E-04
833	615783	4202052	0	0	1	0.115775	0.116322	0.003341	0.119663	0	0	6E-05	0	0	5.351	0	0	0.023
834	615803	4202052	0	0	1	0.077641	0.078097	0.002164	0.080261	0	0	4E-05	0	0	3.588	0	0	0.016
835	615123	4202072	0	1	0	0.002571	0.002748	5.73E-05	0.002805	0	7E-08	0	0	0.019	0	0	5E-04	0
836	615143	4202072	0	1	0	0.00272	0.00291	6.01E-05	0.00297	0	7E-08	0	0	0.02	0	0	5E-04	0
837	615783	4202072	0	0	1	0.11829	0.118827	0.003362	0.122189	0	0	6E-05	0	0	5.467	0	0	0.024
838	615803	4202072	0	0	1	0.079602	0.080052	0.002189	0.082241	0	0	4E-05	0	0	3.679	0	0	0.016
839	615143	4202092	0	1	0	0.002767	0.002939	5.99E-05	0.002999	0	7E-08	0	0	0.02	0	0	6E-04	0
840	615163	4202092	0	1	0	0.002937	0.003119	6.29E-05	0.003182	0	8E-08	0	0	0.022	0	0	6E-04	0
841	615783	4202092	0	0	1	0.119019	0.119548	0.003349	0.122897	0	0	6E-05	0	0	5.501	0	0	0.024
842	615803	4202092	0	0	1	0.080948	0.081391	0.0022	0.083591	0	0	4E-05	0	0	3.741	0	0	0.016
843	615163	4202112	0	1	0	0.002988	0.003153	6.27E-05	0.003215	0	8E-08	0	0	0.022	0	0	6E-04	0
844	615183	4202112	0	1	0	0.003186	0.003359	6.6E-05	0.003425	0	8E-08	0	0	0.023	0	0	6E-04	0
845	615783	4202112	0	0	1	0.120699	0.12122	0.003359	0.124579	0	0	6E-05	0	0	5.578	0	0	0.024
846	615803	4202112	0	0	1	0.082055	0.08249	0.002197	0.084687	0	0	4E-05	0	0	3.792	0	0	0.016
847	615183	4202132	0	1	0	0.003239	0.003396	6.56E-05	0.003461	0	8E-08	0	0	0.024	0	0	6E-04	0
848	615203	4202132	0	1	0	0.003467	0.003631	6.92E-05	0.0037	0	9E-08	0	0	0.026	0	0	7E-04	0
849	615183	4202152	0	1	0	0.003278	0.003422	6.52E-05	0.003487	0	8E-08	0	0	0.024	0	0	7E-04	0
850	615203	4202152	0	1	0	0.003522	0.003671	6.87E-05	0.00374	0	9E-08	0	0	0.026	0	0	7E-04	0
851	614923	4202172	1	0	0	0.001549	0.001629	3.63E-05	0.001666	1.62E-06	0	0	0.461	0	0	3E-04	0	0
852	614943	4202172	1	0	0	0.001623	0.001707	3.77E-05	0.001744	1.7E-06	0	0	0.483	0	0	3E-04	0	0
853	615203	4202172	0	1	0	0.003563	0.003699	6.82E-05	0.003768	0	9E-08	0	0	0.026	0	0	7E-04	0
854	615923	4202172	1	0	0	0.023764	0.023951	0.000592	0.024542	2.48E-05	0	0	7.067	0	0	0.005	0	0
855	615943	4202172	1	0	0	0.020651	0.02082	0.000515	0.021335	2.16E-05	0	0	6.141	0	0	0.004	0	0
856	615963	4202172	1	0	0	0.018137	0.018291	0.000453	0.018744	1.9E-05	0	0	5.393	0	0	0.004	0	0
857	614923	4202192	1	0	0	0.001551	0.001628	3.61E-05	0.001664	1.62E-06	0	0	0.461	0	0	3E-04	0	0
858	614943	4202192	1	0	0	0.001625	0.001706	3.75E-05	0.001743	1.7E-06	0	0	0.483	0	0	3E-04	0	0
859	615203	4202192	0	1	0	0.003588	0.003715	6.77E-05	0.003782	0	9E-08	0	0	0.026	0	0	7E-04	0
860	615923	4202192	1	0	0	0.022261	0.022439	0.00056	0.023	2.33E-05	0	0	6.62	0	0	0.004	0	0
861	615943	4202192	1	0	0	0.019334	0.019494	0.000488	0.019982	2.02E-05	0	0	5.749	0	0	0.004	0	0
862	615963	4202192	1	0	0	0.016994	0.017139	0.00043	0.017569	1.78E-05	0	0	5.053	0	0	0.003	0	0
863	614923	4202212	1	0	0	0.001552	0.001626	3.59E-05	0.001662	1.62E-06	0	0	0.461	0	0	3E-04	0	0
864	614943	4202212	1	0	0	0.001626	0.001703	3.73E-05	0.00174	1.7E-06	0	0	0.483	0	0	3E-04	0	0
865	615203	4202212	0	1	0	0.003606	0.003723	6.71E-05	0.00379	0	9E-08	0	0	0.027	0	0	7E-04	0
866	615923	4202212	1	0	0	0.020543	0.020711	0.000526	0.021237	2.15E-05	0	0	6.109	0	0	0.004	0	0
867	615943	4202212	1	0	0	0.017887	0.018037	0.000459	0.018496	1.87E-05	0	0	5.319	0	0	0.004	0	0
868	615963	4202212	1	0	0	0.015769	0.015905	0.000406	0.016311	1.65E-05	0	0	4.689	0	0	0.003	0	0
869	614923	4202232	1	0	0	0.001549	0.00162	3.57E-05	0.001656	1.62E-06	0	0	0.461	0	0	3E-04	0	0
870	614943	4202232	1	0	0	0.001622	0.001697	3.71E-05	0.001734	1.7E-06	0	0	0.482	0	0	3E-04	0	0
871	615203	4202232	0	1	0	0.003624	0.003734	6.67E-05	0.003801	0	9E-08	0	0	0.027	0	0	7E-04	0
872	614923	4202252	1	0	0	0.001544	0.001613	3.54E-05	0.001649	1.61E-06	0	0	0.459	0	0	3E-04	0	0
873	614943	4202252	1	0	0	0.001618	0.001689	3.68E-05	0.001726	1.69E-06	0	0	0.481	0	0	3E-04	0	0
874	615203	4202252	0	1	0	0.003635	0.003739	6.62E-05	0.003805	0	9E-08	0	0	0.027	0	0	7E-04	0
875	614923	4202272	1	0	0	0.001538	0.001604	3.51E-05	0.001639	1.61E-06	0	0	0.457	0	0	3E-04	0	0
876	614943	4202272	1	0	0	0.001611	0.00168	3.65E-05	0.001716	1.68E-06	0	0	0.479	0	0	3E-04	0	0
877	615183	4202272	0	1	0	0.003346	0.003441	6.22E-05	0.003503	0	9E-08	0	0	0.025	0	0	7E-04	0
878	615203	4202272	0	1	0	0.003634	0.003731	6.55E-05	0.003797	0	9E-08	0	0	0.027	0	0	7E-04	0
879	614923	4202292	1	0	0	0.001518	0.001581	3.4E-05	0.001615	1.59E-06	0	0	0.451	0	0	3E-04	0	0
880	614943	4202292	1	0	0	0.001598	0.001664	3.56E-05	0.001699	1.67E-06	0	0	0.475	0	0	3E-04	0	0
881	615183	4202292	0	1	0	0.003338	0.003428	6.16E-05	0.00349	0	9E-08	0	0	0.025	0	0	7E-04	0
882	615203	4202292	0	1	0	0.003628	0.00372	6.49E-05	0.003785	0	9E-08	0	0	0.027	0	0	7E-04	0
883	614923	4202312	1	0	0	0.001492	0.001553	3.29E-05	0.001586	1.56E-06	0	0	0.444	0	0	3E-04	0	0
884	614943	4202312	1	0	0	0.001581	0.001644	3.49E-05	0.001679	1.65E-06	0	0	0.47	0	0	3E-04	0	0
885	615183	4202312	0	1	0	0.003322	0.003407	6.09E-05	0.003468	0	9E-08	0	0	0.024	0	0	7E-04	0
886	614923	4202332	1	0	0	0.001474	0.001533	3.24E-05	0.001566	1.54E-06	0	0	0.438	0	0	3E-04	0	0
887	614943	4202332	1	0	0	0.001556	0.001617	3.39E-05	0.001651	1.63E-06	0	0	0.463	0	0	3E-04	0	0
888	615183	4202332	0	1	0	0.003295	0.003376	6.01E-05	0.003436	0	9E-08	0	0	0.024	0	0	7E-04	0
889	615183	4202352	0	1	0	0.003256	0.003334	5.91E-05	0.003393	0	8E-08	0	0	0.024	0	0	7E-04	0
890	615183	4202372	0	1	0	0.003208	0.003281	5.81E-05	0.00334	0	8E-08	0	0	0.024	0	0	6E-04	0
891	615183	4202392	0	1	0	0.003152	0.003222	5.71E-05	0.003279	0	8E-08	0	0	0.023	0	0	6E-04	0
892	615183	4202412	0	1	0	0.003092	0.003159	5.62E-05	0.003215	0	8E-08	0	0	0.023	0	0	6E-04	0
893	615183	4202432	0	1	0	0.003028	0.003092	5.53E-05	0.003147	0	8E-08	0	0	0.022	0	0	6E-04	0
894	615183	4202452	0	1	0	0.002957	0.003019	5.44E-05	0.003074	0	8E-08	0	0	0.022	0	0	6E-04	0
895	615203	4202452	0	1	0	0.003185	0.003248	5.72E-05	0.003305	0	8E-08	0	0	0.023	0	0	6E-04	0
896	615203	4202472	0	1	0	0.003098	0.003159	5.62E-05	0.003215	0	8E-08	0	0	0.023	0	0	6E-04	0
897	615223	4202472	0	1	0	0.00334	0.003402	5.92E-05	0.003461	0	9E-08	0	0	0.025	0	0	7E-04	0
898	615243	4202472	0	1	0	0.003615	0.003678	6.25E-05	0.00374	0	9E-08	0	0	0.027	0	0	7E-04	0
899	615263	4202472	0	1	0	0.003928	0.003992	6.61E-05	0.004058	0	1E-07	0	0	0.029	0	0	8E-04	0
900	615283	4202472	0	1	0	0.004289	0.004354	7.01E-05	0.004424	0	1E-07	0	0	0.032	0	0	9E-04	0
901	615303	4202472	0	1	0	0.004708	0.004774	7.46E-05	0.004849	0	1E-07	0	0	0.035	0	0	9E-04	0

902	615323	4202472	0	1	0	0.005195	0.005263	7.95E-05	0.005342	0	1E-07	0	0	0.038	0	0	0.001	0
903	615343	4202472	0	1	0	0.005762	0.005831	8.5E-05	0.005916	0	1E-07	0	0	0.042	0	0	0.001	0
904	615363	4202472	0	1	0	0.006402	0.006472	9.1E-05	0.006563	0	2E-07	0	0	0.047	0	0	0.001	0
905	615383	4202472	0	1	0	0.007087	0.007159	9.74E-05	0.007256	0	2E-07	0	0	0.052	0	0	0.001	0
906	615403	4202472	0	1	0	0.007766	0.00784	0.000104	0.007945	0	2E-07	0	0	0.057	0	0	0.002	0
907	615423	4202472	0	1	0	0.008378	0.008454	0.000112	0.008566	0	2E-07	0	0	0.062	0	0	0.002	0
908	615443	4202472	0	1	0	0.008882	0.00896	0.00012	0.00908	0	2E-07	0	0	0.065	0	0	0.002	0
909	615463	4202472	0	1	0	0.009278	0.009358	0.000129	0.009487	0	2E-07	0	0	0.068	0	0	0.002	0
910	615483	4202472	0	1	0	0.009588	0.009671	0.00014	0.00981	0	2E-07	0	0	0.071	0	0	0.002	0
911	615503	4202472	0	1	0	0.009858	0.009944	0.000153	0.010097	0	3E-07	0	0	0.073	0	0	0.002	0
912	615523	4202472	0	1	0	0.010133	0.010222	0.000169	0.010391	0	3E-07	0	0	0.075	0	0	0.002	0
913	615543	4202472	0	1	0	0.010438	0.010531	0.000191	0.010721	0	3E-07	0	0	0.077	0	0	0.002	0
914	615563	4202472	0	1	0	0.010854	0.01095	0.000222	0.011172	0	3E-07	0	0	0.08	0	0	0.002	0
915	615243	4202492	0	1	0	0.003486	0.003546	6.13E-05	0.003607	0	9E-08	0	0	0.026	0	0	7E-04	0
916	615263	4202492	0	1	0	0.00377	0.003831	6.47E-05	0.003896	0	1E-07	0	0	0.028	0	0	8E-04	0
917	615283	4202492	0	1	0	0.004095	0.004157	6.86E-05	0.004226	0	1E-07	0	0	0.03	0	0	8E-04	0
918	615303	4202492	0	1	0	0.004468	0.004531	7.28E-05	0.004604	0	1E-07	0	0	0.033	0	0	9E-04	0
919	615323	4202492	0	1	0	0.004895	0.004959	7.74E-05	0.005037	0	1E-07	0	0	0.036	0	0	1E-03	0
920	615343	4202492	0	1	0	0.005373	0.005439	8.24E-05	0.005521	0	1E-07	0	0	0.04	0	0	0.001	0
921	615363	4202492	0	1	0	0.005887	0.005954	8.78E-05	0.006042	0	2E-07	0	0	0.043	0	0	0.001	0
922	615383	4202492	0	1	0	0.006408	0.006477	9.36E-05	0.00657	0	2E-07	0	0	0.047	0	0	0.001	0
923	615403	4202492	0	1	0	0.006896	0.006967	9.98E-05	0.007067	0	2E-07	0	0	0.051	0	0	0.001	0
924	615423	4202492	0	1	0	0.007318	0.007391	0.000107	0.007497	0	2E-07	0	0	0.054	0	0	0.001	0
925	615443	4202492	0	1	0	0.007668	0.007742	0.000114	0.007856	0	2E-07	0	0	0.056	0	0	0.002	0
926	615463	4202492	0	1	0	0.007967	0.008043	0.000123	0.008166	0	2E-07	0	0	0.059	0	0	0.002	0
927	615483	4202492	0	1	0	0.008233	0.008311	0.000133	0.008444	0	2E-07	0	0	0.061	0	0	0.002	0
928	615503	4202492	0	1	0	0.008503	0.008584	0.000145	0.008729	0	2E-07	0	0	0.063	0	0	0.002	0
929	615523	4202492	0	1	0	0.00881	0.008893	0.000161	0.009054	0	2E-07	0	0	0.065	0	0	0.002	0
930	615543	4202492	0	1	0	0.009189	0.009274	0.000182	0.009457	0	2E-07	0	0	0.068	0	0	0.002	0
931	615563	4202492	0	1	0	0.009754	0.009842	0.000216	0.010057	0	3E-07	0	0	0.072	0	0	0.002	0
932	615583	4202492	0	1	0	0.010816	0.010905	0.000274	0.011179	0	3E-07	0	0	0.08	0	0	0.002	0
933	615583	4202512	0	1	0	0.010008	0.010089	0.000268	0.010357	0	3E-07	0	0	0.074	0	0	0.002	0
934	615603	4202512	0	1	0	0.013609	0.01369	0.000442	0.014133	0	4E-07	0	0	0.1	0	0	0.003	0
935	615603	4202532	0	1	0	0.011891	0.011965	0.000385	0.01235	0	3E-07	0	0	0.088	0	0	0.002	0
936	615603	4202552	0	1	0	0.009244	0.009312	0.00028	0.009592	0	2E-07	0	0	0.068	0	0	0.002	0
937	615623	4202552	0	1	0	0.010732	0.010799	0.000353	0.011152	0	3E-07	0	0	0.079	0	0	0.002	0
938	615623	4202572	0	1	0	0.007837	0.007899	0.000236	0.008135	0	2E-07	0	0	0.058	0	0	0.002	0
939	615623	4202592	0	1	0	0.006371	0.006429	0.000181	0.00661	0	2E-07	0	0	0.047	0	0	0.001	0
940	615623	4202612	0	1	0	0.005424	0.005479	0.000148	0.005627	0	1E-07	0	0	0.04	0	0	0.001	0
941	615623	4202632	0	1	0	0.00474	0.004792	0.000126	0.004917	0	1E-07	0	0	0.035	0	0	9E-04	0
942	615603	4202652	0	1	0	0.004223	0.004272	0.000108	0.00438	0	1E-07	0	0	0.031	0	0	8E-04	0
943	615623	4202652	0	1	0	0.004215	0.004263	0.000109	0.004373	0	1E-07	0	0	0.031	0	0	8E-04	0
944	615603	4202672	0	1	0	0.003807	0.003853	9.62E-05	0.003949	0	1E-07	0	0	0.028	0	0	8E-04	0
945	615623	4202672	0	1	0	0.003794	0.00384	9.69E-05	0.003937	0	1E-07	0	0	0.028	0	0	8E-04	0
946	615603	4202692	0	1	0	0.00346	0.003504	8.66E-05	0.003591	0	9E-08	0	0	0.025	0	0	7E-04	0
947	615583	4202712	0	1	0	0.003171	0.003213	7.82E-05	0.003291	0	8E-08	0	0	0.023	0	0	6E-04	0
948	615603	4202712	0	1	0	0.003168	0.00321	7.87E-05	0.003289	0	8E-08	0	0	0.023	0	0	6E-04	0
949	615583	4202732	0	1	0	0.002921	0.002961	7.17E-05	0.003033	0	8E-08	0	0	0.022	0	0	6E-04	0
950	615603	4202732	0	1	0	0.002916	0.002956	7.21E-05	0.003028	0	8E-08	0	0	0.021	0	0	6E-04	0
951	615583	4202752	0	1	0	0.002703	0.002741	6.62E-05	0.002808	0	7E-08	0	0	0.02	0	0	5E-04	0
952	615603	4202752	0	1	0	0.002697	0.002735	6.64E-05	0.002801	0	7E-08	0	0	0.02	0	0	5E-04	0
953	615603	4202772	0	1	0	0.002503	0.00254	6.14E-05	0.002601	0	6E-08	0	0	0.018	0	0	5E-04	0
954	615603	4202792	0	1	0	0.002339	0.002374	5.73E-05	0.002432	0	6E-08	0	0	0.017	0	0	5E-04	0

Scaled DPM Concentrations at Receptors

Source Emission Rate (g/s)

Haul 1 E	Haul 2 E	Haul 3 E	Haul T E	Onsite 1 E	Onsite 2 E	Onsite 3 E	Trenching E	Idling 1 E	Idling 2 E	Idling 3 E	Idling T E
1.54E-7	2.24E-7	1.21E-7	1.78E-7	1.07E-3	1.56E-3	8.42E-4	1.24E-3	1.16E-8	1.68E-8	9.11E-9	1.34E-8

Concentrations at receptors calculated by multiplying Source Emission Rate and Unitized Concentrations. Unit micrograms/m3

Num	X	Y	Haul 1 E	Haul 2 E	Haul 3 E	Haul T E	Onsite 1 E	Onsite 2 E	Onsite 3 E	Trenching E	Idling 1 E	Idling 2 E	Idling 3 E	Idling T E
1	614702.9	4201251.5	7.48E-8	1.09E-7	5.89E-8	1.22E-7	1.64E-4	2.19E-4	1.09E-4	2.23E-4	1.14E-9	1.55E-9	8.21E-10	2.08E-9
2	614722.9	4201251.5	7.77E-8	1.13E-7	6.12E-8	1.27E-7	1.69E-4	2.23E-4	1.11E-4	2.29E-4	1.18E-9	1.59E-9	8.54E-10	2.12E-9
3	614742.9	4201251.5	8.07E-8	1.17E-7	6.35E-8	1.32E-7	1.74E-4	2.27E-4	1.13E-4	2.36E-4	1.22E-9	1.62E-9	8.91E-10	2.17E-9
4	614762.9	4201251.5	8.38E-8	1.22E-7	6.59E-8	1.38E-7	1.79E-4	2.31E-4	1.15E-4	2.42E-4	1.26E-9	1.67E-9	9.30E-10	2.22E-9
5	614782.9	4201251.5	8.71E-8	1.27E-7	6.85E-8	1.44E-7	1.84E-4	2.35E-4	1.17E-4	2.49E-4	1.30E-9	1.71E-9	9.73E-10	2.27E-9
6	614802.9	4201251.5	9.05E-8	1.32E-7	7.12E-8	1.50E-7	1.88E-4	2.40E-4	1.19E-4	2.56E-4	1.35E-9	1.76E-9	1.02E-9	2.31E-9
7	614822.9	4201251.5	9.40E-8	1.37E-7	7.40E-8	1.56E-7	1.91E-4	2.44E-4	1.22E-4	2.64E-4	1.39E-9	1.82E-9	1.07E-9	2.35E-9
8	614842.9	4201251.5	9.76E-8	1.42E-7	7.68E-8	1.63E-7	1.94E-4	2.48E-4	1.24E-4	2.72E-4	1.43E-9	1.87E-9	1.12E-9	2.38E-9
9	614862.9	4201251.5	1.01E-7	1.47E-7	7.97E-8	1.69E-7	1.95E-4	2.53E-4	1.26E-4	2.80E-4	1.47E-9	1.93E-9	1.18E-9	2.40E-9
10	614882.9	4201251.5	1.05E-7	1.53E-7	8.26E-8	1.76E-7	1.95E-4	2.58E-4	1.29E-4	2.89E-4	1.52E-9	1.99E-9	1.24E-9	2.42E-9
11	614902.9	4201251.5	1.09E-7	1.58E-7	8.55E-8	1.84E-7	1.95E-4	2.63E-4	1.31E-4	2.98E-4	1.56E-9	2.06E-9	1.31E-9	2.44E-9
12	614922.9	4201251.5	1.12E-7	1.63E-7	8.82E-8	1.90E-7	1.95E-4	2.68E-4	1.34E-4	3.08E-4	1.61E-9	2.12E-9	1.38E-9	2.45E-9
13	614942.9	4201251.5	1.15E-7	1.67E-7	9.06E-8	1.97E-7	1.95E-4	2.74E-4	1.37E-4	3.18E-4	1.65E-9	2.18E-9	1.46E-9	2.46E-9
14	614962.9	4201251.5	1.18E-7	1.72E-7	9.29E-8	2.03E-7	1.95E-4	2.80E-4	1.39E-4	3.29E-4	1.71E-9	2.25E-9	1.54E-9	2.48E-9
15	614982.9	4201251.5	1.21E-7	1.76E-7	9.52E-8	2.09E-7	1.96E-4	2.89E-4	1.43E-4	3.41E-4	1.77E-9	2.32E-9	1.63E-9	2.49E-9
16	615002.9	4201251.5	1.23E-7	1.79E-7	9.71E-8	2.15E-7	1.97E-4	2.96E-4	1.46E-4	3.53E-4	1.83E-9	2.39E-9	1.72E-9	2.51E-9
17	615022.9	4201251.5	1.25E-7	1.82E-7	9.86E-8	2.21E-7	1.99E-4	3.04E-4	1.49E-4	3.65E-4	1.90E-9	2.45E-9	1.81E-9	2.54E-9
18	615042.9	4201251.5	1.27E-7	1.85E-7	1.00E-7	2.26E-7	2.02E-4	3.12E-4	1.52E-4	3.78E-4	1.97E-9	2.51E-9	1.91E-9	2.56E-9
19	615162.9	4201251.5	1.37E-7	2.00E-7	1.08E-7	2.61E-7	2.22E-4	3.62E-4	1.69E-4	4.65E-4	2.41E-9	2.81E-9	2.44E-9	2.77E-9
20	615182.9	4201251.5	1.39E-7	2.02E-7	1.09E-7	2.67E-7	2.24E-4	3.68E-4	1.72E-4	4.82E-4	2.44E-9	2.85E-9	2.53E-9	2.79E-9
21	615202.9	4201251.5	1.40E-7	2.04E-7	1.10E-7	2.72E-7	2.25E-4	3.72E-4	1.75E-4	5.01E-4	2.47E-9	2.89E-9	2.61E-9	2.81E-9
22	615222.9	4201251.5	1.41E-7	2.06E-7	1.11E-7	2.77E-7	2.26E-4	3.76E-4	1.78E-4	5.20E-4	2.47E-9	2.94E-9	2.71E-9	2.83E-9
23	615242.9	4201251.5	1.43E-7	2.07E-7	1.12E-7	2.81E-7	2.26E-4	3.79E-4	1.81E-4	5.42E-4	2.46E-9	2.97E-9	2.83E-9	2.84E-9
24	615262.9	4201251.5	1.44E-7	2.09E-7	1.13E-7	2.86E-7	2.25E-4	3.81E-4	1.84E-4	5.66E-4	2.45E-9	3.00E-9	2.99E-9	2.84E-9
25	615282.9	4201251.5	1.45E-7	2.11E-7	1.14E-7	2.90E-7	2.25E-4	3.83E-4	1.86E-4	5.91E-4	2.42E-9	3.01E-9	3.19E-9	2.85E-9
26	615302.9	4201251.5	1.46E-7	2.12E-7	1.15E-7	2.94E-7	2.25E-4	3.86E-4	1.89E-4	6.17E-4	2.40E-9	3.01E-9	3.45E-9	2.85E-9
27	615322.9	4201251.5	1.47E-7	2.13E-7	1.15E-7	2.97E-7	2.25E-4	3.89E-4	1.91E-4	6.44E-4	2.38E-9	3.00E-9	3.77E-9	2.86E-9
28	615342.9	4201251.5	1.47E-7	2.14E-7	1.16E-7	3.00E-7	2.26E-4	3.94E-4	1.92E-4	6.71E-4	2.37E-9	2.97E-9	4.14E-9	2.86E-9
29	615362.9	4201251.5	1.47E-7	2.14E-7	1.16E-7	3.03E-7	2.27E-4	4.00E-4	1.94E-4	6.98E-4	2.35E-9	2.93E-9	4.53E-9	2.87E-9
30	615382.9	4201251.5	1.47E-7	2.13E-7	1.15E-7	3.05E-7	2.28E-4	4.07E-4	1.96E-4	7.26E-4	2.34E-9	2.89E-9	4.92E-9	2.88E-9
31	615402.9	4201251.5	1.46E-7	2.12E-7	1.15E-7	3.07E-7	2.28E-4	4.14E-4	1.98E-4	7.54E-4	2.32E-9	2.86E-9	5.30E-9	2.89E-9
32	614702.9	4201271.5	7.94E-8	1.15E-7	6.25E-8	1.30E-7	1.66E-4	2.21E-4	1.11E-4	2.25E-4	1.14E-9	1.57E-9	7.99E-10	2.10E-9
33	614722.9	4201271.5	8.26E-8	1.20E-7	6.50E-8	1.36E-7	1.70E-4	2.26E-4	1.13E-4	2.31E-4	1.18E-9	1.60E-9	8.30E-10	2.15E-9
34	614742.9	4201271.5	8.60E-8	1.25E-7	6.77E-8	1.42E-7	1.75E-4	2.30E-4	1.14E-4	2.38E-4	1.22E-9	1.64E-9	8.62E-10	2.20E-9
35	614762.9	4201271.5	8.95E-8	1.30E-7	7.04E-8	1.48E-7	1.80E-4	2.34E-4	1.17E-4	2.44E-4	1.26E-9	1.68E-9	8.98E-10	2.25E-9
36	614782.9	4201271.5	9.32E-8	1.36E-7	7.34E-8	1.55E-7	1.86E-4	2.39E-4	1.19E-4	2.51E-4	1.30E-9	1.72E-9	9.38E-10	2.30E-9
37	614802.9	4201271.5	9.72E-8	1.41E-7	7.65E-8	1.62E-7	1.90E-4	2.43E-4	1.21E-4	2.59E-4	1.35E-9	1.77E-9	9.80E-10	2.35E-9
38	614822.9	4201271.5	1.01E-7	1.47E-7	7.97E-8	1.69E-7	1.95E-4	2.48E-4	1.23E-4	2.66E-4	1.39E-9	1.82E-9	1.03E-9	2.39E-9
39	614842.9	4201271.5	1.05E-7	1.53E-7	8.29E-8	1.77E-7	1.98E-4	2.53E-4	1.26E-4	2.74E-4	1.44E-9	1.88E-9	1.08E-9	2.43E-9
40	614862.9	4201271.5	1.10E-7	1.59E-7	8.63E-8	1.85E-7	2.00E-4	2.57E-4	1.28E-4	2.83E-4	1.48E-9	1.94E-9	1.13E-9	2.46E-9
41	614882.9	4201271.5	1.14E-7	1.66E-7	8.97E-8	1.93E-7	2.01E-4	2.62E-4	1.31E-4	2.92E-4	1.53E-9	2.00E-9	1.19E-9	2.48E-9
42	614902.9	4201271.5	1.18E-7	1.72E-7	9.30E-8	2.01E-7	2.01E-4	2.68E-4	1.33E-4	3.02E-4	1.57E-9	2.06E-9	1.26E-9	2.50E-9
43	614922.9	4201271.5	1.22E-7	1.77E-7	9.60E-8	2.08E-7	2.01E-4	2.73E-4	1.36E-4	3.12E-4	1.62E-9	2.13E-9	1.33E-9	2.52E-9
44	614942.9	4201271.5	1.26E-7	1.83E-7	9.88E-8	2.16E-7	2.01E-4	2.79E-4	1.39E-4	3.23E-4	1.67E-9	2.19E-9	1.40E-9	2.53E-9
45	614962.9	4201271.5	1.29E-7	1.87E-7	1.01E-7	2.22E-7	2.01E-4	2.85E-4	1.42E-4	3.34E-4	1.72E-9	2.26E-9	1.48E-9	2.54E-9
46	614982.9	4201271.5	1.32E-7	1.92E-7	1.04E-7	2.30E-7	2.01E-4	2.94E-4	1.45E-4	3.47E-4	1.78E-9	2.33E-9	1.57E-9	2.56E-9
47	615002.9	4201271.5	1.35E-7	1.97E-7	1.06E-7	2.36E-7	2.03E-4	3.01E-4	1.48E-4	3.59E-4	1.84E-9	2.40E-9	1.67E-9	2.58E-9
48	615022.9	4201271.5	1.38E-7	2.00E-7	1.08E-7	2.43E-7	2.04E-4	3.09E-4	1.51E-4	3.73E-4	1.91E-9	2.47E-9	1.76E-9	2.60E-9
49	615042.9	4201271.5	1.40E-7	2.04E-7	1.10E-7	2.50E-7	2.07E-4	3.17E-4	1.54E-4	3.86E-4	1.98E-9	2.54E-9	1.87E-9	2.63E-9
50	615162.9	4201271.5	1.52E-7	2.21E-7	1.20E-7	2.91E-7	2.27E-4	3.70E-4	1.73E-4	4.80E-4	2.45E-9	2.86E-9	2.50E-9	2.84E-9
51	615182.9	4201271.5	1.54E-7	2.23E-7	1.21E-7	2.97E-7	2.30E-4	3.77E-4	1.76E-4	4.99E-4	2.50E-9	2.91E-9	2.60E-9	2.87E-9
52	615202.9	4201271.5	1.55E-7	2.25E-7	1.22E-7	3.02E-7	2.32E-4	3.83E-4	1.79E-4	5.18E-4	2.54E-9	2.95E-9	2.70E-9	2.89E-9
53	615222.9	4201271.5	1.56E-7	2.27E-7	1.23E-7	3.08E-7	2.33E-4	3.88E-4	1.82E-4	5.39E-4	2.56E-9	3.00E-9	2.81E-9	2.91E-9
54	615242.9	4201271.5	1.57E-7	2.29E-7	1.24E-7	3.13E-7	2.33E-4	3.91E-4	1.86E-4	5.62E-4	2.56E-9	3.04E-9	2.92E-9	2.92E-9
55	615262.9	4201271.5	1.59E-7	2.31E-7	1.25E-7	3.18E-7	2.32E-4	3.94E-4	1.89E-4	5.87E-4	2.55E-9	3.08E-9	3.06E-9	2.93E-9
56	615282.9	4201271.5	1.60E-7	2.32E-7	1.26E-7	3.22E-7	2.32E-4	3.97E-4	1.92E-4	6.15E-4	2.53E-9	3.10E-9	3.23E-9	2.93E-9
57	615302.9	4201271.5	1.61E-7	2.33E-7	1.26E-7	3.26E-7	2.32E-4	3.99E-4	1.94E-4	6.44E-4	2.50E-9	3.11E-9	3.45E-9	2.94E-9
58	615322.9	4201271.5	1.61E-7	2.34E-7	1.27E-7	3.29E-7	2.32E-4	4.03E-4	1.97E-4	6.73E-4	2.48E-9	3.11E-9	3.74E-9	2.94E-9
59	615342.9	4201271.5	1.61E-7	2.34E-7	1.26E-7	3.32E-7	2.33E-4	4.07E-4	1.98E-4	7.04E-4	2.46E-9	3.08E-9	4.10E-9	2.95E-9
60	615362.9	4201271.5	1.60E-7	2.33E-7	1.26E-7	3.35E-7	2.34E-4	4.13E-4	2.00E-4	7.35E-4	2.44E-9	3.05E-9	4.52E-9	2.96E-9
61	615382.9	4201271.5	1.60E-7	2.32E-7	1.26E-7	3.37E-7	2.34E-4	4.19E-4	2.02E-4	7.66E-4	2.43E-9	3.01E-9	4.97E-9	2.97E-9
62	614702.9	4201291.5	8.45E-8	1.23E-7	6.65E-8	1.39E-7	1.67E-4	2.25E-4	1.12E-4	2.27E-4	1.14E-9	1.59E-9	7.84E-10	2.13E-9
63	614722.9	4201291.5	8.82E-8	1.28E-7	6.94E-8	1.45E-7	1.72E-4	2.29E-4	1.14E-4	2.33E-4	1.18E-9	1.62E-9	8.12E-10	2.18E-9
64	614742.9	4201291.5	9.20E-8	1.34E-7	7.24E-8	1.52E-7	1.77E-4	2.33E-4	1.16E-4	2.40E-4	1.22E-9	1.66E-9	8.41E-10	2.23E-9
65	614762.9	4201291.5	9.60E-8	1.40E-7	7.56E-8	1.60E-7	1.82E-4	2.38E-4	1.18E-4	2.47E-4	1.26E-9	1.69E-9	8.73E-10	2.28E-9
66	614782.9	4201291.5	1.00E-7	1.46E-7	7.90E-8	1.68E-7	1.88E-4	2.42E-4	1.20E-4	2.54E-4	1.30E-9	1.74E-9	9.09E-10	2.34E-9
67	614802.9	4201291.5	1.05E-7	1.53E-7	8.26E-8	1.76E-7	1.93E-4	2.47E-4	1.23E-4	2.61E-4	1.35E-9	1.78E-9	9.47E-10	2.39E-9
68	614822.9	4201291.5	1.10E-7	1.59E-7	8.63E-8	1.84E-7	1.98E-4	2.52E-4	1.25E-4	2.69E-4	1.39E-9	1.84E-9	9.90E-10	2.43E-9
69	614842.9	4201291.5	1.15E-7	1.66E-7	9.01E-8	1.93E-7	2.02E-4	2.57E-4	1.28E-4	2.77E-4	1.44E-9	1.89E-9	1.04E-9	2.48E-9
70	614862.9	4201291.5	1.20E-7	1.74E-7	9.41E-8	2.03E-7	2.05E-4	2.62E-4	1.30E-4	2.86E-4	1.49E-9	1.95E-9	1.09E-9	2.51E-9
71	614882.9	4201291.5	1.25E-7	1.81E-7	9.80E-8	2.12E-7	2.07E-4	2.67E-4	1.33E-4	2.95E-4	1.53E-9	2.01E-9	1.14E-9	2.54E-9
72	614902.9	4201291.5	1.29E-7	1.88E-7	1.02E-7	2.21E-7	2.07E-4	2.72E-4	1.35E-4	3.05E-4	1.58E-9	2.07E-9	1.20E-9	2.57E-9
73	614922.9	4201291.5	1.34E-7	1.94E-7	1.05E-7	2.30E-7	2.07E-4	2.78E-4	1.38E-4	3.15E-4	1.63E-9	2.13E-9	1.27E-9	2.59E-9
74	614942.9	4201291.5	1.38E-7	2.00E-7	1.08E-7	2.38E-7	2.07E-4	2.84E-4	1.41E-4	3.27E-4	1.68E-9	2.20E-9	1.34E-9	2.60E-9
75	614962.9	4201291.5	1.42E-7	2.06E-7	1.12E-7	2.46E-7	2.07E-4	2.92E-4	1.45E-4	3.39E-4	1.74E-9	2.27E-9	1.42E-9	2.62E-9
76	614982.9	4201291.5	1.46E-7	2.12E-7	1.15E-7	2.54E-7	2.07E-4	2.99E-4	1.48E-4	3.52E-4	1.80E-9	2.35E-9	1.51E-9	2.63E-9
77	615002.9	4201291.5	1.49E-7	2.17E-7	1.18E-7	2.62E-7	2.08E-4	3.06E-4	1.51E-4	3.65E-4	1.86E-9	2.42E-9	1.60E-9	2.65E-9
78	615022.9	4201291.5	1.53E-7	2.22E-7	1.20E-7	2.70E-7	2.10E-4	3.14E-4	1.54E-4	3.79E-4	1.93E-9	2.49E-9	1.70E-9	2.67E-9
79	615042.9	4201291.5	1.56E-7	2.26E-7	1.23E-7	2.78E-7	2.12E-4	3.22E-4	1.57E-4	3.94E-4	2.00E-9	2.56E-9	1.80E-9	2.70E-9
80	615062.9	4201291.5	1.59E-7	2.31E-7	1.25E-7	2.87E-7	2.15E-4	3.31E-4	1.60E-4	4.09E-4	2.08E-9	2.63E-9	1.92E-9	2.73E-9
81	615082.9	4201291.5	1.61E-7	2.35E-7	1.27E-7	2.95E-7	2.18E-4	3.41E-4	1.64E-4	4.25E-4	2.16E-9	2.70E-9	2.03E-9	2.76E-9
82	615102.9	4201291.5	1.64E-7	2.38E-7	1.29E-7	3.03E-7	2.21E-4	3.51E-4	1.67E-4	4.41E-4	2.25E-9	2.76E-9	2.15E-9	2.80E-9
83	615122.9	4201291.5	1.66E-7	2.42E-7	1.31E-7	3.11E-7	2.25E-4	3.61E-4	1.70E-4	4.58E-4	2.34E-9	2.82E-9	2.28E-9	2.84E-9
84	615142.9	4201291.5	1.68E-7	2.44E-7	1.32E-7	3.18E-7	2.29E-4	3.70E-4	1.73E-4	4.76E-4	2.42E-9	2.87E-9	2.41E-9	2.88E-9
85	615162.9	4201291.5	1.70E-7	2.47E-7	1.33E-7	3.26E-7	2.33E-4	3.79E-4	1.76E-4	4.95E-4	2.50E-9	2.92E-9	2.53E-9	2.92E-9
86	615182.9	4201291.5	1.71E-7	2.49E-7	1.35E-7	3.32E-7	2.36E-4	3.87E-4	1.80E-4	5.15E-4	2.56E-9	2.97E-9	2.65E-9	2.95E-9
87	615202.9	4201291.5	1.72E-7	2.51E-7	1.36E-7	3.39E-7	2.38E-4	3.94E-4	1.83E-4	5.37E-4	2.61E-9	3.02E-9	2.78E-9	2.98E-9
88	615222.9	4201291.5	1.74E-7	2.52E-7	1.37E-7	3.44E-7	2.40E-4	4.00E-4	1.87E-4	5.59E-4	2.64E-9	3.07E-9	2.90E-9	3.00E-9
89	615242.9	4201291.5	1.75E-7	2.54E-7	1.38E-7	3.50E-7	2.40E-4	4.04E-4	1.90E-4	5.84E-4	2.65E-9	3.11E-9	3.02E-9	3.01E-9
90	615262.9	4201291.5	1.76E-7	2.56E-7	1.38E-7	3.54E-7	2.39E-4	4.08E-4	1.94E-4	6.11E-4	2.65E-9	3.15E-9	3.16E-9	3.02E-9
91	615282.9	4201291.5	1.77E-7	2.57E-7	1.39E-7	3.59E-7	2.39E-4	4.11E-4	1.97E-4	6.40E-4	2.63E-9	3.19E-9	3.31E-9	3.02E-9
92	615302.9	4201291.5	1.77E-7	2.57E-7	1.39E-7	3.62E-7	2.39E-4	4.14E-4	2.00E-4	6.72E-4	2.61E-9	3.21E-9	3.50E-9	3.03E-9
93	615322.9	4201291.5	1.77E-7	2.57E-7	1.39E-7	3.66E-7	2.39E-4	4.17E-4	2.03E-4	7.05E-4	2.58E-9	3.21E-9	3.75E-9	3.03E-9
94	615342.9	4201291.5	1.76E-7	2.56E-7	1.39E-7	3.68E-7	2.40E-4	4.21E-4	2.05E-4	7.39E-4	2.56E-9	3.20E-9	4.07E-9	3.04E-9
95	615362.9	4201291.5	1.76E-7	2.55E-7	1.38E-7	3.71E-7	2.41E-4	4.26E-4	2.07E-4	7.75E-4	2.54E-9	3.18E-9	4.48E-9	3.05E-9
96	615382.9	4201291.5	1.74E-7	2.54E-7	1.37E-7	3.74E-7	2.42E-4	4.33E-4	2.09E-4	8.12E-4	2.53E-9	3.14E-9	4.97E-9	3.06E-9
97	614702.9	4201311.5	9.02E-8	1.31E-7	7.10E-8	1.49E-7	1.69E-4	2.28E-4	1.14E-4	2.29E-4	1.15E-9	1.61E-9	7.76E-10	2.16E-9
98	614722.9	4201311.5	9.45E-8	1.37E-7	7.44E-8	1.57E-7	1.74E-4	2.32E-4	1.16E-4	2.35E-4	1.18E-9	1.64E-9	8.01E-10	2.21E-9
99	614742.9	4201311.5	9.90E-8	1.44E-7	7.79E-8	1.65E-7	1.79E-4	2.37E-4	1.18E-4	2.42E-4	1.22E-9	1.67E-9	8.28E-10	2.26E-9
100	614762.9	4201311.5	1.04E-7	1.51E-7	8.16E-8	1.73E-7	1.84E-4	2.41E-4	1.20E-4	2.49E-4	1.26E-9	1.71E-9	8.57E-10	2.31E-9
101	614782.9	4201311.5	1.09E-7	1.58E-7	8.56E-8	1.83E-7	1.89E-4	2.46E-4	1.22E-4	2.56E-4	1.30E-9	1.75E-9	8.89E-10	2.37E-9
102	614802.9	4201311.5	1.14E-7	1.66E-7	8.98E-8	1.93E-7	1.95E-4	2.51E-4	1.25E-4	2.64E-4	1.35E-9	1.80E-9	9.23E-10	2.42E-9
103	614822.9	4201311.5	1.20E-7	1.74E-7	9.41E-8	2.03E-7	2.01E-4	2.56E-4	1.27E-4	2.72E-4	1.39E-9	1.85E-9	9.61E-10	2.48E-9
104	614842.9	4201311.5	1.25E-7	1.82E-7	9.87E-8	2.13E-7	2.05E-4	2.61E-4	1.30E-4	2.80E-4	1.44E-9	1.90E-9	1.00E-9	2.53E-9
105	614862.9	4201311.5	1.31E-7	1.91E-7	1.03E-7	2.25E-7	2.09E-4	2.66E-4	1.32E-4	2.89E-4	1.49E-9	1.96E-9	1.05E-9	2.57E-9
106	614882.9	4201311.5	1.37E-7	1.99E-7	1.08E-7	2.35E-7	2.12E-4	2.72E-4	1.35E-4	2.98E-4	1.54E-9	2.02E-9	1.10E-9	2.61E-9
107	614902.9	4201311.5	1.42E-7	2.07E-7	1.12E-7	2.45E-7	2.13E-4	2.77E-4	1.38E-4	3.08E-4	1.59E-9	2.08E-9	1.15E-9	2.63E-9
108	614922.9	4201311.5	1.47E-7	2.14E-7	1.16E-7	2.55E-7	2.14E-4	2.83E-4	1.41E-4	3.19E-4	1.64E-9	2.14E-9	1.22E-9	2.66E-9
109	614942.9	4201311.5	1.53E-7	2.22E-7	1.20E-7	2.65E-7	2.14E-4	2.91E-4	1.44E-4	3.31E-4	1.70E-9	2.21E-9	1.28E-9	2.68E-9
110	614962.9	4201311.5	1.58E-7	2.29E-7	1.24E-7	2.75E-7	2.14E-4	2.98E-4	1.47E-4	3.43E-4	1.75E-9	2.29E-9	1.36E-9	2.70E-9
111	614982.9	4201311.5	1.62E-7	2.36E-7	1.28E-7	2.84E-7	2.14E-4	3.04E-4	1.50E-4	3.56E-4	1.81E-9	2.36E-9	1.44E-9	2.71E-9
112	615002.9	4201311.5	1.67E-7	2.42E-7	1.31E-7	2.94E-7	2.15E-4	3.12E-4	1.54E-4	3.70E-4	1.88E-9	2.43E-9	1.53E-9	2.73E-9
113	615022.9	4201311.5	1.71E-7	2.49E-7	1.35E-7	3.04E-7	2.16E-4	3.20E-4	1.57E-4	3.85E-4	1.94E-9	2.51E-9	1.63E-9	2.75E-9
114	615042.9	4201311.5	1.75E-7	2.54E-7	1.38E-7	3.14E-7	2.18E-4	3.28E-4	1.60E-4	4.01E-4	2.02E-9	2.58E-9	1.73E-9	2.77E-9
115	615062.9	4201311.5	1.78E-7	2.59E-7	1.40E-7	3.23E-7	2.20E-4	3.37E-4	1.63E-4	4.17E-4	2.10E-9	2.66E-9	1.84E-9	2.80E-9
116	615082.9	4201311.5	1.82E-7	2.64E-7	1.43E-7	3.33E-7	2.23E-4	3.47E-4	1.67E-4	4.34E-4	2.18E-9	2.73E-9	1.96E-9	2.84E-9
117	615102.9	4201311.5	1.84E-7	2.68E-7	1.45E-7	3.42E-7	2.27E-4	3.57E-4	1.70E-4	4.52E-4	2.27E-9	2.80E-9	2.09E-9	2.88E-9

118	615122.9	4201311.5	1.87E-7	2.72E-7	1.47E-7	3.51E-7	2.31E-4	3.67E-4	1.74E-4	4.70E-4	2.36E-9	2.87E-9	2.23E-9	2.92E-9
119	615142.9	4201311.5	1.89E-7	2.75E-7	1.49E-7	3.59E-7	2.35E-4	3.78E-4	1.77E-4	4.90E-4	2.45E-9	2.93E-9	2.37E-9	2.96E-9
120	615162.9	4201311.5	1.90E-7	2.77E-7	1.50E-7	3.67E-7	2.39E-4	3.87E-4	1.80E-4	5.10E-4	2.53E-9	2.98E-9	2.52E-9	3.00E-9
121	615182.9	4201311.5	1.92E-7	2.79E-7	1.51E-7	3.74E-7	2.43E-4	3.97E-4	1.84E-4	5.32E-4	2.61E-9	3.03E-9	2.66E-9	3.03E-9
122	615202.9	4201311.5	1.93E-7	2.81E-7	1.52E-7	3.81E-7	2.45E-4	4.05E-4	1.88E-4	5.55E-4	2.67E-9	3.08E-9	2.81E-9	3.06E-9
123	615222.9	4201311.5	1.94E-7	2.82E-7	1.53E-7	3.87E-7	2.47E-4	4.12E-4	1.91E-4	5.80E-4	2.72E-9	3.13E-9	2.96E-9	3.09E-9
124	615242.9	4201311.5	1.95E-7	2.83E-7	1.53E-7	3.92E-7	2.47E-4	4.17E-4	1.95E-4	6.06E-4	2.74E-9	3.18E-9	3.11E-9	3.10E-9
125	615262.9	4201311.5	1.96E-7	2.85E-7	1.54E-7	3.97E-7	2.47E-4	4.22E-4	1.99E-4	6.35E-4	2.75E-9	3.23E-9	3.26E-9	3.11E-9
126	615282.9	4201311.5	1.96E-7	2.85E-7	1.54E-7	4.01E-7	2.47E-4	4.26E-4	2.02E-4	6.67E-4	2.74E-9	3.27E-9	3.42E-9	3.12E-9
127	615302.9	4201311.5	1.96E-7	2.85E-7	1.54E-7	4.05E-7	2.46E-4	4.29E-4	2.06E-4	7.02E-4	2.72E-9	3.30E-9	3.60E-9	3.12E-9
128	615322.9	4201311.5	1.95E-7	2.84E-7	1.54E-7	4.08E-7	2.47E-4	4.32E-4	2.09E-4	7.40E-4	2.70E-9	3.32E-9	3.82E-9	3.13E-9
129	615342.9	4201311.5	1.94E-7	2.82E-7	1.53E-7	4.11E-7	2.47E-4	4.36E-4	2.12E-4	7.78E-4	2.67E-9	3.32E-9	4.10E-9	3.14E-9
130	615362.9	4201311.5	1.93E-7	2.80E-7	1.52E-7	4.14E-7	2.48E-4	4.42E-4	2.14E-4	8.19E-4	2.65E-9	3.31E-9	4.47E-9	3.15E-9
131	615382.9	4201311.5	1.91E-7	2.78E-7	1.50E-7	4.17E-7	2.49E-4	4.48E-4	2.16E-4	8.62E-4	2.64E-9	3.28E-9	4.94E-9	3.16E-9
132	615402.9	4201311.5	1.88E-7	2.74E-7	1.48E-7	4.18E-7	2.50E-4	4.56E-4	2.19E-4	9.05E-4	2.62E-9	3.27E-9	5.50E-9	3.17E-9
133	614702.9	4201331.5	9.68E-8	1.41E-7	7.62E-8	1.60E-7	1.72E-4	2.31E-4	1.16E-4	2.30E-4	1.15E-9	1.63E-9	7.76E-10	2.19E-9
134	614722.9	4201331.5	1.02E-7	1.48E-7	8.01E-8	1.70E-7	1.76E-4	2.36E-4	1.18E-4	2.37E-4	1.19E-9	1.66E-9	7.99E-10	2.24E-9
135	614742.9	4201331.5	1.07E-7	1.56E-7	8.42E-8	1.79E-7	1.81E-4	2.40E-4	1.20E-4	2.44E-4	1.22E-9	1.69E-9	8.23E-10	2.29E-9
136	614762.9	4201331.5	1.13E-7	1.64E-7	8.86E-8	1.90E-7	1.86E-4	2.45E-4	1.22E-4	2.51E-4	1.26E-9	1.73E-9	8.49E-10	2.35E-9
137	614782.9	4201331.5	1.19E-7	1.72E-7	9.34E-8	2.01E-7	1.91E-4	2.50E-4	1.24E-4	2.58E-4	1.30E-9	1.77E-9	8.78E-10	2.40E-9
138	614802.9	4201331.5	1.25E-7	1.82E-7	9.83E-8	2.12E-7	1.97E-4	2.55E-4	1.27E-4	2.66E-4	1.34E-9	1.82E-9	9.09E-10	2.46E-9
139	614822.9	4201331.5	1.32E-7	1.91E-7	1.04E-7	2.25E-7	2.03E-4	2.60E-4	1.29E-4	2.74E-4	1.39E-9	1.86E-9	9.43E-10	2.52E-9
140	614842.9	4201331.5	1.38E-7	2.01E-7	1.09E-7	2.38E-7	2.09E-4	2.65E-4	1.32E-4	2.83E-4	1.44E-9	1.92E-9	9.80E-10	2.57E-9
141	614862.9	4201331.5	1.45E-7	2.11E-7	1.14E-7	2.51E-7	2.13E-4	2.71E-4	1.34E-4	2.92E-4	1.49E-9	1.97E-9	1.02E-9	2.62E-9
142	614882.9	4201331.5	1.52E-7	2.21E-7	1.20E-7	2.63E-7	2.17E-4	2.76E-4	1.37E-4	3.02E-4	1.54E-9	2.03E-9	1.07E-9	2.67E-9
143	614902.9	4201331.5	1.58E-7	2.30E-7	1.24E-7	2.75E-7	2.19E-4	2.82E-4	1.40E-4	3.12E-4	1.59E-9	2.09E-9	1.12E-9	2.70E-9
144	614922.9	4201331.5	1.65E-7	2.39E-7	1.29E-7	2.87E-7	2.21E-4	2.90E-4	1.43E-4	3.23E-4	1.65E-9	2.16E-9	1.17E-9	2.73E-9
145	614942.9	4201331.5	1.71E-7	2.48E-7	1.34E-7	2.99E-7	2.21E-4	2.96E-4	1.47E-4	3.35E-4	1.71E-9	2.23E-9	1.23E-9	2.76E-9
146	614962.9	4201331.5	1.77E-7	2.57E-7	1.39E-7	3.10E-7	2.21E-4	3.03E-4	1.50E-4	3.47E-4	1.77E-9	2.30E-9	1.30E-9	2.77E-9
147	614982.9	4201331.5	1.82E-7	2.65E-7	1.44E-7	3.22E-7	2.21E-4	3.10E-4	1.53E-4	3.60E-4	1.83E-9	2.37E-9	1.38E-9	2.79E-9
148	615002.9	4201331.5	1.88E-7	2.74E-7	1.48E-7	3.33E-7	2.21E-4	3.17E-4	1.56E-4	3.75E-4	1.89E-9	2.45E-9	1.46E-9	2.81E-9
149	615022.9	4201331.5	1.94E-7	2.82E-7	1.52E-7	3.45E-7	2.22E-4	3.25E-4	1.60E-4	3.90E-4	1.96E-9	2.52E-9	1.55E-9	2.83E-9
150	615042.9	4201331.5	1.99E-7	2.89E-7	1.56E-7	3.57E-7	2.24E-4	3.34E-4	1.63E-4	4.06E-4	2.03E-9	2.60E-9	1.65E-9	2.85E-9
151	615062.9	4201331.5	2.03E-7	2.95E-7	1.60E-7	3.69E-7	2.26E-4	3.43E-4	1.67E-4	4.24E-4	2.11E-9	2.68E-9	1.76E-9	2.88E-9
152	615082.9	4201331.5	2.06E-7	3.00E-7	1.62E-7	3.79E-7	2.29E-4	3.53E-4	1.70E-4	4.42E-4	2.20E-9	2.76E-9	1.88E-9	2.91E-9
153	615102.9	4201331.5	2.09E-7	3.04E-7	1.65E-7	3.90E-7	2.33E-4	3.63E-4	1.74E-4	4.62E-4	2.29E-9	2.84E-9	2.01E-9	2.95E-9
154	615122.9	4201331.5	2.12E-7	3.08E-7	1.67E-7	3.99E-7	2.37E-4	3.74E-4	1.77E-4	4.82E-4	2.38E-9	2.91E-9	2.15E-9	3.00E-9
155	615142.9	4201331.5	2.14E-7	3.11E-7	1.68E-7	4.08E-7	2.41E-4	3.85E-4	1.81E-4	5.03E-4	2.48E-9	2.98E-9	2.30E-9	3.04E-9
156	615162.9	4201331.5	2.15E-7	3.13E-7	1.70E-7	4.17E-7	2.46E-4	3.96E-4	1.85E-4	5.25E-4	2.57E-9	3.04E-9	2.46E-9	3.08E-9
157	615182.9	4201331.5	2.17E-7	3.15E-7	1.70E-7	4.24E-7	2.50E-4	4.06E-4	1.88E-4	5.49E-4	2.66E-9	3.10E-9	2.63E-9	3.12E-9
158	615202.9	4201331.5	2.17E-7	3.16E-7	1.71E-7	4.31E-7	2.53E-4	4.15E-4	1.92E-4	5.74E-4	2.73E-9	3.15E-9	2.80E-9	3.15E-9
159	615222.9	4201331.5	2.18E-7	3.17E-7	1.72E-7	4.37E-7	2.54E-4	4.24E-4	1.96E-4	6.01E-4	2.79E-9	3.21E-9	2.98E-9	3.18E-9
160	615242.9	4201331.5	2.18E-7	3.17E-7	1.72E-7	4.42E-7	2.55E-4	4.31E-4	2.00E-4	6.30E-4	2.83E-9	3.26E-9	3.16E-9	3.20E-9
161	615262.9	4201331.5	2.19E-7	3.18E-7	1.72E-7	4.47E-7	2.55E-4	4.36E-4	2.04E-4	6.61E-4	2.85E-9	3.31E-9	3.34E-9	3.21E-9
162	615282.9	4201331.5	2.19E-7	3.18E-7	1.72E-7	4.51E-7	2.55E-4	4.41E-4	2.08E-4	6.96E-4	2.86E-9	3.35E-9	3.52E-9	3.22E-9
163	615302.9	4201331.5	2.18E-7	3.17E-7	1.71E-7	4.55E-7	2.55E-4	4.45E-4	2.12E-4	7.35E-4	2.84E-9	3.40E-9	3.72E-9	3.22E-9
164	615322.9	4201331.5	2.17E-7	3.15E-7	1.71E-7	4.60E-7	2.55E-4	4.49E-4	2.16E-4	7.78E-4	2.82E-9	3.44E-9	3.94E-9	3.23E-9
165	615342.9	4201331.5	2.15E-7	3.13E-7	1.69E-7	4.62E-7	2.56E-4	4.53E-4	2.19E-4	8.23E-4	2.80E-9	3.45E-9	4.19E-9	3.24E-9
166	615362.9	4201331.5	2.12E-7	3.09E-7	1.67E-7	4.64E-7	2.56E-4	4.58E-4	2.22E-4	8.68E-4	2.77E-9	3.44E-9	4.51E-9	3.25E-9
167	615382.9	4201331.5	2.09E-7	3.04E-7	1.65E-7	4.66E-7	2.57E-4	4.64E-4	2.24E-4	9.16E-4	2.75E-9	3.44E-9	4.93E-9	3.26E-9
168	615402.9	4201331.5	2.06E-7	2.99E-7	1.62E-7	4.67E-7	2.58E-4	4.72E-4	2.26E-4	9.65E-4	2.73E-9	3.41E-9	5.47E-9	3.27E-9
169	615422.9	4201331.5	2.02E-7	2.93E-7	1.59E-7	4.67E-7	2.59E-4	4.81E-4	2.29E-4	1.02E-3	2.71E-9	3.38E-9	6.12E-9	3.28E-9
170	614702.9	4201351.5	1.04E-7	1.52E-7	8.20E-8	1.74E-7	1.74E-4	2.35E-4	1.17E-4	2.32E-4	1.17E-9	1.65E-9	7.84E-10	2.22E-9
171	614722.9	4201351.5	1.10E-7	1.60E-7	8.68E-8	1.85E-7	1.78E-4	2.40E-4	1.19E-4	2.39E-4	1.19E-9	1.68E-9	8.05E-10	2.27E-9
172	614742.9	4201351.5	1.16E-7	1.69E-7	9.17E-8	1.97E-7	1.83E-4	2.44E-4	1.22E-4	2.46E-4	1.23E-9	1.72E-9	8.27E-10	2.33E-9
173	614762.9	4201351.5	1.23E-7	1.79E-7	9.70E-8	2.09E-7	1.88E-4	2.49E-4	1.24E-4	2.53E-4	1.26E-9	1.75E-9	8.51E-10	2.38E-9
174	614782.9	4201351.5	1.30E-7	1.90E-7	1.03E-7	2.23E-7	1.93E-4	2.54E-4	1.26E-4	2.60E-4	1.30E-9	1.79E-9	8.77E-10	2.44E-9
175	614802.9	4201351.5	1.38E-7	2.01E-7	1.09E-7	2.37E-7	1.99E-4	2.59E-4	1.29E-4	2.68E-4	1.35E-9	1.84E-9	9.05E-10	2.50E-9
176	614822.9	4201351.5	1.46E-7	2.13E-7	1.15E-7	2.52E-7	2.06E-4	2.64E-4	1.31E-4	2.77E-4	1.39E-9	1.88E-9	9.35E-10	2.56E-9
177	614842.9	4201351.5	1.55E-7	2.25E-7	1.22E-7	2.68E-7	2.12E-4	2.70E-4	1.34E-4	2.86E-4	1.44E-9	1.93E-9	9.69E-10	2.62E-9
178	614862.9	4201351.5	1.63E-7	2.36E-7	1.28E-7	2.83E-7	2.17E-4	2.76E-4	1.36E-4	2.95E-4	1.49E-9	1.99E-9	1.00E-9	2.67E-9
179	614882.9	4201351.5	1.70E-7	2.48E-7	1.34E-7	2.97E-7	2.22E-4	2.82E-4	1.40E-4	3.05E-4	1.55E-9	2.05E-9	1.05E-9	2.73E-9
180	614902.9	4201351.5	1.78E-7	2.59E-7	1.40E-7	3.12E-7	2.25E-4	2.89E-4	1.43E-4	3.15E-4	1.60E-9	2.11E-9	1.09E-9	2.77E-9
181	614922.9	4201351.5	1.86E-7	2.70E-7	1.46E-7	3.26E-7	2.27E-4	2.95E-4	1.46E-4	3.27E-4	1.66E-9	2.18E-9	1.14E-9	2.81E-9
182	614942.9	4201351.5	1.93E-7	2.81E-7	1.52E-7	3.40E-7	2.28E-4	3.02E-4	1.49E-4	3.39E-4	1.72E-9	2.25E-9	1.20E-9	2.83E-9
183	614962.9	4201351.5	2.00E-7	2.91E-7	1.58E-7	3.55E-7	2.28E-4	3.09E-4	1.52E-4	3.51E-4	1.78E-9	2.32E-9	1.26E-9	2.86E-9
184	614982.9	4201351.5	2.08E-7	3.02E-7	1.64E-7	3.69E-7	2.28E-4	3.16E-4	1.56E-4	3.65E-4	1.84E-9	2.39E-9	1.32E-9	2.87E-9
185	615002.9	4201351.5	2.15E-7	3.13E-7	1.69E-7	3.84E-7	2.28E-4	3.23E-4	1.59E-4	3.79E-4	1.90E-9	2.46E-9	1.40E-9	2.89E-9
186	615022.9	4201351.5	2.22E-7	3.23E-7	1.75E-7	3.98E-7	2.29E-4	3.32E-4	1.62E-4	3.95E-4	1.98E-9	2.54E-9	1.48E-9	2.91E-9
187	615042.9	4201351.5	2.28E-7	3.31E-7	1.79E-7	4.11E-7	2.31E-4	3.40E-4	1.66E-4	4.12E-4	2.05E-9	2.62E-9	1.57E-9	2.93E-9
188	615062.9	4201351.5	2.33E-7	3.39E-7	1.83E-7	4.24E-7	2.33E-4	3.49E-4	1.70E-4	4.30E-4	2.13E-9	2.70E-9	1.68E-9	2.96E-9
189	615082.9	4201351.5	2.37E-7	3.44E-7	1.86E-7	4.36E-7	2.36E-4	3.59E-4	1.74E-4	4.50E-4	2.22E-9	2.78E-9	1.79E-9	3.00E-9
190	615102.9	4201351.5	2.40E-7	3.49E-7	1.89E-7	4.48E-7	2.39E-4	3.70E-4	1.77E-4	4.70E-4	2.31E-9	2.87E-9	1.92E-9	3.04E-9
191	615122.9	4201351.5	2.43E-7	3.53E-7	1.91E-7	4.58E-7	2.43E-4	3.81E-4	1.81E-4	4.92E-4	2.41E-9	2.95E-9	2.06E-9	3.08E-9
192	615142.9	4201351.5	2.45E-7	3.55E-7	1.92E-7	4.68E-7	2.48E-4	3.93E-4	1.85E-4	5.15E-4	2.51E-9	3.03E-9	2.21E-9	3.13E-9
193	615162.9	4201351.5	2.45E-7	3.57E-7	1.93E-7	4.76E-7	2.52E-4	4.04E-4	1.89E-4	5.40E-4	2.61E-9	3.10E-9	2.37E-9	3.17E-9
194	615182.9	4201351.5	2.46E-7	3.57E-7	1.94E-7	4.84E-7	2.57E-4	4.15E-4	1.93E-4	5.65E-4	2.70E-9	3.16E-9	2.55E-9	3.21E-9
195	615202.9	4201351.5	2.46E-7	3.58E-7	1.94E-7	4.90E-7	2.60E-4	4.26E-4	1.97E-4	5.92E-4	2.79E-9	3.22E-9	2.74E-9	3.25E-9
196	615222.9	4201351.5	2.46E-7	3.58E-7	1.94E-7	4.96E-7	2.62E-4	4.35E-4	2.01E-4	6.21E-4	2.86E-9	3.28E-9	2.94E-9	3.28E-9
197	615242.9	4201351.5	2.46E-7	3.58E-7	1.94E-7	5.01E-7	2.63E-4	4.44E-4	2.05E-4	6.53E-4	2.92E-9	3.33E-9	3.15E-9	3.30E-9
198	615262.9	4201351.5	2.46E-7	3.57E-7	1.93E-7	5.06E-7	2.64E-4	4.51E-4	2.09E-4	6.87E-4	2.95E-9	3.39E-9	3.37E-9	3.31E-9
199	615282.9	4201351.5	2.45E-7	3.56E-7	1.93E-7	5.10E-7	2.63E-4	4.57E-4	2.14E-4	7.25E-4	2.97E-9	3.44E-9	3.58E-9	3.32E-9
200	615302.9	4201351.5	2.43E-7	3.54E-7	1.91E-7	5.14E-7	2.63E-4	4.62E-4	2.18E-4	7.68E-4	2.97E-9	3.49E-9	3.81E-9	3.33E-9
201	615322.9	4201351.5	2.42E-7	3.51E-7	1.90E-7	5.19E-7	2.63E-4	4.67E-4	2.22E-4	8.17E-4	2.95E-9	3.54E-9	4.06E-9	3.34E-9
202	615342.9	4201351.5	2.38E-7	3.46E-7	1.88E-7	5.21E-7	2.64E-4	4.71E-4	2.26E-4	8.68E-4	2.93E-9	3.59E-9	4.32E-9	3.35E-9
203	615362.9	4201351.5	2.34E-7	3.40E-7	1.84E-7	5.22E-7	2.65E-4	4.76E-4	2.30E-4	9.21E-4	2.90E-9	3.59E-9	4.61E-9	3.36E-9
204	615382.9	4201351.5	2.30E-7	3.34E-7	1.81E-7	5.23E-7	2.66E-4	4.81E-4	2.32E-4	9.76E-4	2.87E-9	3.59E-9	4.99E-9	3.37E-9
205	615402.9	4201351.5	2.25E-7	3.27E-7	1.77E-7	5.24E-7	2.67E-4	4.89E-4	2.35E-4	1.03E-3	2.85E-9	3.56E-9	5.47E-9	3.38E-9
206	615422.9	4201351.5	2.20E-7	3.19E-7	1.73E-7	5.24E-7	2.67E-4	4.98E-4	2.37E-4	1.09E-3	2.83E-9	3.53E-9	6.09E-9	3.39E-9
207	614762.9	4201371.5	1.36E-7	1.98E-7	1.07E-7	2.33E-7	1.90E-4	2.53E-4	1.26E-4	2.55E-4	1.27E-9	1.77E-9	8.63E-10	2.42E-9
208	614782.9	4201371.5	1.45E-7	2.11E-7	1.14E-7	2.49E-7	1.96E-4	2.58E-4	1.28E-4	2.63E-4	1.31E-9	1.81E-9	8.87E-10	2.48E-9
209	614802.9	4201371.5	1.54E-7	2.24E-7	1.22E-7	2.67E-7	2.02E-4	2.63E-4	1.31E-4	2.71E-4	1.35E-9	1.86E-9	9.12E-10	2.54E-9
210	614822.9	4201371.5	1.64E-7	2.39E-7	1.29E-7	2.86E-7	2.08E-4	2.69E-4	1.33E-4	2.79E-4	1.39E-9	1.90E-9	9.40E-10	2.60E-9
211	614842.9	4201371.5	1.74E-7	2.54E-7	1.37E-7	3.05E-7	2.14E-4	2.74E-4	1.36E-4	2.88E-4	1.44E-9	1.96E-9	9.70E-10	2.67E-9
212	614862.9	4201371.5	1.84E-7	2.68E-7	1.45E-7	3.23E-7	2.21E-4	2.81E-4	1.39E-4	2.98E-4	1.49E-9	2.01E-9	1.00E-9	2.73E-9
213	614882.9	4201371.5	1.94E-7	2.82E-7	1.52E-7	3.41E-7	2.26E-4	2.88E-4	1.42E-4	3.08E-4	1.55E-9	2.07E-9	1.04E-9	2.78E-9
214	614902.9	4201371.5	2.03E-7	2.96E-7	1.60E-7	3.60E-7	2.31E-4	2.94E-4	1.45E-4	3.19E-4	1.61E-9	2.14E-9	1.08E-9	2.84E-9
215	614922.9	4201371.5	2.12E-7	3.09E-7	1.67E-7	3.77E-7	2.34E-4	3.01E-4	1.49E-4	3.30E-4	1.66E-9	2.20E-9	1.13E-9	2.88E-9
216	614942.9	4201371.5	2.22E-7	3.22E-7	1.74E-7	3.95E-7	2.35E-4	3.08E-4	1.52E-4	3.42E-4	1.72E-9	2.27E-9	1.17E-9	2.91E-9
217	614962.9	4201371.5	2.31E-7	3.36E-7	1.82E-7	4.13E-7	2.36E-4	3.15E-4	1.55E-4	3.55E-4	1.78E-9	2.34E-9	1.23E-9	2.94E-9
218	614982.9	4201371.5	2.40E-7	3.50E-7	1.89E-7	4.31E-7	2.36E-4	3.22E-4	1.58E-4	3.69E-4	1.85E-9	2.41E-9	1.29E-9	2.96E-9
219	615002.9	4201371.5	2.49E-7	3.62E-7	1.96E-7	4.48E-7	2.36E-4	3.30E-4	1.62E-4	3.84E-4	1.92E-9	2.48E-9	1.35E-9	2.98E-9
220	615022.9	4201371.5	2.57E-7	3.74E-7	2.03E-7	4.64E-7	2.37E-4	3.38E-4	1.65E-4	4.00E-4	1.99E-9	2.56E-9	1.43E-9	3.00E-9
221	615042.9	4201371.5	2.65E-7	3.85E-7	2.08E-7	4.80E-7	2.38E-4	3.47E-4	1.69E-4	4.17E-4	2.07E-9	2.64E-9	1.51E-9	3.02E-9
222	615062.9	4201371.5	2.71E-7	3.93E-7	2.13E-7	4.94E-7	2.40E-4	3.56E-4	1.73E-4	4.36E-4	2.15E-9	2.72E-9	1.60E-9	3.05E-9
223	615082.9	4201371.5	2.75E-7	4.00E-7	2.17E-7	5.07E-7	2.42E-4	3.66E-4	1.77E-4	4.56E-4	2.24E-9	2.81E-9	1.71E-9	3.08E-9
224	615102.9	4201371.5	2.78E-7	4.04E-7	2.19E-7	5.19E-7	2.46E-4	3.77E-4	1.81E-4	4.78E-4	2.33E-9	2.89E-9	1.83E-9	3.12E-9
225	615122.9	4201371.5	2.80E-7	4.07E-7	2.21E-7	5.30E-7	2.50E-4	3.88E-4	1.85E-4	5.01E-4	2.43E-9	2.98E-9	1.96E-9	3.17E-9
226	615142.9	4201371.5	2.82E-7	4.09E-7	2.22E-7	5.39E-7	2.54E-4	4.00E-4	1.89E-4	5.26E-4	2.54E-9	3.07E-9	2.10E-9	3.21E-9
227	615162.9	4201371.5	2.82E-7	4.10E-7	2.22E-7	5.48E-7	2.59E-4	4.13E-4	1.93E-4	5.53E-4	2.64E-9	3.15E-9	2.26E-9	3.26E-9
228	615182.9	4201371.5	2.81E-7	4.09E-7	2.21E-7	5.55E-7	2.64E-4	4.25E-4	1.98E-4	5.81E-4	2.74E-9	3.23E-9	2.44E-9	3.31E-9
229	615202.9	4201371.5	2.81E-7	4.08E-7	2.21E-7	5.61E-7	2.68E-4	4.36E-4	2.02E-4	6.10E-4	2.84E-9	3.30E-9	2.64E-9	3.35E-9
230	615222.9	4201371.5	2.80E-7	4.07E-7	2.20E-7	5.67E-7	2.71E-4	4.47E-4	2.06E-4	6.42E-4	2.93E-9	3.36E-9	2.85E-9	3.38E-9
231	615242.9	4201371.5	2.79E-7	4.06E-7	2.20E-7	5.72E-7	2.72E-4	4.57E-4	2.10E-4	6.76E-4	3.00E-9	3.42E-9	3.08E-9	3.40E-9
232	615262.9	4201371.5	2.78E-7	4.04E-7	2.19E-7	5.77E-7	2.73E-4	4.66E-4	2.15E-4	7.14E-4	3.05E-9	3.48E-9	3.33E-9	3.42E-9
233	615282.9	4201371.5	2.76E-7	4.01E-7	2.17E-7	5.80E-7	2.72E-4	4.73E-4	2.20E-4	7.56E-4	3.08E-9	3.53E-9	3.58E-9	3.43E-9
234	615302.9	4201371.5	2.73E-7	3.97E-7	2.15E-7	5.84E-7	2.72E-4	4.80E-4	2.24E-4	8.03E-4	3.10E-9	3.59E-9	3.86E-9	3.44E-9
235	615322.9	4201371.5	2.70E-7	3.92E-7	2.12E-7	5.89E-7	2.72E-4	4.85E-4	2.29E-4	8.57E-4	3.09E-9	3.64E-9	4.14E-9	3.45E-9
236	615342.9	4201371.5	2.65E-7	3.85E-7	2.08E-7	5.90E-7	2.73E-4	4.90E-4	2.33E-4	9.15E-4	3.07E-9	3.71E-9	4.43E-9	3.46E-9
237	615362.9	4201371.5	2.59E-7	3.76E-7	2.04E-7	5.91E-7	2.74E-4	4.94E-4	2.37E-4	9.78E-4	3.04E-9	3.73E-9	4.74E-9	3.47E-9
238	615382.9	4201371.5	2.53E-7	3.67E-7	1.99E-7	5.91E-7	2.75E-4	5.00E-4	2.41E-4	1.04E-3	3.01E-9	3.73E-9	5.10E-9	3.48E-9
239	615402.9	4201371.5	2.46E-7	3.58E-7	1.94E-7	5.91E-7	2.76E-4	5.07E-4	2.44E-4	1.11E-3	2.98E-9	3.72E-9	5.54E-9	3.50E-9
240	615422.9	4201371.5	2.40E-7	3.48E-7	1.89E-7	5.91E-7	2.76E-4	5.16E-4	2.46E-4	1.18E-3	2.96E-9	3.69E-9	6.11E-9	3.51E-9
241	615442.9	4201371.5	2.33E-7	3.38E-7	1.83E-7	5.89E-7	2.77E-4	5.26E-4	2.49E-4	1.25E-3	2.93E-9	3.66E-9	6.84E-9	3.52E-9
242	614602.9	4201391.5	8.46E-8	1.23E-7	6.66E-8	1.36E-7	1.67E-4	2.24E-4	1.11E-4	2.06E-4	1.12E-9	1.53E-9	7.57E-10	2.11E-9
243	614802.9	4201391.5	1.75E-7	2.54E-7	1.38E-7	3.06E-7	2.04E-4	2.68E-4	1.33E-4	2.73E-4	1.36E-9	1.88E-9	9.32E-10	2.58E-9

244	614822.9	4201391.5	1.88E-7	2.73E-7	1.48E-7	3.30E-7	2.10E-4	2.73E-4	1.35E-4	2.82E-4	1.40E-9	1.93E-9	9.57E-10	2.64E-9
245	614842.9	4201391.5	2.00E-7	2.90E-7	1.57E-7	3.53E-7	2.17E-4	2.79E-4	1.38E-4	2.91E-4	1.45E-9	1.98E-9	9.85E-10	2.71E-9
246	614862.9	4201391.5	2.12E-7	3.09E-7	1.67E-7	3.77E-7	2.24E-4	2.87E-4	1.42E-4	3.01E-4	1.50E-9	2.04E-9	1.02E-9	2.78E-9
247	614882.9	4201391.5	2.24E-7	3.26E-7	1.77E-7	4.00E-7	2.30E-4	2.93E-4	1.45E-4	3.11E-4	1.55E-9	2.10E-9	1.05E-9	2.84E-9
248	614902.9	4201391.5	2.36E-7	3.43E-7	1.86E-7	4.22E-7	2.36E-4	2.99E-4	1.48E-4	3.22E-4	1.61E-9	2.16E-9	1.09E-9	2.90E-9
249	614922.9	4201391.5	2.48E-7	3.60E-7	1.95E-7	4.45E-7	2.40E-4	3.06E-4	1.51E-4	3.34E-4	1.67E-9	2.22E-9	1.13E-9	2.95E-9
250	614942.9	4201391.5	2.60E-7	3.78E-7	2.05E-7	4.68E-7	2.43E-4	3.13E-4	1.54E-4	3.46E-4	1.73E-9	2.29E-9	1.17E-9	2.99E-9
251	614962.9	4201391.5	2.72E-7	3.95E-7	2.14E-7	4.90E-7	2.44E-4	3.20E-4	1.58E-4	3.59E-4	1.79E-9	2.36E-9	1.22E-9	3.03E-9
252	614982.9	4201391.5	2.83E-7	4.11E-7	2.23E-7	5.11E-7	2.44E-4	3.28E-4	1.61E-4	3.73E-4	1.86E-9	2.43E-9	1.27E-9	3.05E-9
253	615002.9	4201391.5	2.93E-7	4.26E-7	2.31E-7	5.31E-7	2.44E-4	3.36E-4	1.65E-4	3.88E-4	1.93E-9	2.50E-9	1.33E-9	3.07E-9
254	615022.9	4201391.5	3.03E-7	4.40E-7	2.38E-7	5.50E-7	2.45E-4	3.45E-4	1.69E-4	4.05E-4	2.00E-9	2.58E-9	1.39E-9	3.10E-9
255	615042.9	4201391.5	3.11E-7	4.52E-7	2.45E-7	5.66E-7	2.45E-4	3.53E-4	1.72E-4	4.22E-4	2.08E-9	2.66E-9	1.47E-9	3.12E-9
256	615062.9	4201391.5	3.18E-7	4.62E-7	2.50E-7	5.82E-7	2.47E-4	3.63E-4	1.76E-4	4.41E-4	2.17E-9	2.74E-9	1.55E-9	3.14E-9
257	615082.9	4201391.5	3.23E-7	4.69E-7	2.54E-7	5.95E-7	2.50E-4	3.73E-4	1.80E-4	4.62E-4	2.26E-9	2.83E-9	1.64E-9	3.18E-9
258	615102.9	4201391.5	3.25E-7	4.73E-7	2.56E-7	6.07E-7	2.53E-4	3.84E-4	1.85E-4	4.84E-4	2.36E-9	2.92E-9	1.75E-9	3.21E-9
259	615122.9	4201391.5	3.27E-7	4.75E-7	2.57E-7	6.17E-7	2.57E-4	3.96E-4	1.89E-4	5.09E-4	2.46E-9	3.01E-9	1.87E-9	3.26E-9
260	615142.9	4201391.5	3.27E-7	4.76E-7	2.58E-7	6.27E-7	2.61E-4	4.08E-4	1.93E-4	5.36E-4	2.56E-9	3.11E-9	2.00E-9	3.31E-9
261	615162.9	4201391.5	3.26E-7	4.75E-7	2.57E-7	6.35E-7	2.66E-4	4.21E-4	1.98E-4	5.64E-4	2.67E-9	3.20E-9	2.15E-9	3.36E-9
262	615182.9	4201391.5	3.25E-7	4.72E-7	2.56E-7	6.42E-7	2.71E-4	4.34E-4	2.02E-4	5.95E-4	2.78E-9	3.28E-9	2.32E-9	3.41E-9
263	615202.9	4201391.5	3.23E-7	4.69E-7	2.54E-7	6.48E-7	2.76E-4	4.47E-4	2.07E-4	6.27E-4	2.89E-9	3.36E-9	2.51E-9	3.45E-9
264	615222.9	4201391.5	3.21E-7	4.66E-7	2.52E-7	6.53E-7	2.79E-4	4.59E-4	2.11E-4	6.62E-4	2.99E-9	3.44E-9	2.73E-9	3.49E-9
265	615242.9	4201391.5	3.19E-7	4.64E-7	2.51E-7	6.59E-7	2.81E-4	4.71E-4	2.16E-4	7.00E-4	3.08E-9	3.51E-9	2.97E-9	3.52E-9
266	615262.9	4201391.5	3.18E-7	4.62E-7	2.50E-7	6.65E-7	2.82E-4	4.81E-4	2.21E-4	7.43E-4	3.15E-9	3.57E-9	3.23E-9	3.54E-9
267	615282.9	4201391.5	3.14E-7	4.57E-7	2.47E-7	6.68E-7	2.82E-4	4.90E-4	2.26E-4	7.88E-4	3.20E-9	3.63E-9	3.52E-9	3.55E-9
268	615302.9	4201391.5	3.09E-7	4.49E-7	2.43E-7	6.71E-7	2.82E-4	4.98E-4	2.31E-4	8.40E-4	3.23E-9	3.69E-9	3.82E-9	3.56E-9
269	615322.9	4201391.5	3.03E-7	4.40E-7	2.38E-7	6.73E-7	2.82E-4	5.04E-4	2.36E-4	8.98E-4	3.23E-9	3.77E-9	4.15E-9	3.57E-9
270	615342.9	4201391.5	2.95E-7	4.29E-7	2.32E-7	6.74E-7	2.82E-4	5.10E-4	2.41E-4	9.64E-4	3.22E-9	3.82E-9	4.49E-9	3.58E-9
271	615362.9	4201391.5	2.87E-7	4.17E-7	2.26E-7	6.74E-7	2.83E-4	5.15E-4	2.45E-4	1.04E-3	3.19E-9	3.86E-9	4.85E-9	3.59E-9
272	615382.9	4201391.5	2.79E-7	4.05E-7	2.19E-7	6.74E-7	2.84E-4	5.20E-4	2.49E-4	1.11E-3	3.16E-9	3.88E-9	5.23E-9	3.60E-9
273	615402.9	4201391.5	2.70E-7	3.92E-7	2.12E-7	6.73E-7	2.85E-4	5.27E-4	2.53E-4	1.19E-3	3.13E-9	3.88E-9	5.67E-9	3.62E-9
274	615422.9	4201391.5	2.61E-7	3.80E-7	2.06E-7	6.72E-7	2.86E-4	5.36E-4	2.56E-4	1.28E-3	3.10E-9	3.86E-9	6.20E-9	3.63E-9
275	615442.9	4201391.5	2.52E-7	3.67E-7	1.98E-7	6.70E-7	2.86E-4	5.46E-4	2.59E-4	1.36E-3	3.07E-9	3.83E-9	6.87E-9	3.65E-9
276	614602.9	4201411.5	8.81E-8	1.28E-7	6.93E-8	1.42E-7	1.70E-4	2.27E-4	1.12E-4	2.07E-4	1.14E-9	1.54E-9	7.87E-10	2.14E-9
277	614622.9	4201411.5	9.65E-8	1.40E-7	7.59E-8	1.57E-7	1.73E-4	2.31E-4	1.15E-4	2.13E-4	1.15E-9	1.57E-9	8.02E-10	2.18E-9
278	614802.9	4201411.5	2.02E-7	2.94E-7	1.59E-7	3.59E-7	2.06E-4	2.73E-4	1.35E-4	2.75E-4	1.37E-9	1.90E-9	9.64E-10	2.62E-9
279	614822.9	4201411.5	2.18E-7	3.17E-7	1.72E-7	3.89E-7	2.13E-4	2.79E-4	1.38E-4	2.84E-4	1.41E-9	1.95E-9	9.89E-10	2.69E-9
280	614842.9	4201411.5	2.34E-7	3.40E-7	1.84E-7	4.20E-7	2.20E-4	2.86E-4	1.41E-4	2.94E-4	1.45E-9	2.00E-9	1.02E-9	2.76E-9
281	614862.9	4201411.5	2.50E-7	3.63E-7	1.97E-7	4.49E-7	2.27E-4	2.92E-4	1.44E-4	3.04E-4	1.51E-9	2.06E-9	1.05E-9	2.83E-9
282	614882.9	4201411.5	2.65E-7	3.86E-7	2.09E-7	4.79E-7	2.34E-4	2.98E-4	1.48E-4	3.15E-4	1.56E-9	2.12E-9	1.08E-9	2.90E-9
283	614902.9	4201411.5	2.81E-7	4.09E-7	2.21E-7	5.09E-7	2.40E-4	3.05E-4	1.51E-4	3.26E-4	1.61E-9	2.18E-9	1.11E-9	2.96E-9
284	614922.9	4201411.5	2.97E-7	4.31E-7	2.33E-7	5.38E-7	2.46E-4	3.12E-4	1.54E-4	3.37E-4	1.67E-9	2.25E-9	1.15E-9	3.02E-9
285	614942.9	4201411.5	3.12E-7	4.53E-7	2.45E-7	5.67E-7	2.49E-4	3.19E-4	1.57E-4	3.50E-4	1.74E-9	2.31E-9	1.18E-9	3.07E-9
286	614962.9	4201411.5	3.26E-7	4.73E-7	2.56E-7	5.93E-7	2.52E-4	3.27E-4	1.61E-4	3.63E-4	1.80E-9	2.38E-9	1.23E-9	3.11E-9
287	614982.9	4201411.5	3.38E-7	4.92E-7	2.66E-7	6.18E-7	2.53E-4	3.34E-4	1.64E-4	3.78E-4	1.87E-9	2.45E-9	1.27E-9	3.14E-9
288	615002.9	4201411.5	3.50E-7	5.09E-7	2.76E-7	6.40E-7	2.53E-4	3.43E-4	1.68E-4	3.93E-4	1.94E-9	2.52E-9	1.33E-9	3.17E-9
289	615022.9	4201411.5	3.61E-7	5.24E-7	2.84E-7	6.60E-7	2.53E-4	3.51E-4	1.72E-4	4.10E-4	2.01E-9	2.60E-9	1.38E-9	3.19E-9
290	615042.9	4201411.5	3.70E-7	5.37E-7	2.91E-7	6.77E-7	2.54E-4	3.61E-4	1.76E-4	4.27E-4	2.09E-9	2.68E-9	1.45E-9	3.22E-9
291	615062.9	4201411.5	3.77E-7	5.48E-7	2.97E-7	6.92E-7	2.55E-4	3.70E-4	1.80E-4	4.47E-4	2.18E-9	2.76E-9	1.52E-9	3.24E-9
292	615082.9	4201411.5	3.82E-7	5.56E-7	3.01E-7	7.06E-7	2.57E-4	3.81E-4	1.84E-4	4.68E-4	2.28E-9	2.85E-9	1.60E-9	3.27E-9
293	615102.9	4201411.5	3.85E-7	5.60E-7	3.03E-7	7.17E-7	2.60E-4	3.92E-4	1.88E-4	4.91E-4	2.38E-9	2.94E-9	1.70E-9	3.31E-9
294	615122.9	4201411.5	3.86E-7	5.61E-7	3.04E-7	7.27E-7	2.64E-4	4.04E-4	1.93E-4	5.16E-4	2.48E-9	3.04E-9	1.80E-9	3.36E-9
295	615142.9	4201411.5	3.85E-7	5.59E-7	3.03E-7	7.36E-7	2.69E-4	4.17E-4	1.98E-4	5.44E-4	2.59E-9	3.14E-9	1.92E-9	3.41E-9
296	615162.9	4201411.5	3.82E-7	5.56E-7	3.01E-7	7.43E-7	2.74E-4	4.30E-4	2.02E-4	5.74E-4	2.71E-9	3.24E-9	2.06E-9	3.46E-9
297	615182.9	4201411.5	3.79E-7	5.51E-7	2.98E-7	7.50E-7	2.79E-4	4.44E-4	2.07E-4	6.07E-4	2.82E-9	3.33E-9	2.21E-9	3.51E-9
298	615202.9	4201411.5	3.75E-7	5.45E-7	2.95E-7	7.55E-7	2.84E-4	4.58E-4	2.12E-4	6.42E-4	2.94E-9	3.43E-9	2.39E-9	3.56E-9
299	615222.9	4201411.5	3.72E-7	5.41E-7	2.93E-7	7.61E-7	2.88E-4	4.71E-4	2.17E-4	6.81E-4	3.05E-9	3.51E-9	2.60E-9	3.60E-9
300	615242.9	4201411.5	3.69E-7	5.37E-7	2.91E-7	7.67E-7	2.91E-4	4.85E-4	2.22E-4	7.23E-4	3.15E-9	3.59E-9	2.83E-9	3.64E-9
301	615262.9	4201411.5	3.66E-7	5.31E-7	2.88E-7	7.72E-7	2.92E-4	4.97E-4	2.27E-4	7.69E-4	3.24E-9	3.67E-9	3.09E-9	3.66E-9
302	615282.9	4201411.5	3.59E-7	5.22E-7	2.83E-7	7.74E-7	2.92E-4	5.07E-4	2.32E-4	8.19E-4	3.31E-9	3.75E-9	3.38E-9	3.68E-9
303	615302.9	4201411.5	3.51E-7	5.11E-7	2.76E-7	7.76E-7	2.92E-4	5.16E-4	2.38E-4	8.76E-4	3.35E-9	3.82E-9	3.70E-9	3.69E-9
304	615322.9	4201411.5	3.42E-7	4.96E-7	2.69E-7	7.77E-7	2.92E-4	5.24E-4	2.43E-4	9.40E-4	3.37E-9	3.88E-9	4.06E-9	3.70E-9
305	615342.9	4201411.5	3.31E-7	4.81E-7	2.60E-7	7.77E-7	2.92E-4	5.31E-4	2.48E-4	1.01E-3	3.37E-9	3.94E-9	4.45E-9	3.71E-9
306	615362.9	4201411.5	3.19E-7	4.64E-7	2.51E-7	7.77E-7	2.93E-4	5.36E-4	2.54E-4	1.10E-3	3.35E-9	3.99E-9	4.86E-9	3.72E-9
307	615382.9	4201411.5	3.08E-7	4.48E-7	2.42E-7	7.76E-7	2.94E-4	5.42E-4	2.58E-4	1.19E-3	3.32E-9	4.03E-9	5.31E-9	3.73E-9
308	615402.9	4201411.5	2.96E-7	4.31E-7	2.33E-7	7.75E-7	2.95E-4	5.49E-4	2.63E-4	1.29E-3	3.29E-9	4.05E-9	5.80E-9	3.75E-9
309	615422.9	4201411.5	2.85E-7	4.14E-7	2.24E-7	7.73E-7	2.96E-4	5.57E-4	2.66E-4	1.39E-3	3.25E-9	4.04E-9	6.34E-9	3.76E-9
310	615442.9	4201411.5	2.73E-7	3.96E-7	2.15E-7	7.71E-7	2.97E-4	5.67E-4	2.69E-4	1.50E-3	3.22E-9	4.02E-9	6.99E-9	3.78E-9
311	615462.9	4201411.5	2.61E-7	3.79E-7	2.05E-7	7.67E-7	2.97E-4	5.78E-4	2.72E-4	1.61E-3	3.19E-9	3.99E-9	7.81E-9	3.79E-9
312	614622.9	4201431.5	1.01E-7	1.47E-7	7.97E-8	1.65E-7	1.76E-4	2.34E-4	1.16E-4	2.14E-4	1.17E-9	1.58E-9	8.41E-10	2.22E-9
313	614642.9	4201431.5	1.13E-7	1.64E-7	8.88E-8	1.87E-7	1.79E-4	2.39E-4	1.18E-4	2.20E-4	1.19E-9	1.62E-9	8.58E-10	2.26E-9
314	614662.9	4201431.5	1.25E-7	1.82E-7	9.87E-8	2.11E-7	1.82E-4	2.43E-4	1.20E-4	2.26E-4	1.21E-9	1.65E-9	8.74E-10	2.30E-9
315	614802.9	4201431.5	2.40E-7	3.49E-7	1.89E-7	4.32E-7	2.09E-4	2.78E-4	1.37E-4	2.78E-4	1.38E-9	1.92E-9	1.01E-9	2.66E-9
316	614822.9	4201431.5	2.61E-7	3.79E-7	2.05E-7	4.73E-7	2.16E-4	2.85E-4	1.40E-4	2.87E-4	1.42E-9	1.97E-9	1.03E-9	2.73E-9
317	614842.9	4201431.5	2.82E-7	4.10E-7	2.22E-7	5.14E-7	2.23E-4	2.91E-4	1.44E-4	2.97E-4	1.47E-9	2.03E-9	1.06E-9	2.81E-9
318	614862.9	4201431.5	3.03E-7	4.40E-7	2.38E-7	5.53E-7	2.30E-4	2.97E-4	1.47E-4	3.07E-4	1.51E-9	2.08E-9	1.09E-9	2.88E-9
319	614882.9	4201431.5	3.24E-7	4.71E-7	2.55E-7	5.93E-7	2.38E-4	3.04E-4	1.50E-4	3.17E-4	1.57E-9	2.14E-9	1.12E-9	2.96E-9
320	614902.9	4201431.5	3.45E-7	5.01E-7	2.71E-7	6.33E-7	2.45E-4	3.11E-4	1.53E-4	3.29E-4	1.62E-9	2.21E-9	1.15E-9	3.03E-9
321	614922.9	4201431.5	3.64E-7	5.30E-7	2.87E-7	6.70E-7	2.51E-4	3.18E-4	1.57E-4	3.41E-4	1.68E-9	2.27E-9	1.18E-9	3.09E-9
322	614942.9	4201431.5	3.82E-7	5.56E-7	3.01E-7	7.04E-7	2.56E-4	3.25E-4	1.60E-4	3.54E-4	1.74E-9	2.34E-9	1.22E-9	3.15E-9
323	614962.9	4201431.5	3.99E-7	5.79E-7	3.14E-7	7.34E-7	2.59E-4	3.33E-4	1.64E-4	3.67E-4	1.81E-9	2.41E-9	1.26E-9	3.20E-9
324	614982.9	4201431.5	4.13E-7	6.00E-7	3.25E-7	7.61E-7	2.61E-4	3.41E-4	1.68E-4	3.82E-4	1.88E-9	2.48E-9	1.30E-9	3.24E-9
325	615002.9	4201431.5	4.25E-7	6.18E-7	3.35E-7	7.84E-7	2.62E-4	3.49E-4	1.71E-4	3.98E-4	1.95E-9	2.56E-9	1.35E-9	3.27E-9
326	615022.9	4201431.5	4.36E-7	6.34E-7	3.43E-7	8.04E-7	2.63E-4	3.58E-4	1.75E-4	4.15E-4	2.02E-9	2.63E-9	1.40E-9	3.30E-9
327	615042.9	4201431.5	4.45E-7	6.48E-7	3.51E-7	8.21E-7	2.63E-4	3.68E-4	1.79E-4	4.33E-4	2.11E-9	2.71E-9	1.46E-9	3.32E-9
328	615062.9	4201431.5	4.53E-7	6.59E-7	3.57E-7	8.36E-7	2.64E-4	3.78E-4	1.83E-4	4.53E-4	2.20E-9	2.79E-9	1.53E-9	3.35E-9
329	615082.9	4201431.5	4.59E-7	6.67E-7	3.61E-7	8.48E-7	2.66E-4	3.89E-4	1.88E-4	4.74E-4	2.29E-9	2.88E-9	1.60E-9	3.38E-9
330	615102.9	4201431.5	4.62E-7	6.72E-7	3.64E-7	8.59E-7	2.69E-4	4.00E-4	1.92E-4	4.98E-4	2.39E-9	2.97E-9	1.68E-9	3.42E-9
331	615122.9	4201431.5	4.62E-7	6.71E-7	3.63E-7	8.68E-7	2.72E-4	4.12E-4	1.97E-4	5.24E-4	2.50E-9	3.07E-9	1.77E-9	3.46E-9
332	615142.9	4201431.5	4.59E-7	6.67E-7	3.61E-7	8.76E-7	2.77E-4	4.25E-4	2.02E-4	5.52E-4	2.62E-9	3.17E-9	1.88E-9	3.51E-9
333	615162.9	4201431.5	4.55E-7	6.61E-7	3.58E-7	8.82E-7	2.82E-4	4.39E-4	2.07E-4	5.83E-4	2.74E-9	3.28E-9	2.00E-9	3.56E-9
334	615182.9	4201431.5	4.49E-7	6.52E-7	3.53E-7	8.87E-7	2.88E-4	4.54E-4	2.12E-4	6.17E-4	2.86E-9	3.38E-9	2.13E-9	3.62E-9
335	615202.9	4201431.5	4.42E-7	6.42E-7	3.48E-7	8.91E-7	2.93E-4	4.69E-4	2.17E-4	6.55E-4	2.98E-9	3.48E-9	2.29E-9	3.67E-9
336	615222.9	4201431.5	4.38E-7	6.36E-7	3.44E-7	9.00E-7	2.98E-4	4.84E-4	2.23E-4	6.98E-4	3.11E-9	3.59E-9	2.48E-9	3.72E-9
337	615242.9	4201431.5	4.33E-7	6.29E-7	3.40E-7	9.05E-7	3.01E-4	4.98E-4	2.28E-4	7.44E-4	3.22E-9	3.70E-9	2.69E-9	3.76E-9
338	615262.9	4201431.5	4.25E-7	6.18E-7	3.34E-7	9.07E-7	3.03E-4	5.12E-4	2.34E-4	7.95E-4	3.33E-9	3.78E-9	2.94E-9	3.79E-9
339	615282.9	4201431.5	4.15E-7	6.03E-7	3.27E-7	9.08E-7	3.03E-4	5.24E-4	2.39E-4	8.50E-4	3.41E-9	3.86E-9	3.22E-9	3.81E-9
340	615302.9	4201431.5	4.02E-7	5.85E-7	3.17E-7	9.09E-7	3.03E-4	5.35E-4	2.45E-4	9.12E-4	3.48E-9	3.93E-9	3.54E-9	3.82E-9
341	615322.9	4201431.5	3.88E-7	5.64E-7	3.05E-7	9.09E-7	3.03E-4	5.44E-4	2.50E-4	9.82E-4	3.52E-9	4.00E-9	3.90E-9	3.83E-9
342	615342.9	4201431.5	3.73E-7	5.42E-7	2.93E-7	9.09E-7	3.03E-4	5.52E-4	2.56E-4	1.06E-3	3.53E-9	4.06E-9	4.31E-9	3.84E-9
343	615362.9	4201431.5	3.57E-7	5.19E-7	2.81E-7	9.08E-7	3.04E-4	5.59E-4	2.62E-4	1.16E-3	3.52E-9	4.13E-9	4.76E-9	3.85E-9
344	615382.9	4201431.5	3.41E-7	4.96E-7	2.68E-7	9.06E-7	3.05E-4	5.66E-4	2.67E-4	1.27E-3	3.49E-9	4.18E-9	5.27E-9	3.87E-9
345	615402.9	4201431.5	3.25E-7	4.72E-7	2.56E-7	9.04E-7	3.06E-4	5.73E-4	2.72E-4	1.39E-3	3.46E-9	4.21E-9	5.83E-9	3.88E-9
346	615422.9	4201431.5	3.09E-7	4.49E-7	2.43E-7	9.01E-7	3.07E-4	5.81E-4	2.77E-4	1.52E-3	3.42E-9	4.23E-9	6.44E-9	3.90E-9
347	615442.9	4201431.5	2.93E-7	4.27E-7	2.31E-7	8.98E-7	3.08E-4	5.91E-4	2.81E-4	1.66E-3	3.39E-9	4.21E-9	7.12E-9	3.92E-9
348	615462.9	4201431.5	2.79E-7	4.05E-7	2.19E-7	8.94E-7	3.08E-4	6.02E-4	2.84E-4	1.80E-3	3.36E-9	4.19E-9	7.94E-9	3.93E-9
349	614662.9	4201451.5	1.37E-7	1.99E-7	1.07E-7	2.32E-7	1.86E-4	2.47E-4	1.22E-4	2.28E-4	1.23E-9	1.66E-9	9.24E-10	2.34E-9
350	614682.9	4201451.5	1.54E-7	2.24E-7	1.21E-7	2.66E-7	1.89E-4	2.52E-4	1.24E-4	2.34E-4	1.25E-9	1.70E-9	9.40E-10	2.39E-9
351	614822.9	4201451.5	3.24E-7	4.71E-7	2.55E-7	5.99E-7	2.19E-4	2.90E-4	1.43E-4	2.89E-4	1.44E-9	1.99E-9	1.09E-9	2.78E-9
352	614842.9	4201451.5	3.53E-7	5.13E-7	2.78E-7	6.55E-7	2.26E-4	2.97E-4	1.46E-4	2.99E-4	1.48E-9	2.05E-9	1.12E-9	2.86E-9
353	614862.9	4201451.5	3.82E-7	5.56E-7	3.01E-7	7.12E-7	2.33E-4	3.03E-4	1.49E-4	3.10E-4	1.52E-9	2.11E-9	1.15E-9	2.93E-9
354	614882.9	4201451.5	4.11E-7	5.97E-7	3.23E-7	7.66E-7	2.41E-4	3.10E-4	1.53E-4	3.20E-4	1.57E-9	2.16E-9	1.18E-9	3.01E-9
355	614902.9	4201451.5	4.37E-7	6.35E-7	3.44E-7	8.16E-7	2.49E-4	3.17E-4	1.56E-4	3.32E-4	1.63E-9	2.23E-9	1.21E-9	3.09E-9
356	614922.9	4201451.5	4.61E-7	6.69E-7	3.62E-7	8.60E-7	2.56E-4	3.24E-4	1.60E-4	3.44E-4	1.69E-9	2.30E-9	1.24E-9	3.16E-9
357	614942.9	4201451.5	4.81E-7	6.99E-7	3.79E-7	8.97E-7	2.62E-4	3.32E-4	1.63E-4	3.57E-4	1.75E-9	2.37E-9	1.28E-9	3.23E-9
358	614962.9	4201451.5	4.99E-7	7.25E-7	3.93E-7	9.29E-7	2.67E-4	3.40E-4	1.67E-4	3.71E-4	1.82E-9	2.44E-9	1.32E-9	3.29E-9
359	614982.9	4201451.5	5.14E-7	7.47E-7	4.04E-7	9.56E-7	2.70E-4	3.48E-4	1.71E-4	3.86E-4	1.88E-9	2.51E-9	1.36E-9	3.34E-9
360	615002.9	4201451.5	5.27E-7	7.65E-7	4.14E-7	9.79E-7	2.72E-4	3.57E-4	1.75E-4	4.03E-4	1.96E-9	2.59E-9	1.40E-9	3.38E-9
361	615022.9	4201451.5	5.38E-7	7.81E-7	4.23E-7	9.98E-7	2.72E-4	3.66E-4	1.79E-4	4.20E-4	2.04E-9	2.66E-9	1.45E-9	3.41E-9
362	615042.9	4201451.5	5.47E-7	7.95E-7	4.30E-7	1.01E-6	2.73E-4	3.75E-4	1.83E-4	4.38E-4	2.12E-9	2.74E-9	1.50E-9	3.44E-9
363	615062.9	4201451.5	5.54E-7	8.06E-7	4.36E-7	1.03E-6	2.73E-4	3.86E-4	1.87E-4	4.59E-4	2.21E-9	2.82E-9	1.56E-9	3.46E-9
364	615082.9	4201451.5	5.60E-7	8.14E-7	4.41E-7	1.04E-6	2.75E-4	3.97E-4	1.92E-4	4.81E-4	2.30E-9	2.91E-9	1.63E-9	3.49E-9
365	615102.9	4201451.5	5.64E-7	8.19E-7	4.44E-7	1.05E-6	2.77E-4	4.08E-4	1.96E-4	5.05E-4	2.41E-9	3.00E-9	1.70E-9	3.53E-9
366	615122.9	4201451.5	5.63E-7	8.19E-7	4.43E-7	1.05E-6	2.81E-4	4.21E-4	2.01E-4	5.31E-4	2.52E-9	3.10E-9	1.78E-9	3.57E-9
367	615142.9	4201451.5	5.59E-7	8.12E-7	4.40E-7	1.06E-6	2.85E-4	4.34E-4	2.06E-4	5.60E-4	2.64E-9	3.20E-9	1.88E-9	3.62E-9
368	615162.9	4201451.5	5.51E-7	8.01E-7	4.34E-7	1.06E-6	2.91E-4	4.49E-4	2.12E-4	5.92E-4	2.77E-9	3.31E-9	1.98E-9	3.68E-9
369	615182.9	4201451.5	5.41E-7	7.87E-7	4.26E-7	1.07E-6	2.96E-4	4.64E-4	2.17E-4	6.27E-4	2.90E-9	3.42E-9	2.10E-9	3.74E-9

370	615202.9	4201451.5	5.30E-7	7.71E-7	4.17E-7	1.07E-6	3.02E-4	4.80E-4	2.23E-4	6.66E-4	3.03E-9	3.53E-9	2.24E-9	3.79E-9
371	615222.9	4201451.5	5.23E-7	7.60E-7	4.12E-7	1.08E-6	3.07E-4	4.96E-4	2.29E-4	7.12E-4	3.16E-9	3.65E-9	2.41E-9	3.85E-9
372	615242.9	4201451.5	5.14E-7	7.48E-7	4.05E-7	1.08E-6	3.11E-4	5.12E-4	2.34E-4	7.62E-4	3.29E-9	3.78E-9	2.60E-9	3.89E-9
373	615262.9	4201451.5	5.01E-7	7.29E-7	3.95E-7	1.08E-6	3.14E-4	5.27E-4	2.40E-4	8.17E-4	3.41E-9	3.87E-9	2.81E-9	3.93E-9
374	615282.9	4201451.5	4.85E-7	7.06E-7	3.82E-7	1.08E-6	3.14E-4	5.41E-4	2.46E-4	8.78E-4	3.51E-9	3.96E-9	3.07E-9	3.95E-9
375	615302.9	4201451.5	4.66E-7	6.77E-7	3.66E-7	1.08E-6	3.14E-4	5.54E-4	2.52E-4	9.47E-4	3.60E-9	4.04E-9	3.36E-9	3.96E-9
376	615322.9	4201451.5	4.44E-7	6.45E-7	3.49E-7	1.08E-6	3.14E-4	5.65E-4	2.58E-4	1.02E-3	3.66E-9	4.12E-9	3.71E-9	3.98E-9
377	615342.9	4201451.5	4.22E-7	6.13E-7	3.32E-7	1.08E-6	3.14E-4	5.75E-4	2.64E-4	1.12E-3	3.69E-9	4.19E-9	4.11E-9	3.99E-9
378	615362.9	4201451.5	3.99E-7	5.80E-7	3.14E-7	1.08E-6	3.15E-4	5.84E-4	2.71E-4	1.22E-3	3.70E-9	4.26E-9	4.57E-9	4.00E-9
379	615382.9	4201451.5	3.76E-7	5.47E-7	2.96E-7	1.08E-6	3.16E-4	5.91E-4	2.77E-4	1.35E-3	3.68E-9	4.33E-9	5.11E-9	4.01E-9
380	615402.9	4201451.5	3.54E-7	5.15E-7	2.79E-7	1.07E-6	3.17E-4	5.98E-4	2.83E-4	1.51E-3	3.65E-9	4.38E-9	5.71E-9	4.03E-9
381	615422.9	4201451.5	3.33E-7	4.84E-7	2.62E-7	1.07E-6	3.18E-4	6.06E-4	2.88E-4	1.67E-3	3.61E-9	4.41E-9	6.40E-9	4.04E-9
382	615442.9	4201451.5	3.13E-7	4.56E-7	2.47E-7	1.06E-6	3.19E-4	6.16E-4	2.92E-4	1.85E-3	3.57E-9	4.42E-9	7.17E-9	4.06E-9
383	615462.9	4201451.5	2.95E-7	4.29E-7	2.33E-7	1.06E-6	3.20E-4	6.28E-4	2.96E-4	2.03E-3	3.53E-9	4.40E-9	8.05E-9	4.08E-9
384	614682.9	4201471.5	1.73E-7	2.51E-7	1.36E-7	3.00E-7	1.93E-4	2.56E-4	1.26E-4	2.36E-4	1.27E-9	1.70E-9	9.96E-10	2.43E-9
385	614702.9	4201471.5	2.00E-7	2.90E-7	1.57E-7	3.54E-7	1.96E-4	2.61E-4	1.28E-4	2.43E-4	1.29E-9	1.74E-9	1.02E-9	2.48E-9
386	614822.9	4201471.5	4.29E-7	6.23E-7	3.37E-7	8.09E-7	2.23E-4	2.96E-4	1.45E-4	2.92E-4	1.46E-9	2.01E-9	1.16E-9	2.83E-9
387	614842.9	4201471.5	4.72E-7	6.86E-7	3.71E-7	8.94E-7	2.29E-4	3.03E-4	1.48E-4	3.02E-4	1.50E-9	2.07E-9	1.19E-9	2.91E-9
388	614862.9	4201471.5	5.09E-7	7.41E-7	4.01E-7	9.68E-7	2.37E-4	3.09E-4	1.52E-4	3.12E-4	1.54E-9	2.13E-9	1.22E-9	2.99E-9
389	614882.9	4201471.5	5.44E-7	7.90E-7	4.28E-7	1.03E-6	2.44E-4	3.16E-4	1.55E-4	3.23E-4	1.59E-9	2.19E-9	1.25E-9	3.07E-9
390	614902.9	4201471.5	5.74E-7	8.35E-7	4.52E-7	1.09E-6	2.53E-4	3.23E-4	1.59E-4	3.35E-4	1.64E-9	2.25E-9	1.28E-9	3.15E-9
391	614922.9	4201471.5	6.00E-7	8.73E-7	4.72E-7	1.14E-6	2.61E-4	3.31E-4	1.62E-4	3.48E-4	1.70E-9	2.32E-9	1.32E-9	3.23E-9
392	614942.9	4201471.5	6.22E-7	9.04E-7	4.89E-7	1.18E-6	2.68E-4	3.38E-4	1.66E-4	3.61E-4	1.76E-9	2.39E-9	1.35E-9	3.31E-9
393	614962.9	4201471.5	6.40E-7	9.30E-7	5.04E-7	1.21E-6	2.74E-4	3.47E-4	1.70E-4	3.76E-4	1.83E-9	2.47E-9	1.39E-9	3.38E-9
394	614982.9	4201471.5	6.55E-7	9.53E-7	5.16E-7	1.23E-6	2.78E-4	3.55E-4	1.74E-4	3.91E-4	1.90E-9	2.55E-9	1.44E-9	3.43E-9
395	615002.9	4201471.5	6.68E-7	9.72E-7	5.26E-7	1.25E-6	2.81E-4	3.64E-4	1.78E-4	4.07E-4	1.97E-9	2.62E-9	1.48E-9	3.48E-9
396	615022.9	4201471.5	6.79E-7	9.87E-7	5.35E-7	1.27E-6	2.82E-4	3.73E-4	1.83E-4	4.25E-4	2.05E-9	2.70E-9	1.53E-9	3.52E-9
397	615042.9	4201471.5	6.88E-7	1.00E-6	5.41E-7	1.28E-6	2.83E-4	3.83E-4	1.87E-4	4.44E-4	2.13E-9	2.78E-9	1.58E-9	3.55E-9
398	615062.9	4201471.5	6.95E-7	1.01E-6	5.47E-7	1.29E-6	2.84E-4	3.94E-4	1.91E-4	4.65E-4	2.22E-9	2.86E-9	1.64E-9	3.58E-9
399	615082.9	4201471.5	7.00E-7	1.02E-6	5.51E-7	1.30E-6	2.85E-4	4.05E-4	1.96E-4	4.87E-4	2.32E-9	2.95E-9	1.70E-9	3.61E-9
400	615102.9	4201471.5	7.04E-7	1.02E-6	5.54E-7	1.31E-6	2.87E-4	4.17E-4	2.01E-4	5.12E-4	2.42E-9	3.04E-9	1.77E-9	3.65E-9
401	615122.9	4201471.5	7.04E-7	1.02E-6	5.54E-7	1.31E-6	2.90E-4	4.30E-4	2.06E-4	5.39E-4	2.54E-9	3.13E-9	1.85E-9	3.69E-9
402	615142.9	4201471.5	6.98E-7	1.01E-6	5.49E-7	1.32E-6	2.94E-4	4.44E-4	2.11E-4	5.69E-4	2.66E-9	3.24E-9	1.93E-9	3.74E-9
403	615162.9	4201471.5	6.86E-7	9.98E-7	5.40E-7	1.32E-6	3.00E-4	4.59E-4	2.16E-4	6.01E-4	2.79E-9	3.35E-9	2.03E-9	3.80E-9
404	615182.9	4201471.5	6.72E-7	9.77E-7	5.29E-7	1.32E-6	3.06E-4	4.75E-4	2.22E-4	6.38E-4	2.93E-9	3.46E-9	2.13E-9	3.86E-9
405	615202.9	4201471.5	6.57E-7	9.55E-7	5.17E-7	1.33E-6	3.12E-4	4.92E-4	2.28E-4	6.79E-4	3.08E-9	3.59E-9	2.26E-9	3.92E-9
406	615222.9	4201471.5	6.42E-7	9.33E-7	5.05E-7	1.33E-6	3.18E-4	5.09E-4	2.35E-4	7.25E-4	3.22E-9	3.71E-9	2.40E-9	3.98E-9
407	615242.9	4201471.5	6.26E-7	9.09E-7	4.92E-7	1.33E-6	3.22E-4	5.26E-4	2.41E-4	7.77E-4	3.36E-9	3.86E-9	2.57E-9	4.03E-9
408	615262.9	4201471.5	6.04E-7	8.77E-7	4.75E-7	1.33E-6	3.25E-4	5.42E-4	2.47E-4	8.35E-4	3.49E-9	3.96E-9	2.76E-9	4.07E-9
409	615282.9	4201471.5	5.76E-7	8.37E-7	4.53E-7	1.33E-6	3.26E-4	5.58E-4	2.53E-4	9.02E-4	3.61E-9	4.06E-9	2.98E-9	4.10E-9
410	615302.9	4201471.5	5.44E-7	7.91E-7	4.28E-7	1.32E-6	3.26E-4	5.73E-4	2.60E-4	9.79E-4	3.71E-9	4.16E-9	3.24E-9	4.11E-9
411	615322.9	4201471.5	5.10E-7	7.42E-7	4.02E-7	1.32E-6	3.26E-4	5.86E-4	2.66E-4	1.07E-3	3.79E-9	4.24E-9	3.55E-9	4.13E-9
412	615342.9	4201471.5	4.76E-7	6.92E-7	3.75E-7	1.32E-6	3.26E-4	5.98E-4	2.73E-4	1.17E-3	3.85E-9	4.32E-9	3.92E-9	4.14E-9
413	615362.9	4201471.5	4.43E-7	6.43E-7	3.48E-7	1.31E-6	3.27E-4	6.09E-4	2.80E-4	1.29E-3	3.88E-9	4.40E-9	4.36E-9	4.15E-9
414	615382.9	4201471.5	4.11E-7	5.97E-7	3.23E-7	1.31E-6	3.28E-4	6.18E-4	2.86E-4	1.44E-3	3.87E-9	4.48E-9	4.87E-9	4.17E-9
415	615402.9	4201471.5	3.82E-7	5.55E-7	3.00E-7	1.30E-6	3.29E-4	6.26E-4	2.93E-4	1.62E-3	3.85E-9	4.55E-9	5.49E-9	4.18E-9
416	615422.9	4201471.5	3.55E-7	5.17E-7	2.80E-7	1.29E-6	3.30E-4	6.34E-4	2.99E-4	1.84E-3	3.81E-9	4.60E-9	6.20E-9	4.20E-9
417	615442.9	4201471.5	3.32E-7	4.82E-7	2.61E-7	1.29E-6	3.31E-4	6.44E-4	3.05E-4	2.07E-3	3.77E-9	4.63E-9	7.04E-9	4.22E-9
418	615462.9	4201471.5	3.11E-7	4.52E-7	2.44E-7	1.28E-6	3.32E-4	6.56E-4	3.10E-4	2.32E-3	3.73E-9	4.63E-9	8.02E-9	4.24E-9
419	614702.9	4201491.5	2.37E-7	3.45E-7	1.87E-7	4.25E-7	2.00E-4	2.65E-4	1.30E-4	2.44E-4	1.31E-9	1.75E-9	1.08E-9	2.53E-9
420	614822.9	4201491.5	6.16E-7	8.96E-7	4.85E-7	1.19E-6	2.27E-4	3.02E-4	1.47E-4	2.95E-4	1.48E-9	2.04E-9	1.24E-9	2.89E-9
421	614842.9	4201491.5	6.77E-7	9.84E-7	5.33E-7	1.31E-6	2.33E-4	3.08E-4	1.51E-4	3.05E-4	1.52E-9	2.10E-9	1.27E-9	2.96E-9
422	614862.9	4201491.5	7.21E-7	1.05E-6	5.68E-7	1.40E-6	2.40E-4	3.15E-4	1.54E-4	3.15E-4	1.56E-9	2.14E-9	1.30E-9	3.04E-9
423	614882.9	4201491.5	7.58E-7	1.10E-6	5.96E-7	1.47E-6	2.48E-4	3.22E-4	1.58E-4	3.27E-4	1.60E-9	2.20E-9	1.34E-9	3.13E-9
424	614902.9	4201491.5	7.90E-7	1.15E-6	6.22E-7	1.52E-6	2.57E-4	3.30E-4	1.61E-4	3.39E-4	1.65E-9	2.27E-9	1.37E-9	3.21E-9
425	614922.9	4201491.5	8.15E-7	1.18E-6	6.41E-7	1.57E-6	2.65E-4	3.38E-4	1.65E-4	3.51E-4	1.71E-9	2.34E-9	1.41E-9	3.30E-9
426	614942.9	4201491.5	8.35E-7	1.21E-6	6.57E-7	1.60E-6	2.73E-4	3.46E-4	1.69E-4	3.65E-4	1.77E-9	2.42E-9	1.45E-9	3.38E-9
427	614962.9	4201491.5	8.53E-7	1.24E-6	6.71E-7	1.63E-6	2.81E-4	3.54E-4	1.73E-4	3.80E-4	1.84E-9	2.50E-9	1.49E-9	3.46E-9
428	614982.9	4201491.5	8.68E-7	1.26E-6	6.83E-7	1.65E-6	2.87E-4	3.63E-4	1.78E-4	3.95E-4	1.91E-9	2.58E-9	1.54E-9	3.53E-9
429	615002.9	4201491.5	8.80E-7	1.28E-6	6.92E-7	1.67E-6	2.90E-4	3.72E-4	1.82E-4	4.12E-4	1.98E-9	2.66E-9	1.59E-9	3.59E-9
430	615022.9	4201491.5	8.90E-7	1.29E-6	7.00E-7	1.68E-6	2.93E-4	3.81E-4	1.87E-4	4.30E-4	2.06E-9	2.74E-9	1.64E-9	3.64E-9
431	615042.9	4201491.5	8.98E-7	1.31E-6	7.07E-7	1.69E-6	2.94E-4	3.92E-4	1.91E-4	4.50E-4	2.14E-9	2.82E-9	1.69E-9	3.67E-9
432	615062.9	4201491.5	9.04E-7	1.31E-6	7.12E-7	1.69E-6	2.95E-4	4.02E-4	1.96E-4	4.71E-4	2.23E-9	2.91E-9	1.75E-9	3.71E-9
433	615082.9	4201491.5	9.09E-7	1.32E-6	7.15E-7	1.69E-6	2.96E-4	4.14E-4	2.00E-4	4.94E-4	2.33E-9	2.99E-9	1.81E-9	3.74E-9
434	615102.9	4201491.5	9.11E-7	1.32E-6	7.17E-7	1.70E-6	2.97E-4	4.26E-4	2.05E-4	5.19E-4	2.44E-9	3.08E-9	1.88E-9	3.78E-9
435	615122.9	4201491.5	9.10E-7	1.32E-6	7.17E-7	1.69E-6	3.00E-4	4.39E-4	2.10E-4	5.47E-4	2.55E-9	3.18E-9	1.96E-9	3.82E-9
436	615142.9	4201491.5	9.05E-7	1.32E-6	7.12E-7	1.69E-6	3.04E-4	4.54E-4	2.16E-4	5.77E-4	2.68E-9	3.28E-9	2.04E-9	3.87E-9
437	615162.9	4201491.5	8.91E-7	1.30E-6	7.01E-7	1.69E-6	3.09E-4	4.69E-4	2.22E-4	6.11E-4	2.82E-9	3.39E-9	2.13E-9	3.92E-9
438	615182.9	4201491.5	8.70E-7	1.26E-6	6.85E-7	1.69E-6	3.16E-4	4.86E-4	2.28E-4	6.49E-4	2.96E-9	3.51E-9	2.23E-9	3.99E-9
439	615202.9	4201491.5	8.46E-7	1.23E-6	6.65E-7	1.70E-6	3.22E-4	5.04E-4	2.34E-4	6.92E-4	3.12E-9	3.64E-9	2.35E-9	4.06E-9
440	615222.9	4201491.5	8.16E-7	1.19E-6	6.42E-7	1.70E-6	3.28E-4	5.22E-4	2.41E-4	7.39E-4	3.27E-9	3.81E-9	2.48E-9	4.12E-9
441	615242.9	4201491.5	7.85E-7	1.14E-6	6.17E-7	1.69E-6	3.34E-4	5.40E-4	2.47E-4	7.92E-4	3.42E-9	3.93E-9	2.63E-9	4.17E-9
442	615262.9	4201491.5	7.44E-7	1.08E-6	5.85E-7	1.68E-6	3.37E-4	5.58E-4	2.54E-4	8.52E-4	3.56E-9	4.05E-9	2.80E-9	4.22E-9
443	615282.9	4201491.5	6.93E-7	1.01E-6	5.46E-7	1.68E-6	3.39E-4	5.76E-4	2.61E-4	9.23E-4	3.70E-9	4.16E-9	2.99E-9	4.25E-9
444	615302.9	4201491.5	6.39E-7	9.28E-7	5.03E-7	1.67E-6	3.39E-4	5.92E-4	2.68E-4	1.01E-3	3.82E-9	4.27E-9	3.22E-9	4.27E-9
445	615322.9	4201491.5	5.84E-7	8.49E-7	4.59E-7	1.66E-6	3.39E-4	6.08E-4	2.75E-4	1.10E-3	3.93E-9	4.37E-9	3.49E-9	4.29E-9
446	615342.9	4201491.5	5.32E-7	7.73E-7	4.18E-7	1.66E-6	3.39E-4	6.22E-4	2.82E-4	1.22E-3	4.01E-9	4.46E-9	3.82E-9	4.30E-9
447	615362.9	4201491.5	4.84E-7	7.04E-7	3.81E-7	1.65E-6	3.40E-4	6.35E-4	2.89E-4	1.36E-3	4.06E-9	4.55E-9	4.21E-9	4.31E-9
448	615382.9	4201491.5	4.43E-7	6.44E-7	3.48E-7	1.64E-6	3.41E-4	6.46E-4	2.96E-4	1.53E-3	4.08E-9	4.63E-9	4.68E-9	4.33E-9
449	615402.9	4201491.5	4.06E-7	5.91E-7	3.20E-7	1.63E-6	3.42E-4	6.56E-4	3.04E-4	1.74E-3	4.07E-9	4.72E-9	5.25E-9	4.35E-9
450	615422.9	4201491.5	3.75E-7	5.45E-7	2.95E-7	1.62E-6	3.43E-4	6.65E-4	3.11E-4	2.02E-3	4.04E-9	4.79E-9	5.94E-9	4.37E-9
451	615442.9	4201491.5	3.47E-7	5.05E-7	2.73E-7	1.61E-6	3.45E-4	6.75E-4	3.18E-4	2.34E-3	3.99E-9	4.85E-9	6.77E-9	4.39E-9
452	615462.9	4201491.5	3.23E-7	4.70E-7	2.54E-7	1.60E-6	3.46E-4	6.86E-4	3.24E-4	2.70E-3	3.95E-9	4.87E-9	7.78E-9	4.41E-9
453	614722.9	4201511.5	3.80E-7	5.52E-7	2.99E-7	7.09E-7	2.08E-4	2.75E-4	1.34E-4	2.54E-4	1.36E-9	1.80E-9	1.18E-9	2.63E-9
454	614902.9	4201511.5	1.16E-6	1.69E-6	9.16E-7	2.28E-6	2.61E-4	3.37E-4	1.64E-4	3.42E-4	1.67E-9	2.29E-9	1.48E-9	3.28E-9
455	614922.9	4201511.5	1.18E-6	1.71E-6	9.27E-7	2.30E-6	2.70E-4	3.45E-4	1.68E-4	3.55E-4	1.73E-9	2.36E-9	1.52E-9	3.37E-9
456	614942.9	4201511.5	1.19E-6	1.73E-6	9.37E-7	2.31E-6	2.79E-4	3.53E-4	1.72E-4	3.69E-4	1.79E-9	2.44E-9	1.56E-9	3.46E-9
457	614962.9	4201511.5	1.21E-6	1.75E-6	9.50E-7	2.33E-6	2.87E-4	3.62E-4	1.77E-4	3.84E-4	1.85E-9	2.52E-9	1.61E-9	3.55E-9
458	614982.9	4201511.5	1.22E-6	1.77E-6	9.59E-7	2.34E-6	2.94E-4	3.71E-4	1.81E-4	4.00E-4	1.92E-9	2.61E-9	1.66E-9	3.63E-9
459	615002.9	4201511.5	1.23E-6	1.79E-6	9.67E-7	2.35E-6	3.00E-4	3.80E-4	1.86E-4	4.17E-4	2.00E-9	2.69E-9	1.71E-9	3.70E-9
460	615022.9	4201511.5	1.24E-6	1.80E-6	9.73E-7	2.35E-6	3.03E-4	3.90E-4	1.90E-4	4.35E-4	2.07E-9	2.78E-9	1.77E-9	3.75E-9
461	615042.9	4201511.5	1.24E-6	1.80E-6	9.77E-7	2.35E-6	3.05E-4	4.00E-4	1.95E-4	4.55E-4	2.16E-9	2.87E-9	1.83E-9	3.80E-9
462	615062.9	4201511.5	1.24E-6	1.81E-6	9.80E-7	2.34E-6	3.06E-4	4.11E-4	2.00E-4	4.77E-4	2.25E-9	2.95E-9	1.89E-9	3.84E-9
463	615082.9	4201511.5	1.25E-6	1.81E-6	9.81E-7	2.34E-6	3.07E-4	4.23E-4	2.05E-4	5.00E-4	2.34E-9	3.04E-9	1.96E-9	3.88E-9
464	615102.9	4201511.5	1.25E-6	1.81E-6	9.81E-7	2.32E-6	3.09E-4	4.36E-4	2.10E-4	5.26E-4	2.45E-9	3.13E-9	2.04E-9	3.91E-9
465	615122.9	4201511.5	1.24E-6	1.81E-6	9.79E-7	2.31E-6	3.11E-4	4.49E-4	2.15E-4	5.54E-4	2.57E-9	3.23E-9	2.12E-9	3.95E-9
466	615142.9	4201511.5	1.24E-6	1.80E-6	9.74E-7	2.30E-6	3.15E-4	4.64E-4	2.21E-4	5.86E-4	2.70E-9	3.33E-9	2.20E-9	4.00E-9
467	615162.9	4201511.5	1.23E-6	1.79E-6	9.70E-7	2.30E-6	3.20E-4	4.80E-4	2.27E-4	6.21E-4	2.84E-9	3.45E-9	2.30E-9	4.06E-9
468	615182.9	4201511.5	1.20E-6	1.75E-6	9.45E-7	2.30E-6	3.26E-4	4.98E-4	2.33E-4	6.61E-4	2.99E-9	3.57E-9	2.40E-9	4.13E-9
469	615202.9	4201511.5	1.15E-6	1.67E-6	9.04E-7	2.29E-6	3.33E-4	5.16E-4	2.40E-4	7.04E-4	3.15E-9	3.74E-9	2.52E-9	4.20E-9
470	615222.9	4201511.5	1.09E-6	1.59E-6	8.60E-7	2.28E-6	3.40E-4	5.35E-4	2.47E-4	7.53E-4	3.32E-9	3.87E-9	2.64E-9	4.27E-9
471	615242.9	4201511.5	1.03E-6	1.49E-6	8.09E-7	2.26E-6	3.46E-4	5.54E-4	2.54E-4	8.08E-4	3.48E-9	4.00E-9	2.79E-9	4.33E-9
472	615262.9	4201511.5	9.40E-7	1.37E-6	7.40E-7	2.25E-6	3.50E-4	5.74E-4	2.61E-4	8.70E-4	3.64E-9	4.13E-9	2.94E-9	4.38E-9
473	615282.9	4201511.5	8.41E-7	1.22E-6	6.62E-7	2.24E-6	3.52E-4	5.93E-4	2.68E-4	9.43E-4	3.79E-9	4.25E-9	3.13E-9	4.42E-9
474	615302.9	4201511.5	7.43E-7	1.08E-6	5.85E-7	2.22E-6	3.53E-4	6.12E-4	2.76E-4	1.03E-3	3.93E-9	4.38E-9	3.34E-9	4.44E-9
475	615322.9	4201511.5	6.56E-7	9.53E-7	5.16E-7	2.21E-6	3.53E-4	6.30E-4	2.83E-4	1.13E-3	4.06E-9	4.49E-9	3.58E-9	4.46E-9
476	615342.9	4201511.5	5.81E-7	8.45E-7	4.58E-7	2.19E-6	3.53E-4	6.47E-4	2.91E-4	1.26E-3	4.16E-9	4.60E-9	3.87E-9	4.48E-9
477	615362.9	4201511.5	5.20E-7	7.55E-7	4.09E-7	2.18E-6	3.53E-4	6.62E-4	2.99E-4	1.41E-3	4.24E-9	4.70E-9	4.21E-9	4.49E-9
478	615382.9	4201511.5	4.68E-7	6.81E-7	3.68E-7	2.16E-6	3.55E-4	6.75E-4	3.07E-4	1.61E-3	4.29E-9	4.79E-9	4.63E-9	4.51E-9
479	615402.9	4201511.5	4.25E-7	6.18E-7	3.35E-7	2.14E-6	3.56E-4	6.87E-4	3.15E-4	1.87E-3	4.30E-9	4.89E-9	5.13E-9	4.52E-9
480	615422.9	4201511.5	3.89E-7	5.65E-7	3.06E-7	2.13E-6	3.57E-4	6.98E-4	3.23E-4	2.22E-3	4.28E-9	4.98E-9	5.75E-9	4.55E-9
481	615442.9	4201511.5	3.58E-7	5.20E-7	2.82E-7	2.11E-6	3.59E-4	7.08E-4	3.31E-4	2.68E-3	4.24E-9	5.06E-9	6.52E-9	4.57E-9
482	615462.9	4201511.5	3.32E-7	4.82E-7	2.61E-7	2.09E-6	3.60E-4	7.20E-4	3.38E-4	3.21E-3	4.19E-9	5.11E-9	7.49E-9	4.59E-9
483	614722.9	4201531.5	5.66E-7	8.22E-7	4.45E-7	1.07E-6	2.13E-4	2.79E-4	1.36E-4	2.55E-4	1.37E-9	1.80E-9	1.25E-9	2.68E-9
484	614742.9	4201531.5	8.65E-7	1.26E-6	6.81E-7	1.72E-6	2.17E-4	2.85E-4	1.39E-4	2.63E-4	1.40E-9	1.85E-9	1.28E-9	2.74E-9
485	614742.9	4201551.5	2.87E-6	4.17E-6	2.25E-6	3.08E-6	2.22E-4	2.89E-4	1.41E-4	2.65E-4	1.41E-9	1.85E-9	1.36E-9	2.79E-9
486	614762.9	4201571.5	1.94E-6	2.82E-6	1.53E-6	3.27E-6	2.31E-4	3.00E-4	1.45E-4	2.75E-4	1.46E-9	1.90E-9	1.48E-9	2.92E-9
487	614762.9	4201591.5	7.75E-7	1.13E-6	6.10E-7	1.38E-6	2.36E-4	3.04E-4	1.47E-4	2.76E-4	1.46E-9	1.90E-9	1.55E-9	2.97E-9
488	614782.9	4201591.5	8.51E-7	1.24E-6	6.70E-7	1.53E-6	2.42E-4	3.12E-4	1.51E-4	2.86E-4	1.50E-9	1.96E-9	1.60E-9	3.05E-9
489	614802.9	4201591.5	8.98E-7	1.31E-6	7.07E-7	1.63E-6	2.47E-4	3.20E-4	1.54E-4	2.95E-4	1.54E-9	2.02E-9	1.65E-9	3.12E-9
490	614822.9	4201591.5	9.33E-7	1.36E-6	7.34E-7	1.70E-6	2.53E-4	3.28E-4	1.58E-4	3.05E-4	1.58E-9	2.07E-9	1.70E-9	3.20E-9
491	614842.9	4201591.5	9.59E-7	1.39E-6	7.55E-7	1.75E-6	2.58E-4	3.36E-4	1.62E-4	3.16E-4	1.62E-9	2.14E-9	1.75E-9	3.28E-9
492	614862.9	4201591.5	9.87E-7	1.44E-6	7.77E-7	1.81E-6	2.65E-4	3.45E-4	1.66E-4	3.28E-4	1.66E-9	2.20E-9	1.81E-9	3.36E-9
493	614882.9	4201591.5	1.01E-6	1.47E-6	7.98E-7	1.87E-6	2.72E-4	3.54E-4	1.70E-4	3.40E-4	1.71E-9	2.27E-9	1.87E-9	3.46E-9
494	614902.9	4201591.5	1.04E-6	1.51E-6	8.18E-7	1.92E-6	2.80E-4	3.64E-4	1.74E-4	3.53E-4	1.76E-9	2.34E-9	1.94E-9	3.56E-9
495	614922.9	4201591.5	1.05E-6	1.53E-6	8.29E-7	1.95E-6	2.88E-4	3.73E-4	1.79E-4	3.67E-4	1.81E-9	2.40E-9	2.00E-9	3.66E-9

496	614942.9	4201591.5	1.07E-6	1.56E-6	8.44E-7	1.99E-6	2.98E-4	3.83E-4	1.84E-4	3.82E-4	1.86E-9	2.48E-9	2.08E-9	3.77E-9
497	614962.9	4201591.5	1.10E-6	1.59E-6	8.63E-7	2.04E-6	3.10E-4	3.94E-4	1.89E-4	3.98E-4	1.92E-9	2.57E-9	2.15E-9	3.89E-9
498	614982.9	4201591.5	1.12E-6	1.63E-6	8.80E-7	2.08E-6	3.21E-4	4.05E-4	1.94E-4	4.15E-4	1.99E-9	2.67E-9	2.24E-9	4.01E-9
499	615002.9	4201591.5	1.14E-6	1.66E-6	9.01E-7	2.13E-6	3.33E-4	4.17E-4	2.00E-4	4.34E-4	2.07E-9	2.78E-9	2.32E-9	4.13E-9
500	615022.9	4201591.5	1.17E-6	1.71E-6	9.24E-7	2.19E-6	3.43E-4	4.29E-4	2.06E-4	4.54E-4	2.15E-9	2.89E-9	2.42E-9	4.24E-9
501	615042.9	4201591.5	1.20E-6	1.74E-6	9.42E-7	2.23E-6	3.52E-4	4.41E-4	2.12E-4	4.76E-4	2.24E-9	3.00E-9	2.52E-9	4.34E-9
502	615082.9	4201591.5	1.25E-6	1.82E-6	9.86E-7	2.31E-6	3.62E-4	4.68E-4	2.24E-4	5.25E-4	2.44E-9	3.24E-9	2.75E-9	4.50E-9
503	615102.9	4201591.5	1.28E-6	1.86E-6	1.01E-6	2.35E-6	3.65E-4	4.82E-4	2.31E-4	5.53E-4	2.54E-9	3.37E-9	2.88E-9	4.56E-9
504	615122.9	4201591.5	1.32E-6	1.92E-6	1.04E-6	2.39E-6	3.66E-4	4.97E-4	2.38E-4	5.84E-4	2.66E-9	3.49E-9	3.01E-9	4.61E-9
505	615142.9	4201591.5	1.38E-6	2.01E-6	1.09E-6	2.43E-6	3.69E-4	5.12E-4	2.45E-4	6.18E-4	2.78E-9	3.61E-9	3.16E-9	4.67E-9
506	615162.9	4201591.5	1.49E-6	2.16E-6	1.17E-6	2.47E-6	3.72E-4	5.30E-4	2.52E-4	6.56E-4	2.92E-9	3.73E-9	3.32E-9	4.72E-9
507	615342.9	4201591.5	5.75E-7	8.36E-7	4.53E-7	2.94E-6	4.19E-4	7.51E-4	3.32E-4	1.38E-3	4.76E-9	5.12E-9	5.76E-9	5.30E-9
508	615382.9	4201591.5	4.52E-7	6.57E-7	3.56E-7	3.06E-6	4.20E-4	8.03E-4	3.55E-4	1.83E-3	5.12E-9	5.48E-9	6.75E-9	5.35E-9
509	615422.9	4201591.5	3.75E-7	5.45E-7	2.95E-7	3.19E-6	4.24E-4	8.50E-4	3.78E-4	2.80E-3	5.36E-9	5.80E-9	8.08E-9	5.40E-9
510	614782.9	4201611.5	5.21E-7	7.58E-7	4.10E-7	9.31E-7	2.47E-4	3.16E-4	1.52E-4	2.87E-4	1.51E-9	1.96E-9	1.67E-9	3.11E-9
511	614802.9	4201611.5	5.56E-7	8.08E-7	4.37E-7	9.99E-7	2.53E-4	3.24E-4	1.56E-4	2.97E-4	1.55E-9	2.02E-9	1.72E-9	3.19E-9
512	614822.9	4201611.5	5.81E-7	8.45E-7	4.57E-7	1.05E-6	2.59E-4	3.33E-4	1.60E-4	3.07E-4	1.59E-9	2.08E-9	1.77E-9	3.27E-9
513	614842.9	4201611.5	5.99E-7	8.71E-7	4.72E-7	1.08E-6	2.65E-4	3.42E-4	1.64E-4	3.18E-4	1.63E-9	2.14E-9	1.83E-9	3.35E-9
514	614862.9	4201611.5	6.17E-7	8.97E-7	4.86E-7	1.12E-6	2.71E-4	3.51E-4	1.68E-4	3.29E-4	1.68E-9	2.20E-9	1.89E-9	3.44E-9
515	614882.9	4201611.5	6.34E-7	9.21E-7	4.99E-7	1.15E-6	2.78E-4	3.60E-4	1.72E-4	3.42E-4	1.72E-9	2.27E-9	1.96E-9	3.53E-9
516	614902.9	4201611.5	6.50E-7	9.46E-7	5.12E-7	1.18E-6	2.86E-4	3.70E-4	1.77E-4	3.55E-4	1.77E-9	2.35E-9	2.03E-9	3.64E-9
517	614922.9	4201611.5	6.62E-7	9.62E-7	5.21E-7	1.20E-6	2.94E-4	3.80E-4	1.82E-4	3.69E-4	1.83E-9	2.41E-9	2.10E-9	3.74E-9
518	614942.9	4201611.5	6.74E-7	9.80E-7	5.31E-7	1.22E-6	3.04E-4	3.91E-4	1.86E-4	3.84E-4	1.88E-9	2.49E-9	2.17E-9	3.86E-9
519	614962.9	4201611.5	6.88E-7	1.00E-6	5.42E-7	1.24E-6	3.15E-4	4.02E-4	1.92E-4	4.00E-4	1.94E-9	2.57E-9	2.26E-9	3.98E-9
520	614982.9	4201611.5	7.04E-7	1.02E-6	5.54E-7	1.26E-6	3.28E-4	4.14E-4	1.97E-4	4.18E-4	2.01E-9	2.67E-9	2.35E-9	4.11E-9
521	615002.9	4201611.5	7.23E-7	1.05E-6	5.69E-7	1.29E-6	3.40E-4	4.26E-4	2.03E-4	4.37E-4	2.09E-9	2.78E-9	2.44E-9	4.24E-9
522	615022.9	4201611.5	7.43E-7	1.08E-6	5.85E-7	1.32E-6	3.53E-4	4.39E-4	2.09E-4	4.58E-4	2.18E-9	2.90E-9	2.55E-9	4.37E-9
523	615042.9	4201611.5	7.60E-7	1.11E-6	5.98E-7	1.34E-6	3.63E-4	4.52E-4	2.16E-4	4.80E-4	2.27E-9	3.04E-9	2.66E-9	4.49E-9
524	615162.9	4201611.5	1.07E-6	1.55E-6	8.42E-7	1.43E-6	3.88E-4	5.44E-4	2.58E-4	6.62E-4	2.95E-9	3.79E-9	3.54E-9	4.92E-9
525	614802.9	4201631.5	3.99E-7	5.80E-7	3.14E-7	7.04E-7	2.58E-4	3.28E-4	1.58E-4	2.98E-4	1.55E-9	2.01E-9	1.77E-9	3.26E-9
526	614822.9	4201631.5	4.21E-7	6.11E-7	3.31E-7	7.44E-7	2.65E-4	3.38E-4	1.62E-4	3.08E-4	1.60E-9	2.08E-9	1.82E-9	3.34E-9
527	614842.9	4201631.5	4.37E-7	6.36E-7	3.44E-7	7.74E-7	2.71E-4	3.47E-4	1.66E-4	3.19E-4	1.64E-9	2.14E-9	1.88E-9	3.43E-9
528	614862.9	4201631.5	4.50E-7	6.54E-7	3.54E-7	7.96E-7	2.78E-4	3.56E-4	1.70E-4	3.31E-4	1.69E-9	2.21E-9	1.95E-9	3.52E-9
529	614882.9	4201631.5	4.62E-7	6.72E-7	3.64E-7	8.17E-7	2.85E-4	3.66E-4	1.75E-4	3.43E-4	1.74E-9	2.27E-9	2.01E-9	3.62E-9
530	614902.9	4201631.5	4.75E-7	6.91E-7	3.74E-7	8.38E-7	2.93E-4	3.76E-4	1.80E-4	3.57E-4	1.79E-9	2.35E-9	2.09E-9	3.72E-9
531	614922.9	4201631.5	4.88E-7	7.09E-7	3.84E-7	8.56E-7	3.01E-4	3.87E-4	1.84E-4	3.71E-4	1.84E-9	2.41E-9	2.16E-9	3.83E-9
532	614942.9	4201631.5	4.98E-7	7.25E-7	3.92E-7	8.71E-7	3.11E-4	3.98E-4	1.89E-4	3.86E-4	1.90E-9	2.49E-9	2.24E-9	3.95E-9
533	614962.9	4201631.5	5.08E-7	7.38E-7	4.00E-7	8.80E-7	3.22E-4	4.09E-4	1.95E-4	4.02E-4	1.96E-9	2.58E-9	2.33E-9	4.07E-9
534	614982.9	4201631.5	5.24E-7	7.61E-7	4.12E-7	9.01E-7	3.34E-4	4.22E-4	2.00E-4	4.20E-4	2.03E-9	2.68E-9	2.42E-9	4.21E-9
535	615002.9	4201631.5	5.40E-7	7.84E-7	4.25E-7	9.18E-7	3.48E-4	4.35E-4	2.07E-4	4.40E-4	2.11E-9	2.79E-9	2.53E-9	4.35E-9
536	615022.9	4201631.5	5.55E-7	8.07E-7	4.37E-7	9.32E-7	3.61E-4	4.49E-4	2.13E-4	4.61E-4	2.20E-9	2.93E-9	2.63E-9	4.49E-9
537	615042.9	4201631.5	5.71E-7	8.31E-7	4.50E-7	9.43E-7	3.74E-4	4.63E-4	2.20E-4	4.83E-4	2.29E-9	3.05E-9	2.75E-9	4.62E-9
538	615162.9	4201631.5	9.27E-7	1.35E-6	7.30E-7	9.99E-7	4.06E-4	5.60E-4	2.65E-4	6.67E-4	2.98E-9	3.84E-9	3.67E-9	5.13E-9
539	615342.9	4201631.5	5.70E-7	8.28E-7	4.48E-7	1.07E-6	4.61E-4	8.08E-4	3.55E-4	1.40E-3	5.04E-9	5.37E-9	6.57E-9	5.82E-9
540	615382.9	4201631.5	4.51E-7	6.55E-7	3.55E-7	1.09E-6	4.62E-4	8.75E-4	3.82E-4	1.82E-3	5.54E-9	5.79E-9	7.78E-9	5.87E-9
541	615422.9	4201631.5	3.77E-7	5.48E-7	2.96E-7	1.10E-6	4.65E-4	9.38E-4	4.10E-4	2.64E-3	5.94E-9	6.23E-9	9.42E-9	5.93E-9
542	615462.9	4201631.5	3.26E-7	4.74E-7	2.57E-7	1.11E-6	4.70E-4	9.96E-4	4.40E-4	4.62E-3	6.17E-9	6.66E-9	1.17E-8	6.01E-9
543	615502.9	4201631.5	2.90E-7	4.21E-7	2.28E-7	1.12E-6	4.77E-4	1.04E-3	4.73E-4	7.59E-3	6.17E-9	7.09E-9	1.52E-8	6.11E-9
544	615542.9	4201631.5	2.62E-7	3.81E-7	2.06E-7	1.13E-6	4.86E-4	1.09E-3	5.04E-4	9.46E-3	6.04E-9	7.46E-9	2.06E-8	6.24E-9
545	615582.9	4201631.5	2.40E-7	3.50E-7	1.89E-7	1.13E-6	5.03E-4	1.13E-3	5.24E-4	1.06E-2	6.04E-9	7.58E-9	3.03E-8	6.44E-9
546	615622.9	4201631.5	2.23E-7	3.24E-7	1.75E-7	1.11E-6	5.29E-4	1.15E-3	5.41E-4	1.14E-2	6.54E-9	7.69E-9	5.06E-8	6.69E-9
547	615662.9	4201631.5	2.09E-7	3.04E-7	1.65E-7	1.09E-6	5.51E-4	1.17E-3	5.59E-4	1.27E-2	7.84E-9	8.22E-9	1.09E-7	6.93E-9
548	615702.9	4201631.5	1.98E-7	2.88E-7	1.56E-7	9.85E-7	5.65E-4	1.19E-3	5.66E-4	1.51E-2	8.96E-9	9.56E-9	4.10E-7	7.10E-9
549	615742.9	4201631.5	1.89E-7	2.74E-7	1.49E-7	7.36E-7	5.82E-4	1.23E-3	5.78E-4	3.09E-2	9.16E-9	1.09E-8	3.72E-6	7.32E-9
550	614822.9	4201651.5	3.30E-7	4.80E-7	2.60E-7	5.69E-7	2.71E-4	3.42E-4	1.64E-4	3.09E-4	1.59E-9	2.07E-9	1.85E-9	3.42E-9
551	614842.9	4201651.5	3.44E-7	5.00E-7	2.71E-7	5.94E-7	2.78E-4	3.51E-4	1.68E-4	3.21E-4	1.64E-9	2.14E-9	1.91E-9	3.51E-9
552	614862.9	4201651.5	3.55E-7	5.16E-7	2.79E-7	6.11E-7	2.85E-4	3.61E-4	1.73E-4	3.32E-4	1.69E-9	2.21E-9	1.97E-9	3.60E-9
553	614882.9	4201651.5	3.66E-7	5.32E-7	2.88E-7	6.27E-7	2.92E-4	3.72E-4	1.77E-4	3.45E-4	1.74E-9	2.28E-9	2.04E-9	3.70E-9
554	614902.9	4201651.5	3.77E-7	5.48E-7	2.97E-7	6.44E-7	3.00E-4	3.82E-4	1.82E-4	3.58E-4	1.80E-9	2.35E-9	2.11E-9	3.81E-9
555	614922.9	4201651.5	3.88E-7	5.65E-7	3.06E-7	6.59E-7	3.09E-4	3.94E-4	1.87E-4	3.73E-4	1.86E-9	2.43E-9	2.19E-9	3.92E-9
556	614942.9	4201651.5	3.98E-7	5.79E-7	3.13E-7	6.70E-7	3.18E-4	4.05E-4	1.92E-4	3.88E-4	1.92E-9	2.49E-9	2.27E-9	4.04E-9
557	614962.9	4201651.5	4.07E-7	5.91E-7	3.20E-7	6.76E-7	3.28E-4	4.17E-4	1.98E-4	4.04E-4	1.98E-9	2.57E-9	2.36E-9	4.17E-9
558	614982.9	4201651.5	4.20E-7	6.11E-7	3.31E-7	6.90E-7	3.41E-4	4.30E-4	2.04E-4	4.22E-4	2.05E-9	2.67E-9	2.45E-9	4.31E-9
559	615002.9	4201651.5	4.35E-7	6.32E-7	3.42E-7	7.03E-7	3.55E-4	4.44E-4	2.10E-4	4.42E-4	2.13E-9	2.79E-9	2.55E-9	4.46E-9
560	615022.9	4201651.5	4.52E-7	6.56E-7	3.55E-7	7.15E-7	3.70E-4	4.58E-4	2.16E-4	4.63E-4	2.21E-9	2.91E-9	2.66E-9	4.61E-9
561	615042.9	4201651.5	4.69E-7	6.81E-7	3.69E-7	7.23E-7	3.84E-4	4.73E-4	2.23E-4	4.85E-4	2.30E-9	3.05E-9	2.78E-9	4.76E-9
562	614822.9	4201671.5	2.73E-7	3.96E-7	2.15E-7	4.57E-7	2.77E-4	3.45E-4	1.66E-4	3.10E-4	1.59E-9	2.07E-9	1.85E-9	3.49E-9
563	614842.9	4201671.5	2.85E-7	4.14E-7	2.24E-7	4.77E-7	2.84E-4	3.56E-4	1.70E-4	3.22E-4	1.64E-9	2.14E-9	1.91E-9	3.59E-9
564	614862.9	4201671.5	2.95E-7	4.29E-7	2.32E-7	4.92E-7	2.92E-4	3.66E-4	1.75E-4	3.34E-4	1.69E-9	2.20E-9	1.97E-9	3.69E-9
565	614882.9	4201671.5	3.05E-7	4.43E-7	2.40E-7	5.06E-7	3.00E-4	3.77E-4	1.80E-4	3.46E-4	1.75E-9	2.28E-9	2.03E-9	3.79E-9
566	614902.9	4201671.5	3.15E-7	4.58E-7	2.48E-7	5.19E-7	3.08E-4	3.88E-4	1.85E-4	3.60E-4	1.80E-9	2.35E-9	2.10E-9	3.90E-9
567	614922.9	4201671.5	3.25E-7	4.73E-7	2.56E-7	5.31E-7	3.16E-4	4.00E-4	1.90E-4	3.74E-4	1.86E-9	2.43E-9	2.18E-9	4.02E-9
568	614942.9	4201671.5	3.35E-7	4.86E-7	2.63E-7	5.40E-7	3.26E-4	4.12E-4	1.95E-4	3.90E-4	1.92E-9	2.49E-9	2.26E-9	4.14E-9
569	614962.9	4201671.5	3.43E-7	4.99E-7	2.70E-7	5.46E-7	3.36E-4	4.24E-4	2.01E-4	4.06E-4	1.99E-9	2.57E-9	2.34E-9	4.27E-9
570	614982.9	4201671.5	3.55E-7	5.16E-7	2.79E-7	5.55E-7	3.48E-4	4.38E-4	2.07E-4	4.24E-4	2.06E-9	2.67E-9	2.43E-9	4.41E-9
571	615002.9	4201671.5	3.69E-7	5.37E-7	2.91E-7	5.65E-7	3.62E-4	4.52E-4	2.13E-4	4.43E-4	2.14E-9	2.78E-9	2.53E-9	4.57E-9
572	615022.9	4201671.5	3.87E-7	5.63E-7	3.05E-7	5.76E-7	3.78E-4	4.67E-4	2.20E-4	4.65E-4	2.23E-9	2.90E-9	2.64E-9	4.74E-9
573	615042.9	4201671.5	4.06E-7	5.90E-7	3.19E-7	5.83E-7	3.93E-4	4.83E-4	2.27E-4	4.88E-4	2.32E-9	3.05E-9	2.75E-9	4.90E-9
574	615102.9	4201671.5	4.97E-7	7.22E-7	3.91E-7	6.00E-7	4.31E-4	5.35E-4	2.51E-4	5.68E-4	2.65E-9	3.48E-9	3.13E-9	5.33E-9
575	615282.9	4201671.5	9.73E-7	1.41E-6	7.66E-7	6.36E-7	4.92E-4	7.51E-4	3.42E-4	1.04E-3	4.29E-9	5.00E-9	5.08E-9	6.18E-9
576	615302.9	4201671.5	7.87E-7	1.14E-6	6.19E-7	6.38E-7	5.00E-4	7.87E-4	3.55E-4	1.13E-3	4.60E-9	5.20E-9	5.43E-9	6.28E-9
577	615342.9	4201671.5	5.74E-7	8.34E-7	4.52E-7	6.43E-7	5.09E-4	8.66E-4	3.82E-4	1.38E-3	5.26E-9	5.64E-9	6.26E-9	6.41E-9
578	615382.9	4201671.5	4.58E-7	6.65E-7	3.60E-7	6.47E-7	5.11E-4	9.51E-4	4.11E-4	1.75E-3	5.93E-9	6.11E-9	7.33E-9	6.49E-9
579	615422.9	4201671.5	3.86E-7	5.61E-7	3.04E-7	6.49E-7	5.14E-4	1.03E-3	4.45E-4	2.34E-3	6.52E-9	6.64E-9	8.77E-9	6.56E-9
580	615462.9	4201671.5	3.38E-7	4.91E-7	2.66E-7	6.49E-7	5.21E-4	1.12E-3	4.83E-4	3.22E-3	6.98E-9	7.22E-9	1.08E-8	6.65E-9
581	615502.9	4201671.5	3.03E-7	4.40E-7	2.38E-7	6.46E-7	5.28E-4	1.19E-3	5.24E-4	4.18E-3	7.19E-9	7.83E-9	1.38E-8	6.77E-9
582	615542.9	4201671.5	2.76E-7	4.01E-7	2.17E-7	6.40E-7	5.40E-4	1.25E-3	5.68E-4	5.04E-3	7.13E-9	8.43E-9	1.88E-8	6.94E-9
583	615582.9	4201671.5	2.55E-7	3.71E-7	2.01E-7	6.28E-7	5.62E-4	1.30E-3	6.05E-4	5.78E-3	7.06E-9	8.87E-9	2.83E-8	7.19E-9
584	615622.9	4201671.5	2.39E-7	3.47E-7	1.88E-7	6.11E-7	5.93E-4	1.35E-3	6.30E-4	6.61E-3	7.54E-9	9.02E-9	5.00E-8	7.50E-9
585	615662.9	4201671.5	2.26E-7	3.28E-7	1.78E-7	5.73E-7	6.17E-4	1.37E-3	6.55E-4	7.79E-3	8.96E-9	9.45E-9	1.09E-7	7.75E-9
586	615702.9	4201671.5	2.15E-7	3.12E-7	1.69E-7	5.03E-7	6.33E-4	1.40E-3	6.67E-4	1.07E-2	1.04E-8	1.09E-8	2.63E-7	7.96E-9
587	615742.9	4201671.5	2.06E-7	3.00E-7	1.62E-7	4.09E-7	6.58E-4	1.45E-3	6.83E-4	2.90E-2	1.08E-8	1.27E-8	2.84E-7	8.25E-9
588	614842.9	4201691.5	2.45E-7	3.56E-7	1.93E-7	3.97E-7	2.91E-4	3.60E-4	1.72E-4	3.23E-4	1.63E-9	2.13E-9	1.87E-9	3.67E-9
589	614862.9	4201691.5	2.55E-7	3.70E-7	2.00E-7	4.11E-7	2.99E-4	3.71E-4	1.77E-4	3.35E-4	1.68E-9	2.20E-9	1.93E-9	3.77E-9
590	614882.9	4201691.5	2.64E-7	3.83E-7	2.08E-7	4.23E-7	3.07E-4	3.82E-4	1.82E-4	3.48E-4	1.74E-9	2.28E-9	2.00E-9	3.88E-9
591	614902.9	4201691.5	2.72E-7	3.96E-7	2.14E-7	4.32E-7	3.16E-4	3.94E-4	1.87E-4	3.61E-4	1.80E-9	2.35E-9	2.06E-9	3.99E-9
592	614922.9	4201691.5	2.82E-7	4.10E-7	2.22E-7	4.42E-7	3.25E-4	4.06E-4	1.92E-4	3.76E-4	1.86E-9	2.43E-9	2.13E-9	4.12E-9
593	614942.9	4201691.5	2.91E-7	4.24E-7	2.29E-7	4.50E-7	3.34E-4	4.19E-4	1.98E-4	3.91E-4	1.93E-9	2.49E-9	2.20E-9	4.24E-9
594	614962.9	4201691.5	3.00E-7	4.37E-7	2.36E-7	4.56E-7	3.44E-4	4.32E-4	2.03E-4	4.08E-4	1.99E-9	2.57E-9	2.28E-9	4.38E-9
595	614982.9	4201691.5	3.12E-7	4.54E-7	2.46E-7	4.63E-7	3.57E-4	4.46E-4	2.10E-4	4.26E-4	2.07E-9	2.67E-9	2.37E-9	4.53E-9
596	615002.9	4201691.5	3.26E-7	4.74E-7	2.57E-7	4.71E-7	3.70E-4	4.60E-4	2.16E-4	4.45E-4	2.15E-9	2.78E-9	2.46E-9	4.69E-9
597	615022.9	4201691.5	3.44E-7	5.00E-7	2.71E-7	4.80E-7	3.86E-4	4.76E-4	2.23E-4	4.67E-4	2.24E-9	2.90E-9	2.56E-9	4.87E-9
598	615042.9	4201691.5	3.64E-7	5.29E-7	2.86E-7	4.86E-7	4.03E-4	4.93E-4	2.31E-4	4.90E-4	2.33E-9	3.05E-9	2.66E-9	5.04E-9
599	615102.9	4201691.5	4.62E-7	6.72E-7	3.64E-7	5.00E-7	4.48E-4	5.48E-4	2.55E-4	5.71E-4	2.67E-9	3.48E-9	3.01E-9	5.53E-9
600	615142.9	4201691.5	6.31E-7	9.17E-7	4.96E-7	5.08E-7	4.64E-4	5.89E-4	2.74E-4	6.38E-4	2.94E-9	3.80E-9	3.29E-9	5.77E-9
601	615162.9	4201691.5	8.23E-7	1.20E-6	6.48E-7	5.11E-7	4.69E-4	6.11E-4	2.83E-4	6.77E-4	3.09E-9	3.97E-9	3.45E-9	5.87E-9
602	615182.9	4201691.5	1.27E-6	1.84E-6	9.98E-7	5.14E-7	4.73E-4	6.34E-4	2.94E-4	7.20E-4	3.25E-9	4.14E-9	3.63E-9	5.96E-9
603	615222.9	4201691.5	3.16E-6	4.59E-6	2.48E-6	5.20E-7	4.84E-4	6.84E-4	3.15E-4	8.22E-4	3.62E-9	4.49E-9	4.02E-9	6.14E-9
604	615242.9	4201691.5	1.82E-6	2.65E-6	1.44E-6	5.23E-7	4.93E-4	7.12E-4	3.27E-4	8.83E-4	3.83E-9	4.68E-9	4.25E-9	6.25E-9
605	615262.9	4201691.5	1.27E-6	1.84E-6	9.98E-7	5.25E-7	5.04E-4	7.42E-4	3.40E-4	9.53E-4	4.07E-9	4.88E-9	4.49E-9	6.36E-9
606	615282.9	4201691.5	9.70E-7	1.41E-6	7.63E-7	5.27E-7	5.15E-4	7.75E-4	3.53E-4	1.03E-3	4.34E-9	5.09E-9	4.77E-9	6.48E-9
607	615302.9	4201691.5	7.87E-7	1.14E-6	6.19E-7	5.29E-7	5.25E-4	8.12E-4	3.67E-4	1.13E-3	4.65E-9	5.31E-9	5.08E-9	6.59E-9
608	614862.9	4201711.5	2.25E-7	3.27E-7	1.77E-7	3.51E-7	3.06E-4	3.74E-4	1.79E-4	3.36E-4	1.67E-9	2.20E-9	1.87E-9	3.86E-9
609	614882.9	4201711.5	2.34E-7	3.39E-7	1.84E-7	3.61E-7	3.15E-4	3.86E-4	1.84E-4	3.49E-4	1.73E-9	2.28E-9	1.93E-9	3.97E-9
610	614902.9	4201711.5	2.42E-7	3.51E-7	1.90E-7	3.69E-7	3.24E-4	3.99E-4	1.89E-4	3.62E-4	1.79E-9	2.35E-9	1.99E-9	4.09E-9
611	614922.9	4201711.5	2.50E-7	3.64E-7	1.97E-7	3.77E-7	3.33E-4	4.12E-4	1.95E-4	3.77E-4	1.86E-9	2.41E-9	2.05E-9	4.22E-9
612	614942.9	4201711.5	2.60E-7	3.78E-7	2.05E-7	3.84E-7	3.43E-4	4.25E-4	2.01E-4	3.93E-4	1.92E-9	2.49E-9	2.12E-9	4.35E-9
613	614962.9	4201711.5	2.71E-7	3.93E-7	2.13E-7	3.91E-7	3.54E-4	4.39E-4	2.07E-4	4.09E-4	2.00E-9	2.58E-9	2.19E-9	4.49E-9
614	614982.9	4201711.5	2.83E-7	4.11E-7	2.22E-7	3.98E-7	3.66E-4	4.54E-4	2.13E-4	4.28E-4	2.07E-9	2.67E-9	2.27E-9	4.65E-9
615	615002.9	4201711.5	2.97E-7	4.31E-7	2.33E-7	4.04E-7	3.80E-4	4.69E-4	2.20E-4	4.47E-4	2.15E-9	2.78E-9	2.35E-9	4.82E-9
616	615022.9	4201711.5	3.14E-7	4.56E-7	2.47E-7	4.10E-7	3.96E-4	4.85E-4	2.27E-4	4.69E-4	2.24E-9	2.90E-9	2.44E-9	5.00E-9
617	615042.9	4201711.5	3.34E-7	4.86E-7	2.63E-7	4.15E-7	4.13E-4	5.02E-4	2.35E-4	4.92E-4	2.34E-9	3.05E-9	2.53E-9	5.19E-9
618	615102.9	4201711.5	4.40E-7	6.39E-7	3.46E-7	4.27E-7	4.64E-4	5.60E-4	2.60E-4	5.73E-4	2.68E-9	3.49E-9	2.85E-9	5.74E-9
619	615282.9	4201711.5	9.67E-7	1.41E-6	7.61E-7	4.48E-7	5.40E-4	8.02E-4	3.63E-4	1.03E-3	4.39E-9	5.17E-9	4.41E-9	6.80E-9
620	615302.9	4201711.5	7.87E-7	1.14E-6	6.19E-7	4.49E-7	5.51E-4	8.40E-4	3.78E-4	1.12E-3	4.70E-9	5.41E-9	4.69E-9	6.93E-9
621	615342.9	4201711.5	5.80E-7	8.44E-7	4.57E-7	4.51E-7	5.65E-4	9.29E-4	4.11E-4	1.35E-3	5.43E-9	5.92E-9	5.37E-9	7.11E-9

622	615382.9	4201711.5	4.69E-7	6.81E-7	3.69E-7	4.51E-7	5.69E-4	1.03E-3	4.46E-4	1.66E-3	6.26E-9	6.47E-9	6.28E-9	7.22E-9
623	615422.9	4201711.5	4.00E-7	5.82E-7	3.15E-7	4.50E-7	5.73E-4	1.14E-3	4.85E-4	2.08E-3	7.10E-9	7.06E-9	7.57E-9	7.31E-9
624	615462.9	4201711.5	3.55E-7	5.16E-7	2.79E-7	4.47E-7	5.80E-4	1.25E-3	5.29E-4	2.59E-3	7.83E-9	7.76E-9	9.55E-9	7.42E-9
625	615502.9	4201711.5	3.22E-7	4.68E-7	2.53E-7	4.42E-7	5.90E-4	1.36E-3	5.81E-4	3.14E-3	8.36E-9	8.57E-9	1.29E-8	7.57E-9
626	615542.9	4201711.5	2.97E-7	4.32E-7	2.34E-7	4.33E-7	6.06E-4	1.45E-3	6.40E-4	3.72E-3	8.52E-9	9.47E-9	1.88E-8	7.78E-9
627	615582.9	4201711.5	2.78E-7	4.04E-7	2.19E-7	4.20E-7	6.34E-4	1.52E-3	7.02E-4	4.34E-3	8.46E-9	1.03E-8	2.99E-8	8.09E-9
628	615622.9	4201711.5	2.63E-7	3.82E-7	2.07E-7	3.99E-7	6.68E-4	1.58E-3	7.46E-4	5.12E-3	8.82E-9	1.08E-8	5.10E-8	8.43E-9
629	615662.9	4201711.5	2.50E-7	3.64E-7	1.97E-7	3.70E-7	6.94E-4	1.62E-3	7.80E-4	6.45E-3	1.04E-8	1.12E-8	8.87E-8	8.72E-9
630	615702.9	4201711.5	2.40E-7	3.49E-7	1.89E-7	3.28E-7	7.17E-4	1.66E-3	8.06E-4	9.59E-3	1.22E-8	1.27E-8	1.14E-7	9.01E-9
631	615742.9	4201711.5	2.32E-7	3.37E-7	1.83E-7	2.81E-7	7.53E-4	1.73E-3	8.29E-4	2.52E-2	1.30E-8	1.52E-8	1.01E-7	9.37E-9
632	614882.9	4201731.5	2.11E-7	3.06E-7	1.66E-7	3.14E-7	3.22E-4	3.90E-4	1.86E-4	3.50E-4	1.71E-9	2.27E-9	1.84E-9	4.07E-9
633	614922.9	4201731.5	2.27E-7	3.30E-7	1.79E-7	3.28E-7	3.42E-4	4.17E-4	1.97E-4	3.78E-4	1.84E-9	2.41E-9	1.95E-9	4.32E-9
634	614942.9	4201731.5	2.37E-7	3.44E-7	1.86E-7	3.34E-7	3.53E-4	4.31E-4	2.03E-4	3.94E-4	1.91E-9	2.49E-9	2.01E-9	4.46E-9
635	614962.9	4201731.5	2.48E-7	3.61E-7	1.95E-7	3.42E-7	3.64E-4	4.46E-4	2.10E-4	4.11E-4	1.99E-9	2.59E-9	2.08E-9	4.62E-9
636	614982.9	4201731.5	2.60E-7	3.78E-7	2.05E-7	3.47E-7	3.77E-4	4.61E-4	2.16E-4	4.29E-4	2.07E-9	2.71E-9	2.15E-9	4.78E-9
637	615002.9	4201731.5	2.74E-7	3.99E-7	2.16E-7	3.52E-7	3.90E-4	4.77E-4	2.23E-4	4.49E-4	2.15E-9	2.81E-9	2.22E-9	4.95E-9
638	615022.9	4201731.5	2.91E-7	4.23E-7	2.29E-7	3.57E-7	4.06E-4	4.94E-4	2.30E-4	4.70E-4	2.24E-9	2.93E-9	2.30E-9	5.14E-9
639	615042.9	4201731.5	3.12E-7	4.54E-7	2.46E-7	3.61E-7	4.23E-4	5.12E-4	2.38E-4	4.93E-4	2.34E-9	3.05E-9	2.38E-9	5.33E-9
640	615902.9	4201731.5	2.05E-7	2.98E-7	1.61E-7	1.27E-7	7.35E-4	2.39E-3	1.17E-3	6.60E-3	1.91E-8	2.24E-8	1.84E-8	9.37E-9
641	615922.9	4201731.5	1.99E-7	2.89E-7	1.57E-7	1.18E-7	7.16E-4	2.37E-3	1.16E-3	5.73E-3	1.92E-8	2.26E-8	1.71E-8	9.18E-9
642	614882.9	4201751.5	1.93E-7	2.80E-7	1.52E-7	2.76E-7	3.29E-4	3.93E-4	1.88E-4	3.50E-4	1.69E-9	2.27E-9	1.74E-9	4.16E-9
643	614902.9	4201751.5	2.02E-7	2.93E-7	1.59E-7	2.84E-7	3.41E-4	4.07E-4	1.94E-4	3.64E-4	1.76E-9	2.36E-9	1.79E-9	4.30E-9
644	614922.9	4201751.5	2.10E-7	3.05E-7	1.65E-7	2.90E-7	3.51E-4	4.21E-4	2.00E-4	3.79E-4	1.83E-9	2.44E-9	1.84E-9	4.44E-9
645	614942.9	4201751.5	2.19E-7	3.19E-7	1.73E-7	2.96E-7	3.63E-4	4.36E-4	2.06E-4	3.95E-4	1.90E-9	2.50E-9	1.89E-9	4.58E-9
646	614962.9	4201751.5	2.30E-7	3.34E-7	1.81E-7	3.01E-7	3.75E-4	4.52E-4	2.12E-4	4.12E-4	1.98E-9	2.62E-9	1.95E-9	4.74E-9
647	614982.9	4201751.5	2.42E-7	3.52E-7	1.91E-7	3.06E-7	3.87E-4	4.68E-4	2.19E-4	4.30E-4	2.06E-9	2.71E-9	2.01E-9	4.91E-9
648	615002.9	4201751.5	2.57E-7	3.73E-7	2.02E-7	3.11E-7	4.01E-4	4.84E-4	2.26E-4	4.50E-4	2.15E-9	2.82E-9	2.08E-9	5.09E-9
649	615022.9	4201751.5	2.74E-7	3.98E-7	2.16E-7	3.15E-7	4.16E-4	5.02E-4	2.34E-4	4.71E-4	2.24E-9	2.93E-9	2.15E-9	5.28E-9
650	615042.9	4201751.5	2.96E-7	4.30E-7	2.33E-7	3.18E-7	4.34E-4	5.21E-4	2.42E-4	4.93E-4	2.33E-9	3.05E-9	2.22E-9	5.49E-9
651	615162.9	4201751.5	8.17E-7	1.19E-6	6.43E-7	3.34E-7	5.43E-4	6.59E-4	3.02E-4	6.78E-4	3.14E-9	4.03E-9	2.79E-9	6.74E-9
652	615342.9	4201751.5	5.92E-7	8.60E-7	4.66E-7	3.42E-7	6.31E-4	1.00E-3	4.39E-4	1.31E-3	5.58E-9	6.15E-9	4.84E-9	7.94E-9
653	615382.9	4201751.5	4.86E-7	7.07E-7	3.83E-7	3.41E-7	6.39E-4	1.12E-3	4.82E-4	1.57E-3	6.53E-9	6.80E-9	5.89E-9	8.10E-9
654	615422.9	4201751.5	4.22E-7	6.13E-7	3.32E-7	3.39E-7	6.43E-4	1.25E-3	5.30E-4	1.90E-3	7.60E-9	7.51E-9	7.49E-9	8.21E-9
655	615462.9	4201751.5	3.80E-7	5.53E-7	2.99E-7	3.35E-7	6.52E-4	1.40E-3	5.84E-4	2.27E-3	8.68E-9	8.32E-9	1.00E-8	8.35E-9
656	615502.9	4201751.5	3.52E-7	5.12E-7	2.77E-7	3.29E-7	6.65E-4	1.55E-3	6.46E-4	2.68E-3	9.62E-9	9.30E-9	1.41E-8	8.53E-9
657	615542.9	4201751.5	3.31E-7	4.82E-7	2.61E-7	3.20E-7	6.85E-4	1.70E-3	7.23E-4	3.17E-3	1.02E-8	1.05E-8	2.04E-8	8.80E-9
658	615582.9	4201751.5	3.14E-7	4.57E-7	2.47E-7	3.08E-7	7.22E-4	1.82E-3	8.12E-4	3.76E-3	1.04E-8	1.19E-8	3.03E-8	9.19E-9
659	615622.9	4201751.5	3.00E-7	4.36E-7	2.36E-7	2.90E-7	7.61E-4	1.90E-3	9.03E-4	4.60E-3	1.07E-8	1.32E-8	4.57E-8	9.59E-9
660	615662.9	4201751.5	2.88E-7	4.18E-7	2.26E-7	2.67E-7	7.90E-4	1.96E-3	9.58E-4	6.08E-3	1.23E-8	1.37E-8	5.92E-8	9.93E-9
661	615702.9	4201751.5	2.78E-7	4.04E-7	2.19E-7	2.41E-7	8.23E-4	2.03E-3	1.01E-3	9.64E-3	1.47E-8	1.53E-8	5.91E-8	1.03E-8
662	615742.9	4201751.5	2.69E-7	3.92E-7	2.12E-7	2.14E-7	8.68E-4	2.14E-3	1.05E-3	2.67E-2	1.61E-8	1.88E-8	5.24E-8	1.07E-8
663	615902.9	4201751.5	2.19E-7	3.18E-7	1.72E-7	1.19E-7	7.69E-4	2.65E-3	1.33E-3	6.50E-3	2.15E-8	2.57E-8	1.49E-8	9.86E-9
664	615922.9	4201751.5	2.11E-7	3.07E-7	1.66E-7	1.11E-7	7.49E-4	2.62E-3	1.32E-3	5.64E-3	2.16E-8	2.58E-8	1.39E-8	9.66E-9
665	614902.9	4201771.5	1.87E-7	2.71E-7	1.47E-7	2.53E-7	3.48E-4	4.10E-4	1.96E-4	3.64E-4	1.73E-9	2.36E-9	1.68E-9	4.40E-9
666	614922.9	4201771.5	1.96E-7	2.84E-7	1.54E-7	2.59E-7	3.60E-4	4.25E-4	2.02E-4	3.80E-4	1.81E-9	2.44E-9	1.73E-9	4.55E-9
667	614942.9	4201771.5	2.05E-7	2.98E-7	1.62E-7	2.64E-7	3.73E-4	4.41E-4	2.09E-4	3.95E-4	1.89E-9	2.53E-9	1.78E-9	4.71E-9
668	614962.9	4201771.5	2.16E-7	3.14E-7	1.70E-7	2.69E-7	3.86E-4	4.57E-4	2.15E-4	4.13E-4	1.97E-9	2.63E-9	1.83E-9	4.88E-9
669	614982.9	4201771.5	2.28E-7	3.32E-7	1.79E-7	2.73E-7	3.99E-4	4.74E-4	2.22E-4	4.30E-4	2.05E-9	2.72E-9	1.88E-9	5.05E-9
670	615002.9	4201771.5	2.42E-7	3.52E-7	1.91E-7	2.77E-7	4.13E-4	4.91E-4	2.30E-4	4.50E-4	2.13E-9	2.83E-9	1.94E-9	5.23E-9
671	615022.9	4201771.5	2.60E-7	3.78E-7	2.05E-7	2.81E-7	4.28E-4	5.10E-4	2.37E-4	4.71E-4	2.23E-9	2.94E-9	2.00E-9	5.43E-9
672	615042.9	4201771.5	2.82E-7	4.11E-7	2.22E-7	2.84E-7	4.46E-4	5.29E-4	2.46E-4	4.93E-4	2.33E-9	3.06E-9	2.07E-9	5.65E-9
673	615162.9	4201771.5	8.21E-7	1.19E-6	6.46E-7	2.98E-7	5.70E-4	6.74E-4	3.07E-4	6.78E-4	3.14E-9	4.04E-9	2.62E-9	7.05E-9
674	615222.9	4201771.5	2.92E-6	4.24E-6	2.30E-6	3.02E-7	5.98E-4	7.72E-4	3.47E-4	8.18E-4	3.76E-9	4.67E-9	3.06E-9	7.52E-9
675	615242.9	4201771.5	1.74E-6	2.53E-6	1.37E-6	3.03E-7	6.06E-4	8.09E-4	3.62E-4	8.75E-4	4.00E-9	4.89E-9	3.25E-9	7.66E-9
676	615262.9	4201771.5	1.24E-6	1.80E-6	9.73E-7	3.03E-7	6.16E-4	8.48E-4	3.77E-4	9.39E-4	4.27E-9	5.12E-9	3.47E-9	7.81E-9
677	615282.9	4201771.5	9.62E-7	1.40E-6	7.57E-7	3.04E-7	6.30E-4	8.91E-4	3.94E-4	1.01E-3	4.56E-9	5.37E-9	3.73E-9	7.96E-9
678	615302.9	4201771.5	7.92E-7	1.15E-6	6.24E-7	3.04E-7	6.44E-4	9.37E-4	4.12E-4	1.09E-3	4.89E-9	5.65E-9	4.04E-9	8.12E-9
679	615902.9	4201771.5	2.34E-7	3.40E-7	1.84E-7	1.12E-7	8.07E-4	2.96E-3	1.53E-3	6.39E-3	2.44E-8	3.00E-8	1.25E-8	1.04E-8
680	615922.9	4201771.5	2.25E-7	3.28E-7	1.77E-7	1.05E-7	7.88E-4	2.92E-3	1.54E-3	5.59E-3	2.47E-8	3.02E-8	1.16E-8	1.02E-8
681	614922.9	4201791.5	1.83E-7	2.67E-7	1.44E-7	2.33E-7	3.69E-4	4.28E-4	2.05E-4	3.79E-4	1.78E-9	2.45E-9	1.62E-9	4.67E-9
682	614942.9	4201791.5	1.94E-7	2.81E-7	1.52E-7	2.38E-7	3.83E-4	4.45E-4	2.11E-4	3.96E-4	1.86E-9	2.54E-9	1.67E-9	4.84E-9
683	614962.9	4201791.5	2.04E-7	2.97E-7	1.61E-7	2.43E-7	3.97E-4	4.62E-4	2.18E-4	4.13E-4	1.95E-9	2.64E-9	1.72E-9	5.02E-9
684	614982.9	4201791.5	2.16E-7	3.15E-7	1.70E-7	2.46E-7	4.11E-4	4.79E-4	2.25E-4	4.30E-4	2.03E-9	2.74E-9	1.77E-9	5.19E-9
685	615002.9	4201791.5	2.31E-7	3.36E-7	1.82E-7	2.50E-7	4.25E-4	4.98E-4	2.33E-4	4.49E-4	2.12E-9	2.84E-9	1.82E-9	5.38E-9
686	615022.9	4201791.5	2.49E-7	3.62E-7	1.96E-7	2.53E-7	4.41E-4	5.17E-4	2.41E-4	4.70E-4	2.21E-9	2.95E-9	1.88E-9	5.59E-9
687	615042.9	4201791.5	2.71E-7	3.95E-7	2.14E-7	2.56E-7	4.59E-4	5.38E-4	2.49E-4	4.93E-4	2.31E-9	3.07E-9	1.95E-9	5.82E-9
688	615162.9	4201791.5	8.25E-7	1.20E-6	6.49E-7	2.68E-7	5.96E-4	6.89E-4	3.13E-4	6.77E-4	3.12E-9	4.06E-9	2.50E-9	7.38E-9
689	615222.9	4201791.5	2.86E-6	4.16E-6	2.25E-6	2.71E-7	6.34E-4	7.92E-4	3.55E-4	8.15E-4	3.76E-9	4.70E-9	2.98E-9	7.95E-9
690	615242.9	4201791.5	1.73E-6	2.51E-6	1.36E-6	2.72E-7	6.43E-4	8.31E-4	3.70E-4	8.71E-4	4.01E-9	4.93E-9	3.19E-9	8.10E-9
691	615262.9	4201791.5	1.23E-6	1.79E-6	9.69E-7	2.73E-7	6.53E-4	8.74E-4	3.87E-4	9.33E-4	4.29E-9	5.18E-9	3.43E-9	8.26E-9
692	615282.9	4201791.5	9.63E-7	1.40E-6	7.58E-7	2.73E-7	6.66E-4	9.20E-4	4.05E-4	1.00E-3	4.60E-9	5.44E-9	3.73E-9	8.43E-9
693	615302.9	4201791.5	7.98E-7	1.16E-6	6.28E-7	2.73E-7	6.82E-4	9.69E-4	4.24E-4	1.08E-3	4.94E-9	5.71E-9	4.07E-9	8.60E-9
694	615342.9	4201791.5	6.12E-7	8.90E-7	4.82E-7	2.72E-7	7.10E-4	1.08E-3	4.66E-4	1.27E-3	5.74E-9	6.34E-9	5.00E-9	8.93E-9
695	615382.9	4201791.5	5.15E-7	7.49E-7	4.05E-7	2.71E-7	7.23E-4	1.22E-3	5.17E-4	1.50E-3	6.77E-9	7.07E-9	6.34E-9	9.16E-9
696	615422.9	4201791.5	4.58E-7	6.66E-7	3.61E-7	2.68E-7	7.30E-4	1.38E-3	5.76E-4	1.77E-3	8.03E-9	7.91E-9	8.29E-9	9.31E-9
697	615462.9	4201791.5	4.24E-7	6.17E-7	3.34E-7	2.64E-7	7.40E-4	1.56E-3	6.44E-4	2.08E-3	9.46E-9	8.80E-9	1.10E-8	9.48E-9
698	615502.9	4201791.5	4.03E-7	5.86E-7	3.17E-7	2.58E-7	7.56E-4	1.77E-3	7.24E-4	2.45E-3	1.09E-8	9.93E-9	1.49E-8	9.71E-9
699	615542.9	4201791.5	3.89E-7	5.65E-7	3.06E-7	2.50E-7	7.84E-4	1.99E-3	8.20E-4	2.91E-3	1.22E-8	1.14E-8	2.03E-8	1.01E-8
700	615582.9	4201791.5	3.75E-7	5.45E-7	2.95E-7	2.39E-7	8.30E-4	2.20E-3	9.40E-4	3.52E-3	1.30E-8	1.33E-8	2.83E-8	1.05E-8
701	615622.9	4201791.5	3.61E-7	5.24E-7	2.84E-7	2.24E-7	8.75E-4	2.35E-3	1.09E-3	4.45E-3	1.34E-8	1.56E-8	3.65E-8	1.10E-8
702	615662.9	4201791.5	3.47E-7	5.04E-7	2.73E-7	2.07E-7	9.12E-4	2.45E-3	1.24E-3	6.18E-3	1.52E-8	1.79E-8	3.74E-8	1.15E-8
703	615702.9	4201791.5	3.35E-7	4.87E-7	2.64E-7	1.90E-7	9.59E-4	2.56E-3	1.33E-3	1.07E-2	1.83E-8	1.94E-8	3.65E-8	1.20E-8
704	615742.9	4201791.5	3.25E-7	4.72E-7	2.56E-7	1.72E-7	1.00E-3	2.73E-3	1.41E-3	3.76E-2	2.07E-8	2.44E-8	3.27E-8	1.24E-8
705	615882.9	4201791.5	2.62E-7	3.80E-7	2.06E-7	1.12E-7	8.72E-4	3.36E-3	1.81E-3	7.30E-3	2.78E-8	3.53E-8	1.19E-8	1.12E-8
706	615902.9	4201791.5	2.51E-7	3.65E-7	1.98E-7	1.05E-7	8.50E-4	3.33E-3	1.82E-3	6.30E-3	2.82E-8	3.58E-8	1.08E-8	1.10E-8
707	615922.9	4201791.5	2.41E-7	3.51E-7	1.90E-7	9.95E-8	8.34E-4	3.30E-3	1.82E-3	5.55E-3	2.87E-8	3.63E-8	9.99E-9	1.09E-8
708	614942.9	4201811.5	1.83E-7	2.66E-7	1.44E-7	2.16E-7	3.92E-4	4.48E-4	2.14E-4	3.95E-4	1.84E-9	2.55E-9	1.57E-9	4.97E-9
709	614962.9	4201811.5	1.94E-7	2.82E-7	1.53E-7	2.20E-7	4.07E-4	4.65E-4	2.21E-4	4.12E-4	1.92E-9	2.65E-9	1.62E-9	5.15E-9
710	614982.9	4201811.5	2.06E-7	3.00E-7	1.62E-7	2.23E-7	4.22E-4	4.84E-4	2.28E-4	4.30E-4	2.01E-9	2.75E-9	1.67E-9	5.34E-9
711	615002.9	4201811.5	2.21E-7	3.21E-7	1.74E-7	2.26E-7	4.38E-4	5.03E-4	2.36E-4	4.49E-4	2.10E-9	2.86E-9	1.72E-9	5.54E-9
712	615022.9	4201811.5	2.39E-7	3.48E-7	1.88E-7	2.29E-7	4.55E-4	5.23E-4	2.44E-4	4.70E-4	2.19E-9	2.97E-9	1.78E-9	5.76E-9
713	615042.9	4201811.5	2.62E-7	3.81E-7	2.06E-7	2.32E-7	4.73E-4	5.45E-4	2.53E-4	4.92E-4	2.30E-9	3.09E-9	1.85E-9	6.00E-9
714	615082.9	4201811.5	3.32E-7	4.83E-7	2.61E-7	2.37E-7	5.16E-4	5.92E-4	2.72E-4	5.43E-4	2.52E-9	3.36E-9	2.00E-9	6.53E-9
715	615282.9	4201811.5	9.66E-7	1.40E-6	7.60E-7	2.47E-7	7.07E-4	9.48E-4	4.15E-4	9.94E-4	4.62E-9	5.50E-9	3.82E-9	8.94E-9
716	615302.9	4201811.5	8.06E-7	1.17E-6	6.35E-7	2.47E-7	7.23E-4	1.00E-3	4.35E-4	1.07E-3	4.97E-9	5.79E-9	4.22E-9	9.13E-9
717	615862.9	4201811.5	2.96E-7	4.30E-7	2.33E-7	1.12E-7	9.45E-4	3.86E-3	2.20E-3	8.44E-3	3.20E-8	4.37E-8	1.21E-8	1.22E-8
718	615882.9	4201811.5	2.83E-7	4.11E-7	2.23E-7	1.06E-7	9.21E-4	3.84E-3	2.21E-3	7.20E-3	3.27E-8	4.34E-8	1.06E-8	1.20E-8
719	615902.9	4201811.5	2.71E-7	3.93E-7	2.13E-7	9.98E-8	9.02E-4	3.82E-3	2.20E-3	6.26E-3	3.33E-8	4.40E-8	9.53E-9	1.18E-8
720	615922.9	4201811.5	2.58E-7	3.75E-7	2.03E-7	9.45E-8	8.89E-4	3.80E-3	2.18E-3	5.51E-3	3.38E-8	4.42E-8	8.78E-9	1.17E-8
721	614942.9	4201831.5	1.74E-7	2.52E-7	1.37E-7	1.97E-7	4.01E-4	4.50E-4	2.16E-4	3.93E-4	1.81E-9	2.57E-9	1.49E-9	5.09E-9
722	614962.9	4201831.5	1.85E-7	2.69E-7	1.45E-7	2.01E-7	4.18E-4	4.69E-4	2.24E-4	4.11E-4	1.90E-9	2.67E-9	1.54E-9	5.29E-9
723	615002.9	4201831.5	2.12E-7	3.09E-7	1.67E-7	2.07E-7	4.51E-4	5.08E-4	2.39E-4	4.48E-4	2.08E-9	2.88E-9	1.65E-9	5.71E-9
724	615022.9	4201831.5	2.31E-7	3.35E-7	1.82E-7	2.09E-7	4.69E-4	5.29E-4	2.48E-4	4.68E-4	2.18E-9	2.99E-9	1.71E-9	5.94E-9
725	615042.9	4201831.5	2.54E-7	3.69E-7	2.00E-7	2.12E-7	4.88E-4	5.51E-4	2.57E-4	4.91E-4	2.28E-9	3.12E-9	1.78E-9	6.19E-9
726	615082.9	4201831.5	3.24E-7	4.70E-7	2.55E-7	2.16E-7	5.32E-4	6.00E-4	2.76E-4	5.42E-4	2.51E-9	3.39E-9	1.95E-9	6.74E-9
727	615122.9	4201831.5	4.64E-7	6.74E-7	3.65E-7	2.19E-7	5.87E-4	6.55E-4	2.99E-4	6.02E-4	2.77E-9	3.71E-9	2.16E-9	7.38E-9
728	615142.9	4201831.5	5.96E-7	8.67E-7	4.69E-7	2.21E-7	6.18E-4	6.85E-4	3.11E-4	6.36E-4	2.93E-9	3.90E-9	2.29E-9	7.72E-9
729	615162.9	4201831.5	8.35E-7	1.21E-6	6.57E-7	2.22E-7	6.48E-4	7.18E-4	3.25E-4	6.73E-4	3.09E-9	4.10E-9	2.43E-9	8.05E-9
730	615182.9	4201831.5	1.40E-6	2.03E-6	1.10E-6	2.23E-7	6.75E-4	7.53E-4	3.39E-4	7.14E-4	3.28E-9	4.32E-9	2.60E-9	8.36E-9
731	615342.9	4201831.5	6.53E-7	9.49E-7	5.14E-7	2.24E-7	8.04E-4	1.16E-3	4.95E-4	1.23E-3	5.85E-9	6.53E-9	5.54E-9	1.01E-8
732	615382.9	4201831.5	5.71E-7	8.30E-7	4.50E-7	2.22E-7	8.27E-4	1.32E-3	5.52E-4	1.44E-3	6.96E-9	7.32E-9	7.02E-9	1.05E-8
733	615422.9	4201831.5	5.29E-7	7.70E-7	4.17E-7	2.19E-7	8.37E-4	1.52E-3	6.21E-4	1.69E-3	8.40E-9	8.26E-9	8.93E-9	1.07E-8
734	615462.9	4201831.5	5.05E-7	7.35E-7	3.98E-7	2.14E-7	8.48E-4	1.75E-3	7.01E-4	1.97E-3	1.01E-8	9.21E-9	1.14E-8	1.09E-8
735	615502.9	4201831.5	4.93E-7	7.16E-7	3.88E-7	2.08E-7	8.68E-4	2.01E-3	8.01E-4	2.32E-3	1.21E-8	1.05E-8	1.47E-8	1.12E-8
736	615542.9	4201831.5	4.85E-7	7.06E-7	3.82E-7	2.01E-7	9.06E-4	2.33E-3	9.29E-4	2.79E-3	1.43E-8	1.23E-8	1.94E-8	1.16E-8
737	615582.9	4201831.5	4.75E-7	6.91E-7	3.74E-7	1.92E-7	9.64E-4	2.68E-3	1.09E-3	3.44E-3	1.62E-8	1.47E-8	2.47E-8	1.22E-8
738	615622.9	4201831.5	4.60E-7	6.68E-7	3.62E-7	1.80E-7	1.02E-3	2.97E-3	1.31E-3	4.47E-3	1.74E-8	1.79E-8	2.69E-8	1.28E-8
739	615662.9	4201831.5	4.45E-7	6.46E-7	3.50E-7	1.69E-7	1.07E-3	3.20E-3	1.64E-3	6.52E-3	1.96E-8	2.35E-8	2.50E-8	1.34E-8
740	615702.9	4201831.5	4.28E-7	6.22E-7	3.37E-7	1.56E-7	1.13E-3	3.38E-3	1.92E-3	1.28E-2	2.39E-8	2.74E-8	2.52E-8	1.40E-8
741	615862.9	4201831.5	3.22E-7	4.69E-7	2.54E-7	1.05E-7	9.99E-4	4.48E-3	2.77E-3	8.31E-3	3.81E-8	5.53E-8	1.11E-8	1.30E-8
742	615882.9	4201831.5	3.07E-7	4.46E-7	2.42E-7	9.98E-8	9.79E-4	4.47E-3	2.75E-3	7.13E-3	3.91E-8	5.61E-8	9.66E-9	1.28E-8
743	615902.9	4201831.5	2.91E-7	4.23E-7	2.29E-7	9.47E-8	9.64E-4	4.47E-3	2.69E-3	6.20E-3	3.98E-8	5.59E-8	8.61E-9	1.27E-8
744	615922.9	4201831.5	2.75E-7	4.00E-7	2.17E-7	8.98E-8	9.54E-4	4.45E-3	2.61E-3	5.43E-3	4.03E-8	5.48E-8	7.85E-9	1.26E-8
745	615942.9	4201831.5	2.60E-7	3.78E-7	2.05E-7	8.53E-8	9.52E-4	4.43E-3	2.51E-3	4.82E-3	4.06E-8	5.35E-8	7.30E-9	1.27E-8
746	614962.9	4201851.5	1.76E-7	2.56E-7	1.39E-7	1.84E-7	4.28E-4	4.71E-4	2.26E-4	4.09E-4	1.88E-9	2.69E-9	1.49E-9	5.44E-9
747	614982.9	4201851.5	1.89E-7	2.75E-7	1.49E-7	1.88E-7	4.46E-4	4.91E-4	2.34E-4	4.28E-4	1.97E-9	2.80E-9	1.54E-9	5.66E-9

748	615002.9	4201851.5	2.04E-7	2.97E-7	1.61E-7	1.90E-7	4.65E-4	5.12E-4	2.42E-4	4.47E-4	2.06E-9	2.91E-9	1.60E-9	5.89E-9
749	615022.9	4201851.5	2.22E-7	3.23E-7	1.75E-7	1.92E-7	4.84E-4	5.33E-4	2.51E-4	4.67E-4	2.16E-9	3.03E-9	1.67E-9	6.12E-9
750	615042.9	4201851.5	2.46E-7	3.57E-7	1.93E-7	1.94E-7	5.04E-4	5.57E-4	2.60E-4	4.90E-4	2.26E-9	3.15E-9	1.74E-9	6.38E-9
751	615082.9	4201851.5	3.15E-7	4.58E-7	2.48E-7	1.98E-7	5.50E-4	6.08E-4	2.80E-4	5.41E-4	2.50E-9	3.42E-9	1.93E-9	6.97E-9
752	615122.9	4201851.5	4.55E-7	6.61E-7	3.58E-7	2.01E-7	6.07E-4	6.66E-4	3.04E-4	6.00E-4	2.76E-9	3.75E-9	2.16E-9	7.65E-9
753	615142.9	4201851.5	5.92E-7	8.60E-7	4.66E-7	2.02E-7	6.39E-4	6.97E-4	3.17E-4	6.34E-4	2.91E-9	3.93E-9	2.31E-9	8.02E-9
754	615162.9	4201851.5	8.38E-7	1.22E-6	6.60E-7	2.03E-7	6.73E-4	7.31E-4	3.30E-4	6.70E-4	3.08E-9	4.14E-9	2.47E-9	8.40E-9
755	615182.9	4201851.5	1.42E-6	2.07E-6	1.12E-6	2.04E-7	7.06E-4	7.68E-4	3.45E-4	7.10E-4	3.26E-9	4.36E-9	2.67E-9	8.77E-9
756	615242.9	4201851.5	1.69E-6	2.45E-6	1.33E-6	2.06E-7	7.76E-4	8.96E-4	3.96E-4	8.55E-4	3.96E-9	5.11E-9	3.45E-9	9.68E-9
757	615262.9	4201851.5	1.23E-6	1.79E-6	9.69E-7	2.06E-7	7.90E-4	9.47E-4	4.16E-4	9.13E-4	4.26E-9	5.39E-9	3.80E-9	9.91E-9
758	615282.9	4201851.5	9.88E-7	1.44E-6	7.78E-7	2.06E-7	8.04E-4	1.00E-3	4.36E-4	9.78E-4	4.59E-9	5.67E-9	4.21E-9	1.01E-8
759	615302.9	4201851.5	8.44E-7	1.23E-6	6.64E-7	2.06E-7	8.21E-4	1.06E-3	4.59E-4	1.05E-3	4.97E-9	5.97E-9	4.67E-9	1.04E-8
760	615842.9	4201851.5	3.74E-7	5.43E-7	2.94E-7	1.04E-7	1.09E-3	5.31E-3	3.66E-3	9.81E-3	4.52E-8	7.13E-8	1.15E-8	1.41E-8
761	615862.9	4201851.5	3.52E-7	5.12E-7	2.77E-7	9.92E-8	1.06E-3	5.31E-3	3.57E-3	8.21E-3	4.65E-8	7.14E-8	1.02E-8	1.39E-8
762	615882.9	4201851.5	3.32E-7	4.83E-7	2.62E-7	9.45E-8	1.05E-3	5.34E-3	3.45E-3	7.04E-3	4.77E-8	7.06E-8	8.93E-9	1.38E-8
763	615902.9	4201851.5	3.12E-7	4.54E-7	2.46E-7	8.99E-8	1.04E-3	5.35E-3	3.28E-3	6.10E-3	4.84E-8	6.84E-8	7.90E-9	1.38E-8
764	615922.9	4201851.5	2.92E-7	4.25E-7	2.30E-7	8.54E-8	1.03E-3	5.30E-3	3.09E-3	5.33E-3	4.84E-8	6.53E-8	7.14E-9	1.38E-8
765	615942.9	4201851.5	2.74E-7	3.98E-7	2.15E-7	8.14E-8	1.04E-3	5.23E-3	2.92E-3	4.73E-3	4.83E-8	6.25E-8	6.60E-9	1.38E-8
766	614982.9	4201871.5	1.82E-7	2.64E-7	1.43E-7	1.73E-7	4.59E-4	4.94E-4	2.37E-4	4.26E-4	1.96E-9	2.83E-9	1.51E-9	5.83E-9
767	615002.9	4201871.5	1.97E-7	2.86E-7	1.55E-7	1.75E-7	4.79E-4	5.15E-4	2.46E-4	4.46E-4	2.05E-9	2.95E-9	1.58E-9	6.07E-9
768	615022.9	4201871.5	2.15E-7	3.12E-7	1.69E-7	1.78E-7	4.99E-4	5.38E-4	2.55E-4	4.67E-4	2.15E-9	3.07E-9	1.66E-9	6.32E-9
769	615042.9	4201871.5	2.37E-7	3.45E-7	1.87E-7	1.79E-7	5.21E-4	5.62E-4	2.64E-4	4.89E-4	2.25E-9	3.19E-9	1.74E-9	6.59E-9
770	615082.9	4201871.5	3.06E-7	4.45E-7	2.41E-7	1.83E-7	5.69E-4	6.15E-4	2.85E-4	5.39E-4	2.49E-9	3.47E-9	1.94E-9	7.21E-9
771	615122.9	4201871.5	4.44E-7	6.46E-7	3.50E-7	1.85E-7	6.28E-4	6.75E-4	3.08E-4	5.98E-4	2.76E-9	3.80E-9	2.21E-9	7.93E-9
772	615142.9	4201871.5	5.81E-7	8.45E-7	4.58E-7	1.87E-7	6.62E-4	7.08E-4	3.22E-4	6.31E-4	2.91E-9	3.98E-9	2.37E-9	8.33E-9
773	615162.9	4201871.5	8.38E-7	1.22E-6	6.60E-7	1.88E-7	6.99E-4	7.44E-4	3.36E-4	6.67E-4	3.07E-9	4.19E-9	2.56E-9	8.76E-9
774	615182.9	4201871.5	1.45E-6	2.11E-6	1.14E-6	1.88E-7	7.37E-4	7.82E-4	3.51E-4	7.06E-4	3.26E-9	4.42E-9	2.77E-9	9.18E-9
775	615342.9	4201871.5	7.53E-7	1.10E-6	5.93E-7	1.88E-7	9.22E-4	1.24E-3	5.24E-4	1.20E-3	5.86E-9	6.80E-9	6.00E-9	1.16E-8
776	615382.9	4201871.5	7.03E-7	1.02E-6	5.53E-7	1.86E-7	9.56E-4	1.43E-3	5.88E-4	1.39E-3	7.05E-9	7.64E-9	7.35E-9	1.21E-8
777	615422.9	4201871.5	6.80E-7	9.88E-7	5.35E-7	1.83E-7	9.70E-4	1.66E-3	6.64E-4	1.62E-3	8.60E-9	8.47E-9	8.99E-9	1.24E-8
778	615462.9	4201871.5	6.72E-7	9.78E-7	5.29E-7	1.79E-7	9.85E-4	1.95E-3	7.61E-4	1.90E-3	1.07E-8	9.66E-9	1.12E-8	1.26E-8
779	615502.9	4201871.5	6.70E-7	9.74E-7	5.27E-7	1.74E-7	1.01E-3	2.31E-3	8.82E-4	2.27E-3	1.32E-8	1.12E-8	1.42E-8	1.30E-8
780	615542.9	4201871.5	6.68E-7	9.71E-7	5.26E-7	1.67E-7	1.07E-3	2.75E-3	1.04E-3	2.76E-3	1.64E-8	1.32E-8	1.79E-8	1.37E-8
781	615582.9	4201871.5	6.62E-7	9.63E-7	5.21E-7	1.59E-7	1.14E-3	3.28E-3	1.26E-3	3.50E-3	2.00E-8	1.61E-8	2.02E-8	1.44E-8
782	615622.9	4201871.5	6.47E-7	9.40E-7	5.09E-7	1.50E-7	1.21E-3	3.89E-3	1.60E-3	4.67E-3	2.34E-8	2.04E-8	1.94E-8	1.52E-8
783	615842.9	4201871.5	4.14E-7	6.01E-7	3.26E-7	9.87E-8	1.17E-3	6.51E-3	4.97E-3	9.74E-3	5.70E-8	9.71E-8	1.05E-8	1.52E-8
784	615862.9	4201871.5	3.85E-7	5.60E-7	3.03E-7	9.41E-8	1.15E-3	6.53E-3	4.62E-3	8.10E-3	5.83E-8	9.28E-8	9.40E-9	1.51E-8
785	615882.9	4201871.5	3.58E-7	5.20E-7	2.82E-7	8.97E-8	1.13E-3	6.55E-3	4.27E-3	6.90E-3	5.91E-8	8.77E-8	8.31E-9	1.50E-8
786	615902.9	4201871.5	3.32E-7	4.83E-7	2.61E-7	8.55E-8	1.13E-3	6.49E-3	3.93E-3	5.96E-3	5.91E-8	8.23E-8	7.34E-9	1.51E-8
787	615922.9	4201871.5	3.08E-7	4.48E-7	2.43E-7	8.16E-8	1.14E-3	6.37E-3	3.62E-3	5.22E-3	5.85E-8	7.70E-8	6.60E-9	1.51E-8
788	615942.9	4201871.5	2.86E-7	4.16E-7	2.25E-7	7.79E-8	1.15E-3	6.19E-3	3.35E-3	4.63E-3	5.76E-8	7.22E-8	6.06E-9	1.53E-8
789	615002.9	4201891.5	1.89E-7	2.75E-7	1.49E-7	1.63E-7	4.92E-4	5.17E-4	2.48E-4	4.44E-4	2.04E-9	2.98E-9	1.58E-9	6.25E-9
790	615022.9	4201891.5	2.07E-7	3.01E-7	1.63E-7	1.65E-7	5.14E-4	5.41E-4	2.58E-4	4.65E-4	2.15E-9	3.11E-9	1.67E-9	6.52E-9
791	615862.9	4201891.5	4.15E-7	6.04E-7	3.27E-7	8.92E-8	1.24E-3	8.24E-3	5.79E-3	7.84E-3	7.40E-8	1.16E-7	8.67E-9	1.65E-8
792	615882.9	4201891.5	3.80E-7	5.53E-7	2.99E-7	8.52E-8	1.24E-3	8.12E-3	5.14E-3	6.66E-3	7.35E-8	1.05E-7	7.76E-9	1.65E-8
793	615002.9	4201911.5	1.82E-7	2.64E-7	1.43E-7	1.51E-7	5.06E-4	5.19E-4	2.51E-4	4.41E-4	2.05E-9	3.02E-9	1.60E-9	6.44E-9
794	615022.9	4201911.5	1.99E-7	2.90E-7	1.57E-7	1.53E-7	5.30E-4	5.44E-4	2.61E-4	4.63E-4	2.15E-9	3.15E-9	1.70E-9	6.74E-9
795	615342.9	4201911.5	1.08E-6	1.56E-6	8.46E-7	1.61E-7	1.07E-3	1.32E-3	5.52E-4	1.17E-3	5.85E-9	7.11E-9	6.15E-9	1.35E-8
796	615382.9	4201911.5	1.06E-6	1.54E-6	8.33E-7	1.58E-7	1.11E-3	1.52E-3	6.22E-4	1.34E-3	7.04E-9	7.96E-9	7.31E-9	1.41E-8
797	615422.9	4201911.5	1.06E-6	1.54E-6	8.34E-7	1.56E-7	1.14E-3	1.79E-3	7.10E-4	1.57E-3	8.69E-9	9.05E-9	8.85E-9	1.45E-8
798	615462.9	4201911.5	1.06E-6	1.54E-6	8.34E-7	1.52E-7	1.16E-3	2.15E-3	8.21E-4	1.86E-3	1.10E-8	1.04E-8	1.10E-8	1.49E-8
799	615502.9	4201911.5	1.07E-6	1.55E-6	8.39E-7	1.48E-7	1.21E-3	2.63E-3	9.66E-4	2.24E-3	1.42E-8	1.22E-8	1.36E-8	1.55E-8
800	615542.9	4201911.5	1.07E-6	1.55E-6	8.41E-7	1.42E-7	1.28E-3	3.24E-3	1.16E-3	2.79E-3	1.83E-8	1.45E-8	1.56E-8	1.63E-8
801	615582.9	4201911.5	1.07E-6	1.55E-6	8.42E-7	1.36E-7	1.37E-3	4.06E-3	1.44E-3	3.62E-3	2.39E-8	1.79E-8	1.57E-8	1.73E-8
802	615622.9	4201911.5	1.06E-6	1.54E-6	8.36E-7	1.28E-7	1.46E-3	5.17E-3	1.89E-3	5.05E-3	3.16E-8	2.31E-8	1.43E-8	1.83E-8
803	615022.9	4201931.5	1.92E-7	2.79E-7	1.51E-7	1.43E-7	5.47E-4	5.46E-4	2.64E-4	4.61E-4	2.17E-9	3.20E-9	1.75E-9	6.97E-9
804	615042.9	4201931.5	2.12E-7	3.08E-7	1.67E-7	1.44E-7	5.73E-4	5.72E-4	2.74E-4	4.83E-4	2.28E-9	3.34E-9	1.87E-9	7.29E-9
805	615042.9	4201951.5	2.03E-7	2.95E-7	1.60E-7	1.35E-7	5.93E-4	5.75E-4	2.77E-4	4.79E-4	2.32E-9	3.39E-9	1.95E-9	7.55E-9
806	615062.9	4201951.5	2.27E-7	3.30E-7	1.79E-7	1.36E-7	6.22E-4	6.03E-4	2.89E-4	5.03E-4	2.44E-9	3.55E-9	2.09E-9	7.91E-9
807	615342.9	4201951.5	2.47E-6	3.60E-6	1.95E-6	1.39E-7	1.26E-3	1.39E-3	5.80E-4	1.13E-3	5.95E-9	7.55E-9	6.08E-9	1.59E-8
808	615382.9	4201951.5	2.46E-6	3.57E-6	1.93E-6	1.37E-7	1.33E-3	1.62E-3	6.57E-4	1.31E-3	7.18E-9	8.53E-9	7.20E-9	1.68E-8
809	615422.9	4201951.5	2.41E-6	3.50E-6	1.90E-6	1.34E-7	1.37E-3	1.92E-3	7.51E-4	1.52E-3	8.85E-9	9.69E-9	8.74E-9	1.74E-8
810	615462.9	4201951.5	2.39E-6	3.47E-6	1.88E-6	1.31E-7	1.40E-3	2.33E-3	8.75E-4	1.82E-3	1.13E-8	1.12E-8	1.06E-8	1.79E-8
811	616102.9	4201951.5	1.63E-7	2.37E-7	1.28E-7	4.91E-8	1.63E-3	5.57E-3	2.19E-3	2.06E-3	5.47E-8	5.28E-8	2.97E-9	2.00E-8
812	615062.9	4201971.5	2.16E-7	3.14E-7	1.70E-7	1.28E-7	6.46E-4	6.06E-4	2.92E-4	4.99E-4	2.50E-9	3.60E-9	2.19E-9	8.22E-9
813	615082.9	4201971.5	2.44E-7	3.55E-7	1.92E-7	1.29E-7	6.79E-4	6.37E-4	3.04E-4	5.23E-4	2.63E-9	3.77E-9	2.35E-9	8.64E-9
814	615062.9	4201991.5	2.04E-7	2.97E-7	1.61E-7	1.20E-7	6.71E-4	6.09E-4	2.94E-4	4.94E-4	2.57E-9	3.65E-9	2.28E-9	8.53E-9
815	615082.9	4201991.5	2.29E-7	3.34E-7	1.81E-7	1.21E-7	7.07E-4	6.40E-4	3.08E-4	5.19E-4	2.70E-9	3.83E-9	2.45E-9	8.99E-9
816	615102.9	4201991.5	2.61E-7	3.79E-7	2.05E-7	1.22E-7	7.43E-4	6.73E-4	3.21E-4	5.44E-4	2.84E-9	4.01E-9	2.62E-9	9.46E-9
817	615082.9	4202011.5	2.15E-7	3.12E-7	1.69E-7	1.14E-7	7.39E-4	6.44E-4	3.11E-4	5.14E-4	2.80E-9	3.88E-9	2.53E-9	9.38E-9
818	615102.9	4202011.5	2.41E-7	3.51E-7	1.90E-7	1.15E-7	7.77E-4	6.77E-4	3.25E-4	5.39E-4	2.94E-9	4.06E-9	2.70E-9	9.88E-9
819	615782.9	4202011.5	7.56E-7	1.10E-6	5.95E-7	7.60E-8	2.46E-3	5.86E-2	4.11E-2	1.13E-2	4.52E-7	5.23E-7	6.66E-9	3.26E-8
820	615802.9	4202011.5	6.22E-7	9.04E-7	4.89E-7	7.38E-8	2.49E-3	4.09E-2	2.23E-2	9.22E-3	3.42E-7	3.53E-7	6.28E-9	3.27E-8
821	615822.9	4202011.5	5.28E-7	7.67E-7	4.15E-7	7.16E-8	2.53E-3	3.14E-2	1.50E-2	7.74E-3	2.73E-7	2.68E-7	5.98E-9	3.30E-8
822	615102.9	4202031.5	2.22E-7	3.23E-7	1.75E-7	1.08E-7	8.14E-4	6.81E-4	3.28E-4	5.34E-4	3.05E-9	4.10E-9	2.76E-9	1.03E-8
823	615122.9	4202031.5	2.49E-7	3.62E-7	1.96E-7	1.09E-7	8.60E-4	7.18E-4	3.43E-4	5.61E-4	3.20E-9	4.30E-9	2.93E-9	1.09E-8
824	615782.9	4202031.5	7.26E-7	1.06E-6	5.72E-7	7.25E-8	2.87E-3	6.02E-2	4.07E-2	1.09E-2	4.64E-7	5.25E-7	6.16E-9	3.77E-8
825	615802.9	4202031.5	6.01E-7	8.74E-7	4.73E-7	7.05E-8	2.91E-3	4.20E-2	2.23E-2	8.88E-3	3.50E-7	3.55E-7	5.82E-9	3.78E-8
826	615822.9	4202031.5	5.12E-7	7.45E-7	4.03E-7	6.85E-8	2.96E-3	3.24E-2	1.52E-2	7.48E-3	2.80E-7	2.73E-7	5.55E-9	3.79E-8
827	615122.9	4202051.5	2.25E-7	3.27E-7	1.77E-7	1.03E-7	9.03E-4	7.22E-4	3.47E-4	5.56E-4	3.31E-9	4.34E-9	2.95E-9	1.14E-8
828	615142.9	4202051.5	2.49E-7	3.62E-7	1.96E-7	1.03E-7	9.58E-4	7.62E-4	3.64E-4	5.84E-4	3.48E-9	4.56E-9	3.11E-9	1.22E-8
829	615242.9	4202051.5	3.89E-7	5.66E-7	3.06E-7	1.04E-7	1.38E-3	1.04E-3	4.71E-4	7.69E-4	4.71E-9	6.01E-9	4.12E-9	1.75E-8
830	615262.9	4202051.5	4.12E-7	5.99E-7	3.24E-7	1.04E-7	1.51E-3	1.11E-3	4.99E-4	8.17E-4	5.05E-9	6.39E-9	4.39E-9	1.90E-8
831	615282.9	4202051.5	4.26E-7	6.19E-7	3.35E-7	1.03E-7	1.64E-3	1.20E-3	5.29E-4	8.67E-4	5.42E-9	6.73E-9	4.71E-9	2.06E-8
832	615302.9	4202051.5	4.37E-7	6.35E-7	3.44E-7	1.03E-7	1.79E-3	1.29E-3	5.63E-4	9.24E-4	5.85E-9	7.18E-9	5.09E-9	2.23E-8
833	615782.9	4202051.5	7.05E-7	1.02E-6	5.55E-7	6.93E-8	3.39E-3	6.17E-2	4.02E-2	1.05E-2	4.69E-7	5.25E-7	5.71E-9	4.39E-8
834	615802.9	4202051.5	5.85E-7	8.51E-7	4.61E-7	6.75E-8	3.42E-3	4.33E-2	2.23E-2	8.61E-3	3.53E-7	3.57E-7	5.41E-9	4.37E-8
835	615122.9	4202071.5	2.04E-7	2.97E-7	1.61E-7	9.72E-8	9.45E-4	7.25E-4	3.51E-4	5.50E-4	3.42E-9	4.37E-9	2.95E-9	1.19E-8
836	615142.9	4202071.5	2.22E-7	3.23E-7	1.75E-7	9.77E-8	1.01E-3	7.66E-4	3.68E-4	5.78E-4	3.59E-9	4.59E-9	3.10E-9	1.27E-8
837	615782.9	4202071.5	6.92E-7	1.01E-6	5.45E-7	6.63E-8	4.02E-3	6.41E-2	3.99E-2	1.03E-2	4.73E-7	5.30E-7	5.32E-9	5.12E-8
838	615802.9	4202071.5	5.77E-7	8.38E-7	4.54E-7	6.46E-8	4.02E-3	4.48E-2	2.24E-2	8.40E-3	3.58E-7	3.67E-7	5.05E-9	5.05E-8
839	615142.9	4202091.5	1.99E-7	2.90E-7	1.57E-7	9.26E-8	1.05E-3	7.69E-4	3.72E-4	5.71E-4	3.69E-9	4.61E-9	3.07E-9	1.33E-8
840	615162.9	4202091.5	2.14E-7	3.11E-7	1.68E-7	9.29E-8	1.13E-3	8.14E-4	3.90E-4	6.01E-4	3.88E-9	4.85E-9	3.23E-9	1.43E-8
841	615782.9	4202091.5	6.82E-7	9.92E-7	5.37E-7	6.35E-8	4.75E-3	6.47E-2	3.95E-2	1.00E-2	4.76E-7	5.37E-7	4.97E-9	5.95E-8
842	615802.9	4202091.5	5.69E-7	8.27E-7	4.48E-7	6.20E-8	4.66E-3	4.57E-2	2.24E-2	8.20E-3	3.61E-7	3.74E-7	4.72E-9	5.79E-8
843	615162.9	4202111.5	1.92E-7	2.79E-7	1.51E-7	8.81E-8	1.18E-3	8.17E-4	3.94E-4	5.93E-4	3.96E-9	4.87E-9	3.20E-9	1.49E-8
844	615182.9	4202111.5	2.03E-7	2.95E-7	1.60E-7	8.83E-8	1.28E-3	8.67E-4	4.15E-4	6.24E-4	4.17E-9	5.13E-9	3.38E-9	1.62E-8
845	615782.9	4202111.5	6.73E-7	9.78E-7	5.29E-7	6.09E-8	5.53E-3	6.61E-2	3.93E-2	9.80E-3	4.80E-7	5.47E-7	4.66E-9	6.84E-8
846	615802.9	4202111.5	5.59E-7	8.12E-7	4.40E-7	5.95E-8	5.31E-3	4.66E-2	2.22E-2	7.96E-3	3.59E-7	3.76E-7	4.43E-9	6.52E-8
847	615182.9	4202131.5	1.83E-7	2.65E-7	1.44E-7	8.40E-8	1.34E-3	8.69E-4	4.18E-4	6.15E-4	4.24E-9	5.15E-9	3.37E-9	1.68E-8
848	615202.9	4202131.5	1.91E-7	2.78E-7	1.50E-7	8.40E-8	1.46E-3	9.23E-4	4.41E-4	6.47E-4	4.47E-9	5.44E-9	3.59E-9	1.84E-8
849	615182.9	4202151.5	1.66E-7	2.41E-7	1.31E-7	7.99E-8	1.38E-3	8.69E-4	4.21E-4	6.05E-4	4.29E-9	5.17E-9	3.37E-9	1.74E-8
850	615202.9	4202151.5	1.73E-7	2.52E-7	1.36E-7	8.00E-8	1.52E-3	9.23E-4	4.44E-4	6.36E-4	4.52E-9	5.46E-9	3.59E-9	1.91E-8
851	614922.9	4202171.5	8.49E-8	1.23E-7	6.68E-8	6.99E-8	5.25E-4	4.52E-4	2.32E-4	3.39E-4	2.51E-9	2.84E-9	1.86E-9	6.64E-9
852	614942.9	4202171.5	8.88E-8	1.29E-7	6.99E-8	7.08E-8	5.57E-4	4.72E-4	2.42E-4	3.52E-4	2.60E-9	2.99E-9	1.94E-9	7.05E-9
853	615202.9	4202171.5	1.58E-7	2.30E-7	1.24E-7	7.62E-8	1.57E-3	9.21E-4	4.47E-4	6.25E-4	4.56E-9	5.49E-9	3.61E-9	1.98E-8
854	615922.9	4202171.5	2.34E-7	3.40E-7	1.84E-7	4.62E-8	3.78E-3	1.17E-2	5.54E-3	2.70E-3	9.86E-8	1.21E-7	3.02E-9	4.66E-8
855	615942.9	4202171.5	2.10E-7	3.05E-7	1.65E-7	4.51E-8	3.47E-3	9.93E-3	4.86E-3	2.39E-3	8.43E-8	1.09E-7	2.91E-9	4.27E-8
856	615962.9	4202171.5	1.90E-7	2.76E-7	1.49E-7	4.40E-8	3.19E-3	8.50E-3	4.32E-3	2.14E-3	7.27E-8	9.87E-8	2.78E-9	3.93E-8
857	614922.9	4202191.5	8.19E-8	1.19E-7	6.45E-8	6.70E-8	5.29E-4	4.52E-4	2.33E-4	3.36E-4	2.52E-9	2.86E-9	1.87E-9	6.70E-9
858	614942.9	4202191.5	8.56E-8	1.24E-7	6.73E-8	6.78E-8	5.62E-4	4.72E-4	2.42E-4	3.49E-4	2.60E-9	2.97E-9	1.94E-9	7.11E-9
859	615202.9	4202191.5	1.46E-7	2.12E-7	1.15E-7	7.27E-8	1.61E-3	9.18E-4	4.50E-4	6.14E-4	4.60E-9	5.53E-9	3.64E-9	2.03E-8
860	615922.9	4202191.5	2.22E-7	3.23E-7	1.75E-7	4.48E-8	3.75E-3	1.05E-2	5.53E-3	2.44E-3	8.75E-8	1.22E-7	2.88E-9	4.61E-8
861	615942.9	4202191.5	1.99E-7	2.89E-7	1.57E-7	4.38E-8	3.43E-3	8.88E-3	4.86E-3	2.17E-3	7.43E-8	1.10E-7	2.78E-9	4.21E-8
862	615962.9	4202191.5	1.79E-7	2.61E-7	1.41E-7	4.27E-8	3.14E-3	7.58E-3	4.33E-3	1.94E-3	6.38E-8	9.97E-8	2.67E-9	3.86E-8
863	614922.9	4202211.5	7.90E-8	1.15E-7	6.22E-8	6.43E-8	5.33E-4	4.52E-4	2.33E-4	3.33E-4	2.50E-9	2.85E-9	1.86E-9	6.75E-9
864	614942.9	4202211.5	8.24E-8	1.20E-7	6.48E-8	6.50E-8	5.66E-4	4.71E-4	2.42E-4	3.45E-4	2.59E-9	2.96E-9	1.93E-9	7.17E-9
865	615202.9	4202211.5	1.35E-7	1.96E-7	1.06E-7	6.95E-8	1.64E-3	9.14E-4	4.52E-4	6.03E-4	4.63E-9	5.57E-9	3.66E-9	2.07E-8
866	615922.9	4202211.5	2.09E-7	3.04E-7	1.64E-7	4.34E-8	3.66E-3	9.18E-3	5.53E-3	2.17E-3	7.48E-8	1.24E-7	2.75E-9	4.49E-8
867	615942.9	4202211.5	1.87E-7	2.71E-7	1.47E-7	4.25E-8	3.33E-3	7.75E-3	4.87E-3	1.94E-3	6.33E-8	1.11E-7	2.65E-9	4.09E-8
868	615962.9	4202211.5	1.68E-7	2.44E-7	1.32E-7	4.15E-8	3.05E-3	6.63E-3	4.35E-3	1.74E-3	5.42E-8	1.01E-7	2.56E-9	3.74E-8
869	614922.9	4202231.5	7.62E-8	1.11E-7	6.00E-8	6.17E-8	5.36E-4	4.50E-4	2.33E-4	3.29E-4	2.47E-9	2.84E-9	1.85E-9	6.79E-9
870	614942.9	4202231.5	7.92E-8	1.15E-7	6.23E-8	6.23E-8	5.69E-4	4.69E-4	2.42E-4	3.41E-4	2.56E-9	2.95E-9	1.92E-9	7.21E-9
871	615202.9	4202231.5	1.26E-7	1.83E-7	9.90E-8	6.64E-8	1.67E-3	9.09E-4	4.54E-4	5.92E-4	4.64E-9	5.62E-9	3.68E-9	2.11E-8
872	614922.9	4202251.5	7.34E-8	1.07E-7	5.77E-8	5.92E-8	5.39E-4	4.48E-4	2.32E-4	3.25E-4	2.43E-9	2.78E-9	1.84E-9	6.81E-9
873	614942.9	4202251.5	7.62E-8	1.11E-7	5.99E-8	5.98E-8	5.72E-4	4.67E-4	2.41E-4	3.37E-4	2.51E-9	2.88E-9	1.90E-9	7.23E-9

874	615202.9	4202251.5	1.18E-7	1.71E-7	9.25E-8	6.35E-8	1.70E-3	9.03E-4	4.56E-4	5.80E-4	4.64E-9	5.67E-9	3.69E-9	2.14E-8
875	614922.9	4202271.5	7.07E-8	1.03E-7	5.56E-8	5.68E-8	5.40E-4	4.45E-4	2.31E-4	3.21E-4	2.37E-9	2.77E-9	1.82E-9	6.82E-9
876	614942.9	4202271.5	7.32E-8	1.06E-7	5.76E-8	5.74E-8	5.74E-4	4.64E-4	2.41E-4	3.32E-4	2.46E-9	2.87E-9	1.88E-9	7.25E-9
877	615182.9	4202271.5	1.07E-7	1.56E-7	8.46E-8	6.09E-8	1.53E-3	8.41E-4	4.30E-4	5.42E-4	4.33E-9	5.34E-9	3.48E-9	1.93E-8
878	615202.9	4202271.5	1.10E-7	1.60E-7	8.68E-8	6.08E-8	1.72E-3	8.94E-4	4.56E-4	5.68E-4	4.61E-9	5.71E-9	3.68E-9	2.16E-8
879	614922.9	4202291.5	6.80E-8	9.88E-8	5.35E-8	5.46E-8	5.40E-4	4.36E-4	2.26E-4	3.15E-4	2.30E-9	2.77E-9	1.80E-9	6.82E-9
880	614942.9	4202291.5	7.04E-8	1.02E-7	5.54E-8	5.51E-8	5.74E-4	4.58E-4	2.38E-4	3.27E-4	2.39E-9	2.87E-9	1.86E-9	7.24E-9
881	615182.9	4202291.5	1.01E-7	1.47E-7	7.98E-8	5.84E-8	1.55E-3	8.32E-4	4.29E-4	5.31E-4	4.29E-9	5.36E-9	3.48E-9	1.95E-8
882	615202.9	4202291.5	1.04E-7	1.51E-7	8.18E-8	5.83E-8	1.73E-3	8.84E-4	4.55E-4	5.56E-4	4.58E-9	5.74E-9	3.66E-9	2.18E-8
883	614922.9	4202311.5	6.54E-8	9.51E-8	5.15E-8	5.25E-8	5.35E-4	4.25E-4	2.22E-4	3.09E-4	2.19E-9	2.79E-9	1.78E-9	6.50E-9
884	614942.9	4202311.5	6.77E-8	9.85E-8	5.33E-8	5.30E-8	5.74E-4	4.50E-4	2.35E-4	3.22E-4	2.32E-9	2.90E-9	1.84E-9	7.24E-9
885	615182.9	4202311.5	9.60E-8	1.40E-7	7.55E-8	5.61E-8	1.55E-3	8.23E-4	4.27E-4	5.20E-4	4.24E-9	5.38E-9	3.47E-9	1.96E-8
886	614922.9	4202331.5	6.30E-8	9.17E-8	4.96E-8	5.06E-8	5.32E-4	4.19E-4	2.20E-4	3.03E-4	2.10E-9	2.83E-9	1.76E-9	6.45E-9
887	614942.9	4202331.5	6.51E-8	9.47E-8	5.13E-8	5.11E-8	5.69E-4	4.40E-4	2.31E-4	3.16E-4	2.18E-9	2.93E-9	1.83E-9	6.93E-9
888	615182.9	4202331.5	9.11E-8	1.32E-7	7.17E-8	5.39E-8	1.55E-3	8.12E-4	4.26E-4	5.08E-4	4.20E-9	5.42E-9	3.45E-9	1.95E-8
889	615182.9	4202351.5	8.66E-8	1.26E-7	6.81E-8	5.19E-8	1.54E-3	8.01E-4	4.24E-4	4.97E-4	4.16E-9	5.48E-9	3.41E-9	1.93E-8
890	615182.9	4202371.5	8.24E-8	1.20E-7	6.49E-8	4.99E-8	1.51E-3	7.89E-4	4.21E-4	4.85E-4	4.14E-9	5.57E-9	3.35E-9	1.91E-8
891	615182.9	4202391.5	7.86E-8	1.14E-7	6.19E-8	4.81E-8	1.48E-3	7.76E-4	4.19E-4	4.73E-4	4.15E-9	5.69E-9	3.29E-9	1.87E-8
892	615182.9	4202411.5	7.51E-8	1.09E-7	5.91E-8	4.64E-8	1.45E-3	7.63E-4	4.16E-4	4.62E-4	4.17E-9	5.84E-9	3.20E-9	1.83E-8
893	615182.9	4202431.5	7.18E-8	1.04E-7	5.65E-8	4.47E-8	1.41E-3	7.50E-4	4.14E-4	4.51E-4	4.22E-9	6.00E-9	3.11E-9	1.79E-8
894	615182.9	4202451.5	6.88E-8	1.00E-7	5.41E-8	4.32E-8	1.37E-3	7.35E-4	4.10E-4	4.40E-4	4.27E-9	6.16E-9	3.01E-9	1.73E-8
895	615202.9	4202451.5	7.02E-8	1.02E-7	5.53E-8	4.31E-8	1.52E-3	7.74E-4	4.34E-4	4.57E-4	4.59E-9	6.55E-9	3.01E-9	1.92E-8
896	615202.9	4202471.5	6.73E-8	9.79E-8	5.30E-8	4.17E-8	1.47E-3	7.57E-4	4.29E-4	4.45E-4	4.66E-9	6.69E-9	2.89E-9	1.85E-8
897	615222.9	4202471.5	6.87E-8	9.99E-8	5.41E-8	4.16E-8	1.63E-3	7.97E-4	4.55E-4	4.62E-4	5.03E-9	7.13E-9	2.86E-9	2.05E-8
898	615242.9	4202471.5	7.02E-8	1.02E-7	5.52E-8	4.15E-8	1.81E-3	8.41E-4	4.84E-4	4.79E-4	5.44E-9	7.64E-9	2.80E-9	2.28E-8
899	615262.9	4202471.5	7.17E-8	1.04E-7	5.64E-8	4.13E-8	2.03E-3	8.88E-4	5.15E-4	4.98E-4	5.89E-9	8.20E-9	2.74E-9	2.55E-8
900	615282.9	4202471.5	7.32E-8	1.06E-7	5.76E-8	4.12E-8	2.28E-3	9.39E-4	5.51E-4	5.18E-4	6.41E-9	8.83E-9	2.67E-9	2.87E-8
901	615302.9	4202471.5	7.49E-8	1.09E-7	5.90E-8	4.10E-8	2.58E-3	9.95E-4	5.90E-4	5.40E-4	6.99E-9	9.54E-9	2.60E-9	3.24E-8
902	615322.9	4202471.5	7.67E-8	1.12E-7	6.04E-8	4.08E-8	2.94E-3	1.06E-3	6.34E-4	5.62E-4	7.64E-9	1.03E-8	2.53E-9	3.69E-8
903	615342.9	4202471.5	7.87E-8	1.14E-7	6.19E-8	4.06E-8	3.37E-3	1.12E-3	6.85E-4	5.86E-4	8.37E-9	1.13E-8	2.47E-9	4.20E-8
904	615362.9	4202471.5	8.09E-8	1.18E-7	6.36E-8	4.04E-8	3.85E-3	1.20E-3	7.43E-4	6.11E-4	9.17E-9	1.23E-8	2.40E-9	4.79E-8
905	615382.9	4202471.5	8.32E-8	1.21E-7	6.55E-8	4.02E-8	4.36E-3	1.28E-3	8.09E-4	6.37E-4	1.00E-8	1.35E-8	2.34E-9	5.40E-8
906	615402.9	4202471.5	8.58E-8	1.25E-7	6.75E-8	3.99E-8	4.85E-3	1.36E-3	8.87E-4	6.64E-4	1.10E-8	1.48E-8	2.28E-9	6.00E-8
907	615422.9	4202471.5	8.86E-8	1.29E-7	6.97E-8	3.96E-8	5.25E-3	1.46E-3	9.78E-4	6.93E-4	1.20E-8	1.64E-8	2.21E-9	6.51E-8
908	615442.9	4202471.5	9.15E-8	1.33E-7	7.20E-8	3.93E-8	5.51E-3	1.56E-3	1.09E-3	7.23E-4	1.30E-8	1.83E-8	2.14E-9	6.86E-8
909	615462.9	4202471.5	9.48E-8	1.38E-7	7.46E-8	3.90E-8	5.64E-3	1.67E-3	1.22E-3	7.55E-4	1.40E-8	2.05E-8	2.07E-9	7.05E-8
910	615482.9	4202471.5	9.83E-8	1.43E-7	7.74E-8	3.87E-8	5.63E-3	1.78E-3	1.39E-3	7.88E-4	1.50E-8	2.32E-8	2.01E-9	7.06E-8
911	615502.9	4202471.5	1.02E-7	1.49E-7	8.04E-8	3.84E-8	5.53E-3	1.90E-3	1.60E-3	8.21E-4	1.60E-8	2.68E-8	1.97E-9	6.95E-8
912	615522.9	4202471.5	1.06E-7	1.55E-7	8.38E-8	3.81E-8	5.36E-3	2.03E-3	1.89E-3	8.52E-4	1.68E-8	3.15E-8	1.97E-9	6.72E-8
913	615542.9	4202471.5	1.11E-7	1.61E-7	8.74E-8	3.79E-8	5.10E-3	2.16E-3	2.31E-3	8.78E-4	1.75E-8	3.83E-8	2.00E-9	6.39E-8
914	615562.9	4202471.5	1.16E-7	1.68E-7	9.10E-8	3.76E-8	4.76E-3	2.28E-3	2.92E-3	8.98E-4	1.80E-8	4.92E-8	2.08E-9	5.97E-8
915	615242.9	4202491.5	6.72E-8	9.77E-8	5.29E-8	4.01E-8	1.72E-3	8.20E-4	4.78E-4	4.66E-4	5.51E-9	7.75E-9	2.67E-9	2.17E-8
916	615262.9	4202491.5	6.86E-8	9.97E-8	5.40E-8	4.00E-8	1.91E-3	8.65E-4	5.09E-4	4.84E-4	5.97E-9	8.33E-9	2.60E-9	2.41E-8
917	615282.9	4202491.5	7.01E-8	1.02E-7	5.52E-8	3.98E-8	2.14E-3	9.14E-4	5.43E-4	5.02E-4	6.49E-9	8.98E-9	2.53E-9	2.69E-8
918	615302.9	4202491.5	7.17E-8	1.04E-7	5.64E-8	3.97E-8	2.40E-3	9.67E-4	5.82E-4	5.22E-4	7.07E-9	9.70E-9	2.47E-9	3.01E-8
919	615322.9	4202491.5	7.33E-8	1.07E-7	5.77E-8	3.95E-8	2.70E-3	1.02E-3	6.25E-4	5.42E-4	7.70E-9	1.05E-8	2.41E-9	3.38E-8
920	615342.9	4202491.5	7.51E-8	1.09E-7	5.91E-8	3.93E-8	3.05E-3	1.09E-3	6.74E-4	5.64E-4	8.41E-9	1.14E-8	2.35E-9	3.80E-8
921	615362.9	4202491.5	7.71E-8	1.12E-7	6.07E-8	3.91E-8	3.42E-3	1.15E-3	7.31E-4	5.86E-4	9.16E-9	1.25E-8	2.29E-9	4.24E-8
922	615382.9	4202491.5	7.92E-8	1.15E-7	6.23E-8	3.89E-8	3.78E-3	1.23E-3	7.96E-4	6.09E-4	9.97E-9	1.37E-8	2.23E-9	4.68E-8
923	615402.9	4202491.5	8.15E-8	1.18E-7	6.41E-8	3.86E-8	4.09E-3	1.31E-3	8.71E-4	6.33E-4	1.08E-8	1.51E-8	2.17E-9	5.07E-8
924	615422.9	4202491.5	8.39E-8	1.22E-7	6.60E-8	3.83E-8	4.31E-3	1.39E-3	9.60E-4	6.59E-4	1.17E-8	1.67E-8	2.10E-9	5.36E-8
925	615442.9	4202491.5	8.65E-8	1.26E-7	6.80E-8	3.81E-8	4.44E-3	1.48E-3	1.07E-3	6.85E-4	1.26E-8	1.86E-8	2.03E-9	5.54E-8
926	615462.9	4202491.5	8.92E-8	1.30E-7	7.02E-8	3.78E-8	4.48E-3	1.57E-3	1.20E-3	7.12E-4	1.34E-8	2.09E-8	1.97E-9	5.62E-8
927	615482.9	4202491.5	9.22E-8	1.34E-7	7.26E-8	3.75E-8	4.46E-3	1.67E-3	1.36E-3	7.40E-4	1.42E-8	2.37E-8	1.91E-9	5.61E-8
928	615502.9	4202491.5	9.53E-8	1.39E-7	7.50E-8	3.72E-8	4.39E-3	1.78E-3	1.57E-3	7.66E-4	1.50E-8	2.73E-8	1.89E-9	5.52E-8
929	615522.9	4202491.5	9.86E-8	1.43E-7	7.76E-8	3.69E-8	4.28E-3	1.88E-3	1.86E-3	7.89E-4	1.56E-8	3.22E-8	1.89E-9	5.37E-8
930	615542.9	4202491.5	1.02E-7	1.48E-7	8.03E-8	3.67E-8	4.11E-3	1.98E-3	2.29E-3	8.07E-4	1.60E-8	3.92E-8	1.93E-9	5.16E-8
931	615562.9	4202491.5	1.05E-7	1.53E-7	8.27E-8	3.64E-8	3.90E-3	2.07E-3	2.96E-3	8.19E-4	1.62E-8	5.06E-8	2.01E-9	4.89E-8
932	615582.9	4202491.5	1.07E-7	1.56E-7	8.45E-8	3.61E-8	3.64E-3	2.15E-3	4.20E-3	8.27E-4	1.61E-8	7.28E-8	2.12E-9	4.57E-8
933	615582.9	4202511.5	9.67E-8	1.41E-7	7.61E-8	3.50E-8	3.08E-3	1.94E-3	4.23E-3	7.54E-4	1.42E-8	7.67E-8	2.06E-9	3.86E-8
934	615602.9	4202511.5	9.70E-8	1.41E-7	7.64E-8	3.47E-8	2.88E-3	1.97E-3	8.00E-3	7.55E-4	1.40E-8	1.45E-7	2.17E-9	3.61E-8
935	615602.9	4202531.5	8.77E-8	1.28E-7	6.90E-8	3.37E-8	2.50E-3	1.78E-3	6.92E-3	6.92E-4	1.24E-8	1.50E-7	2.11E-9	3.13E-8
936	615602.9	4202551.5	8.01E-8	1.16E-7	6.30E-8	3.27E-8	2.19E-3	1.61E-3	4.80E-3	6.39E-4	1.11E-8	1.12E-7	2.05E-9	2.75E-8
937	615622.9	4202551.5	7.94E-8	1.15E-7	6.25E-8	3.24E-8	2.07E-3	1.62E-3	6.41E-3	6.37E-4	1.11E-8	1.34E-7	2.13E-9	2.59E-8
938	615622.9	4202571.5	7.30E-8	1.06E-7	5.75E-8	3.16E-8	1.84E-3	1.47E-3	3.93E-3	5.92E-4	1.01E-8	8.56E-8	2.06E-9	2.31E-8
939	615622.9	4202591.5	6.77E-8	9.84E-8	5.33E-8	3.07E-8	1.66E-3	1.34E-3	2.82E-3	5.52E-4	9.22E-9	6.17E-8	2.01E-9	2.08E-8
940	615622.9	4202611.5	6.31E-8	9.17E-8	4.97E-8	2.99E-8	1.49E-3	1.23E-3	2.18E-3	5.17E-4	8.49E-9	4.74E-8	1.95E-9	1.87E-8
941	615622.9	4202631.5	5.91E-8	8.59E-8	4.65E-8	2.91E-8	1.35E-3	1.14E-3	1.76E-3	4.86E-4	7.86E-9	3.78E-8	1.89E-9	1.70E-8
942	615602.9	4202651.5	5.60E-8	8.14E-8	4.41E-8	2.86E-8	1.27E-3	1.06E-3	1.44E-3	4.58E-4	7.14E-9	3.18E-8	1.79E-9	1.59E-8
943	615622.9	4202651.5	5.56E-8	8.08E-8	4.38E-8	2.83E-8	1.23E-3	1.05E-3	1.47E-3	4.58E-4	7.31E-9	3.11E-8	1.84E-9	1.55E-8
944	615602.9	4202671.5	5.29E-8	7.69E-8	4.16E-8	2.78E-8	1.15E-3	9.82E-4	1.24E-3	4.33E-4	6.64E-9	2.68E-8	1.74E-9	1.45E-8
945	615622.9	4202671.5	5.25E-8	7.63E-8	4.13E-8	2.76E-8	1.13E-3	9.79E-4	1.25E-3	4.33E-4	6.83E-9	2.61E-8	1.79E-9	1.42E-8
946	615602.9	4202691.5	5.01E-8	7.28E-8	3.94E-8	2.71E-8	1.05E-3	9.16E-4	1.08E-3	4.11E-4	6.22E-9	2.29E-8	1.70E-9	1.33E-8
947	615582.9	4202711.5	4.78E-8	6.95E-8	3.76E-8	2.66E-8	9.79E-4	8.60E-4	9.42E-4	3.90E-4	5.70E-9	2.02E-8	1.60E-9	1.24E-8
948	615602.9	4202711.5	4.75E-8	6.91E-8	3.74E-8	2.65E-8	9.68E-4	8.57E-4	9.53E-4	3.90E-4	5.84E-9	1.98E-8	1.66E-9	1.22E-8
949	615582.9	4202731.5	4.55E-8	6.61E-8	3.58E-8	2.60E-8	9.00E-4	8.06E-4	8.43E-4	3.71E-4	5.35E-9	1.78E-8	1.56E-9	1.14E-8
950	615602.9	4202731.5	4.52E-8	6.57E-8	3.56E-8	2.58E-8	8.92E-4	8.03E-4	8.49E-4	3.71E-4	5.50E-9	1.74E-8	1.62E-9	1.12E-8
951	615582.9	4202751.5	4.33E-8	6.30E-8	3.41E-8	2.53E-8	8.31E-4	7.58E-4	7.60E-4	3.54E-4	5.04E-9	1.57E-8	1.53E-9	1.05E-8
952	615602.9	4202751.5	4.31E-8	6.26E-8	3.39E-8	2.52E-8	8.23E-4	7.55E-4	7.64E-4	3.54E-4	5.20E-9	1.55E-8	1.58E-9	1.04E-8
953	615602.9	4202771.5	4.11E-8	5.98E-8	3.24E-8	2.45E-8	7.63E-4	7.11E-4	6.91E-4	3.38E-4	4.92E-9	1.38E-8	1.54E-9	9.63E-9
954	615602.9	4202791.5	3.94E-8	5.73E-8	3.10E-8	2.40E-8	7.11E-4	6.73E-4	6.31E-4	3.24E-4	4.69E-9	1.25E-8	1.50E-9	8.98E-9

Scaled PM2.5 Concentrations at receptors

Source Emission Rate (g/s)

Haul 1 E	Haul 2 E	Haul 3 E	Haul T E	Haul 1 F	Haul 2 F	Haul 3 F	Haul T F	Onsite 1 E	Onsite 2 E	Onsite 3 E	Trenching	Onsite 1 F	Onsite 2 F	Onsite 3 F	Trenching	Idling 1 E	Idling 2 E	Idling 3 E	Idling T E
3.60E-5	5.23E-5	2.83E-5	4.17E-5	1.90E-6	2.76E-6	1.49E-6	2.20E-6	1.07E-3	1.56E-3	8.42E-4	1.24E-3	2.71E-5	3.93E-5	2.13E-5	3.13E-5	1.16E-8	1.68E-8	9.11E-9	1.34E-8

Concentrations at receptors calculated by multiplying Source Emission Rate and Unitized Concentrations. Unit micrograms/m3

Num	X	Y	Haul 1 E	Haul 2 E	Haul 3 E	Haul T E	Haul 1 F	Haul 2 F	Haul 3 F	Haul T F	Onsite 1 E	Onsite 2 E	Onsite 3 E	Trenching	Onsite 1 F	Onsite 2 F	Onsite 3 F	Trenching	Idling 1 E	Idling 2 E	Idling 3 E	Idling T E
1	614703	4201252	1.75E-5	2.54E-5	1.38E-5	2.85E-5	1.31E-6	1.90E-6	1.03E-6	2.82E-7	1.64E-4	2.19E-4	1.09E-4	2.23E-4	3.81E-6	5.10E-6	3.87E-6	5.65E-6	1.14E-9	1.55E-9	8.21E-10	2.08E-9
2	614723	4201252	1.81E-5	2.64E-5	1.43E-5	2.97E-5	1.37E-6	1.99E-6	1.08E-6	2.96E-7	1.69E-4	2.23E-4	1.11E-4	2.29E-4	3.88E-6	5.19E-6	3.97E-6	5.80E-6	1.18E-9	1.59E-9	8.54E-10	2.12E-9
3	614743	4201252	1.88E-5	2.74E-5	1.48E-5	3.09E-5	1.43E-6	2.07E-6	1.12E-6	3.11E-7	1.74E-4	2.27E-4	1.13E-4	2.36E-4	3.95E-6	5.28E-6	4.08E-6	5.96E-6	1.22E-9	1.62E-9	8.91E-10	2.17E-9
4	614763	4201252	1.96E-5	2.84E-5	1.54E-5	3.22E-5	1.49E-6	2.16E-6	1.17E-6	3.26E-7	1.79E-4	2.31E-4	1.15E-4	2.42E-4	4.03E-6	5.38E-6	4.19E-6	6.12E-6	1.26E-9	1.67E-9	9.30E-10	2.22E-9
5	614783	4201252	2.03E-5	2.96E-5	1.60E-5	3.35E-5	1.55E-6	2.25E-6	1.22E-6	3.40E-7	1.84E-4	2.35E-4	1.17E-4	2.49E-4	4.10E-6	5.48E-6	4.31E-6	6.29E-6	1.30E-9	1.71E-9	9.73E-10	2.27E-9
6	614803	4201252	2.11E-5	3.07E-5	1.66E-5	3.50E-5	1.62E-6	2.35E-6	1.27E-6	3.52E-7	1.88E-4	2.40E-4	1.19E-4	2.56E-4	4.18E-6	5.58E-6	4.44E-6	6.48E-6	1.35E-9	1.76E-9	1.02E-9	2.31E-9
7	614823	4201252	2.20E-5	3.19E-5	1.73E-5	3.64E-5	1.68E-6	2.45E-6	1.33E-6	3.61E-7	1.91E-4	2.44E-4	1.22E-4	2.64E-4	4.25E-6	5.68E-6	4.57E-6	6.67E-6	1.39E-9	1.82E-9	1.07E-9	2.35E-9
8	614843	4201252	2.28E-5	3.31E-5	1.79E-5	3.80E-5	1.75E-6	2.55E-6	1.38E-6	3.67E-7	1.94E-4	2.48E-4	1.24E-4	2.72E-4	4.33E-6	5.79E-6	4.71E-6	6.87E-6	1.43E-9	1.87E-9	1.12E-9	2.38E-9
9	614863	4201252	2.36E-5	3.44E-5	1.86E-5	3.96E-5	1.82E-6	2.65E-6	1.44E-6	3.70E-7	1.95E-4	2.53E-4	1.26E-4	2.80E-4	4.42E-6	5.90E-6	4.85E-6	7.08E-6	1.47E-9	1.93E-9	1.18E-9	2.40E-9
10	614883	4201252	2.45E-5	3.56E-5	1.93E-5	4.12E-5	1.90E-6	2.76E-6	1.49E-6	3.69E-7	1.95E-4	2.58E-4	1.29E-4	2.89E-4	4.50E-6	6.01E-6	5.00E-6	7.30E-6	1.52E-9	1.99E-9	1.24E-9	2.42E-9
11	614903	4201252	2.54E-5	3.69E-5	2.00E-5	4.29E-5	1.97E-6	2.86E-6	1.55E-6	3.66E-7	1.95E-4	2.63E-4	1.31E-4	2.98E-4	4.59E-6	6.12E-6	5.17E-6	7.54E-6	1.56E-9	2.06E-9	1.31E-9	2.44E-9
12	614923	4201252	2.62E-5	3.80E-5	2.06E-5	4.45E-5	2.04E-6	2.97E-6	1.61E-6	3.61E-7	1.95E-4	2.68E-4	1.34E-4	3.08E-4	4.69E-6	6.24E-6	5.33E-6	7.79E-6	1.61E-9	2.12E-9	1.38E-9	2.45E-9
13	614943	4201252	2.69E-5	3.91E-5	2.12E-5	4.59E-5	2.11E-6	3.07E-6	1.66E-6	3.56E-7	1.95E-4	2.74E-4	1.37E-4	3.18E-4	4.79E-6	6.36E-6	5.51E-6	8.05E-6	1.65E-9	2.18E-9	1.46E-9	2.46E-9
14	614963	4201252	2.76E-5	4.01E-5	2.17E-5	4.73E-5	2.18E-6	3.17E-6	1.72E-6	3.51E-7	1.95E-4	2.80E-4	1.39E-4	3.29E-4	4.89E-6	6.48E-6	5.70E-6	8.33E-6	1.71E-9	2.25E-9	1.54E-9	2.48E-9
15	614983	4201252	2.82E-5	4.10E-5	2.22E-5	4.88E-5	2.26E-6	3.28E-6	1.78E-6	3.47E-7	1.96E-4	2.89E-4	1.43E-4	3.41E-4	5.09E-6	6.71E-6	5.90E-6	8.62E-6	1.77E-9	2.32E-9	1.63E-9	2.49E-9
16	615003	4201252	2.88E-5	4.19E-5	2.27E-5	5.02E-5	2.33E-6	3.39E-6	1.83E-6	3.45E-7	1.97E-4	2.96E-4	1.46E-4	3.53E-4	5.21E-6	6.84E-6	6.11E-6	8.93E-6	1.83E-9	2.39E-9	1.72E-9	2.51E-9
17	615023	4201252	2.93E-5	4.25E-5	2.30E-5	5.15E-5	2.40E-6	3.49E-6	1.89E-6	3.44E-7	1.99E-4	3.04E-4	1.49E-4	3.65E-4	5.34E-6	6.97E-6	6.32E-6	9.23E-6	1.90E-9	2.45E-9	1.81E-9	2.54E-9
18	615043	4201252	2.97E-5	4.32E-5	2.34E-5	5.28E-5	2.47E-6	3.59E-6	1.94E-6	3.43E-7	2.02E-4	3.12E-4	1.52E-4	3.78E-4	5.47E-6	7.10E-6	6.54E-6	9.55E-6	1.97E-9	2.51E-9	1.91E-9	2.56E-9
19	615163	4201252	3.21E-5	4.67E-5	2.53E-5	6.10E-5	2.85E-6	4.15E-6	2.25E-6	3.31E-7	2.22E-4	3.62E-4	1.69E-4	4.65E-4	6.24E-6	7.91E-6	8.07E-6	1.18E-5	2.41E-9	2.81E-9	2.44E-9	2.77E-9
20	615183	4201252	3.24E-5	4.71E-5	2.55E-5	6.23E-5	2.91E-6	4.23E-6	2.29E-6	3.26E-7	2.24E-4	3.68E-4	1.72E-4	4.82E-4	6.35E-6	8.05E-6	8.37E-6	1.22E-5	2.44E-9	2.85E-9	2.53E-9	2.79E-9
21	615203	4201252	3.27E-5	4.76E-5	2.58E-5	6.35E-5	2.96E-6	4.31E-6	2.33E-6	3.22E-7	2.25E-4	3.72E-4	1.75E-4	5.01E-4	6.44E-6	8.19E-6	8.70E-6	1.27E-5	2.47E-9	2.89E-9	2.61E-9	2.81E-9
22	615223	4201252	3.30E-5	4.80E-5	2.60E-5	6.46E-5	3.01E-6	4.38E-6	2.37E-6	3.19E-7	2.26E-4	3.76E-4	1.78E-4	5.20E-4	6.52E-6	8.33E-6	9.04E-6	1.32E-5	2.47E-9	2.94E-9	2.71E-9	2.83E-9
23	615243	4201252	3.33E-5	4.84E-5	2.62E-5	6.57E-5	3.06E-6	4.45E-6	2.41E-6	3.18E-7	2.26E-4	3.79E-4	1.81E-4	5.42E-4	6.60E-6	8.46E-6	9.42E-6	1.37E-5	2.46E-9	2.97E-9	2.83E-9	2.84E-9
24	615263	4201252	3.36E-5	4.88E-5	2.64E-5	6.67E-5	3.10E-6	4.51E-6	2.44E-6	3.20E-7	2.25E-4	3.81E-4	1.84E-4	5.66E-4	6.66E-6	8.59E-6	9.82E-6	1.43E-5	2.45E-9	3.00E-9	2.99E-9	2.84E-9
25	615283	4201252	3.39E-5	4.93E-5	2.67E-5	6.77E-5	3.14E-6	4.57E-6	2.47E-6	3.27E-7	2.25E-4	3.83E-4	1.86E-4	5.91E-4	6.73E-6	8.71E-6	1.02E-5	1.49E-5	2.42E-9	3.01E-9	3.19E-9	2.85E-9
26	615303	4201252	3.41E-5	4.96E-5	2.69E-5	6.86E-5	3.18E-6	4.62E-6	2.50E-6	3.38E-7	2.25E-4	3.86E-4	1.89E-4	6.17E-4	6.80E-6	8.82E-6	1.07E-5	1.56E-5	2.40E-9	3.01E-9	3.45E-9	2.85E-9
27	615323	4201252	3.42E-5	4.98E-5	2.69E-5	6.94E-5	3.21E-6	4.66E-6	2.52E-6	3.55E-7	2.25E-4	3.89E-4	1.91E-4	6.44E-4	6.87E-6	8.93E-6	1.11E-5	1.63E-5	2.38E-9	3.00E-9	3.77E-9	2.86E-9
28	615343	4201252	3.43E-5	4.99E-5	2.70E-5	7.01E-5	3.23E-6	4.70E-6	2.55E-6	3.77E-7	2.26E-4	3.94E-4	1.92E-4	6.71E-4	6.95E-6	9.02E-6	1.16E-5	1.70E-5	2.37E-9	2.97E-9	4.14E-9	2.86E-9
29	615363	4201252	3.43E-5	4.99E-5	2.70E-5	7.07E-5	3.26E-6	4.74E-6	2.56E-6	4.03E-7	2.27E-4	4.00E-4	1.94E-4	6.98E-4	7.05E-6	9.12E-6	1.20E-5	1.76E-5	2.35E-9	2.93E-9	4.53E-9	2.87E-9
30	615383	4201252	3.43E-5	4.98E-5	2.70E-5	7.13E-5	3.28E-6	4.76E-6	2.58E-6	4.32E-7	2.28E-4	4.07E-4	1.96E-4	7.26E-4	7.15E-6	9.21E-6	1.25E-5	1.84E-5	2.34E-9	2.89E-9	4.92E-9	2.88E-9
31	615403	4201252	3.41E-5	4.96E-5	2.69E-5	7.17E-5	3.29E-6	4.79E-6	2.59E-6	4.59E-7	2.28E-4	4.14E-4	1.98E-4	7.54E-4	7.25E-6	9.31E-6	1.30E-5	1.91E-5	2.32E-9	2.86E-9	5.30E-9	2.89E-9
32	614703	4201272	1.85E-5	2.69E-5	1.46E-5	3.03E-5	1.39E-6	2.02E-6	1.10E-6	2.81E-7	1.66E-4	2.21E-4	1.11E-4	2.25E-4	3.86E-6	5.17E-6	3.90E-6	5.69E-6	1.14E-9	1.57E-9	7.99E-10	2.10E-9
33	614723	4201272	1.93E-5	2.80E-5	1.52E-5	3.17E-5	1.46E-6	2.12E-6	1.15E-6	2.94E-7	1.70E-4	2.26E-4	1.13E-4	2.31E-4	3.93E-6	5.26E-6	4.00E-6	5.85E-6	1.18E-9	1.60E-9	8.30E-10	2.15E-9
34	614743	4201272	2.01E-5	2.92E-5	1.58E-5	3.31E-5	1.53E-6	2.22E-6	1.20E-6	3.09E-7	1.75E-4	2.30E-4	1.14E-4	2.38E-4	4.01E-6	5.36E-6	4.11E-6	6.01E-6	1.22E-9	1.64E-9	8.62E-10	2.20E-9
35	614763	4201272	2.09E-5	3.04E-5	1.64E-5	3.46E-5	1.60E-6	2.32E-6	1.26E-6	3.24E-7	1.80E-4	2.34E-4	1.17E-4	2.44E-4	4.09E-6	5.46E-6	4.23E-6	6.18E-6	1.26E-9	1.68E-9	8.98E-10	2.25E-9
36	614783	4201272	2.18E-5	3.16E-5	1.71E-5	3.61E-5	1.67E-6	2.43E-6	1.31E-6	3.40E-7	1.86E-4	2.39E-4	1.19E-4	2.51E-4	4.16E-6	5.56E-6	4.35E-6	6.35E-6	1.30E-9	1.72E-9	9.38E-10	2.30E-9
37	614803	4201272	2.27E-5	3.30E-5	1.79E-5	3.78E-5	1.75E-6	2.54E-6	1.37E-6	3.54E-7	1.90E-4	2.43E-4	1.21E-4	2.59E-4	4.24E-6	5.66E-6	4.48E-6	6.54E-6	1.35E-9	1.77E-9	9.80E-10	2.35E-9
38	614823	4201272	2.36E-5	3.44E-5	1.86E-5	3.95E-5	1.82E-6	2.65E-6	1.44E-6	3.65E-7	1.95E-4	2.48E-4	1.23E-4	2.66E-4	4.32E-6	5.77E-6	4.61E-6	6.73E-6	1.39E-9	1.82E-9	1.03E-9	2.39E-9
39	614843	4201272	2.46E-5	3.58E-5	1.94E-5	4.13E-5	1.90E-6	2.77E-6	1.50E-6	3.74E-7	1.98E-4	2.53E-4	1.26E-4	2.74E-4	4.41E-6	5.88E-6	4.76E-6	6.94E-6	1.44E-9	1.88E-9	1.08E-9	2.43E-9
40	614863	4201272	2.56E-5	3.72E-5	2.02E-5	4.31E-5	1.99E-6	2.89E-6	1.56E-6	3.79E-7	2.00E-4	2.57E-4	1.28E-4	2.83E-4	4.49E-6	5.99E-6	4.90E-6	7.16E-6	1.48E-9	1.94E-9	1.13E-9	2.46E-9
41	614883	4201272	2.66E-5	3.87E-5	2.10E-5	4.51E-5	2.07E-6	3.01E-6	1.63E-6	3.80E-7	2.01E-4	2.62E-4	1.31E-4	2.92E-4	4.58E-6	6.10E-6	5.06E-6	7.39E-6	1.53E-9	2.00E-9	1.19E-9	2.48E-9
42	614903	4201272	2.76E-5	4.01E-5	2.17E-5	4.69E-5	2.15E-6	3.13E-6	1.70E-6	3.78E-7	2.01E-4	2.68E-4	1.33E-4	3.02E-4	4.67E-6	6.22E-6	5.23E-6	7.63E-6	1.57E-9	2.06E-9	1.26E-9	2.50E-9
43	614923	4201272	2.85E-5	4.14E-5	2.24E-5	4.87E-5	2.24E-6	3.25E-6	1.76E-6	3.74E-7	2.01E-4	2.73E-4	1.36E-4	3.12E-4	4.77E-6	6.34E-6	5.40E-6	7.89E-6	1.62E-9	2.13E-9	1.33E-9	2.52E-9
44	614943	4201272	2.93E-5	4.26E-5	2.31E-5	5.03E-5	2.32E-6	3.37E-6	1.82E-6	3.69E-7	2.01E-4	2.79E-4	1.39E-4	3.23E-4	4.87E-6	6.46E-6	5.59E-6	8.16E-6	1.67E-9	2.19E-9	1.40E-9	2.53E-9
45	614963	4201272	3.01E-5	4.37E-5	2.37E-5	5.19E-5	2.40E-6	3.49E-6	1.89E-6	3.63E-7	2.01E-4	2.85E-4	1.42E-4	3.34E-4	4.98E-6	6.59E-6	5.78E-6	8.45E-6	1.72E-9	2.26E-9	1.48E-9	2.54E-9
46	614983	4201272	3.09E-5	4.49E-5	2.43E-5	5.36E-5	2.49E-6	3.62E-6	1.96E-6	3.59E-7	2.01E-4	2.94E-4	1.45E-4	3.47E-4	5.18E-6	6.82E-6	6.00E-6	8.77E-6	1.78E-9	2.33E-9	1.57E-9	2.56E-9
47	615003	4201272	3.16E-5	4.59E-5	2.49E-5	5.52E-5	2.57E-6	3.74E-6	2.02E-6	3.56E-7	2.03E-4	3.01E-4	1.48E-4	3.59E-4	5.30E-6	6.96E-6	6.22E-6	9.09E-6	1.84E-9	2.40E-9	1.67E-9	2.58E-9
48	615023	4201272	3.22E-5	4.67E-5	2.53E-5	5.67E-5	2.65E-6	3.86E-6	2.09E-6	3.54E-7	2.04E-4	3.09E-4	1.51E-4	3.73E-4	5.43E-6	7.10E-6	6.44E-6	9.42E-6	1.91E-9	2.47E-9	1.76E-9	2.60E-9
49	615043	4201272	3.27E-5	4.75E-5	2.57E-5	5.83E-5	2.73E-6	3.97E-6	2.15E-6	3.53E-7	2.07E-4	3.17E-4	1.54E-4	3.86E-4	5.57E-6	7.24E-6	6.68E-6	9.76E-6	1.98E-9	2.54E-9	1.87E-9	2.63E-9
50	615163	4201272	3.55E-5	5.17E-5	2.80E-5	6.79E-5	3.17E-6	4.61E-6	2.49E-6	3.42E-7	2.27E-4	3.70E-4	1.73E-4	4.80E-4	6.39E-6	8.09E-6	8.32E-6	1.21E-5	2.45E-9	2.86E-9	2.50E-9	2.84E-9
51	615183	4201272	3.59E-5	5.22E-5	2.82E-5	6.93E-5	3.23E-6	4.70E-6	2.54E-6	3.37E-7	2.30E-4	3.77E-4	1.76E-4	4.99E-4	6.51E-6	8.24E-6	8.65E-6	1.26E-5	2.50E-9	2.91E-9	2.60E-9	2.87E-9
52	615203	4201272	3.62E-5	5.26E-5	2.85E-5	7.06E-5	3.29E-6	4.78E-6	2.59E-6	3.32E-7	2.32E-4	3.83E-4	1.79E-4	5.18E-4	6.62E-6	8.39E-6	8.99E-6	1.31E-5	2.54E-9	2.95E-9	2.70E-9	2.89E-9
53	615223	4201272	3.65E-5	5.30E-5	2.87E-5	7.19E-5	3.34E-6	4.85E-6	2.63E-6	3.29E-7	2.33E-4	3.88E-4	1.82E-4	5.39E-4	6.72E-6	8.53E-6	9.37E-6	1.36E-5	2.56E-9	3.00E-9	2.81E-9	2.91E-9
54	615243	4201272	3.68E-5	5.34E-5	2.89E-5	7.31E-5	3.39E-6	4.93E-6	2.67E-6	3.27E-7	2.33E-4	3.91E-4	1.86E-4	5.62E-4	6.80E-6	8.68E-6	9.77E-6	1.42E-5	2.56E-9	3.04E-9	2.92E-9	2.92E-9
55	615263	4201272	3.71E-5	5.39E-5	2.92E-5	7.42E-5	3.43E-6	4.99E-6	2.70E-6	3.29E-7	2.32E-4	3.94E-4	1.89E-4	5.87E-4	6.88E-6	8.82E-6	1.02E-5	1.49E-5	2.55E-9	3.08E-9	3.06E-9	2.93E-9
56	615283	4201272	3.73E-5	5.43E-5	2.94E-5	7.51E-5	3.47E-6	5.05E-6	2.73E-6	3.35E-7	2.32E-4	3.97E-4	1.92E-4	6.15E-4	6.95E-6	8.95E-6	1.07E-5	1.55E-5	2.53E-9	3.10E-9	3.23E-9	2.93E-9
57	615303	4201272	3.75E-5	5.45E-5	2.95E-5	7.60E-5	3.51E-6	5.10E-6	2.76E-6	3.46E-7	2.32E-4	3.99E-4	1.94E-4	6.44E-4	7.02E-6	9.08E-6	1.11E-5	1.63E-5	2.50E-9	3.11E-9	3.45E-9	2.94E-9
58	615323	4201272	3.75E-5	5.46E-5	2.96E-5	7.68E-5	3.54E-6	5.14E-6	2.79E-6	3.62E-7	2.32E-4	4.03E-4	1.97E-4	6.73E-4	7.10E-6	9.20E-6	1.16E-5	1.70E-5	2.48E-9	3.11E-9	3.74E-9	2.94E-9
59	615343	4201272	3.75E-5	5.46E-5	2.95E-5	7.75E-5	3.57E-6	5.18E-6	2.81E-6	3.85E-7	2.33E-4	4.07E-4	1.98E-4	7.04E-4	7.18E-6	9.30E-6	1.22E-5	1.78E-5	2.46E-9	3.08E-9	4.10E-9	2.95E-9
60	615363	4201272	3.74E-5	5.44E-5	2.95E-5	7.81E-5	3.59E-6	5.22E-6	2.82E-6	4.12E-7	2.34E-4	4.13E-4	2.00E-4	7.35E-4	7.27E-6	9.41E-6	1.27E-5	1.86E-5	2.44E-9	3.05E-9	4.52E-9	2.96E-9
61	615383	4201272	3.73E-5	5.42E-5	2.93E-5	7.86E-5	3.61E-6	5.24E-6	2.84E-6	4.41E-7	2.34E-4	4.19E-4	2.02E-4	7.66E-4	7.38E-6	9.51E-6	1.32E-5	1.94E-5	2.43E-9	3.01E-9	4.97E-9	2.97E-9
62	614703	4201292	1.97E-5	2.87E-5	1.55E-5	3.24E-5	1.49E-6	2.16E-6	1.17E-6	2.81E-7	1.67E-4	2.25E-4	1.12E-4	2.27E-4	3.92E-6	5.25E-6	3.93E-6	5.74E-6	1.14E-9	1.59E-9	7.84E-10	2.13E-9
63	614723	4201292	2.06E-5	2.99E-5	1.62E-5	3.40E-5	1.56E-6	2.27E-6	1.23E-6	2.93E-7	1.72E-4	2.29E-4	1.14E-4	2.33E-4	3.99E-6	5.34E-6	4.04E-6	5.90E-6	1.18E-9	1.62E-9	8.12E-10	2.18E-9
64	614743	4201292	2.15E-5	3.12E-5	1.69E-5	3.56E-5	1.64E-6	2.39E-6	1.29E-6	3.07E-7	1.77E-4	2.33E-4	1.16E-4	2.40E-4	4.07E-6	5.44E-6	4.15E-6	6.06E-6	1.22E-9	1.66E-9	8.41E-10	2.23E-9
65	614763	4201292	2.24E-5	3.26E-5	1.77E-5	3.73E-5	1.72E-6	2.50E-6	1.36E-6	3.23E-7	1.82E-4	2.38E-4	1.18E-4	2.47E-4	4.15E-6	5.53E-6	4.27E-6	6.23E-6	1.26E-9	1.69E-9	8.73E-10	2.28E-9
66	614783	4201292	2.34E-5	3.41E-5	1.84E-5	3.91E-5	1.81E-6	2.63E-6	1.42E-6	3.39E-7	1.88E-4	2.42E-4	1.20E-4	2.54E-4	4.23E-6	5.64E-6	4.39E-6	6.41E-6	1.30E-9	1.74E-9	9.09E-10	2.34E-9
67	614803	4201292	2.45E-5	3.56E-5	1.93E-5	4.11E-5	1.90E-6	2.76E-6	1.49E-6	3.54E-7	1.93E-4	2.47E-4	1.23E-4	2.61E-4	4.31E-6	5.74E-6	4.52E-6	6.60E-6	1.35E-9	1.78E-9	9.47E-10	2.39E-9
68	614823	4201292	2.56E-5	3.72E-5	2.01E-5	4.31E-5	1.99E-6	2.89E-6	1.56E-6	3.68E-7	1.98E-4	2.52E-4	1.25E-4	2.69E-4	4.39E-6	5.85E-6	4.66E-6	6.80E-6	1.39E-9	1.84E-9	9.90E-10	2.43E-9
69	614843	4201292	2.67E-5	3.89E-5	2.10E-5	4.52E-5	2.08E-6	3.03E-6	1.64E-6	3.79E-7	2.02E-4	2.57E-4	1.28E-4	2.77E-4	4.48E-6	5.97E-6	4.80E-6	7.01E-6	1.44E-9	1.89E-9	1.04E-9	2.48E-9
70	614863	4201292	2.79E-5	4.06E-5	2.20E-5	4.74E-5	2.18E-6	3.17E-6	1.71E-6	3.87E-7	2.05E-4	2.62E-4	1.30E-4	2.86E-4	4.57E-6	6.08E-6	4.96E-6	7.23E-6	1.49E-9	1.95E-9	1.09E-9	2.51E-9
71	614883	4201292	2.91E-5	4.23E-5	2.29E-5	4.96E-5	2.28E-6	3.31E-6	1.79E-6	3.91E-7	2.07E-4	2.67E-4	1.33E-4	2.95E-4	4.66E-6	6.20E-6	5.12E-6	7.47E-6	1.53E-9	2.01E-9	1.14E-9	2.54E-9
72	614903	4201292	3.02E-5	4.39E-5	2.38E-5	5.17E-5	2.37E-6	3.45E-6	1.87E-6	3.91E-7	2.07E-4	2.72E-4	1.35E-4	3.05E-4	4.75E-6	6.32E-6	5.29E-6	7.71E-6	1.58E-9	2.07E-9	1.20E-9	2.57E-9
73	614923	4201292	3.12E-5	4.54E-5	2.46E-5	5.36E-5	2.47E-6	3.59E-6	1.94E-6	3.88E-7	2.07E-4	2.78E-4	1.38E-4	3.15E-4	4.85E-6	6.45E-6	5.47E-6	7.98E-6	1.63E-9	2.13E-9	1.27E-9	2.59E-9
74	614943	4201292	3.22E-5	4.68E-5	2.53E-5	5.55E-5	2.56E-6	3.73E-6	2.02E-6	3.83E-7	2.07E-4	2.84E-4	1.41E-4	3.27E-4	4.97E-6	6.59E-6	5.66E-6	8.26E-6	1.68E-9	2.20E-9	1.34E-9	2.60E-9
75	614963	4201292	3.31E-5	4.82E-5	2.61E-5	5.75E-5	2.66E-6	3.87E-6	2.10E-6	3.78E-7	2.07E-4	2.92E-4	1.45E-4	3.39E-4	5.15E-6	6.80E-6	5.88E-6	8.57E-6	1.74E-9	2.27E-9	1.42E-9	2.62E-9
76	614983	4201292	3.41E-5	4.95E-5	2.68E-5	5.93E-5	2.76E-6	4.02E-6	2.18E-6	3.72E-7	2.07E-4	2.99E-4	1.48E-4	3.52E-4	5.27E-6	6.95E-6	6.09E-6	8.89E-6	1.80E-9	2.35E-9	1.51E-9	2.63E-9
77	615003	4201292	3.49E-5	5.07E-5	2.75E-5	6.12E-5	2.86E-6	4.16E-6	2.25E-6	3.68E-7	2.08E-4	3.06E-4	1.51E-4	3.65E-4	5.40E-6	7.09E-6	6.32E-6	9.23E-6	1.86E-9	2.42E-9	1.60E-9	2.65E-9
78	615023	4201292	3.57E-5	5.18E-5	2.81E-5	6.31E-5	2.96E-6	4.30E-6	2.33E-6	3.65E-7	2.10E-4	3.14E-4	1.54E-4	3.79E-4	5.53E-6	7.23E-6	6.56E-6	9.59E-6	1.93E-9	2.49E-9	1.70E-9	2.67E-9
79	615043	4201292	3.64E-5	5.29E-5	2.86E-5	6.50E-5	3.05E-6	4.43E-6	2.40E-6	3.64E-7	2.12E-4	3.22E-4	1.57E-4	3.94E-4	5.67E-6	7.37E-6	6.81E-6	9.96E-6	2.00E-9	2.56E-9	1.80E-9	2.70E-9
80	615063	4201292	3.70E-5	5.38E-5	2.91E-5	6.70E-5	3.14E-6	4.56E-6	2.47E-6	3.64E-7	2.15E-4	3.31E-4	1.60E-4	4.09E-4	5.81E-6	7.52E-6	7.07E-6	1.03E-5	2.08E-9	2.63E-9	1.92E-9	2.73E-9
81	615083	4201292	3.77E-5	5.48E-5	2.97E-5	6.89E-5	3.23E-6	4.69E-6	2.54E-6	3.63E-7	2.18E-4	3.41E-4	1.64E-4	4.25E-4	5.96E-6	7.67E-6	7.34E-6	1.07E-5	2.16E-9	2.70E-9	2.03E-9	2.76E-9
82	615103	4201292	3.83E-5	5.57E-5	3.01E-5	7.08E-5	3.31E-6	4.81E-6	2.61E-6	3.63E-7	2.21E-4	3.51E-4	1.67E-4	4.41E-4	6.11E-6	7.82E-6	7.63E-6	1.12E-5	2.25E-9	2.76E-9	2.15E-9	2.80E-9
83	615123	4201292	3.88E-5	5.64E-5	3.06E-5	7.26E-5	3.39E-6	4.93E-6	2.67E-6	3.61E-7	2.25E-4	3.61E-4	1.70E-4	4.58E-4	6.26E-6	7.97E-6	7.93E-6	1.16E-5	2.34E-9	2.82E-9	2.28E-9	2.84E-9
84	615143	4201292	3.92E-5	5.70E-5	3.09E-5	7.44E-5	3.47E-6	5.04E-6	2.73E-6	3.58E-7	2.29E-4	3.70E-4	1.73E-4	4.76E-4	6.41E-6	8.12E-6	8.24E-6	1.20E-5	2.42E-9	2.87E-9	2.41E-9	2.88E-9
85	615163	4201292	3.96E-5	5.76E-5	3.12E-5	7.60E-5	3.54E-6	5.14E-6	2.78E-6	3.54E-7	2.33E-4	3.79E-4	1.76E-4	4.95E-4	6.55E-6	8.27E-6	8.58E-6	1.25E-5	2.50E-9	2.92E-9	2.53E-9	2.92E-9
86	615183	4201292	4.00E-5	5.81E-5	3.14E-5	7.76E-5	3.60E-6	5.24E-6	2.84E-6	3.49E-7	2.36E-4	3.87E-4	1.80E-4	5.15E-4	6.68E-6	8.43E-6	8.93E-6	1.30E-5	2.56E-9	2.97E-9	2.65E-9	2.95E-9
87	615203	4201292	4.03E-5	5.85E-5	3.17E-5	7.91E-5	3.66E-6	5.33E-6	2.88E-6	3.44E-7	2.38E-4	3.94E-4	1.83E-4	5.37E-4	6.80E-6	8.59E-6	9.30E-6	1.36E-5	2.61E-9	3.02E-9	2.78E-9	2.98E-9
88	615223	4201292	4.05E-5	5.89E-5	3.19E-5	8.04E-5	3.72E-6	5.41E-6	2.93E-6	3.40E-7	2.40E-4	4.00E-4	1.87E-4	5.59E-4	6.91E-6	8.75E-6	9.70E-6	1.41E-5	2.64E-9	3.07E-9	2.90E-9	3.00E-9
89	615243	4201292	4.08E-5	5.93E-5	3.21E-5	8.16E-5	3.77E-6	5.48E-6	2.97E-6	3.38E-7	2.40E-4	4.04E-4	1.90E-4	5.84E-4	7.01E-6	8.90E-6	1.01E-5	1.48E-5	2.65E-9	3.11E-9	3.02E-9	3.01E-9
90	615263	4201292	4.11E-5	5.97E-5	3.23E-5	8.28E-5	3.81E-6	5.54E-6	3.00E-6	3.39E-7	2.39E-4	4.08E-4	1.94E-4	6.11E-4	7.10E-6	9.06E-6	1.06E-5	1.54E-5	2.65E-9	3.15E-9	3.16E-9	3.02E-9
91	615283	4201292	4.13E-5	6.00E-5	3.25E-5	8.38E-5	3.85E-6	5.60E-6	3.03E-6	3.44E-7	2.39E-4	4.11E-4	1.97E-4	6.40E-4	7.18E-6	9.20E-6	1.11E-5	1.62E-5	2.63E-9	3.19E-9	3.31E-9	3.02E-9
92	615303	4201292	4.13E-5	6.01E-5	3.25E-5	8.46E-5	3.89E-6	5.65E-6	3.06E-6	3.54E-7	2.39E-4	4.14E-4	2.00E-4	6.72E-4	7.26E-6	9.34E-6	1.16E-5	1.70E-5	2.61E-9	3.21E-9	3.50E-9	3.03E-9
93	615323	4201292	4.13E-5	6.00E-5	3.25E-5	8.54E-5	3.92E-6	5.70E-6	3.09E-6	3.71E-7	2.39E-4	4.17E-4	2.03E-4	7.05E-4	7.34E-6	9.48E-6	1.22E-5	1.78E-5	2.58E-9	3.21E-9	3.75E-9	3.03E-9
94	615343	4201292	4.12E-5	5.98E-5	3.24E-5	8.60E-5	3.95E-6	5.74E-6	3.11E-6	3.93E-7	2.40E-4	4.21E-4	2.05E-4	7.39E-4	7.42E-6	9.60E-6	1.28E-5	1.87E-5	2.56E-9	3.20E-9	4.07E-9	3.04E-9
95	615363	4201292	4.10E-5	5.96E-5	3.23E-5	8.67E-5	3.97E-6	5.77E-6	3.13E-6	4.21E-7	2.41E-4	4.26E-4	2.07E-4	7.75E-4	7.52E-6	9.72E-6	1.34E-5	1.96E-5	2.54E-9	3.18E-9	4.48E-9	3.05E-9
96	615383	4201292	4.07E-5	5.92E-5	3.21E-5	8.73E-5	4.00E-6	5.81E-6	3.15E-6	4.52E-7	2.42E-4	4.33E-4	2.09E-4	8.12E-4	7.63E-6	9.83E-6	1.40E-5	2.05E-5	2.53E-9	3.14E-9	4.97E-9	3.06E-9
97	614703	4201312	2.11E-5	3.06E-5	1.66E-5	3.47E-5	1.59E-6	2.32E-6	1.25E-6	2.82E-7	1.69E-4	2.28E-4	1.14E-4	2.29E-4	3.97E-6	5.32E-6	3.96E-6	5.78E-6	1.15E-9	1.61E-9	7.76E-10	2.16E-9
98	614723	4201312	2.21E-5	3.21E-5	1.74E-5	3.66E-5	1.68E-6	2.45E-6	1.32E-6	2.93E-7	1.74E-4	2.32E-4	1.16E-4	2.35E-4	4.05E-6	5.42E-6	4.07E-6	5.95E-6	1.18E-9	1.64E-9	8.01E-10	2.21E-9
99	614743	4201312	2.31E-5	3.36E-5	1.82E-5	3.85E-5	1.77E-6	2.58E-6	1.40E-6	3.06E-7	1.79E-4	2.37E-4	1.18E-4	2.42E-4	4.13E-6	5.52E-6	4.19E-6	6.11E-6	1.22E-9	1.67E-9	8.28E-10	2.26E-9
100	614763	4201312	2.42E-5	3.52E-5	1.91E-5	4.05E-5	1.87E-6	2.72E-6	1.47E-6	3.21E-7	1.84E-4	2.41E-4	1.20E-4	2.49E-4	4.21E-6	5.62E-6	4.31E-6	6.29E-6	1.26E-9	1.71E-9	8.57E-10	2.31E-9
101	614783	4201312	2.54E-5	3.69E-5	2.00E-5	4.27E-5	1.97E-6	2.86E-6	1.55E-6	3.37E-7	1.89E-4	2.46E-4	1.22E-4	2.56E-4	4.29E-6	5.72E-6	4.43E-6	6.47E-6	1.30E-9	1.75E-9	8.89E-10	2.37E-9
102	614803	4201312	2.66E-5	3.87E-5	2.10E-5	4.50E-5	2.07E-6	3.02E-6	1.63E-6	3.54E-7	1.95E-4	2.51E-4	1.25E-4	2.64E-4	4.38E-6	5.83E-6	4.57E-6	6.67E-6	1.35E-9	1.80E-9	9.23E-10	2.42E-9
103	614823	4201312	2.79E-5	4.06E-5	2.20E-5	4.73E-5	2.18E-6	3.17E-6	1.72E-6	3.70E-7	2.01E-4	2.56E-4	1.27E-4	2.72E-4	4.47E-6	5.94E-6	4.70E-6	6.87E-6	1.39E-9	1.85E-9	9.61E-10	2.48E-9
104	614843	4201312	2.93E-5	4.26E-5	2.30E-5	4.98E-5	2.29E-6	3.33E-6	1.81E-6	3.83E-7	2.05E-4	2.61E-4	1.30E-4	2.80E-4	4.55E-6	6.06E-6	4.85E-6	7.08E-6	1.44E-9	1.90E-9	1.00E-9	2.53E-9
105	614863	4201312	3.07E-5	4.46E-5	2.41E-5	5.24E-5	2.41E-6	3.50E-6	1.89E-6	3.94E-7	2.09E-4	2.66E-4	1.32E-4	2.89E-4	4.65E-6	6.18E-6	5.01E-6	7.31E-6	1.49E-9	1.96E-9	1.05E-9	2.57E-9
106	614883	4201312	3.20E-5	4.65E-5	2.52E-5	5.49E-5	2.52E-6	3.66E-6	1.98E-6	4.00E-7	2.12E-4	2.72E-4	1.35E-4	2.98E-4	4.74E-6	6.30E-6	5.17E-6	7.55E-6	1.54E-9	2.02E-9	1.10E-9	2.61E-9
107	614903	4201312	3.32E-5	4.83E-5	2.62E-5	5.73E-5	2.63E-6	3.83E-6	2.07E-6	4.03E-7	2.13E-4	2.77E-4	1.38E-4	3.08E-4	4.84E-6	6.43E-6	5.35E-6	7.80E-6	1.59E-9	2.08E-9	1.15E-9	2.63E-9
108	614923	4201312	3.44E-5	5.01E-5	2.71E-5	5.96E-5	2.75E-6	4.00E-6	2.16E-6	4.02E-7	2.14E-4	2.83E-4	1.41E-4	3.19E-4	4.95E-6	6.57E-6	5.53E-6	8.07E-6	1.64E-9	2.14E-9	1.22E-9	2.66E-9
109	614943	4201312	3.56E-5	5.18E-5	2.80E-5	6.19E-5	2.87E-6	4.17E-6	2.26E-6	3.98E-7	2.14E-4	2.91E-4	1.44E-4	3.31E-4	5.08E-6	6.73E-6	5.74E-6	8.36E-6	1.70E-9	2.21E-9	1.28E-9	2.68E-9
110	614963	4201312	3.68E-5	5.35E-5	2.90E-5	6.42E-5	2.99E-6	4.35E-6	2.35E-6	3.93E-7	2.14E-4	2.98E-4	1.47E-4	3.43E-4	5.25E-6	6.93E-6	5.95E-6	8.68E-6	1.75E-9	2.29E-9	1.36E-9	2.70E-9
111	614983	4201312	3.79E-5	5.51E-5	2.98E-5	6.64E-5	3.10E-6	4.51E-6	2.44E-6	3.87E-7	2.14E-4	3.04E-4	1.50E-4	3.56E-4	5.37E-6	7.07E-6	6.18E-6	9.01E-6	1.81E-9	2.36E-9	1.44E-9	2.71E-9
112	615003	4201312	3.89E-5	5.66E-5	3.06E-5	6.86E-5	3.21E-6	4.67E-6	2.53E-6	3.82E-7	2.15E-4	3.12E-4	1.54E-4	3.70E-4	5.50E-6	7.22E-6	6.41E-6	9.36E-6	1.88E-9	2.43E-9	1.53E-9	2.73E-9
113	615023	4201312	3.99E-5	5.81E-5	3.14E-5	7.09E-5	3.32E-6	4.83E-6	2.62E-6	3.78E-7	2.16E-4	3.20E-4	1.57E-4	3.85E-4	5.63E-6	7.36E-6	6.66E-6	9.73E-6	1.94E-9	2.51E-9	1.63E-9	2.75E-9
114	615043	4201312	4.09E-5	5.94E-5	3.22E-5	7.32E-5	3.43E-6	4.99E-6	2.70E-6	3.76E-7	2.18E-4	3.28E-4	1.60E-4	4.01E-4	5.77E-6	7.51E-6	6.93E-6	1.01E-5	2.02E-9	2.58E-9	1.73E-9	2.77E-9
115	615063	4201312	4.17E-5	6.06E-5	3.28E-5	7.55E-5	3.53E-6	5.14E-6	2.78E-6	3.75E-7	2.20E-4	3.37E-4	1.63E-4	4.17E-4	5.92E-6	7.67E-6	7.21E-6	1.05E-5	2.10E-9	2.66E-9	1.84E-9	2.80E-9
116	615083	4201312	4.24E-5	6.16E-5	3.34E-5	7.78E-5	3.63E-6	5.28E-6	2.86E-6	3.74E-7	2.23E-4	3.47E-4	1.67E-4	4.34E-4	6.07E-6	7.82E-6	7.50E-6	1.10E-5	2.18E-9	2.73E-9	1.96E-9	2.84E-9
117	615103	4201312	4.31E-5	6.26E-5	3.39E-5	7.99E-5	3.73E-6	5.42E-6	2.93E-6	3.74E-7	2.27E-4	3.57E-4	1.70E-4	4.52E-4	6.23E-6	7.98E-6	7.81E-6	1.14E-5	2.27E-9	2.80E-9	2.09E-9	2.88E-9
118	615123	4201312	4.37E-5	6.35E-5	3.44E-5	8.20E-5	3.81E-6	5.54E-6	3.00E-6	3.72E-7	2.31E-4	3.67E-4	1.74E-4	4.70E-4	6.39E-6	8.14E-6	8.13E-6	1.19E-5	2.36E-9	2.87E-9	2.23E-9	2.92E-9
119	615143	4201312	4.41E-5	6.41E-5	3.47E-5	8.39E-5	3.90E-6	5.66E-6	3.07E-6	3.70E-7	2.35E-4	3.78E-4	1.77E-4	4.90E-4	6.55E-6	8.30E-6	8.47E-6	1.24E-5	2.45E-9	2.93E-9	2.37E-9	2.96E-9

120	615163	4201312	4.45E-5	6.46E-5	3.50E-5	8.57E-5	3.97E-6	5.77E-6	3.13E-6	3.66E-7	2.39E-4	3.87E-4	1.80E-4	5.10E-4	6.70E-6	8.46E-6	8.83E-6	1.29E-5	2.53E-9	2.98E-9	2.52E-9	3.00E-9
121	615183	4201312	4.48E-5	6.51E-5	3.53E-5	8.74E-5	4.04E-6	5.87E-6	3.18E-6	3.61E-7	2.43E-4	3.97E-4	1.84E-4	5.32E-4	6.85E-6	8.63E-6	9.21E-6	1.35E-5	2.61E-9	3.03E-9	2.66E-9	3.03E-9
122	615203	4201312	4.51E-5	6.55E-5	3.55E-5	8.90E-5	4.10E-6	5.97E-6	3.23E-6	3.56E-7	2.45E-4	4.05E-4	1.88E-4	5.55E-4	6.99E-6	8.80E-6	9.62E-6	1.40E-5	2.67E-9	3.08E-9	2.81E-9	3.06E-9
123	615223	4201312	4.53E-5	6.59E-5	3.57E-5	9.04E-5	4.16E-6	6.05E-6	3.27E-6	3.51E-7	2.47E-4	4.12E-4	1.91E-4	5.80E-4	7.12E-6	8.96E-6	1.01E-5	1.47E-5	2.72E-9	3.13E-9	2.96E-9	3.09E-9
124	615243	4201312	4.55E-5	6.62E-5	3.58E-5	9.16E-5	4.21E-6	6.12E-6	3.31E-6	3.49E-7	2.47E-4	4.17E-4	1.95E-4	6.06E-4	7.23E-6	9.13E-6	1.05E-5	1.53E-5	2.74E-9	3.18E-9	3.11E-9	3.10E-9
125	615263	4201312	4.57E-5	6.64E-5	3.60E-5	9.28E-5	4.26E-6	6.19E-6	3.35E-6	3.49E-7	2.47E-4	4.22E-4	1.99E-4	6.35E-4	7.33E-6	9.30E-6	1.10E-5	1.61E-5	2.75E-9	3.23E-9	3.26E-9	3.11E-9
126	615283	4201312	4.58E-5	6.66E-5	3.61E-5	9.37E-5	4.30E-6	6.25E-6	3.38E-6	3.54E-7	2.47E-4	4.26E-4	2.02E-4	6.67E-4	7.42E-6	9.46E-6	1.16E-5	1.69E-5	2.74E-9	3.27E-9	3.42E-9	3.12E-9
127	615303	4201312	4.58E-5	6.65E-5	3.60E-5	9.46E-5	4.33E-6	6.30E-6	3.41E-6	3.63E-7	2.46E-4	4.29E-4	2.06E-4	7.02E-4	7.51E-6	9.62E-6	1.22E-5	1.78E-5	2.72E-9	3.30E-9	3.60E-9	3.12E-9
128	615323	4201312	4.56E-5	6.63E-5	3.59E-5	9.54E-5	4.37E-6	6.35E-6	3.44E-6	3.80E-7	2.47E-4	4.32E-4	2.09E-4	7.40E-4	7.60E-6	9.77E-6	1.28E-5	1.87E-5	2.70E-9	3.32E-9	3.82E-9	3.13E-9
129	615343	4201312	4.53E-5	6.59E-5	3.57E-5	9.60E-5	4.39E-6	6.38E-6	3.45E-6	4.02E-7	2.47E-4	4.36E-4	2.12E-4	7.78E-4	7.68E-6	9.91E-6	1.35E-5	1.97E-5	2.67E-9	3.32E-9	4.10E-9	3.14E-9
130	615363	4201312	4.50E-5	6.54E-5	3.54E-5	9.66E-5	4.42E-6	6.42E-6	3.48E-6	4.30E-7	2.48E-4	4.42E-4	2.14E-4	8.19E-4	7.78E-6	1.00E-5	1.42E-5	2.07E-5	2.65E-9	3.31E-9	4.47E-9	3.15E-9
131	615383	4201312	4.46E-5	6.48E-5	3.51E-5	9.73E-5	4.44E-6	6.46E-6	3.50E-6	4.63E-7	2.49E-4	4.48E-4	2.16E-4	8.62E-4	7.90E-6	1.02E-5	1.49E-5	2.18E-5	2.64E-9	3.28E-9	4.94E-9	3.16E-9
132	615403	4201312	4.40E-5	6.40E-5	3.46E-5	9.76E-5	4.46E-6	6.48E-6	3.51E-6	4.95E-7	2.50E-4	4.56E-4	2.19E-4	9.05E-4	8.02E-6	1.03E-5	1.56E-5	2.29E-5	2.62E-9	3.27E-9	5.50E-9	3.17E-9
133	614703	4201332	2.26E-5	3.28E-5	1.78E-5	3.74E-5	1.72E-6	2.50E-6	1.35E-6	2.85E-7	1.72E-4	2.31E-4	1.16E-4	2.30E-4	4.03E-6	5.40E-6	3.99E-6	5.83E-6	1.15E-9	1.63E-9	7.76E-10	2.19E-9
134	614723	4201332	2.38E-5	3.46E-5	1.87E-5	3.96E-5	1.82E-6	2.65E-6	1.43E-6	2.94E-7	1.76E-4	2.36E-4	1.18E-4	2.37E-4	4.11E-6	5.50E-6	4.10E-6	5.99E-6	1.19E-9	1.66E-9	7.99E-10	2.24E-9
135	614743	4201332	2.50E-5	3.63E-5	1.97E-5	4.19E-5	1.93E-6	2.81E-6	1.52E-6	3.05E-7	1.81E-4	2.40E-4	1.20E-4	2.44E-4	4.19E-6	5.60E-6	4.22E-6	6.16E-6	1.22E-9	1.69E-9	8.23E-10	2.29E-9
136	614763	4201332	2.63E-5	3.82E-5	2.07E-5	4.43E-5	2.04E-6	2.97E-6	1.61E-6	3.20E-7	1.86E-4	2.45E-4	1.22E-4	2.51E-4	4.27E-6	5.70E-6	4.34E-6	6.34E-6	1.26E-9	1.73E-9	8.49E-10	2.35E-9
137	614783	4201332	2.77E-5	4.03E-5	2.18E-5	4.69E-5	2.16E-6	3.14E-6	1.70E-6	3.36E-7	1.91E-4	2.50E-4	1.24E-4	2.58E-4	4.36E-6	5.81E-6	4.47E-6	6.53E-6	1.30E-9	1.77E-9	8.78E-10	2.40E-9
138	614803	4201332	2.92E-5	4.24E-5	2.30E-5	4.96E-5	2.29E-6	3.32E-6	1.80E-6	3.53E-7	1.97E-4	2.55E-4	1.27E-4	2.66E-4	4.45E-6	5.92E-6	4.61E-6	6.73E-6	1.34E-9	1.82E-9	9.09E-10	2.46E-9
139	614823	4201332	3.07E-5	4.47E-5	2.42E-5	5.25E-5	2.42E-6	3.51E-6	1.90E-6	3.70E-7	2.03E-4	2.60E-4	1.29E-4	2.74E-4	4.54E-6	6.04E-6	4.75E-6	6.93E-6	1.39E-9	1.86E-9	9.43E-10	2.52E-9
140	614843	4201332	3.23E-5	4.70E-5	2.54E-5	5.55E-5	2.55E-6	3.71E-6	2.01E-6	3.86E-7	2.09E-4	2.65E-4	1.32E-4	2.83E-4	4.63E-6	6.15E-6	4.90E-6	7.15E-6	1.44E-9	1.92E-9	9.80E-10	2.57E-9
141	614863	4201332	3.39E-5	4.93E-5	2.67E-5	5.85E-5	2.68E-6	3.90E-6	2.11E-6	3.99E-7	2.13E-4	2.71E-4	1.34E-4	2.92E-4	4.73E-6	6.28E-6	5.06E-6	7.38E-6	1.49E-9	1.97E-9	1.02E-9	2.62E-9
142	614883	4201332	3.55E-5	5.16E-5	2.79E-5	6.14E-5	2.82E-6	4.10E-6	2.22E-6	4.08E-7	2.17E-4	2.76E-4	1.37E-4	3.02E-4	4.82E-6	6.40E-6	5.23E-6	7.62E-6	1.54E-9	2.03E-9	1.07E-9	2.67E-9
143	614903	4201332	3.69E-5	5.36E-5	2.90E-5	6.41E-5	2.95E-6	4.29E-6	2.33E-6	4.14E-7	2.19E-4	2.82E-4	1.40E-4	3.12E-4	4.93E-6	6.53E-6	5.40E-6	7.88E-6	1.59E-9	2.09E-9	1.12E-9	2.70E-9
144	614923	4201332	3.84E-5	5.58E-5	3.02E-5	6.70E-5	3.10E-6	4.51E-6	2.44E-6	4.15E-7	2.21E-4	2.90E-4	1.43E-4	3.23E-4	5.11E-6	6.76E-6	5.61E-6	8.17E-6	1.65E-9	2.16E-9	1.17E-9	2.73E-9
145	614943	4201332	3.99E-5	5.79E-5	3.14E-5	6.97E-5	3.24E-6	4.72E-6	2.55E-6	4.13E-7	2.21E-4	2.96E-4	1.47E-4	3.35E-4	5.22E-6	6.90E-6	5.81E-6	8.46E-6	1.71E-9	2.23E-9	1.23E-9	2.76E-9
146	614963	4201332	4.12E-5	5.99E-5	3.24E-5	7.24E-5	3.38E-6	4.92E-6	2.66E-6	4.08E-7	2.21E-4	3.03E-4	1.50E-4	3.47E-4	5.34E-6	7.05E-6	6.03E-6	8.78E-6	1.77E-9	2.30E-9	1.30E-9	2.77E-9
147	614983	4201332	4.26E-5	6.19E-5	3.35E-5	7.51E-5	3.52E-6	5.11E-6	2.77E-6	4.02E-7	2.21E-4	3.10E-4	1.53E-4	3.60E-4	5.47E-6	7.20E-6	6.26E-6	9.11E-6	1.83E-9	2.37E-9	1.38E-9	2.79E-9
148	615003	4201332	4.39E-5	6.39E-5	3.46E-5	7.79E-5	3.65E-6	5.30E-6	2.87E-6	3.96E-7	2.21E-4	3.17E-4	1.56E-4	3.75E-4	5.60E-6	7.35E-6	6.50E-6	9.47E-6	1.89E-9	2.45E-9	1.46E-9	2.81E-9
149	615023	4201332	4.52E-5	6.58E-5	3.56E-5	8.07E-5	3.78E-6	5.49E-6	2.97E-6	3.92E-7	2.22E-4	3.25E-4	1.60E-4	3.90E-4	5.73E-6	7.50E-6	6.76E-6	9.86E-6	1.96E-9	2.52E-9	1.55E-9	2.83E-9
150	615043	4201332	4.64E-5	6.74E-5	3.65E-5	8.34E-5	3.90E-6	5.67E-6	3.07E-6	3.88E-7	2.24E-4	3.34E-4	1.63E-4	4.06E-4	5.88E-6	7.66E-6	7.04E-6	1.03E-5	2.03E-9	2.60E-9	1.65E-9	2.85E-9
151	615063	4201332	4.74E-5	6.89E-5	3.73E-5	8.61E-5	4.01E-6	5.83E-6	3.16E-6	3.87E-7	2.26E-4	3.43E-4	1.67E-4	4.24E-4	6.03E-6	7.82E-6	7.33E-6	1.07E-5	2.11E-9	2.68E-9	1.76E-9	2.88E-9
152	615083	4201332	4.82E-5	7.00E-5	3.79E-5	8.86E-5	4.12E-6	5.99E-6	3.24E-6	3.86E-7	2.29E-4	3.53E-4	1.70E-4	4.42E-4	6.19E-6	7.98E-6	7.65E-6	1.12E-5	2.20E-9	2.76E-9	1.88E-9	2.91E-9
153	615103	4201332	4.89E-5	7.11E-5	3.85E-5	9.10E-5	4.22E-6	6.14E-6	3.32E-6	3.86E-7	2.33E-4	3.63E-4	1.74E-4	4.62E-4	6.35E-6	8.15E-6	7.98E-6	1.17E-5	2.29E-9	2.84E-9	2.01E-9	2.95E-9
154	615123	4201332	4.95E-5	7.20E-5	3.90E-5	9.33E-5	4.32E-6	6.28E-6	3.40E-6	3.84E-7	2.37E-4	3.74E-4	1.77E-4	4.82E-4	6.52E-6	8.32E-6	8.33E-6	1.22E-5	2.38E-9	2.91E-9	2.15E-9	3.00E-9
155	615143	4201332	5.00E-5	7.27E-5	3.93E-5	9.54E-5	4.41E-6	6.40E-6	3.47E-6	3.82E-7	2.41E-4	3.85E-4	1.81E-4	5.03E-4	6.69E-6	8.49E-6	8.69E-6	1.27E-5	2.48E-9	2.98E-9	2.30E-9	3.04E-9
156	615163	4201332	5.03E-5	7.31E-5	3.96E-5	9.73E-5	4.48E-6	6.52E-6	3.53E-6	3.79E-7	2.46E-4	3.96E-4	1.85E-4	5.25E-4	6.86E-6	8.66E-6	9.08E-6	1.33E-5	2.57E-9	3.04E-9	2.46E-9	3.08E-9
157	615183	4201332	5.06E-5	7.35E-5	3.98E-5	9.91E-5	4.56E-6	6.62E-6	3.59E-6	3.74E-7	2.50E-4	4.06E-4	1.88E-4	5.49E-4	7.02E-6	8.83E-6	9.49E-6	1.39E-5	2.66E-9	3.10E-9	2.63E-9	3.12E-9
158	615203	4201332	5.08E-5	7.38E-5	3.99E-5	1.01E-4	4.62E-6	6.72E-6	3.64E-6	3.69E-7	2.53E-4	4.15E-4	1.92E-4	5.74E-4	7.18E-6	9.01E-6	9.93E-6	1.45E-5	2.73E-9	3.15E-9	2.80E-9	3.15E-9
159	615223	4201332	5.09E-5	7.40E-5	4.01E-5	1.02E-4	4.68E-6	6.80E-6	3.68E-6	3.64E-7	2.54E-4	4.24E-4	1.96E-4	6.01E-4	7.32E-6	9.19E-6	1.04E-5	1.52E-5	2.79E-9	3.21E-9	2.98E-9	3.18E-9
160	615243	4201332	5.10E-5	7.41E-5	4.01E-5	1.03E-4	4.73E-6	6.88E-6	3.72E-6	3.61E-7	2.55E-4	4.31E-4	2.00E-4	6.30E-4	7.45E-6	9.37E-6	1.09E-5	1.59E-5	2.83E-9	3.26E-9	3.16E-9	3.20E-9
161	615263	4201332	5.11E-5	7.43E-5	4.02E-5	1.04E-4	4.77E-6	6.94E-6	3.76E-6	3.60E-7	2.55E-4	4.36E-4	2.04E-4	6.61E-4	7.57E-6	9.55E-6	1.15E-5	1.67E-5	2.85E-9	3.31E-9	3.34E-9	3.21E-9
162	615283	4201332	5.11E-5	7.42E-5	4.02E-5	1.05E-4	4.81E-6	7.00E-6	3.79E-6	3.64E-7	2.55E-4	4.41E-4	2.08E-4	6.96E-4	7.67E-6	9.73E-6	1.21E-5	1.76E-5	2.86E-9	3.35E-9	3.52E-9	3.22E-9
163	615303	4201332	5.09E-5	7.40E-5	4.00E-5	1.06E-4	4.85E-6	7.06E-6	3.82E-6	3.73E-7	2.55E-4	4.45E-4	2.12E-4	7.35E-4	7.77E-6	9.91E-6	1.27E-5	1.86E-5	2.84E-9	3.40E-9	3.72E-9	3.22E-9
164	615323	4201332	5.07E-5	7.37E-5	3.99E-5	1.07E-4	4.90E-6	7.12E-6	3.86E-6	3.90E-7	2.55E-4	4.49E-4	2.16E-4	7.78E-4	7.88E-6	1.01E-5	1.35E-5	1.97E-5	2.82E-9	3.44E-9	3.94E-9	3.23E-9
165	615343	4201332	5.02E-5	7.30E-5	3.95E-5	1.08E-4	4.92E-6	7.16E-6	3.87E-6	4.12E-7	2.56E-4	4.53E-4	2.19E-4	8.23E-4	7.97E-6	1.02E-5	1.42E-5	2.08E-5	2.80E-9	3.45E-9	4.19E-9	3.24E-9
166	615363	4201332	4.96E-5	7.21E-5	3.90E-5	1.08E-4	4.94E-6	7.18E-6	3.89E-6	4.41E-7	2.56E-4	4.58E-4	2.22E-4	8.68E-4	8.07E-6	1.04E-5	1.50E-5	2.20E-5	2.77E-9	3.44E-9	4.51E-9	3.25E-9
167	615383	4201332	4.88E-5	7.10E-5	3.84E-5	1.09E-4	4.96E-6	7.20E-6	3.90E-6	4.74E-7	2.57E-4	4.64E-4	2.24E-4	9.16E-4	8.18E-6	1.05E-5	1.58E-5	2.32E-5	2.75E-9	3.44E-9	4.93E-9	3.26E-9
168	615403	4201332	4.80E-5	6.98E-5	3.78E-5	1.09E-4	4.96E-6	7.21E-6	3.91E-6	5.07E-7	2.58E-4	4.72E-4	2.26E-4	9.65E-4	8.30E-6	1.06E-5	1.67E-5	2.44E-5	2.73E-9	3.41E-9	5.47E-9	3.27E-9
169	615423	4201332	4.71E-5	6.85E-5	3.71E-5	1.09E-4	4.96E-6	7.22E-6	3.91E-6	5.37E-7	2.59E-4	4.81E-4	2.29E-4	1.02E-3	8.43E-6	1.08E-5	1.75E-5	2.57E-5	2.71E-9	3.38E-9	6.12E-9	3.28E-9
170	614703	4201352	2.43E-5	3.54E-5	1.92E-5	4.06E-5	1.86E-6	2.70E-6	1.46E-6	2.88E-7	1.74E-4	2.35E-4	1.17E-4	2.32E-4	4.09E-6	5.48E-6	4.02E-6	5.87E-6	1.17E-9	1.65E-9	7.84E-10	2.22E-9
171	614723	4201352	2.57E-5	3.74E-5	2.03E-5	4.32E-5	1.98E-6	2.88E-6	1.56E-6	2.96E-7	1.78E-4	2.40E-4	1.19E-4	2.39E-4	4.17E-6	5.58E-6	4.14E-6	6.04E-6	1.19E-9	1.68E-9	8.05E-10	2.27E-9
172	614743	4201352	2.72E-5	3.95E-5	2.14E-5	4.59E-5	2.11E-6	3.07E-6	1.66E-6	3.06E-7	1.83E-4	2.44E-4	1.22E-4	2.46E-4	4.25E-6	5.68E-6	4.26E-6	6.21E-6	1.23E-9	1.72E-9	8.27E-10	2.33E-9
173	614763	4201352	2.88E-5	4.18E-5	2.26E-5	4.88E-5	2.25E-6	3.27E-6	1.77E-6	3.19E-7	1.88E-4	2.49E-4	1.24E-4	2.53E-4	4.34E-6	5.79E-6	4.38E-6	6.39E-6	1.26E-9	1.75E-9	8.51E-10	2.38E-9
174	614783	4201352	3.05E-5	4.43E-5	2.40E-5	5.20E-5	2.39E-6	3.48E-6	1.88E-6	3.34E-7	1.93E-4	2.54E-4	1.26E-4	2.60E-4	4.43E-6	5.90E-6	4.51E-6	6.59E-6	1.30E-9	1.79E-9	8.77E-10	2.44E-9
175	614803	4201352	3.23E-5	4.69E-5	2.54E-5	5.53E-5	2.55E-6	3.70E-6	2.00E-6	3.52E-7	1.99E-4	2.59E-4	1.29E-4	2.68E-4	4.52E-6	6.01E-6	4.65E-6	6.79E-6	1.35E-9	1.84E-9	9.05E-10	2.50E-9
176	614823	4201352	3.41E-5	4.96E-5	2.69E-5	5.88E-5	2.70E-6	3.93E-6	2.13E-6	3.70E-7	2.06E-4	2.64E-4	1.31E-4	2.77E-4	4.61E-6	6.13E-6	4.80E-6	7.00E-6	1.39E-9	1.88E-9	9.35E-10	2.56E-9
177	614843	4201352	3.61E-5	5.25E-5	2.84E-5	6.25E-5	2.86E-6	4.16E-6	2.25E-6	3.87E-7	2.12E-4	2.70E-4	1.34E-4	2.86E-4	4.71E-6	6.25E-6	4.95E-6	7.22E-6	1.44E-9	1.93E-9	9.69E-10	2.62E-9
178	614863	4201352	3.80E-5	5.52E-5	2.99E-5	6.60E-5	3.03E-6	4.40E-6	2.38E-6	4.03E-7	2.17E-4	2.76E-4	1.36E-4	2.95E-4	4.81E-6	6.38E-6	5.11E-6	7.46E-6	1.49E-9	1.99E-9	1.00E-9	2.67E-9
179	614883	4201352	3.98E-5	5.78E-5	3.13E-5	6.94E-5	3.20E-6	4.65E-6	2.52E-6	4.15E-7	2.22E-4	2.82E-4	1.40E-4	3.05E-4	4.92E-6	6.52E-6	5.28E-6	7.71E-6	1.55E-9	2.05E-9	1.05E-9	2.73E-9
180	614903	4201352	4.16E-5	6.04E-5	3.27E-5	7.28E-5	3.37E-6	4.90E-6	2.65E-6	4.24E-7	2.25E-4	2.89E-4	1.43E-4	3.15E-4	5.08E-6	6.73E-6	5.47E-6	7.98E-6	1.60E-9	2.11E-9	1.09E-9	2.77E-9
181	614923	4201352	4.33E-5	6.30E-5	3.41E-5	7.62E-5	3.54E-6	5.15E-6	2.79E-6	4.28E-7	2.27E-4	2.95E-4	1.46E-4	3.27E-4	5.20E-6	6.88E-6	5.67E-6	8.26E-6	1.66E-9	2.18E-9	1.14E-9	2.81E-9
182	614943	4201352	4.51E-5	6.55E-5	3.55E-5	7.95E-5	3.71E-6	5.40E-6	2.92E-6	4.28E-7	2.28E-4	3.02E-4	1.49E-4	3.39E-4	5.32E-6	7.02E-6	5.88E-6	8.56E-6	1.72E-9	2.25E-9	1.20E-9	2.83E-9
183	614963	4201352	4.68E-5	6.80E-5	3.68E-5	8.28E-5	3.88E-6	5.63E-6	3.05E-6	4.24E-7	2.28E-4	3.09E-4	1.52E-4	3.51E-4	5.44E-6	7.17E-6	6.10E-6	8.88E-6	1.78E-9	2.32E-9	1.26E-9	2.86E-9
184	614983	4201352	4.85E-5	7.06E-5	3.82E-5	8.62E-5	4.03E-6	5.87E-6	3.18E-6	4.18E-7	2.28E-4	3.16E-4	1.56E-4	3.65E-4	5.57E-6	7.32E-6	6.33E-6	9.22E-6	1.84E-9	2.39E-9	1.32E-9	2.87E-9
185	615003	4201352	5.02E-5	7.30E-5	3.95E-5	8.96E-5	4.19E-6	6.09E-6	3.30E-6	4.12E-7	2.28E-4	3.23E-4	1.59E-4	3.79E-4	5.70E-6	7.48E-6	6.58E-6	9.59E-6	1.90E-9	2.46E-9	1.40E-9	2.89E-9
186	615023	4201352	5.18E-5	7.53E-5	4.08E-5	9.29E-5	4.33E-6	6.30E-6	3.41E-6	4.06E-7	2.29E-4	3.32E-4	1.62E-4	3.95E-4	5.84E-6	7.64E-6	6.85E-6	9.98E-6	1.98E-9	2.54E-9	1.48E-9	2.91E-9
187	615043	4201352	5.33E-5	7.74E-5	4.19E-5	9.61E-5	4.47E-6	6.50E-6	3.52E-6	4.02E-7	2.31E-4	3.40E-4	1.66E-4	4.12E-4	5.99E-6	7.80E-6	7.14E-6	1.04E-5	2.05E-9	2.62E-9	1.57E-9	2.93E-9
188	615063	4201352	5.44E-5	7.91E-5	4.28E-5	9.91E-5	4.60E-6	6.69E-6	3.62E-6	4.00E-7	2.33E-4	3.49E-4	1.70E-4	4.30E-4	6.15E-6	7.97E-6	7.45E-6	1.09E-5	2.13E-9	2.70E-9	1.68E-9	2.96E-9
189	615083	4201352	5.53E-5	8.04E-5	4.36E-5	1.02E-4	4.72E-6	6.86E-6	3.71E-6	3.99E-7	2.36E-4	3.59E-4	1.74E-4	4.50E-4	6.31E-6	8.14E-6	7.78E-6	1.14E-5	2.22E-9	2.78E-9	1.79E-9	3.00E-9
190	615103	4201352	5.61E-5	8.15E-5	4.41E-5	1.05E-4	4.83E-6	7.02E-6	3.80E-6	3.98E-7	2.39E-4	3.70E-4	1.77E-4	4.70E-4	6.48E-6	8.32E-6	8.13E-6	1.19E-5	2.31E-9	2.87E-9	1.92E-9	3.04E-9
191	615123	4201352	5.67E-5	8.24E-5	4.46E-5	1.07E-4	4.93E-6	7.16E-6	3.88E-6	3.97E-7	2.43E-4	3.81E-4	1.81E-4	4.92E-4	6.66E-6	8.50E-6	8.51E-6	1.25E-5	2.41E-9	2.95E-9	2.06E-9	3.08E-9
192	615143	4201352	5.71E-5	8.30E-5	4.49E-5	1.09E-4	5.02E-6	7.29E-6	3.95E-6	3.95E-7	2.48E-4	3.93E-4	1.85E-4	5.15E-4	6.84E-6	8.68E-6	8.90E-6	1.30E-5	2.51E-9	3.03E-9	2.21E-9	3.13E-9
193	615163	4201352	5.73E-5	8.33E-5	4.51E-5	1.11E-4	5.10E-6	7.41E-6	4.01E-6	3.92E-7	2.52E-4	4.04E-4	1.89E-4	5.40E-4	7.02E-6	8.86E-6	9.32E-6	1.36E-5	2.61E-9	3.10E-9	2.37E-9	3.17E-9
194	615183	4201352	5.74E-5	8.35E-5	4.52E-5	1.13E-4	5.17E-6	7.52E-6	4.07E-6	3.87E-7	2.57E-4	4.15E-4	1.93E-4	5.65E-4	7.20E-6	9.04E-6	9.77E-6	1.43E-5	2.70E-9	3.16E-9	2.55E-9	3.21E-9
195	615203	4201352	5.75E-5	8.36E-5	4.52E-5	1.15E-4	5.24E-6	7.61E-6	4.12E-6	3.82E-7	2.60E-4	4.26E-4	1.97E-4	5.92E-4	7.37E-6	9.23E-6	1.02E-5	1.50E-5	2.79E-9	3.22E-9	2.74E-9	3.25E-9
196	615223	4201352	5.75E-5	8.35E-5	4.52E-5	1.16E-4	5.29E-6	7.69E-6	4.17E-6	3.77E-7	2.62E-4	4.35E-4	2.01E-4	6.21E-4	7.53E-6	9.42E-6	1.08E-5	1.57E-5	2.86E-9	3.28E-9	2.94E-9	3.28E-9
197	615243	4201352	5.74E-5	8.35E-5	4.52E-5	1.17E-4	5.34E-6	7.77E-6	4.20E-6	3.73E-7	2.63E-4	4.44E-4	2.05E-4	6.53E-4	7.68E-6	9.61E-6	1.13E-5	1.65E-5	2.92E-9	3.33E-9	3.15E-9	3.30E-9
198	615263	4201352	5.74E-5	8.34E-5	4.52E-5	1.18E-4	5.38E-6	7.83E-6	4.24E-6	3.72E-7	2.64E-4	4.51E-4	2.09E-4	6.87E-4	7.81E-6	9.81E-6	1.19E-5	1.74E-5	2.95E-9	3.39E-9	3.37E-9	3.31E-9
199	615283	4201352	5.72E-5	8.31E-5	4.50E-5	1.19E-4	5.42E-6	7.88E-6	4.27E-6	3.75E-7	2.63E-4	4.57E-4	2.14E-4	7.25E-4	7.93E-6	1.00E-5	1.26E-5	1.83E-5	2.97E-9	3.44E-9	3.58E-9	3.32E-9
200	615303	4201352	5.68E-5	8.26E-5	4.47E-5	1.20E-4	5.46E-6	7.94E-6	4.30E-6	3.84E-7	2.63E-4	4.62E-4	2.18E-4	7.68E-4	8.05E-6	1.02E-5	1.33E-5	1.94E-5	2.97E-9	3.49E-9	3.81E-9	3.33E-9
201	615323	4201352	5.64E-5	8.20E-5	4.44E-5	1.21E-4	5.51E-6	8.01E-6	4.34E-6	4.00E-7	2.63E-4	4.67E-4	2.22E-4	8.17E-4	8.16E-6	1.04E-5	1.42E-5	2.07E-5	2.95E-9	3.54E-9	4.06E-9	3.34E-9
202	615343	4201352	5.56E-5	8.09E-5	4.38E-5	1.22E-4	5.53E-6	8.04E-6	4.35E-6	4.22E-7	2.64E-4	4.71E-4	2.26E-4	8.68E-4	8.26E-6	1.06E-5	1.50E-5	2.20E-5	2.93E-9	3.59E-9	4.32E-9	3.35E-9
203	615363	4201352	5.47E-5	7.95E-5	4.30E-5	1.22E-4	5.55E-6	8.06E-6	4.36E-6	4.51E-7	2.65E-4	4.76E-4	2.30E-4	9.21E-4	8.37E-6	1.07E-5	1.59E-5	2.33E-5	2.90E-9	3.59E-9	4.61E-9	3.36E-9
204	615383	4201352	5.36E-5	7.79E-5	4.22E-5	1.22E-4	5.55E-6	8.07E-6	4.37E-6	4.85E-7	2.66E-4	4.81E-4	2.32E-4	9.76E-4	8.48E-6	1.09E-5	1.69E-5	2.47E-5	2.87E-9	3.59E-9	4.99E-9	3.37E-9
205	615403	4201352	5.25E-5	7.63E-5	4.13E-5	1.22E-4	5.56E-6	8.08E-6	4.37E-6	5.20E-7	2.67E-4	4.89E-4	2.35E-4	1.03E-3	8.60E-6	1.10E-5	1.78E-5	2.61E-5	2.85E-9	3.56E-9	5.47E-9	3.38E-9
206	615423	4201352	5.13E-5	7.46E-5	4.04E-5	1.22E-4	5.55E-6	8.07E-6	4.37E-6	5.52E-7	2.67E-4	4.98E-4	2.37E-4	1.09E-3	8.74E-6	1.12E-5	1.89E-5	2.76E-5	2.83E-9	3.53E-9	6.09E-9	3.39E-9
207	614763	4201372	3.18E-5	4.62E-5	2.50E-5	5.44E-5	2.50E-6	3.64E-6	1.97E-6	3.20E-7	1.90E-4	2.53E-4	1.26E-4	2.55E-4	4.41E-6	5.87E-6	4.42E-6	6.44E-6	1.27E-9	1.77E-9	8.63E-10	2.42E-9
208	614783	4201372	3.38E-5	4.92E-5	2.66E-5	5.83E-5	2.68E-6	3.90E-6	2.11E-6	3.34E-7	1.96E-4	2.58E-4	1.28E-4	2.63E-4	4.50E-6	5.99E-6	4.55E-6	6.64E-6	1.31E-9	1.81E-9	8.87E-10	2.48E-9
209	614803	4201372	3.61E-5	5.24E-5	2.84E-5	6.24E-5	2.87E-6	4.17E-6	2.26E-6	3.50E-7	2.02E-4	2.63E-4	1.31E-4	2.71E-4	4.59E-6	6.10E-6	4.69E-6	6.85E-6	1.35E-9	1.86E-9	9.12E-10	2.54E-9
210	614823	4201372	3.84E-5	5.58E-5	3.02E-5	6.68E-5	3.06E-6	4.45E-6	2.41E-6	3.69E-7	2.08E-4	2.69E-4	1.33E-4	2.79E-4	4.69E-6	6.23E-6	4.84E-6	7.06E-6	1.39E-9	1.90E-9	9.40E-10	2.60E-9
211	614843	4201372	4.07E-5	5.92E-5	3.21E-5	7.12E-5	3.26E-6	4.74E-6	2.57E-6	3.87E-7	2.14E-4	2.74E-4	1.36E-4	2.88E-4	4.79E-6	6.35E-6	5.00E-6	7.29E-6	1.44E-9	1.96E-9	9.70E-10	2.67E-9
212	614863	4201372	4.30E-5	6.25E-5	3.38E-5	7.55E-5	3.47E-6	5.04E-6	2.73E-6	4.05E-7	2.21E-4	2.81E-4	1.39E-4	2.98E-4	4.90E-6	6.50E-6	5.16E-6	7.53E-6	1.49E-9	2.01E-9	1.00E-9	2.73E-9
213	614883	4201372	4.52E-5	6.57E-5	3.56E-5	7.97E-5	3.68E-6	5.35E-6	2.90E-6	4.21E-7	2.26E-4	2.88E-4	1.42E-4	3.08E-4	5.03E-6	6.67E-6	5.34E-6	7.79E-6	1.55E-9	2.07E-9	1.04E-9	2.78E-9
214	614903	4201372	4.75E-5	6.90E-5	3.74E-5	8.40E-5	3.90E-6	5.68E-6	3.07E-6	4.33E-7	2.31E-4	2.94E-4	1.45E-4	3.19E-4	5.18E-6	6.86E-6	5.54E-6	8.07E-6	1.61E-9	2.14E-9	1.08E-9	2.84E-9
215	614923	4201372	4.96E-5	7.21E-5	3.90E-5	8.80E-5	4.11E-6	5.97E-6	3.23E-6	4.40E-7	2.34E-4	3.01E-4	1.49E-4	3.30E-4	5.29E-6	7.00E-6	5.73E-6	8.35E-6	1.66E-9	2.20E-9	1.13E-9	2.88E-9
216	614943	4201372	5.18E-5	7.53E-5	4.07E-5	9.22E-5	4.31E-6	6.27E-6	3.39E-6	4.42E-7	2.35E-4	3.08E-4	1.52E-4	3.42E-4	5.41E-6	7.15E-6	5.94E-6	8.66E-6	1.72E-9	2.27E-9	1.17E-9	2.91E-9
217	614963	4201372	5.40E-5	7.85E-5	4.25E-5	9.64E-5	4.51E-6	6.55E-6	3.55E-6	4.40E-7	2.36E-4	3.15E-4	1.55E-4	3.55E-4	5.54E-6	7.30E-6	6.17E-6	8.98E-6	1.78E-9	2.34E-9	1.23E-9	2.94E-9
218	614983	4201372	5.62E-5	8.16E-5	4.42E-5	1.01E-4	4.69E-6	6.82E-6	3.69E-6	4.35E-7	2.36E-4	3.22E-4	1.58E-4	3.69E-4	5.67E-6	7.46E-6	6.41E-6	9.33E-6	1.85E-9	2.41E-9	1.29E-9	2.96E-9
219	615003	4201372	5.82E-5	8.46E-5	4.58E-5	1.05E-4	4.87E-6	7.08E-6	3.83E-6	4.29E-7	2.36E-4	3.30E-4	1.62E-4	3.84E-4	5.81E-6	7.62E-6	6.66E-6	9.70E-6	1.92E-9	2.48E-9	1.35E-9	2.98E-9
220	615023	4201372	6.01E-5	8.74E-5	4.73E-5	1.08E-4	5.03E-6	7.32E-6	3.96E-6	4.23E-7	2.37E-4	3.38E-4	1.65E-4	4.00E-4	5.96E-6	7.78E-6	6.94E-6	1.01E-5	1.99E-9	2.56E-9	1.43E-9	3.00E-9
221	615043	4201372	6.18E-5	8.98E-5	4.86E-5	1.12E-4	5.18E-6	7.54E-6	4.08E-6	4.18E-7	2.38E-4	3.47E-4	1.69E-4	4.17E-4	6.11E-6	7.95E-6	7.24E-6	1.05E-5	2.07E-9	2.64E-9	1.51E-9	3.02E-9
222	615063	4201372	6.32E-5	9.19E-5	4.97E-5	1.15E-4	5.32E-6	7.74E-6	4.19E-6	4.14E-7	2.40E-4	3.56E-4	1.73E-4	4.36E-4	6.27E-6	8.13E-6	7.56E-6	1.10E-5	2.15E-9	2.72E-9	1.60E-9	3.05E-9
223	615083	4201372	6.42E-5	9.34E-5	5.06E-5	1.18E-4	5.45E-6	7.92E-6	4.29E-6	4.12E-7	2.42E-4	3.66E-4	1.77E-4	4.56E-4	6.44E-6	8.31E-6	7.90E-6	1.15E-5	2.24E-9	2.81E-9	1.71E-9	3.08E-9
224	615103	4201372	6.50E-5	9.44E-5	5.11E-5	1.21E-4	5.56E-6	8.09E-6	4.38E-6	4.11E-7	2.46E-4	3.77E-4	1.81E-4	4.78E-4	6.62E-6	8.49E-6	8.27E-6	1.21E-5	2.33E-9	2.89E-9	1.83E-9	3.12E-9
225	615123	4201372	6.55E-5	9.52E-5	5.15E-5	1.24E-4	5.66E-6	8.24E-6	4.46E-6	4.10E-7	2.50E-4	3.88E-4	1.85E-4	5.01E-4	6.80E-6	8.68E-6	8.67E-6	1.27E-5	2.43E-9	2.98E-9	1.96E-9	3.17E-9
226	615143	4201372	6.58E-5	9.56E-5	5.18E-5	1.26E-4	5.76E-6	8.37E-6	4.53E-6	4.09E-7	2.54E-4	4.00E-4	1.89E-4	5.26E-4	6.99E-6	8.87E-6	9.09E-6	1.33E-5	2.54E-9	3.07E-9	2.10E-9	3.21E-9
227	615163	4201372	6.58E-5	9.56E-5	5.18E-5	1.28E-4	5.84E-6	8.49E-6	4.59E-6	4.06E-7	2.59E-4	4.13E-4	1.93E-4	5.53E-4	7.18E-6	9.07E-6	9.55E-6	1.40E-5	2.64E-9	3.15E-9	2.26E-9	3.26E-9
228	615183	4201372	6.57E-5	9.55E-5	5.17E-5	1.30E-4	5.91E-6	8.59E-6	4.65E-6	4.02E-7	2.64E-4	4.25E-4	1.98E-4	5.81E-4	7.37E-6	9.26E-6	1.00E-5	1.47E-5	2.74E-9	3.23E-9	2.44E-9	3.31E-9
229	615203	4201372	6.55E-5	9.53E-5	5.16E-5	1.31E-4	5.97E-6	8.68E-6	4.70E-6	3.97E-7	2.68E-4	4.36E-4	2.02E-4	6.10E-4	7.56E-6	9.46E-6	1.06E-5	1.54E-5	2.84E-9	3.30E-9	2.64E-9	3.35E-9
230	615223	4201372	6.53E-5	9.50E-5	5.14E-5	1.32E-4	6.03E-6	8.76E-6	4.74E-6	3.91E-7	2.71E-4	4.47E-4	2.06E-4	6.42E-4	7.74E-6	9.66E-6	1.11E-5	1.62E-5	2.93E-9	3.36E-9	2.85E-9	3.38E-9
231	615243	4201372	6.52E-5	9.47E-5	5.13E-5	1.34E-4	6.08E-6	8.83E-6	4.78E-6	3.87E-7	2.72E-4	4.57E-4	2.10E-4	6.76E-4	7.91E-6	9.87E-6	1.17E-5	1.71E-5	3.00E-9	3.42E-9	3.08E-9	3.40E-9
232	615263	4201372	6.50E-5	9.44E-5	5.11E-5	1.35E-4	6.12E-6	8.90E-6	4.82E-6	3.85E-7	2.73E-4	4.66E-4	2.15E-4	7.14E-4	8.06E-6	1.01E-5	1.24E-5	1.81E-5	3.05E-9	3.48E-9	3.33E-9	3.42E-9
233	615283	4201372	6.44E-5	9.37E-5	5.07E-5	1.36E-4	6.15E-6	8.95E-6	4.84E-6	3.87E-7	2.72E-4	4.73E-4	2.20E-4	7.56E-4	8.21E-6	1.03E-5	1.31E-5	1.91E-5	3.08E-9	3.53E-9	3.58E-9	3.43E-9
234	615303	4201372	6.38E-5	9.27E-5	5.02E-5	1.36E-4	6.19E-6	9.00E-6	4.87E-6	3.95E-7	2.72E-4	4.80E-4	2.24E-4	8.03E-4	8.34E-6	1.05E-5	1.39E-5	2.03E-5	3.10E-9	3.59E-9	3.86E-9	3.44E-9
235	615323	4201372	6.30E-5	9.16E-5	4.96E-5	1.37E-4	6.24E-6	9.07E-6	4.91E-6	4.11E-7	2.72E-4	4.85E-4	2.29E-4	8.57E-4	8.46E-6	1.07E-5	1.48E-5	2.17E-5	3.09E-9	3.64E-9	4.14E-9	3.45E-9
236	615343	4201372	6.18E-5	8.99E-5	4.86E-5	1.38E-4	6.25E-6	9.09E-6	4.92E-6	4.33E-7	2.73E-4	4.90E-4	2.33E-4	9.15E-4	8.58E-6	1.09E-5	1.58E-5	2.31E-5	3.07E-9	3.71E-9	4.43E-9	3.46E-9
237	615363	4201372	6.04E-5	8.78E-5	4.76E-5	1.38E-4	6.26E-6	9.10E-6	4.93E-6	4.62E-7	2.74E-4	4.94E-4	2.37E-4	9.78E-4	8.69E-6	1.11E-5	1.69E-5	2.47E-5	3.04E-9	3.73E-9	4.74E-9	3.47E-9
238	615383	4201372	5.90E-5	8.57E-5	4.64E-5	1.38E-4	6.27E-6	9.11E-6	4.93E-6	4.97E-7	2.75E-4	5.00E-4	2.41E-4	1.04E-3	8.80E-6	1.13E-5	1.80E-5	2.64E-5	3.01E-9	3.73E-9	5.10E-9	3.48E-9
239	615403	4201372	5.75E-5	8.35E-5	4.52E-5	1.38E-4	6.26E-6	9.11E-6	4.93E-6	5.34E-7	2.76E-4	5.07E-4	2.44E-4	1.11E-3	8.93E-6	1.14E-5	1.92E-5	2.80E-5	2.98E-9	3.72E-9	5.54E-9	3.50E-9
240	615423	4201372	5.59E-5	8.13E-5	4.40E-5	1.38E-4	6.26E-6	9.10E-6	4.92E-6	5.67E-7	2.76E-4	5.16E-4	2.46E-4	1.18E-3	9.07E-6	1.16E-5	2.04E-5	2.98E-5	2.96E-9	3.69E-9	6.11E-9	3.51E-9
241	615443	4201372	5.43E-5	7.90E-5	4.28E-5	1.38E-4	6.24E-6	9.08E-6	4.91E-6	5.94E-7	2.77E-4	5.26E-4	2.49E-4	1.25E-3	9.21E-6	1.17E-5	2.16E-5	3.16E-5	2.93E-9	3.66E-9	6.84E-9	3.52E-9
242	614603	4201392	1.98E-5	2.87E-5	1.55E-5	3.17E-5	1.46E-6	2.12E-6	1.15E-6	2.75E-7	1.67E-4	2.24E-4	1.11E-4	2.06E-4	3.93E-6	5.24E-6	3.58E-6	5.22E-6	1.12E-9	1.53E-9	7.57E-10	2.11E-9
243	614803	4201392	4.09E-5	5.94E-5	3.22E-5	7.16E-5	3.28E-6	4.77E-6	2.58E-6	3.49E-7	2.04E-4	2.68E-4	1.33E-4	2.73E-4	4.67E-6	6.20E-6	4.73E-6	6.90E-6	1.36E-9	1.88E-9	9.32E-10	2.58E-9
244	614823	4201392	4.38E-5	6.37E-5	3.45E-5	7.71E-5	3.53E-6	5.13E-6	2.78E-6	3.67E-7	2.10E-4	2.73E-4	1.35E-4	2.82E-4	4.77E-6	6.32E-6	4.89E-6	7.12E-6	1.40E-9	1.93E-9	9.57E-10	2.64E-9
245	614843	4201392	4.66E-5	6.78E-5	3.67E-5	8.25E-5	3.78E-6	5.50E-6	2.98E-6	3.87E-7	2.17E-4	2.79E-4	1.38E-4	2.91E-4	4.87E-6	6.46E-6	5.04E-6	7.36E-6	1.45E-9	1.98E-9	9.85E-10	2.71E-9

246	614863	4201392	4.96E-5	7.21E-5	3.90E-5	8.80E-5	4.06E-6	5.90E-6	3.19E-6	4.06E-7	2.24E-4	2.87E-4	1.42E-4	3.01E-4	5.04E-6	6.69E-6	5.22E-6	7.61E-6	1.50E-9	2.04E-9	1.02E-9	2.78E-9
247	614883	4201392	5.24E-5	7.62E-5	4.12E-5	9.33E-5	4.33E-6	6.30E-6	3.41E-6	4.25E-7	2.30E-4	2.93E-4	1.45E-4	3.11E-4	5.16E-6	6.83E-6	5.41E-6	7.88E-6	1.55E-9	2.10E-9	1.05E-9	2.84E-9
248	614903	4201392	5.51E-5	8.02E-5	4.34E-5	9.85E-5	4.60E-6	6.68E-6	3.62E-6	4.39E-7	2.36E-4	2.99E-4	1.48E-4	3.22E-4	5.27E-6	6.98E-6	5.60E-6	8.15E-6	1.61E-9	2.16E-9	1.09E-9	2.90E-9
249	614923	4201392	5.79E-5	8.42E-5	4.56E-5	1.04E-4	4.85E-6	7.05E-6	3.82E-6	4.50E-7	2.40E-4	3.06E-4	1.51E-4	3.34E-4	5.39E-6	7.13E-6	5.80E-6	8.44E-6	1.67E-9	2.22E-9	1.13E-9	2.95E-9
250	614943	4201392	6.07E-5	8.82E-5	4.78E-5	1.09E-4	5.09E-6	7.41E-6	4.01E-6	4.55E-7	2.43E-4	3.13E-4	1.54E-4	3.46E-4	5.52E-6	7.28E-6	6.01E-6	8.75E-6	1.73E-9	2.29E-9	1.17E-9	2.99E-9
251	614963	4201392	6.34E-5	9.22E-5	4.99E-5	1.14E-4	5.32E-6	7.74E-6	4.19E-6	4.56E-7	2.44E-4	3.20E-4	1.58E-4	3.59E-4	5.64E-6	7.43E-6	6.24E-6	9.09E-6	1.79E-9	2.36E-9	1.22E-9	3.03E-9
252	614983	4201392	6.60E-5	9.60E-5	5.20E-5	1.19E-4	5.54E-6	8.05E-6	4.36E-6	4.53E-7	2.44E-4	3.28E-4	1.61E-4	3.73E-4	5.78E-6	7.60E-6	6.48E-6	9.44E-6	1.86E-9	2.43E-9	1.27E-9	3.05E-9
253	615003	4201392	6.84E-5	9.95E-5	5.39E-5	1.24E-4	5.74E-6	8.34E-6	4.51E-6	4.47E-7	2.44E-4	3.36E-4	1.65E-4	3.88E-4	5.92E-6	7.76E-6	6.74E-6	9.82E-6	1.93E-9	2.50E-9	1.33E-9	3.07E-9
254	615023	4201392	7.07E-5	1.03E-4	5.56E-5	1.28E-4	5.92E-6	8.60E-6	4.66E-6	4.40E-7	2.45E-4	3.45E-4	1.69E-4	4.05E-4	6.07E-6	7.93E-6	7.03E-6	1.02E-5	2.00E-9	2.58E-9	1.39E-9	3.10E-9
255	615043	4201392	7.26E-5	1.06E-4	5.71E-5	1.32E-4	6.08E-6	8.84E-6	4.78E-6	4.34E-7	2.45E-4	3.53E-4	1.72E-4	4.22E-4	6.23E-6	8.11E-6	7.33E-6	1.07E-5	2.08E-9	2.66E-9	1.47E-9	3.12E-9
256	615063	4201392	7.42E-5	1.08E-4	5.84E-5	1.36E-4	6.22E-6	9.05E-6	4.90E-6	4.30E-7	2.47E-4	3.63E-4	1.76E-4	4.41E-4	6.39E-6	8.29E-6	7.66E-6	1.12E-5	2.17E-9	2.74E-9	1.55E-9	3.14E-9
257	615083	4201392	7.53E-5	1.10E-4	5.93E-5	1.39E-4	6.35E-6	9.24E-6	5.00E-6	4.27E-7	2.50E-4	3.73E-4	1.80E-4	4.62E-4	6.57E-6	8.48E-6	8.01E-6	1.17E-5	2.26E-9	2.83E-9	1.64E-9	3.18E-9
258	615103	4201392	7.60E-5	1.10E-4	5.98E-5	1.42E-4	6.47E-6	9.40E-6	5.09E-6	4.25E-7	2.53E-4	3.84E-4	1.85E-4	4.84E-4	6.75E-6	8.67E-6	8.40E-6	1.23E-5	2.36E-9	2.92E-9	1.75E-9	3.21E-9
259	615123	4201392	7.63E-5	1.11E-4	6.01E-5	1.44E-4	6.57E-6	9.55E-6	5.17E-6	4.24E-7	2.57E-4	3.96E-4	1.89E-4	5.09E-4	6.94E-6	8.87E-6	8.81E-6	1.29E-5	2.46E-9	3.01E-9	1.87E-9	3.26E-9
260	615143	4201392	7.64E-5	1.11E-4	6.01E-5	1.46E-4	6.66E-6	9.68E-6	5.24E-6	4.23E-7	2.61E-4	4.08E-4	1.93E-4	5.36E-4	7.14E-6	9.07E-6	9.27E-6	1.35E-5	2.56E-9	3.11E-9	2.00E-9	3.31E-9
261	615163	4201392	7.62E-5	1.11E-4	6.00E-5	1.48E-4	6.74E-6	9.80E-6	5.30E-6	4.21E-7	2.66E-4	4.21E-4	1.98E-4	5.64E-4	7.35E-6	9.28E-6	9.75E-6	1.43E-5	2.67E-9	3.20E-9	2.15E-9	3.36E-9
262	615183	4201392	7.58E-5	1.10E-4	5.97E-5	1.50E-4	6.81E-6	9.90E-6	5.36E-6	4.17E-7	2.71E-4	4.34E-4	2.02E-4	5.95E-4	7.55E-6	9.48E-6	1.03E-5	1.50E-5	2.78E-9	3.28E-9	2.32E-9	3.41E-9
263	615203	4201392	7.54E-5	1.10E-4	5.93E-5	1.51E-4	6.87E-6	9.98E-6	5.40E-6	4.12E-7	2.76E-4	4.47E-4	2.07E-4	6.27E-4	7.75E-6	9.70E-6	1.08E-5	1.59E-5	2.89E-9	3.36E-9	2.51E-9	3.45E-9
264	615223	4201392	7.49E-5	1.09E-4	5.89E-5	1.52E-4	6.92E-6	1.01E-5	5.44E-6	4.06E-7	2.79E-4	4.59E-4	2.11E-4	6.62E-4	7.95E-6	9.91E-6	1.14E-5	1.67E-5	2.99E-9	3.44E-9	2.73E-9	3.49E-9
265	615243	4201392	7.46E-5	1.08E-4	5.87E-5	1.54E-4	6.97E-6	1.01E-5	5.49E-6	4.02E-7	2.81E-4	4.71E-4	2.16E-4	7.00E-4	8.14E-6	1.01E-5	1.21E-5	1.77E-5	3.08E-9	3.51E-9	2.97E-9	3.52E-9
266	615263	4201392	7.43E-5	1.08E-4	5.84E-5	1.55E-4	7.04E-6	1.02E-5	5.54E-6	4.00E-7	2.82E-4	4.81E-4	2.21E-4	7.43E-4	8.33E-6	1.04E-5	1.29E-5	1.88E-5	3.15E-9	3.57E-9	3.23E-9	3.54E-9
267	615283	4201392	7.33E-5	1.07E-4	5.77E-5	1.56E-4	7.07E-6	1.03E-5	5.56E-6	4.01E-7	2.82E-4	4.90E-4	2.26E-4	7.88E-4	8.49E-6	1.06E-5	1.37E-5	1.99E-5	3.20E-9	3.63E-9	3.52E-9	3.55E-9
268	615303	4201392	7.22E-5	1.05E-4	5.68E-5	1.57E-4	7.09E-6	1.03E-5	5.58E-6	4.08E-7	2.82E-4	4.98E-4	2.31E-4	8.40E-4	8.64E-6	1.08E-5	1.46E-5	2.12E-5	3.23E-9	3.69E-9	3.82E-9	3.56E-9
269	615323	4201392	7.07E-5	1.03E-4	5.56E-5	1.57E-4	7.11E-6	1.03E-5	5.60E-6	4.22E-7	2.82E-4	5.04E-4	2.36E-4	8.98E-4	8.78E-6	1.10E-5	1.56E-5	2.27E-5	3.23E-9	3.77E-9	4.15E-9	3.57E-9
270	615343	4201392	6.89E-5	1.00E-4	5.42E-5	1.57E-4	7.12E-6	1.04E-5	5.61E-6	4.44E-7	2.82E-4	5.10E-4	2.41E-4	9.64E-4	8.90E-6	1.13E-5	1.67E-5	2.44E-5	3.22E-9	3.82E-9	4.49E-9	3.58E-9
271	615363	4201392	6.70E-5	9.74E-5	5.27E-5	1.57E-4	7.13E-6	1.04E-5	5.61E-6	4.74E-7	2.83E-4	5.15E-4	2.45E-4	1.04E-3	9.03E-6	1.15E-5	1.79E-5	2.62E-5	3.19E-9	3.86E-9	4.85E-9	3.59E-9
272	615383	4201392	6.50E-5	9.46E-5	5.12E-5	1.57E-4	7.13E-6	1.04E-5	5.61E-6	5.10E-7	2.84E-4	5.20E-4	2.49E-4	1.11E-3	9.15E-6	1.17E-5	1.92E-5	2.82E-5	3.16E-9	3.88E-9	5.23E-9	3.60E-9
273	615403	4201392	6.30E-5	9.16E-5	4.96E-5	1.57E-4	7.12E-6	1.03E-5	5.60E-6	5.48E-7	2.85E-4	5.27E-4	2.53E-4	1.19E-3	9.28E-6	1.18E-5	2.06E-5	3.02E-5	3.13E-9	3.88E-9	5.67E-9	3.62E-9
274	615423	4201392	6.10E-5	8.87E-5	4.80E-5	1.57E-4	7.10E-6	1.03E-5	5.59E-6	5.84E-7	2.86E-4	5.36E-4	2.56E-4	1.28E-3	9.42E-6	1.20E-5	2.21E-5	3.23E-5	3.10E-9	3.86E-9	6.20E-9	3.63E-9
275	615443	4201392	5.89E-5	8.56E-5	4.63E-5	1.57E-4	7.08E-6	1.03E-5	5.58E-6	6.12E-7	2.86E-4	5.46E-4	2.59E-4	1.36E-3	9.57E-6	1.22E-5	2.36E-5	3.45E-5	3.07E-9	3.83E-9	6.87E-9	3.65E-9
276	614603	4201412	2.06E-5	2.99E-5	1.62E-5	3.30E-5	1.52E-6	2.21E-6	1.20E-6	2.76E-7	1.70E-4	2.27E-4	1.12E-4	2.07E-4	3.98E-6	5.30E-6	3.60E-6	5.25E-6	1.14E-9	1.54E-9	7.87E-10	2.14E-9
277	614623	4201412	2.25E-5	3.28E-5	1.77E-5	3.67E-5	1.68E-6	2.45E-6	1.32E-6	2.84E-7	1.73E-4	2.31E-4	1.15E-4	2.13E-4	4.06E-6	5.40E-6	3.70E-6	5.39E-6	1.15E-9	1.57E-9	8.02E-10	2.18E-9
278	614803	4201412	4.72E-5	6.86E-5	3.72E-5	8.38E-5	3.83E-6	5.57E-6	3.01E-6	3.50E-7	2.06E-4	2.73E-4	1.35E-4	2.75E-4	4.75E-6	6.29E-6	4.78E-6	6.96E-6	1.37E-9	1.90E-9	9.64E-10	2.62E-9
279	614823	4201412	5.10E-5	7.41E-5	4.01E-5	9.09E-5	4.16E-6	6.05E-6	3.27E-6	3.67E-7	2.13E-4	2.79E-4	1.38E-4	2.84E-4	4.86E-6	6.44E-6	4.93E-6	7.19E-6	1.41E-9	1.95E-9	9.89E-10	2.69E-9
280	614843	4201412	5.47E-5	7.95E-5	4.30E-5	9.80E-5	4.51E-6	6.55E-6	3.55E-6	3.86E-7	2.20E-4	2.86E-4	1.41E-4	2.94E-4	5.02E-6	6.66E-6	5.10E-6	7.43E-6	1.45E-9	2.00E-9	1.02E-9	2.76E-9
281	614863	4201412	5.83E-5	8.48E-5	4.59E-5	1.05E-4	4.86E-6	7.07E-6	3.83E-6	4.07E-7	2.27E-4	2.92E-4	1.44E-4	3.04E-4	5.14E-6	6.81E-6	5.28E-6	7.69E-6	1.51E-9	2.06E-9	1.05E-9	2.83E-9
282	614883	4201412	6.20E-5	9.01E-5	4.88E-5	1.12E-4	5.21E-6	7.57E-6	4.10E-6	4.27E-7	2.34E-4	2.98E-4	1.48E-4	3.15E-4	5.25E-6	6.95E-6	5.46E-6	7.95E-6	1.56E-9	2.12E-9	1.08E-9	2.90E-9
283	614903	4201412	6.56E-5	9.54E-5	5.17E-5	1.19E-4	5.53E-6	8.05E-6	4.36E-6	4.44E-7	2.40E-4	3.05E-4	1.51E-4	3.26E-4	5.37E-6	7.10E-6	5.65E-6	8.23E-6	1.61E-9	2.18E-9	1.11E-9	2.96E-9
284	614923	4201412	6.93E-5	1.01E-4	5.45E-5	1.26E-4	5.85E-6	8.50E-6	4.60E-6	4.58E-7	2.46E-4	3.12E-4	1.54E-4	3.37E-4	5.49E-6	7.25E-6	5.86E-6	8.53E-6	1.67E-9	2.25E-9	1.15E-9	3.02E-9
285	614943	4201412	7.28E-5	1.06E-4	5.73E-5	1.32E-4	6.14E-6	8.92E-6	4.83E-6	4.67E-7	2.49E-4	3.19E-4	1.57E-4	3.50E-4	5.62E-6	7.41E-6	6.08E-6	8.85E-6	1.74E-9	2.31E-9	1.18E-9	3.07E-9
286	614963	4201412	7.60E-5	1.10E-4	5.98E-5	1.39E-4	6.40E-6	9.31E-6	5.04E-6	4.71E-7	2.52E-4	3.27E-4	1.61E-4	3.63E-4	5.75E-6	7.57E-6	6.31E-6	9.19E-6	1.80E-9	2.38E-9	1.23E-9	3.11E-9
287	614983	4201412	7.90E-5	1.15E-4	6.22E-5	1.44E-4	6.64E-6	9.65E-6	5.23E-6	4.70E-7	2.53E-4	3.34E-4	1.64E-4	3.78E-4	5.89E-6	7.74E-6	6.56E-6	9.55E-6	1.87E-9	2.45E-9	1.27E-9	3.14E-9
288	615003	4201412	8.18E-5	1.19E-4	6.43E-5	1.49E-4	6.86E-6	9.97E-6	5.40E-6	4.66E-7	2.53E-4	3.43E-4	1.68E-4	3.93E-4	6.04E-6	7.91E-6	6.83E-6	9.94E-6	1.94E-9	2.52E-9	1.33E-9	3.17E-9
289	615023	4201412	8.42E-5	1.22E-4	6.63E-5	1.54E-4	7.05E-6	1.02E-5	5.54E-6	4.59E-7	2.53E-4	3.51E-4	1.72E-4	4.10E-4	6.19E-6	8.09E-6	7.11E-6	1.04E-5	2.01E-9	2.60E-9	1.38E-9	3.19E-9
290	615043	4201412	8.63E-5	1.25E-4	6.79E-5	1.58E-4	7.21E-6	1.05E-5	5.68E-6	4.53E-7	2.54E-4	3.61E-4	1.76E-4	4.27E-4	6.35E-6	8.27E-6	7.43E-6	1.08E-5	2.09E-9	2.68E-9	1.45E-9	3.22E-9
291	615063	4201412	8.80E-5	1.28E-4	6.93E-5	1.62E-4	7.36E-6	1.07E-5	5.79E-6	4.47E-7	2.55E-4	3.70E-4	1.80E-4	4.47E-4	6.52E-6	8.46E-6	7.76E-6	1.13E-5	2.18E-9	2.76E-9	1.52E-9	3.24E-9
292	615083	4201412	8.93E-5	1.30E-4	7.03E-5	1.65E-4	7.49E-6	1.09E-5	5.90E-6	4.43E-7	2.57E-4	3.81E-4	1.84E-4	4.68E-4	6.70E-6	8.65E-6	8.12E-6	1.18E-5	2.28E-9	2.85E-9	1.60E-9	3.27E-9
293	615103	4201412	8.99E-5	1.31E-4	7.08E-5	1.67E-4	7.60E-6	1.11E-5	5.99E-6	4.40E-7	2.60E-4	3.92E-4	1.88E-4	4.91E-4	6.89E-6	8.86E-6	8.52E-6	1.24E-5	2.38E-9	2.94E-9	1.70E-9	3.31E-9
294	615123	4201412	9.01E-5	1.31E-4	7.09E-5	1.70E-4	7.70E-6	1.12E-5	6.06E-6	4.39E-7	2.64E-4	4.04E-4	1.93E-4	5.16E-4	7.09E-6	9.06E-6	8.95E-6	1.31E-5	2.48E-9	3.04E-9	1.80E-9	3.36E-9
295	615143	4201412	8.98E-5	1.31E-4	7.07E-5	1.72E-4	7.79E-6	1.13E-5	6.13E-6	4.38E-7	2.69E-4	4.17E-4	1.98E-4	5.44E-4	7.30E-6	9.27E-6	9.42E-6	1.38E-5	2.59E-9	3.14E-9	1.92E-9	3.41E-9
296	615163	4201412	8.93E-5	1.30E-4	7.03E-5	1.74E-4	7.86E-6	1.14E-5	6.19E-6	4.36E-7	2.74E-4	4.30E-4	2.02E-4	5.74E-4	7.51E-6	9.49E-6	9.93E-6	1.45E-5	2.71E-9	3.24E-9	2.06E-9	3.46E-9
297	615183	4201412	8.85E-5	1.29E-4	6.96E-5	1.75E-4	7.92E-6	1.15E-5	6.23E-6	4.32E-7	2.79E-4	4.44E-4	2.07E-4	6.07E-4	7.73E-6	9.71E-6	1.05E-5	1.53E-5	2.82E-9	3.33E-9	2.21E-9	3.51E-9
298	615203	4201412	8.76E-5	1.27E-4	6.89E-5	1.76E-4	7.97E-6	1.16E-5	6.27E-6	4.28E-7	2.84E-4	4.58E-4	2.12E-4	6.42E-4	7.95E-6	9.94E-6	1.11E-5	1.62E-5	2.94E-9	3.43E-9	2.39E-9	3.56E-9
299	615223	4201412	8.69E-5	1.26E-4	6.84E-5	1.78E-4	8.04E-6	1.17E-5	6.33E-6	4.23E-7	2.88E-4	4.71E-4	2.17E-4	6.81E-4	8.17E-6	1.02E-5	1.18E-5	1.72E-5	3.05E-9	3.51E-9	2.60E-9	3.60E-9
300	615243	4201412	8.63E-5	1.25E-4	6.79E-5	1.79E-4	8.10E-6	1.18E-5	6.37E-6	4.18E-7	2.91E-4	4.85E-4	2.22E-4	7.23E-4	8.39E-6	1.04E-5	1.25E-5	1.83E-5	3.15E-9	3.59E-9	2.83E-9	3.64E-9
301	615263	4201412	8.54E-5	1.24E-4	6.72E-5	1.80E-4	8.15E-6	1.18E-5	6.41E-6	4.15E-7	2.92E-4	4.97E-4	2.27E-4	7.69E-4	8.60E-6	1.07E-5	1.33E-5	1.95E-5	3.24E-9	3.67E-9	3.09E-9	3.66E-9
302	615283	4201412	8.39E-5	1.22E-4	6.60E-5	1.81E-4	8.17E-6	1.19E-5	6.43E-6	4.15E-7	2.92E-4	5.07E-4	2.32E-4	8.19E-4	8.78E-6	1.09E-5	1.42E-5	2.07E-5	3.31E-9	3.75E-9	3.38E-9	3.68E-9
303	615303	4201412	8.20E-5	1.19E-4	6.46E-5	1.81E-4	8.18E-6	1.19E-5	6.44E-6	4.21E-7	2.92E-4	5.16E-4	2.38E-4	8.76E-4	8.95E-6	1.11E-5	1.52E-5	2.21E-5	3.35E-9	3.82E-9	3.70E-9	3.69E-9
304	615323	4201412	7.98E-5	1.16E-4	6.28E-5	1.81E-4	8.19E-6	1.19E-5	6.45E-6	4.34E-7	2.92E-4	5.24E-4	2.43E-4	9.40E-4	9.11E-6	1.14E-5	1.63E-5	2.38E-5	3.37E-9	3.88E-9	4.06E-9	3.70E-9
305	615343	4201412	7.72E-5	1.12E-4	6.08E-5	1.81E-4	8.19E-6	1.19E-5	6.45E-6	4.56E-7	2.92E-4	5.31E-4	2.48E-4	1.01E-3	9.25E-6	1.16E-5	1.76E-5	2.56E-5	3.37E-9	3.94E-9	4.45E-9	3.71E-9
306	615363	4201412	7.46E-5	1.08E-4	5.87E-5	1.81E-4	8.19E-6	1.19E-5	6.45E-6	4.86E-7	2.93E-4	5.36E-4	2.54E-4	1.10E-3	9.38E-6	1.19E-5	1.90E-5	2.78E-5	3.35E-9	3.99E-9	4.86E-9	3.72E-9
307	615383	4201412	7.19E-5	1.05E-4	5.66E-5	1.81E-4	8.18E-6	1.19E-5	6.44E-6	5.23E-7	2.94E-4	5.42E-4	2.58E-4	1.19E-3	9.52E-6	1.21E-5	2.06E-5	3.01E-5	3.32E-9	4.03E-9	5.31E-9	3.73E-9
308	615403	4201412	6.92E-5	1.01E-4	5.45E-5	1.81E-4	8.17E-6	1.19E-5	6.43E-6	5.63E-7	2.95E-4	5.49E-4	2.63E-4	1.29E-3	9.66E-6	1.23E-5	2.23E-5	3.26E-5	3.29E-9	4.05E-9	5.80E-9	3.75E-9
309	615423	4201412	6.64E-5	9.66E-5	5.23E-5	1.81E-4	8.14E-6	1.18E-5	6.41E-6	6.01E-7	2.96E-4	5.57E-4	2.66E-4	1.39E-3	9.80E-6	1.25E-5	2.40E-5	3.52E-5	3.25E-9	4.04E-9	6.34E-9	3.76E-9
310	615443	4201412	6.37E-5	9.26E-5	5.01E-5	1.80E-4	8.12E-6	1.18E-5	6.39E-6	6.31E-7	2.97E-4	5.67E-4	2.69E-4	1.50E-3	9.96E-6	1.26E-5	2.59E-5	3.79E-5	3.22E-9	4.02E-9	6.99E-9	3.78E-9
311	615463	4201412	6.09E-5	8.86E-5	4.80E-5	1.79E-4	8.08E-6	1.17E-5	6.36E-6	6.50E-7	2.97E-4	5.78E-4	2.72E-4	1.61E-3	1.01E-5	1.28E-5	2.78E-5	4.06E-5	3.19E-9	3.99E-9	7.81E-9	3.79E-9
312	614623	4201432	2.37E-5	3.44E-5	1.86E-5	3.86E-5	1.77E-6	2.58E-6	1.40E-6	2.85E-7	1.76E-4	2.34E-4	1.16E-4	2.14E-4	4.11E-6	5.46E-6	3.72E-6	5.42E-6	1.17E-9	1.58E-9	8.41E-10	2.22E-9
313	614643	4201432	2.64E-5	3.83E-5	2.07E-5	4.37E-5	2.00E-6	2.90E-6	1.57E-6	2.94E-7	1.79E-4	2.39E-4	1.18E-4	2.20E-4	4.19E-6	5.56E-6	3.83E-6	5.57E-6	1.19E-9	1.62E-9	8.58E-10	2.26E-9
314	614663	4201432	2.93E-5	4.26E-5	2.30E-5	4.93E-5	2.24E-6	3.26E-6	1.77E-6	3.02E-7	1.82E-4	2.43E-4	1.20E-4	2.26E-4	4.27E-6	5.67E-6	3.93E-6	5.72E-6	1.21E-9	1.65E-9	8.74E-10	2.30E-9
315	614803	4201432	5.60E-5	8.14E-5	4.41E-5	1.01E-4	4.60E-6	6.69E-6	3.62E-6	3.51E-7	2.09E-4	2.78E-4	1.37E-4	2.78E-4	4.84E-6	6.41E-6	4.82E-6	7.02E-6	1.38E-9	1.92E-9	1.01E-9	2.66E-9
316	614823	4201432	6.09E-5	8.85E-5	4.79E-5	1.10E-4	5.06E-6	7.35E-6	3.98E-6	3.67E-7	2.16E-4	2.85E-4	1.40E-4	2.87E-4	4.97E-6	6.58E-6	4.98E-6	7.25E-6	1.42E-9	1.97E-9	1.03E-9	2.73E-9
317	614843	4201432	6.59E-5	9.58E-5	5.19E-5	1.20E-4	5.54E-6	8.06E-6	4.36E-6	3.86E-7	2.23E-4	2.91E-4	1.44E-4	2.97E-4	5.12E-6	6.78E-6	5.15E-6	7.50E-6	1.47E-9	2.03E-9	1.06E-9	2.81E-9
318	614863	4201432	7.07E-5	1.03E-4	5.56E-5	1.29E-4	6.00E-6	8.72E-6	4.72E-6	4.06E-7	2.30E-4	2.97E-4	1.47E-4	3.07E-4	5.23E-6	6.92E-6	5.33E-6	7.76E-6	1.51E-9	2.08E-9	1.09E-9	2.88E-9
319	614883	4201432	7.56E-5	1.10E-4	5.95E-5	1.39E-4	6.43E-6	9.35E-6	5.06E-6	4.27E-7	2.38E-4	3.04E-4	1.50E-4	3.17E-4	5.35E-6	7.07E-6	5.52E-6	8.03E-6	1.57E-9	2.14E-9	1.12E-9	2.96E-9
320	614903	4201432	8.05E-5	1.17E-4	6.33E-5	1.48E-4	6.84E-6	9.95E-6	5.39E-6	4.48E-7	2.45E-4	3.11E-4	1.53E-4	3.29E-4	5.47E-6	7.23E-6	5.71E-6	8.32E-6	1.62E-9	2.21E-9	1.15E-9	3.03E-9
321	614923	4201432	8.51E-5	1.24E-4	6.70E-5	1.56E-4	7.22E-6	1.05E-5	5.68E-6	4.65E-7	2.51E-4	3.18E-4	1.57E-4	3.41E-4	5.60E-6	7.39E-6	5.92E-6	8.62E-6	1.68E-9	2.27E-9	1.18E-9	3.09E-9
322	614943	4201432	8.93E-5	1.30E-4	7.03E-5	1.64E-4	7.55E-6	1.10E-5	5.94E-6	4.78E-7	2.56E-4	3.25E-4	1.60E-4	3.54E-4	5.73E-6	7.55E-6	6.15E-6	8.95E-6	1.74E-9	2.34E-9	1.22E-9	3.15E-9
323	614963	4201432	9.31E-5	1.35E-4	7.32E-5	1.71E-4	7.84E-6	1.14E-5	6.17E-6	4.85E-7	2.59E-4	3.33E-4	1.64E-4	3.67E-4	5.86E-6	7.72E-6	6.38E-6	9.29E-6	1.81E-9	2.41E-9	1.26E-9	3.20E-9
324	614983	4201432	9.64E-5	1.40E-4	7.59E-5	1.78E-4	8.10E-6	1.18E-5	6.37E-6	4.88E-7	2.61E-4	3.41E-4	1.68E-4	3.82E-4	6.01E-6	7.89E-6	6.64E-6	9.66E-6	1.88E-9	2.48E-9	1.30E-9	3.24E-9
325	615003	4201432	9.93E-5	1.44E-4	7.82E-5	1.83E-4	8.32E-6	1.21E-5	6.55E-6	4.85E-7	2.62E-4	3.49E-4	1.71E-4	3.98E-4	6.16E-6	8.07E-6	6.91E-6	1.01E-5	1.95E-9	2.56E-9	1.35E-9	3.27E-9
326	615023	4201432	1.02E-4	1.48E-4	8.02E-5	1.88E-4	8.52E-6	1.24E-5	6.70E-6	4.79E-7	2.63E-4	3.58E-4	1.75E-4	4.15E-4	6.32E-6	8.25E-6	7.21E-6	1.05E-5	2.02E-9	2.63E-9	1.40E-9	3.30E-9
327	615043	4201432	1.04E-4	1.51E-4	8.19E-5	1.92E-4	8.69E-6	1.26E-5	6.84E-6	4.72E-7	2.63E-4	3.68E-4	1.79E-4	4.33E-4	6.48E-6	8.44E-6	7.52E-6	1.09E-5	2.11E-9	2.71E-9	1.46E-9	3.32E-9
328	615063	4201432	1.06E-4	1.54E-4	8.33E-5	1.95E-4	8.83E-6	1.28E-5	6.95E-6	4.66E-7	2.64E-4	3.78E-4	1.83E-4	4.53E-4	6.66E-6	8.64E-6	7.87E-6	1.14E-5	2.20E-9	2.79E-9	1.53E-9	3.35E-9
329	615083	4201432	1.07E-4	1.56E-4	8.43E-5	1.98E-4	8.95E-6	1.30E-5	7.05E-6	4.60E-7	2.66E-4	3.89E-4	1.88E-4	4.74E-4	6.84E-6	8.84E-6	8.24E-6	1.20E-5	2.29E-9	2.88E-9	1.60E-9	3.38E-9
330	615103	4201432	1.08E-4	1.57E-4	8.49E-5	2.01E-4	9.06E-6	1.32E-5	7.13E-6	4.57E-7	2.69E-4	4.00E-4	1.92E-4	4.98E-4	7.04E-6	9.05E-6	8.64E-6	1.26E-5	2.39E-9	2.97E-9	1.68E-9	3.42E-9
331	615123	4201432	1.08E-4	1.57E-4	8.49E-5	2.03E-4	9.15E-6	1.33E-5	7.20E-6	4.55E-7	2.72E-4	4.12E-4	1.97E-4	5.24E-4	7.25E-6	9.26E-6	9.09E-6	1.32E-5	2.50E-9	3.07E-9	1.77E-9	3.46E-9
332	615143	4201432	1.07E-4	1.56E-4	8.44E-5	2.04E-4	9.22E-6	1.34E-5	7.26E-6	4.54E-7	2.77E-4	4.25E-4	2.02E-4	5.52E-4	7.46E-6	9.48E-6	9.57E-6	1.40E-5	2.62E-9	3.17E-9	1.88E-9	3.51E-9
333	615163	4201432	1.06E-4	1.54E-4	8.35E-5	2.06E-4	9.28E-6	1.35E-5	7.31E-6	4.52E-7	2.82E-4	4.39E-4	2.07E-4	5.83E-4	7.69E-6	9.71E-6	1.01E-5	1.47E-5	2.74E-9	3.28E-9	2.00E-9	3.56E-9
334	615183	4201432	1.05E-4	1.52E-4	8.24E-5	2.07E-4	9.33E-6	1.36E-5	7.34E-6	4.49E-7	2.88E-4	4.54E-4	2.12E-4	6.17E-4	7.92E-6	9.95E-6	1.07E-5	1.56E-5	2.86E-9	3.38E-9	2.13E-9	3.62E-9
335	615203	4201432	1.03E-4	1.50E-4	8.12E-5	2.08E-4	9.37E-6	1.36E-5	7.38E-6	4.45E-7	2.93E-4	4.69E-4	2.17E-4	6.55E-4	8.15E-6	1.02E-5	1.13E-5	1.66E-5	2.98E-9	3.48E-9	2.29E-9	3.67E-9
336	615223	4201432	1.02E-4	1.49E-4	8.04E-5	2.10E-4	9.46E-6	1.38E-5	7.45E-6	4.40E-7	2.98E-4	4.84E-4	2.23E-4	6.98E-4	8.40E-6	1.05E-5	1.21E-5	1.76E-5	3.11E-9	3.59E-9	2.48E-9	3.72E-9
337	615243	4201432	1.01E-4	1.47E-4	7.95E-5	2.11E-4	9.52E-6	1.38E-5	7.49E-6	4.35E-7	3.01E-4	4.98E-4	2.28E-4	7.44E-4	8.64E-6	1.07E-5	1.29E-5	1.88E-5	3.22E-9	3.70E-9	2.69E-9	3.76E-9
338	615263	4201432	9.92E-5	1.44E-4	7.81E-5	2.12E-4	9.54E-6	1.39E-5	7.51E-6	4.31E-7	3.03E-4	5.12E-4	2.34E-4	7.95E-4	8.86E-6	1.10E-5	1.37E-5	2.01E-5	3.33E-9	3.78E-9	2.94E-9	3.79E-9
339	615283	4201432	9.69E-5	1.41E-4	7.62E-5	2.12E-4	9.55E-6	1.39E-5	7.51E-6	4.30E-7	3.03E-4	5.24E-4	2.39E-4	8.50E-4	9.07E-6	1.12E-5	1.47E-5	2.15E-5	3.41E-9	3.86E-9	3.22E-9	3.81E-9
340	615303	4201432	9.40E-5	1.37E-4	7.40E-5	2.12E-4	9.55E-6	1.39E-5	7.52E-6	4.35E-7	3.03E-4	5.35E-4	2.45E-4	9.12E-4	9.27E-6	1.15E-5	1.58E-5	2.31E-5	3.48E-9	3.93E-9	3.54E-9	3.82E-9
341	615323	4201432	9.06E-5	1.32E-4	7.13E-5	2.12E-4	9.55E-6	1.39E-5	7.52E-6	4.48E-7	3.03E-4	5.44E-4	2.50E-4	9.82E-4	9.45E-6	1.17E-5	1.70E-5	2.48E-5	3.52E-9	4.00E-9	3.90E-9	3.83E-9
342	615343	4201432	8.70E-5	1.26E-4	6.85E-5	2.12E-4	9.54E-6	1.39E-5	7.51E-6	4.69E-7	3.03E-4	5.52E-4	2.56E-4	1.06E-3	9.61E-6	1.20E-5	1.84E-5	2.69E-5	3.53E-9	4.06E-9	4.31E-9	3.84E-9
343	615363	4201432	8.33E-5	1.21E-4	6.56E-5	2.12E-4	9.53E-6	1.39E-5	7.50E-6	4.99E-7	3.04E-4	5.59E-4	2.62E-4	1.16E-3	9.77E-6	1.23E-5	2.01E-5	2.93E-5	3.52E-9	4.13E-9	4.76E-9	3.85E-9
344	615383	4201432	7.96E-5	1.16E-4	6.27E-5	2.12E-4	9.51E-6	1.38E-5	7.49E-6	5.37E-7	3.05E-4	5.66E-4	2.67E-4	1.27E-3	9.91E-6	1.25E-5	2.20E-5	3.21E-5	3.49E-9	4.18E-9	5.27E-9	3.87E-9
345	615403	4201432	7.58E-5	1.10E-4	5.97E-5	2.11E-4	9.49E-6	1.38E-5	7.47E-6	5.79E-7	3.06E-4	5.73E-4	2.72E-4	1.39E-3	1.01E-5	1.27E-5	2.41E-5	3.53E-5	3.46E-9	4.21E-9	5.83E-9	3.88E-9
346	615423	4201432	7.21E-5	1.05E-4	5.68E-5	2.10E-4	9.45E-6	1.37E-5	7.44E-6	6.19E-7	3.07E-4	5.81E-4	2.77E-4	1.52E-3	1.02E-5	1.29E-5	2.63E-5	3.85E-5	3.42E-9	4.23E-9	6.44E-9	3.90E-9
347	615443	4201432	6.85E-5	9.96E-5	5.39E-5	2.10E-4	9.42E-6	1.37E-5	7.41E-6	6.52E-7	3.08E-4	5.91E-4	2.81E-4	1.66E-3	1.04E-5	1.31E-5	2.86E-5	4.19E-5	3.39E-9	4.21E-9	7.12E-9	3.92E-9
348	615463	4201432	6.51E-5	9.46E-5	5.12E-5	2.09E-4	9.37E-6	1.36E-5	7.37E-6	6.72E-7	3.08E-4	6.02E-4	2.84E-4	1.80E-3	1.06E-5	1.33E-5	3.10E-5	4.54E-5	3.36E-9	4.19E-9	7.94E-9	3.93E-9
349	614663	4201452	3.19E-5	4.64E-5	2.51E-5	5.41E-5	2.45E-6	3.57E-6	1.93E-6	3.04E-7	1.86E-4	2.47E-4	1.22E-4	2.28E-4	4.34E-6	5.74E-6	3.96E-6	5.76E-6	1.23E-9	1.66E-9	9.24E-10	2.34E-9
350	614683	4201452	3.60E-5	5.24E-5	2.84E-5	6.21E-5	2.81E-6	4.09E-6	2.21E-6	3.13E-7	1.89E-4	2.52E-4	1.24E-4	2.34E-4	4.42E-6	5.85E-6	4.07E-6	5.92E-6	1.25E-9	1.70E-9	9.40E-10	2.39E-9
351	614823	4201452	7.57E-5	1.10E-4	5.96E-5	1.40E-4	6.42E-6	9.33E-6	5.05E-6	3.68E-7	2.19E-4	2.90E-4	1.43E-4	2.89E-4	5.10E-6	6.74E-6	5.03E-6	7.32E-6	1.44E-9	1.99E-9	1.09E-9	2.78E-9
352	614843	4201452	8.25E-5	1.20E-4	6.49E-5	1.53E-4	7.06E-6	1.03E-5	5.56E-6	3.86E-7	2.26E-4	2.97E-4	1.46E-4	2.99E-4	5.22E-6	6.88E-6	5.20E-6	7.57E-6	1.48E-9	2.05E-9	1.12E-9	2.86E-9
353	614863	4201452	8.93E-5	1.30E-4	7.03E-5	1.66E-4	7.67E-6	1.11E-5	6.03E-6	4.06E-7	2.33E-4	3.03E-4	1.49E-4	3.10E-4	5.33E-6	7.04E-6	5.38E-6	7.83E-6	1.52E-9	2.11E-9	1.15E-9	2.93E-9
354	614883	4201452	9.59E-5	1.39E-4	7.55E-5	1.79E-4	8.22E-6	1.20E-5	6.47E-6	4.27E-7	2.41E-4	3.10E-4	1.53E-4	3.20E-4	5.45E-6	7.19E-6	5.57E-6	8.10E-6	1.57E-9	2.16E-9	1.18E-9	3.01E-9
355	614903	4201452	1.02E-4	1.48E-4	8.03E-5	1.90E-4	8.71E-6	1.27E-5	6.86E-6	4.49E-7	2.49E-4	3.17E-4	1.56E-4	3.32E-4	5.58E-6	7.35E-6	5.77E-6	8.40E-6	1.63E-9	2.23E-9	1.21E-9	3.09E-9
356	614923	4201452	1.08E-4	1.56E-4	8.46E-5	2.01E-4	9.14E-6	1.33E-5	7.19E-6	4.70E-7	2.56E-4	3.24E-4	1.60E-4	3.44E-4	5.71E-6	7.52E-6	5.98E-6	8.71E-6	1.69E-9	2.30E-9	1.24E-9	3.16E-9
357	614943	4201452	1.12E-4	1.63E-4	8.84E-5	2.10E-4	9.50E-6	1.38E-5	7.48E-6	4.87E-7	2.62E-4	3.32E-4	1.63E-4	3.57E-4	5.84E-6	7.69E-6	6.21E-6	9.04E-6	1.75E-9	2.37E-9	1.28E-9	3.23E-9
358	614963	4201452	1.16E-4	1.69E-4	9.17E-5	2.17E-4	9.81E-6	1.43E-5	7.72E-6	4.98E-7	2.67E-4	3.40E-4	1.67E-4	3.71E-4	5.98E-6	7.86E-6	6.46E-6	9.39E-6	1.82E-9	2.44E-9	1.32E-9	3.29E-9
359	614983	4201452	1.20E-4	1.74E-4	9.44E-5	2.23E-4	1.01E-5	1.46E-5	7.93E-6	5.04E-7	2.70E-4	3.48E-4	1.71E-4	3.86E-4	6.13E-6	8.04E-6	6.72E-6	9.77E-6	1.88E-9	2.51E-9	1.36E-9	3.34E-9
360	615003	4201452	1.23E-4	1.79E-4	9.68E-5	2.29E-4	1.03E-5	1.50E-5	8.10E-6	5.04E-7	2.72E-4	3.57E-4	1.75E-4	4.03E-4	6.28E-6	8.23E-6	7.00E-6	1.02E-5	1.96E-9	2.59E-9	1.40E-9	3.38E-9
361	615023	4201452	1.26E-4	1.82E-4	9.88E-5	2.33E-4	1.05E-5	1.52E-5	8.25E-6	5.00E-7	2.72E-4	3.66E-4	1.79E-4	4.20E-4	6.45E-6	8.42E-6	7.30E-6	1.06E-5	2.04E-9	2.66E-9	1.45E-9	3.41E-9
362	615043	4201452	1.28E-4	1.86E-4	1.00E-4	2.37E-4	1.06E-5	1.55E-5	8.38E-6	4.94E-7	2.73E-4	3.75E-4	1.83E-4	4.38E-4	6.62E-6	8.62E-6	7.62E-6	1.11E-5	2.12E-9	2.74E-9	1.50E-9	3.44E-9
363	615063	4201452	1.29E-4	1.88E-4	1.02E-4	2.40E-4	1.08E-5	1.57E-5	8.48E-6	4.86E-7	2.73E-4	3.86E-4	1.87E-4	4.59E-4	6.80E-6	8.82E-6	7.97E-6	1.16E-5	2.21E-9	2.82E-9	1.56E-9	3.46E-9
364	615083	4201452	1.31E-4	1.90E-4	1.03E-4	2.42E-4	1.09E-5	1.58E-5	8.57E-6	4.80E-7	2.75E-4	3.97E-4	1.92E-4	4.81E-4	6.99E-6	9.03E-6	8.35E-6	1.22E-5	2.30E-9	2.91E-9	1.63E-9	3.49E-9
365	615103	4201452	1.32E-4	1.91E-4	1.04E-4	2.44E-4	1.10E-5	1.60E-5	8.64E-6	4.75E-7	2.77E-4	4.08E-4	1.96E-4	5.05E-4	7.19E-6	9.24E-6	8.77E-6	1.28E-5	2.41E-9	3.00E-9	1.70E-9	3.53E-9
366	615123	4201452	1.32E-4	1.91E-4	1.04E-4	2.46E-4	1.10E-5	1.61E-5	8.69E-6	4.73E-7	2.81E-4	4.21E-4	2.01E-4	5.31E-4	7.41E-6	9.47E-6	9.22E-6	1.34E-5	2.52E-9	3.10E-9	1.78E-9	3.57E-9
367	615143	4201452	1.30E-4	1.90E-4	1.03E-4	2.48E-4	1.11E-5	1.61E-5	8.74E-6	4.71E-7	2.85E-4	4.34E-4	2.06E-4	5.60E-4	7.63E-6	9.70E-6	9.72E-6	1.42E-5	2.64E-9	3.20E-9	1.88E-9	3.62E-9
368	615163	4201452	1.29E-4	1.87E-4	1.01E-4	2.49E-4	1.11E-5	1.62E-5	8.77E-6	4.69E-7	2.91E-4	4.49E-4	2.12E-4	5.92E-4	7.87E-6	9.94E-6	1.03E-5	1.50E-5	2.77E-9	3.31E-9	1.98E-9	3.68E-9
369	615183	4201452	1.26E-4	1.84E-4	9.95E-5	2.49E-4	1.12E-5	1.62E-5	8.80E-6	4.66E-7	2.96E-4	4.64E-4	2.17E-4	6.27E-4	8.11E-6	1.02E-5	1.09E-5	1.59E-5	2.90E-9	3.42E-9	2.10E-9	3.74E-9
370	615203	4201452	1.24E-4	1.80E-4	9.75E-5	2.50E-4	1.12E-5	1.63E-5	8.81E-6	4.62E-7	3.02E-4	4.80E-4	2.23E-4	6.66E-4	8.36E-6	1.04E-5	1.15E-5	1.69E-5	3.03E-9	3.53E-9	2.24E-9	3.79E-9
371	615223	4201452	1.22E-4	1.78E-4	9.61E-5	2.52E-4	1.13E-5	1.64E-5	8.89E-6	4.58E-7	3.07E-4	4.96E-4	2.29E-4	7.12E-4	8.63E-6	1.07E-5	1.23E-5	1.80E-5	3.16E-9	3.65E-9	2.41E-9	3.85E-9

372	615243	4201452	1.20E-4	1.75E-4	9.45E-5	2.53E-4	1.13E-5	1.65E-5	8.93E-6	4.53E-7	3.11E-4	5.12E-4	2.34E-4	7.62E-4	8.89E-6	1.10E-5	1.32E-5	1.93E-5	3.29E-9	3.78E-9	2.60E-9	3.89E-9
373	615263	4201452	1.17E-4	1.70E-4	9.22E-5	2.53E-4	1.13E-5	1.65E-5	8.93E-6	4.48E-7	3.14E-4	5.27E-4	2.40E-4	8.17E-4	9.13E-6	1.13E-5	1.41E-5	2.07E-5	3.41E-9	3.87E-9	2.81E-9	3.93E-9
374	615283	4201452	1.13E-4	1.65E-4	8.92E-5	2.53E-4	1.13E-5	1.65E-5	8.93E-6	4.47E-7	3.14E-4	5.41E-4	2.46E-4	8.78E-4	9.37E-6	1.15E-5	1.52E-5	2.22E-5	3.51E-9	3.96E-9	3.07E-9	3.95E-9
375	615303	4201452	1.09E-4	1.58E-4	8.56E-5	2.53E-4	1.13E-5	1.65E-5	8.92E-6	4.51E-7	3.14E-4	5.54E-4	2.52E-4	9.47E-4	9.59E-6	1.18E-5	1.64E-5	2.39E-5	3.60E-9	4.04E-9	3.36E-9	3.96E-9
376	615323	4201452	1.04E-4	1.51E-4	8.16E-5	2.53E-4	1.13E-5	1.65E-5	8.91E-6	4.62E-7	3.14E-4	5.65E-4	2.58E-4	1.02E-3	9.80E-6	1.21E-5	1.78E-5	2.59E-5	3.66E-9	4.12E-9	3.71E-9	3.98E-9
377	615343	4201452	9.84E-5	1.43E-4	7.75E-5	2.52E-4	1.13E-5	1.64E-5	8.89E-6	4.83E-7	3.14E-4	5.75E-4	2.64E-4	1.12E-3	9.99E-6	1.24E-5	1.93E-5	2.82E-5	3.69E-9	4.19E-9	4.11E-9	3.99E-9
378	615363	4201452	9.31E-5	1.35E-4	7.33E-5	2.52E-4	1.13E-5	1.64E-5	8.87E-6	5.13E-7	3.15E-4	5.84E-4	2.71E-4	1.22E-3	1.02E-5	1.27E-5	2.12E-5	3.09E-5	3.70E-9	4.26E-9	4.57E-9	4.00E-9
379	615383	4201452	8.78E-5	1.28E-4	6.91E-5	2.51E-4	1.12E-5	1.63E-5	8.84E-6	5.52E-7	3.16E-4	5.91E-4	2.77E-4	1.35E-3	1.03E-5	1.29E-5	2.34E-5	3.42E-5	3.68E-9	4.33E-9	5.11E-9	4.01E-9
380	615403	4201452	8.27E-5	1.20E-4	6.51E-5	2.50E-4	1.12E-5	1.63E-5	8.81E-6	5.95E-7	3.17E-4	5.98E-4	2.83E-4	1.51E-3	1.05E-5	1.32E-5	2.60E-5	3.81E-5	3.65E-9	4.38E-9	5.71E-9	4.03E-9
381	615423	4201452	7.78E-5	1.13E-4	6.12E-5	2.49E-4	1.11E-5	1.62E-5	8.78E-6	6.38E-7	3.18E-4	6.06E-4	2.88E-4	1.67E-3	1.07E-5	1.35E-5	2.88E-5	4.22E-5	3.61E-9	4.41E-9	6.40E-9	4.04E-9
382	615443	4201452	7.32E-5	1.06E-4	5.76E-5	2.48E-4	1.11E-5	1.61E-5	8.73E-6	6.73E-7	3.19E-4	6.16E-4	2.92E-4	1.85E-3	1.08E-5	1.37E-5	3.18E-5	4.67E-5	3.57E-9	4.42E-9	7.17E-9	4.06E-9
383	615463	4201452	6.90E-5	1.00E-4	5.43E-5	2.47E-4	1.10E-5	1.60E-5	8.69E-6	6.96E-7	3.20E-4	6.28E-4	2.96E-4	2.03E-3	1.10E-5	1.39E-5	3.50E-5	5.13E-5	3.53E-9	4.40E-9	8.05E-9	4.08E-9
384	614683	4201472	4.03E-5	5.86E-5	3.17E-5	7.02E-5	3.16E-6	4.60E-6	2.49E-6	3.15E-7	1.93E-4	2.56E-4	1.26E-4	2.36E-4	4.49E-6	5.92E-6	4.10E-6	5.96E-6	1.27E-9	1.70E-9	9.96E-10	2.43E-9
385	614703	4201472	4.66E-5	6.78E-5	3.67E-5	8.26E-5	3.72E-6	5.40E-6	2.92E-6	3.24E-7	1.96E-4	2.61E-4	1.28E-4	2.43E-4	4.58E-6	6.04E-6	4.21E-6	6.13E-6	1.29E-9	1.74E-9	1.02E-9	2.48E-9
386	614823	4201472	1.00E-4	1.45E-4	7.88E-5	1.89E-4	8.65E-6	1.26E-5	6.81E-6	3.72E-7	2.23E-4	2.96E-4	1.45E-4	2.92E-4	5.20E-6	6.85E-6	5.08E-6	7.39E-6	1.46E-9	2.01E-9	1.16E-9	2.83E-9
387	614843	4201472	1.10E-4	1.60E-4	8.67E-5	2.09E-4	9.54E-6	1.39E-5	7.51E-6	3.87E-7	2.29E-4	3.03E-4	1.48E-4	3.02E-4	5.32E-6	7.00E-6	5.25E-6	7.64E-6	1.50E-9	2.07E-9	1.19E-9	2.91E-9
388	614863	4201472	1.19E-4	1.73E-4	9.36E-5	2.26E-4	1.03E-5	1.49E-5	8.08E-6	4.06E-7	2.37E-4	3.09E-4	1.52E-4	3.12E-4	5.43E-6	7.15E-6	5.43E-6	7.90E-6	1.54E-9	2.13E-9	1.22E-9	2.99E-9
389	614883	4201472	1.27E-4	1.85E-4	9.99E-5	2.41E-4	1.09E-5	1.58E-5	8.58E-6	4.27E-7	2.44E-4	3.16E-4	1.55E-4	3.23E-4	5.56E-6	7.31E-6	5.62E-6	8.18E-6	1.59E-9	2.19E-9	1.25E-9	3.07E-9
390	614903	4201472	1.34E-4	1.95E-4	1.06E-4	2.55E-4	1.14E-5	1.66E-5	9.01E-6	4.50E-7	2.53E-4	3.23E-4	1.59E-4	3.35E-4	5.69E-6	7.48E-6	5.83E-6	8.48E-6	1.64E-9	2.25E-9	1.28E-9	3.15E-9
391	614923	4201472	1.40E-4	2.04E-4	1.10E-4	2.66E-4	1.19E-5	1.73E-5	9.37E-6	4.73E-7	2.61E-4	3.31E-4	1.62E-4	3.48E-4	5.82E-6	7.65E-6	6.05E-6	8.80E-6	1.70E-9	2.32E-9	1.32E-9	3.23E-9
392	614943	4201472	1.45E-4	2.11E-4	1.14E-4	2.74E-4	1.23E-5	1.78E-5	9.66E-6	4.93E-7	2.68E-4	3.38E-4	1.66E-4	3.61E-4	5.96E-6	7.83E-6	6.28E-6	9.14E-6	1.76E-9	2.39E-9	1.35E-9	3.31E-9
393	614963	4201472	1.49E-4	2.17E-4	1.18E-4	2.82E-4	1.26E-5	1.83E-5	9.91E-6	5.09E-7	2.74E-4	3.47E-4	1.70E-4	3.76E-4	6.10E-6	8.01E-6	6.53E-6	9.50E-6	1.83E-9	2.47E-9	1.39E-9	3.38E-9
394	614983	4201472	1.53E-4	2.22E-4	1.20E-4	2.88E-4	1.28E-5	1.87E-5	1.01E-5	5.19E-7	2.78E-4	3.55E-4	1.74E-4	3.91E-4	6.26E-6	8.20E-6	6.79E-6	9.88E-6	1.90E-9	2.55E-9	1.44E-9	3.43E-9
395	615003	4201472	1.56E-4	2.27E-4	1.23E-4	2.93E-4	1.31E-5	1.90E-5	1.03E-5	5.23E-7	2.81E-4	3.64E-4	1.78E-4	4.07E-4	6.41E-6	8.39E-6	7.08E-6	1.03E-5	1.97E-9	2.62E-9	1.48E-9	3.48E-9
396	615023	4201472	1.59E-4	2.31E-4	1.25E-4	2.97E-4	1.32E-5	1.92E-5	1.04E-5	5.21E-7	2.82E-4	3.73E-4	1.83E-4	4.25E-4	6.58E-6	8.59E-6	7.39E-6	1.07E-5	2.05E-9	2.70E-9	1.53E-9	3.52E-9
397	615043	4201472	1.61E-4	2.34E-4	1.26E-4	3.00E-4	1.34E-5	1.94E-5	1.05E-5	5.16E-7	2.83E-4	3.83E-4	1.87E-4	4.44E-4	6.76E-6	8.80E-6	7.72E-6	1.12E-5	2.13E-9	2.78E-9	1.58E-9	3.55E-9
398	615063	4201472	1.62E-4	2.36E-4	1.28E-4	3.02E-4	1.35E-5	1.96E-5	1.06E-5	5.09E-7	2.84E-4	3.94E-4	1.91E-4	4.65E-4	6.94E-6	9.01E-6	8.08E-6	1.18E-5	2.22E-9	2.86E-9	1.64E-9	3.58E-9
399	615083	4201472	1.64E-4	2.38E-4	1.29E-4	3.04E-4	1.35E-5	1.97E-5	1.07E-5	5.01E-7	2.85E-4	4.05E-4	1.96E-4	4.87E-4	7.14E-6	9.22E-6	8.47E-6	1.23E-5	2.32E-9	2.95E-9	1.70E-9	3.61E-9
400	615103	4201472	1.64E-4	2.39E-4	1.29E-4	3.05E-4	1.36E-5	1.98E-5	1.07E-5	4.95E-7	2.87E-4	4.17E-4	2.01E-4	5.12E-4	7.35E-6	9.45E-6	8.90E-6	1.29E-5	2.42E-9	3.04E-9	1.77E-9	3.65E-9
401	615123	4201472	1.64E-4	2.39E-4	1.29E-4	3.06E-4	1.36E-5	1.98E-5	1.07E-5	4.92E-7	2.90E-4	4.30E-4	2.06E-4	5.39E-4	7.57E-6	9.68E-6	9.36E-6	1.36E-5	2.54E-9	3.13E-9	1.85E-9	3.69E-9
402	615143	4201472	1.63E-4	2.37E-4	1.28E-4	3.07E-4	1.37E-5	1.99E-5	1.08E-5	4.89E-7	2.94E-4	4.44E-4	2.11E-4	5.69E-4	7.81E-6	9.93E-6	9.87E-6	1.44E-5	2.66E-9	3.24E-9	1.93E-9	3.74E-9
403	615163	4201472	1.60E-4	2.33E-4	1.26E-4	3.08E-4	1.37E-5	1.99E-5	1.08E-5	4.87E-7	3.00E-4	4.59E-4	2.16E-4	6.01E-4	8.05E-6	1.02E-5	1.04E-5	1.52E-5	2.79E-9	3.35E-9	2.03E-9	3.80E-9
404	615183	4201472	1.57E-4	2.28E-4	1.24E-4	3.08E-4	1.37E-5	1.99E-5	1.08E-5	4.85E-7	3.06E-4	4.75E-4	2.22E-4	6.38E-4	8.31E-6	1.04E-5	1.11E-5	1.61E-5	2.93E-9	3.46E-9	2.13E-9	3.86E-9
405	615203	4201472	1.53E-4	2.23E-4	1.21E-4	3.10E-4	1.38E-5	2.00E-5	1.08E-5	4.82E-7	3.12E-4	4.92E-4	2.28E-4	6.79E-4	8.58E-6	1.07E-5	1.18E-5	1.72E-5	3.08E-9	3.59E-9	2.26E-9	3.92E-9
406	615223	4201472	1.50E-4	2.18E-4	1.18E-4	3.11E-4	1.38E-5	2.01E-5	1.09E-5	4.77E-7	3.18E-4	5.09E-4	2.35E-4	7.25E-4	8.86E-6	1.10E-5	1.26E-5	1.83E-5	3.22E-9	3.71E-9	2.40E-9	3.98E-9
407	615243	4201472	1.46E-4	2.12E-4	1.15E-4	3.11E-4	1.38E-5	2.01E-5	1.09E-5	4.72E-7	3.22E-4	5.26E-4	2.41E-4	7.77E-4	9.14E-6	1.13E-5	1.35E-5	1.96E-5	3.36E-9	3.86E-9	2.57E-9	4.03E-9
408	615263	4201472	1.41E-4	2.05E-4	1.11E-4	3.10E-4	1.38E-5	2.01E-5	1.09E-5	4.67E-7	3.25E-4	5.42E-4	2.47E-4	8.35E-4	9.41E-6	1.16E-5	1.45E-5	2.11E-5	3.49E-9	3.96E-9	2.76E-9	4.07E-9
409	615283	4201472	1.34E-4	1.95E-4	1.06E-4	3.10E-4	1.38E-5	2.00E-5	1.08E-5	4.64E-7	3.26E-4	5.58E-4	2.53E-4	9.02E-4	9.67E-6	1.19E-5	1.56E-5	2.28E-5	3.61E-9	4.06E-9	2.98E-9	4.10E-9
410	615303	4201472	1.27E-4	1.85E-4	1.00E-4	3.09E-4	1.37E-5	2.00E-5	1.08E-5	4.67E-7	3.26E-4	5.73E-4	2.60E-4	9.79E-4	9.93E-6	1.22E-5	1.69E-5	2.48E-5	3.71E-9	4.16E-9	3.24E-9	4.11E-9
411	615323	4201472	1.19E-4	1.73E-4	9.38E-5	3.08E-4	1.37E-5	1.99E-5	1.08E-5	4.78E-7	3.26E-4	5.86E-4	2.66E-4	1.07E-3	1.02E-5	1.25E-5	1.85E-5	2.70E-5	3.79E-9	4.24E-9	3.55E-9	4.13E-9
412	615343	4201472	1.11E-4	1.62E-4	8.75E-5	3.07E-4	1.37E-5	1.99E-5	1.08E-5	4.98E-7	3.26E-4	5.98E-4	2.73E-4	1.17E-3	1.04E-5	1.28E-5	2.02E-5	2.95E-5	3.85E-9	4.32E-9	3.92E-9	4.14E-9
413	615363	4201472	1.03E-4	1.50E-4	8.13E-5	3.06E-4	1.36E-5	1.98E-5	1.07E-5	5.28E-7	3.27E-4	6.09E-4	2.80E-4	1.29E-3	1.06E-5	1.31E-5	2.24E-5	3.26E-5	3.88E-9	4.40E-9	4.36E-9	4.15E-9
414	615383	4201472	9.60E-5	1.40E-4	7.55E-5	3.05E-4	1.36E-5	1.97E-5	1.07E-5	5.68E-7	3.28E-4	6.18E-4	2.86E-4	1.44E-3	1.08E-5	1.34E-5	2.49E-5	3.64E-5	3.87E-9	4.48E-9	4.87E-9	4.17E-9
415	615403	4201472	8.91E-5	1.30E-4	7.02E-5	3.04E-4	1.35E-5	1.96E-5	1.06E-5	6.13E-7	3.29E-4	6.26E-4	2.93E-4	1.62E-3	1.10E-5	1.37E-5	2.80E-5	4.10E-5	3.85E-9	4.55E-9	5.49E-9	4.18E-9
416	615423	4201472	8.30E-5	1.21E-4	6.53E-5	3.02E-4	1.34E-5	1.95E-5	1.06E-5	6.58E-7	3.30E-4	6.34E-4	2.99E-4	1.84E-3	1.11E-5	1.40E-5	3.17E-5	4.65E-5	3.81E-9	4.60E-9	6.20E-9	4.20E-9
417	615443	4201472	7.75E-5	1.13E-4	6.10E-5	3.01E-4	1.34E-5	1.94E-5	1.05E-5	6.95E-7	3.31E-4	6.44E-4	3.05E-4	2.07E-3	1.13E-5	1.43E-5	3.57E-5	5.24E-5	3.77E-9	4.63E-9	7.04E-9	4.22E-9
418	615463	4201472	7.25E-5	1.05E-4	5.71E-5	2.99E-4	1.33E-5	1.93E-5	1.05E-5	7.20E-7	3.32E-4	6.56E-4	3.10E-4	2.32E-3	1.15E-5	1.45E-5	4.00E-5	5.87E-5	3.73E-9	4.63E-9	8.02E-9	4.24E-9
419	614703	4201492	5.54E-5	8.05E-5	4.36E-5	9.93E-5	4.42E-6	6.43E-6	3.48E-6	3.27E-7	2.00E-4	2.65E-4	1.30E-4	2.44E-4	4.65E-6	6.12E-6	4.24E-6	6.18E-6	1.31E-9	1.75E-9	1.08E-9	2.53E-9
420	614823	4201492	1.44E-4	2.09E-4	1.13E-4	2.79E-4	1.25E-5	1.82E-5	9.86E-6	3.77E-7	2.27E-4	3.02E-4	1.47E-4	2.95E-4	5.30E-6	6.96E-6	5.12E-6	7.45E-6	1.48E-9	2.04E-9	1.24E-9	2.89E-9
421	614843	4201492	1.58E-4	2.30E-4	1.24E-4	3.07E-4	1.37E-5	1.99E-5	1.08E-5	3.91E-7	2.33E-4	3.08E-4	1.51E-4	3.05E-4	5.42E-6	7.11E-6	5.30E-6	7.71E-6	1.52E-9	2.10E-9	1.27E-9	2.96E-9
422	614863	4201492	1.68E-4	2.45E-4	1.33E-4	3.27E-4	1.45E-5	2.11E-5	1.14E-5	4.07E-7	2.40E-4	3.15E-4	1.54E-4	3.15E-4	5.54E-6	7.27E-6	5.48E-6	7.98E-6	1.56E-9	2.14E-9	1.30E-9	3.04E-9
423	614883	4201492	1.77E-4	2.57E-4	1.39E-4	3.42E-4	1.51E-5	2.20E-5	1.19E-5	4.27E-7	2.48E-4	3.22E-4	1.58E-4	3.27E-4	5.67E-6	7.43E-6	5.67E-6	8.26E-6	1.60E-9	2.20E-9	1.34E-9	3.13E-9
424	614903	4201492	1.84E-4	2.68E-4	1.45E-4	3.56E-4	1.57E-5	2.28E-5	1.23E-5	4.51E-7	2.57E-4	3.30E-4	1.61E-4	3.39E-4	5.80E-6	7.61E-6	5.88E-6	8.56E-6	1.65E-9	2.27E-9	1.37E-9	3.21E-9
425	614923	4201492	1.90E-4	2.76E-4	1.50E-4	3.66E-4	1.61E-5	2.34E-5	1.27E-5	4.75E-7	2.65E-4	3.38E-4	1.65E-4	3.51E-4	5.94E-6	7.79E-6	6.11E-6	8.89E-6	1.71E-9	2.34E-9	1.41E-9	3.30E-9
426	614943	4201492	1.95E-4	2.83E-4	1.53E-4	3.73E-4	1.64E-5	2.39E-5	1.29E-5	4.98E-7	2.73E-4	3.46E-4	1.69E-4	3.65E-4	6.08E-6	7.97E-6	6.34E-6	9.23E-6	1.77E-9	2.42E-9	1.45E-9	3.38E-9
427	614963	4201492	1.99E-4	2.89E-4	1.57E-4	3.80E-4	1.67E-5	2.43E-5	1.32E-5	5.18E-7	2.81E-4	3.54E-4	1.73E-4	3.80E-4	6.23E-6	8.16E-6	6.60E-6	9.60E-6	1.84E-9	2.50E-9	1.49E-9	3.46E-9
428	614983	4201492	2.03E-4	2.95E-4	1.59E-4	3.85E-4	1.69E-5	2.46E-5	1.33E-5	5.32E-7	2.87E-4	3.63E-4	1.78E-4	3.95E-4	6.39E-6	8.36E-6	6.87E-6	9.99E-6	1.91E-9	2.58E-9	1.54E-9	3.53E-9
429	615003	4201492	2.05E-4	2.99E-4	1.62E-4	3.89E-4	1.71E-5	2.49E-5	1.35E-5	5.41E-7	2.90E-4	3.72E-4	1.82E-4	4.12E-4	6.55E-6	8.56E-6	7.16E-6	1.04E-5	1.98E-9	2.66E-9	1.59E-9	3.59E-9
430	615023	4201492	2.08E-4	3.02E-4	1.64E-4	3.92E-4	1.72E-5	2.51E-5	1.36E-5	5.43E-7	2.93E-4	3.81E-4	1.87E-4	4.30E-4	6.72E-6	8.77E-6	7.48E-6	1.09E-5	2.06E-9	2.74E-9	1.64E-9	3.64E-9
431	615043	4201492	2.10E-4	3.05E-4	1.65E-4	3.94E-4	1.73E-5	2.52E-5	1.36E-5	5.39E-7	2.94E-4	3.92E-4	1.91E-4	4.50E-4	6.91E-6	8.99E-6	7.82E-6	1.14E-5	2.14E-9	2.82E-9	1.69E-9	3.67E-9
432	615063	4201492	2.11E-4	3.07E-4	1.66E-4	3.95E-4	1.74E-5	2.53E-5	1.37E-5	5.32E-7	2.95E-4	4.02E-4	1.96E-4	4.71E-4	7.10E-6	9.21E-6	8.19E-6	1.19E-5	2.23E-9	2.91E-9	1.75E-9	3.71E-9
433	615083	4201492	2.12E-4	3.08E-4	1.67E-4	3.96E-4	1.74E-5	2.53E-5	1.37E-5	5.25E-7	2.96E-4	4.14E-4	2.00E-4	4.94E-4	7.30E-6	9.43E-6	8.59E-6	1.25E-5	2.33E-9	2.99E-9	1.81E-9	3.74E-9
434	615103	4201492	2.13E-4	3.09E-4	1.67E-4	3.96E-4	1.74E-5	2.53E-5	1.37E-5	5.18E-7	2.97E-4	4.26E-4	2.05E-4	5.19E-4	7.51E-6	9.67E-6	9.02E-6	1.31E-5	2.44E-9	3.08E-9	1.88E-9	3.78E-9
435	615123	4201492	2.13E-4	3.09E-4	1.67E-4	3.96E-4	1.74E-5	2.53E-5	1.37E-5	5.12E-7	3.00E-4	4.39E-4	2.10E-4	5.47E-4	7.74E-6	9.91E-6	9.50E-6	1.38E-5	2.55E-9	3.18E-9	1.96E-9	3.82E-9
436	615143	4201492	2.11E-4	3.07E-4	1.66E-4	3.95E-4	1.74E-5	2.52E-5	1.37E-5	5.09E-7	3.04E-4	4.54E-4	2.16E-4	5.77E-4	7.99E-6	1.02E-5	1.00E-5	1.46E-5	2.68E-9	3.28E-9	2.04E-9	3.87E-9
437	615163	4201492	2.08E-4	3.02E-4	1.64E-4	3.95E-4	1.74E-5	2.52E-5	1.37E-5	5.07E-7	3.09E-4	4.69E-4	2.22E-4	6.11E-4	8.24E-6	1.04E-5	1.06E-5	1.55E-5	2.82E-9	3.39E-9	2.13E-9	3.92E-9
438	615183	4201492	2.03E-4	2.95E-4	1.60E-4	3.96E-4	1.74E-5	2.53E-5	1.37E-5	5.05E-7	3.16E-4	4.86E-4	2.28E-4	6.49E-4	8.52E-6	1.07E-5	1.13E-5	1.64E-5	2.96E-9	3.51E-9	2.23E-9	3.99E-9
439	615203	4201492	1.97E-4	2.87E-4	1.55E-4	3.97E-4	1.75E-5	2.54E-5	1.38E-5	5.02E-7	3.22E-4	5.04E-4	2.34E-4	6.92E-4	8.81E-6	1.10E-5	1.20E-5	1.75E-5	3.12E-9	3.64E-9	2.35E-9	4.06E-9
440	615223	4201492	1.91E-4	2.77E-4	1.50E-4	3.96E-4	1.74E-5	2.54E-5	1.37E-5	4.98E-7	3.28E-4	5.22E-4	2.41E-4	7.39E-4	9.10E-6	1.13E-5	1.28E-5	1.87E-5	3.27E-9	3.81E-9	2.48E-9	4.12E-9
441	615243	4201492	1.83E-4	2.66E-4	1.44E-4	3.95E-4	1.74E-5	2.53E-5	1.37E-5	4.92E-7	3.34E-4	5.40E-4	2.47E-4	7.92E-4	9.40E-6	1.16E-5	1.37E-5	2.00E-5	3.42E-9	3.93E-9	2.63E-9	4.17E-9
442	615263	4201492	1.74E-4	2.52E-4	1.37E-4	3.93E-4	1.73E-5	2.52E-5	1.36E-5	4.87E-7	3.37E-4	5.58E-4	2.54E-4	8.52E-4	9.69E-6	1.19E-5	1.48E-5	2.16E-5	3.56E-9	4.05E-9	2.80E-9	4.22E-9
443	615283	4201492	1.62E-4	2.35E-4	1.27E-4	3.92E-4	1.73E-5	2.51E-5	1.36E-5	4.84E-7	3.39E-4	5.76E-4	2.61E-4	9.23E-4	9.99E-6	1.22E-5	1.60E-5	2.33E-5	3.70E-9	4.16E-9	2.99E-9	4.25E-9
444	615303	4201492	1.49E-4	2.17E-4	1.17E-4	3.90E-4	1.72E-5	2.50E-5	1.35E-5	4.85E-7	3.39E-4	5.92E-4	2.68E-4	1.01E-3	1.03E-5	1.26E-5	1.74E-5	2.54E-5	3.82E-9	4.27E-9	3.22E-9	4.27E-9
445	615323	4201492	1.36E-4	1.98E-4	1.07E-4	3.88E-4	1.71E-5	2.49E-5	1.35E-5	4.95E-7	3.39E-4	6.08E-4	2.75E-4	1.10E-3	1.05E-5	1.29E-5	1.91E-5	2.79E-5	3.93E-9	4.37E-9	3.49E-9	4.29E-9
446	615343	4201492	1.24E-4	1.80E-4	9.77E-5	3.87E-4	1.70E-5	2.48E-5	1.34E-5	5.14E-7	3.39E-4	6.22E-4	2.82E-4	1.22E-3	1.08E-5	1.32E-5	2.11E-5	3.08E-5	4.01E-9	4.46E-9	3.82E-9	4.30E-9
447	615363	4201492	1.13E-4	1.64E-4	8.90E-5	3.85E-4	1.70E-5	2.46E-5	1.33E-5	5.44E-7	3.40E-4	6.35E-4	2.89E-4	1.36E-3	1.10E-5	1.36E-5	2.35E-5	3.43E-5	4.06E-9	4.55E-9	4.21E-9	4.31E-9
448	615383	4201492	1.03E-4	1.50E-4	8.14E-5	3.82E-4	1.69E-5	2.45E-5	1.33E-5	5.85E-7	3.41E-4	6.46E-4	2.96E-4	1.53E-3	1.12E-5	1.39E-5	2.64E-5	3.86E-5	4.08E-9	4.63E-9	4.68E-9	4.33E-9
449	615403	4201492	9.49E-5	1.38E-4	7.47E-5	3.80E-4	1.68E-5	2.44E-5	1.32E-5	6.32E-7	3.42E-4	6.56E-4	3.04E-4	1.74E-3	1.14E-5	1.42E-5	3.02E-5	4.41E-5	4.07E-9	4.72E-9	5.25E-9	4.35E-9
450	615423	4201492	8.75E-5	1.27E-4	6.88E-5	3.78E-4	1.67E-5	2.42E-5	1.31E-5	6.79E-7	3.43E-4	6.65E-4	3.11E-4	2.02E-3	1.16E-5	1.45E-5	3.49E-5	5.11E-5	4.04E-9	4.79E-9	5.94E-9	4.37E-9
451	615443	4201492	8.11E-5	1.18E-4	6.38E-5	3.76E-4	1.66E-5	2.41E-5	1.30E-5	7.19E-7	3.45E-4	6.75E-4	3.18E-4	2.34E-3	1.18E-5	1.49E-5	4.04E-5	5.93E-5	3.99E-9	4.85E-9	6.77E-9	4.39E-9
452	615463	4201492	7.55E-5	1.10E-4	5.94E-5	3.73E-4	1.65E-5	2.39E-5	1.30E-5	7.47E-7	3.46E-4	6.86E-4	3.24E-4	2.70E-3	1.20E-5	1.51E-5	4.65E-5	6.82E-5	3.95E-9	4.87E-9	7.78E-9	4.41E-9
453	614723	4201512	8.86E-5	1.29E-4	6.98E-5	1.66E-4	7.23E-6	1.05E-5	5.69E-6	3.40E-7	2.08E-4	2.75E-4	1.34E-4	2.54E-4	4.82E-6	6.32E-6	4.40E-6	6.41E-6	1.36E-9	1.80E-9	1.18E-9	2.63E-9
454	614903	4201512	2.72E-4	3.95E-4	2.14E-4	5.33E-4	2.29E-5	3.33E-5	1.80E-5	4.52E-7	2.61E-4	3.37E-4	1.64E-4	3.42E-4	5.92E-6	7.74E-6	5.94E-6	8.66E-6	1.67E-9	2.29E-9	1.48E-9	3.28E-9
455	614923	4201512	2.75E-4	4.00E-4	2.16E-4	5.36E-4	2.30E-5	3.34E-5	1.81E-5	4.76E-7	2.70E-4	3.45E-4	1.68E-4	3.55E-4	6.06E-6	7.92E-6	6.17E-6	8.98E-6	1.73E-9	2.36E-9	1.52E-9	3.37E-9
456	614943	4201512	2.78E-4	4.04E-4	2.19E-4	5.40E-4	2.31E-5	3.36E-5	1.82E-5	5.01E-7	2.79E-4	3.53E-4	1.72E-4	3.69E-4	6.21E-6	8.11E-6	6.41E-6	9.33E-6	1.79E-9	2.44E-9	1.56E-9	3.46E-9
457	614963	4201512	2.82E-4	4.10E-4	2.22E-4	5.44E-4	2.34E-5	3.40E-5	1.84E-5	5.24E-7	2.87E-4	3.62E-4	1.77E-4	3.84E-4	6.36E-6	8.31E-6	6.66E-6	9.70E-6	1.85E-9	2.52E-9	1.61E-9	3.55E-9
458	614983	4201512	2.85E-4	4.14E-4	2.24E-4	5.47E-4	2.35E-5	3.42E-5	1.85E-5	5.44E-7	2.94E-4	3.71E-4	1.81E-4	4.00E-4	6.53E-6	8.52E-6	6.94E-6	1.01E-5	1.92E-9	2.61E-9	1.66E-9	3.63E-9
459	615003	4201512	2.87E-4	4.17E-4	2.26E-4	5.49E-4	2.36E-5	3.43E-5	1.86E-5	5.57E-7	3.00E-4	3.80E-4	1.86E-4	4.17E-4	6.70E-6	8.73E-6	7.24E-6	1.05E-5	2.00E-9	2.69E-9	1.71E-9	3.70E-9
460	615023	4201512	2.89E-4	4.20E-4	2.27E-4	5.49E-4	2.37E-5	3.44E-5	1.86E-5	5.63E-7	3.03E-4	3.90E-4	1.90E-4	4.35E-4	6.87E-6	8.95E-6	7.56E-6	1.10E-5	2.07E-9	2.78E-9	1.77E-9	3.75E-9
461	615043	4201512	2.90E-4	4.21E-4	2.28E-4	5.49E-4	2.36E-5	3.44E-5	1.86E-5	5.63E-7	3.05E-4	4.00E-4	1.95E-4	4.55E-4	7.06E-6	9.18E-6	7.91E-6	1.15E-5	2.16E-9	2.87E-9	1.83E-9	3.80E-9
462	615063	4201512	2.91E-4	4.23E-4	2.29E-4	5.47E-4	2.36E-5	3.43E-5	1.86E-5	5.58E-7	3.06E-4	4.11E-4	2.00E-4	4.77E-4	7.26E-6	9.41E-6	8.29E-6	1.21E-5	2.25E-9	2.95E-9	1.89E-9	3.84E-9
463	615083	4201512	2.91E-4	4.23E-4	2.29E-4	5.45E-4	2.35E-5	3.42E-5	1.85E-5	5.50E-7	3.07E-4	4.23E-4	2.05E-4	5.00E-4	7.47E-6	9.65E-6	8.70E-6	1.27E-5	2.34E-9	3.04E-9	1.96E-9	3.88E-9
464	615103	4201512	2.91E-4	4.23E-4	2.29E-4	5.43E-4	2.34E-5	3.40E-5	1.84E-5	5.42E-7	3.09E-4	4.36E-4	2.10E-4	5.26E-4	7.69E-6	9.89E-6	9.15E-6	1.33E-5	2.45E-9	3.13E-9	2.04E-9	3.91E-9
465	615123	4201512	2.90E-4	4.22E-4	2.29E-4	5.40E-4	2.33E-5	3.38E-5	1.83E-5	5.35E-7	3.11E-4	4.49E-4	2.15E-4	5.54E-4	7.92E-6	1.01E-5	9.64E-6	1.40E-5	2.57E-9	3.23E-9	2.12E-9	3.95E-9
466	615143	4201512	2.89E-4	4.20E-4	2.27E-4	5.37E-4	2.31E-5	3.36E-5	1.82E-5	5.31E-7	3.15E-4	4.64E-4	2.21E-4	5.86E-4	8.17E-6	1.04E-5	1.02E-5	1.48E-5	2.70E-9	3.33E-9	2.20E-9	4.00E-9
467	615163	4201512	2.88E-4	4.18E-4	2.26E-4	5.38E-4	2.32E-5	3.38E-5	1.83E-5	5.28E-7	3.20E-4	4.80E-4	2.27E-4	6.21E-4	8.45E-6	1.07E-5	1.08E-5	1.57E-5	2.84E-9	3.45E-9	2.30E-9	4.06E-9
468	615183	4201512	2.80E-4	4.08E-4	2.21E-4	5.37E-4	2.32E-5	3.38E-5	1.83E-5	5.27E-7	3.26E-4	4.98E-4	2.33E-4	6.61E-4	8.74E-6	1.10E-5	1.15E-5	1.67E-5	2.99E-9	3.57E-9	2.40E-9	4.13E-9
469	615203	4201512	2.68E-4	3.90E-4	2.11E-4	5.35E-4	2.32E-5	3.37E-5	1.82E-5	5.24E-7	3.33E-4	5.16E-4	2.40E-4	7.04E-4	9.04E-6	1.13E-5	1.22E-5	1.78E-5	3.15E-9	3.74E-9	2.52E-9	4.20E-9
470	615223	4201512	2.55E-4	3.71E-4	2.01E-4	5.32E-4	2.30E-5	3.35E-5	1.81E-5	5.19E-7	3.40E-4	5.35E-4	2.47E-4	7.53E-4	9.35E-6	1.16E-5	1.31E-5	1.90E-5	3.32E-9	3.87E-9	2.64E-9	4.27E-9
471	615243	4201512	2.40E-4	3.49E-4	1.89E-4	5.29E-4	2.29E-5	3.33E-5	1.80E-5	5.14E-7	3.46E-4	5.54E-4	2.54E-4	8.08E-4	9.66E-6	1.19E-5	1.40E-5	2.04E-5	3.48E-9	4.00E-9	2.79E-9	4.33E-9
472	615263	4201512	2.20E-4	3.19E-4	1.73E-4	5.25E-4	2.28E-5	3.31E-5	1.79E-5	5.08E-7	3.50E-4	5.74E-4	2.61E-4	8.70E-4	9.98E-6	1.23E-5	1.51E-5	2.20E-5	3.64E-9	4.13E-9	2.94E-9	4.38E-9
473	615283	4201512	1.96E-4	2.85E-4	1.55E-4	5.22E-4	2.26E-5	3.29E-5	1.78E-5	5.04E-7	3.52E-4	5.93E-4	2.68E-4	9.43E-4	1.03E-5	1.26E-5	1.64E-5	2.38E-5	3.79E-9	4.25E-9	3.13E-9	4.42E-9
474	615303	4201512	1.74E-4	2.52E-4	1.37E-4	5.19E-4	2.25E-5	3.27E-5	1.77E-5	5.05E-7	3.53E-4	6.12E-4	2.76E-4	1.03E-3	1.06E-5	1.29E-5	1.78E-5	2.60E-5	3.93E-9	4.38E-9	3.34E-9	4.44E-9
475	615323	4201512	1.53E-4	2.23E-4	1.20E-4	5.15E-4	2.24E-5	3.25E-5	1.76E-5	5.13E-7	3.53E-4	6.30E-4	2.83E-4	1.13E-3	1.09E-5	1.33E-5	1.96E-5	2.86E-5	4.06E-9	4.49E-9	3.58E-9	4.46E-9
476	615343	4201512	1.36E-4	1.97E-4	1.07E-4	5.12E-4	2.22E-5	3.23E-5	1.75E-5	5.32E-7	3.53E-4	6.47E-4	2.91E-4	1.26E-3	1.12E-5	1.37E-5	2.18E-5	3.18E-5	4.16E-9	4.60E-9	3.87E-9	4.48E-9
477	615363	4201512	1.21E-4	1.76E-4	9.55E-5	5.08E-4	2.21E-5	3.21E-5	1.74E-5	5.62E-7	3.53E-4	6.62E-4	2.99E-4	1.41E-3	1.15E-5	1.40E-5	2.45E-5	3.58E-5	4.24E-9	4.70E-9	4.21E-9	4.49E-9
478	615383	4201512	1.09E-4	1.59E-4	8.60E-5	5.04E-4	2.19E-5	3.19E-5	1.73E-5	6.03E-7	3.55E-4	6.75E-4	3.07E-4	1.61E-3	1.17E-5	1.44E-5	2.79E-5	4.08E-5	4.29E-9	4.79E-9	4.63E-9	4.51E-9
479	615403	4201512	9.93E-5	1.44E-4	7.81E-5	5.00E-4	2.18E-5	3.17E-5	1.71E-5	6.52E-7	3.56E-4	6.87E-4	3.15E-4	1.87E-3	1.20E-5	1.48E-5	3.24E-5	4.72E-5	4.30E-9	4.89E-9	5.13E-9	4.52E-9
480	615423	4201512	9.08E-5	1.32E-4	7.15E-5	4.97E-4	2.16E-5	3.14E-5	1.70E-5	7.02E-7	3.57E-4	6.98E-4	3.23E-4	2.22E-3	1.22E-5	1.51E-5	3.83E-5	5.61E-5	4.28E-9	4.98E-9	5.75E-9	4.55E-9
481	615443	4201512	8.36E-5	1.22E-4	6.58E-5	4.93E-4	2.15E-5	3.12E-5	1.69E-5	7.45E-7	3.59E-4	7.08E-4	3.31E-4	2.68E-3	1.24E-5	1.55E-5	4.61E-5	6.77E-5	4.24E-9	5.06E-9	6.52E-9	4.57E-9
482	615463	4201512	7.75E-5	1.13E-4	6.10E-5	4.89E-4	2.13E-5	3.09E-5	1.68E-5	7.74E-7	3.60E-4	7.20E-4	3.38E-4	3.21E-3	1.26E-5	1.58E-5	5.54E-5	8.13E-5	4.19E-9	5.11E-9	7.49E-9	4.59E-9
483	614723	4201532	1.32E-4	1.92E-4	1.04E-4	2.51E-4	1.05E-5	1.52E-5	8.24E-6	3.41E-7	2.13E-4	2.79E-4	1.36E-4	2.55E-4	4.89E-6	6.40E-6	4.42E-6	6.45E-6	1.37E-9	1.80E-9	1.25E-9	2.68E-9
484	614743	4201532	2.02E-4	2.94E-4	1.59E-4	4.02E-4	1.65E-5	2.39E-5	1.29E-5	3.54E-7	2.17E-4	2.85E-4	1.39E-4	2.63E-4	5.00E-6	6.54E-6	4.56E-6	6.65E-6	1.40E-9	1.85E-9	1.28E-9	2.74E-9
485	614743	4201552	6.69E-4	9.73E-4	5.27E-4	7.20E-4	2.53E-5	3.67E-5	1.99E-5	3.55E-7	2.22E-4	2.89E-4	1.41E-4	2.65E-4	5.07E-6	6.62E-6	4.59E-6	6.69E-6	1.41E-9	1.85E-9	1.36E-9	2.79E-9
486	614763	4201572	4.53E-4	6.58E-4	3.56E-4	7.63E-4	2.85E-5	4.14E-5	2.24E-5	3.69E-7	2.31E-4	3.00E-4	1.45E-4	2.75E-4	5.26E-6	6.85E-6	4.77E-6	6.95E-6	1.46E-9	1.90E-9	1.48E-9	2.92E-9
487	614763	4201592	1.81E-4	2.63E-4	1.42E-4	3.22E-4	1.33E-5	1.93E-5	1.04E-5	3.69E-7	2.36E-4	3.04E-4	1.47E-4	2.76E-4	5.32E-6	6.93E-6	4.79E-6	6.98E-6	1.46E-9	1.90E-9	1.55E-9	2.97E-9
488	614783	4201592	1.99E-4	2.89E-4	1.56E-4	3.57E-4	1.48E-5	2.15E-5	1.17E-5	3.85E-7	2.42E-4	3.12E-4	1.51E-4	2.86E-4	5.46E-6	7.10E-6	4.95E-6	7.22E-6	1.50E-9	1.96E-9	1.60E-9	3.05E-9
489	614803	4201592	2.10E-4	3.05E-4	1.65E-4	3.80E-4	1.58E-5	2.30E-5	1.24E-5	4.00E-7	2.47E-4	3.20E-4	1.54E-4	2.95E-4	5.60E-6	7.27E-6	5.12E-6	7.46E-6	1.54E-9	2.02E-9	1.65E-9	3.12E-9
490	614823	4201592	2.18E-4	3.17E-4	1.71E-4	3.96E-4	1.65E-5	2.41E-5	1.30E-5	4.14E-7	2.53E-4	3.28E-4	1.58E-4	3.05E-4	5.75E-6	7.44E-6	5.30E-6	7.72E-6	1.58E-9	2.07E-9	1.70E-9	3.20E-9
491	614843	4201592	2.24E-4	3.26E-4	1.76E-4	4.09E-4	1.71E-5	2.49E-5	1.35E-5	4.26E-7	2.58E-4	3.36E-4	1.62E-4	3.16E-4	5.90E-6	7.63E-6	5.48E-6	7.99E-6	1.62E-9	2.14E-9	1.75E-9	3.28E-9
492	614863	4201592	2.31E-4	3.35E-4	1.81E-4	4.23E-4	1.78E-5	2.58E-5	1.40E-5	4.38E-7	2.65E-4	3.45E-4	1.66E-4	3.28E-4	6.05E-6	7.82E-6	5.68E-6	8.29E-6	1.66E-9	2.20E-9	1.81E-9	3.36E-9
493	614883	4201592	2.37E-4	3.44E-4	1.86E-4	4.36E-4	1.83E-5	2.67E-5	1.44E-5	4.51E-7	2.72E-4	3.54E-4	1.70E-4	3.40E-4	6.22E-6	8.02E-6	5.90E-6	8.60E-6	1.71E-9	2.27E-9	1.87E-9	3.46E-9
494	614903	4201592	2.43E-4	3.53E-4	1.91E-4	4.48E-4	1.89E-5	2.75E-5	1.49E-5	4.67E-7	2.80E-4	3.64E-4	1.74E-4	3.53E-4	6.38E-6	8.23E-6	6.13E-6	8.93E-6	1.76E-9	2.34E-9	1.94E-9	3.56E-9
495	614923	4201592	2.46E-4	3.58E-4	1.94E-4	4.55E-4	1.92E-5	2.79E-5	1.51E-5	4.85E-7	2.88E-4	3.73E-4	1.79E-4	3.67E-4	6.55E-6	8.44E-6	6.36E-6	9.28E-6	1.81E-9	2.40E-9	2.00E-9	3.66E-9
496	614943	4201592	2.50E-4	3.64E-4	1.97E-4	4.64E-4	1.96E-5	2.85E-5	1.54E-5	5.08E-7	2.98E-4	3.83E-4	1.84E-4	3.82E-4	6.73E-6	8.66E-6	6.62E-6	9.65E-6	1.86E-9	2.48E-9	2.08E-9	3.77E-9
497	614963	4201592	2.56E-4	3.72E-4	2.01E-4	4.76E-4	2.01E-5	2.92E-5	1.58E-5	5.36E-7	3.10E-4	3.94E-4	1.89E-4	3.98E-4	6.92E-6	8.89E-6	6.90E-6	1.01E-5	1.92E-9	2.57E-9	2.15E-9	3.89E-9

498	614983	4201592	2.61E-4	3.80E-4	2.06E-4	4.86E-4	2.05E-5	2.98E-5	1.61E-5	5.67E-7	3.21E-4	4.05E-4	1.94E-4	4.15E-4	7.11E-6	9.14E-6	7.20E-6	1.05E-5	1.99E-9	2.67E-9	2.24E-9	4.01E-9
499	615003	4201592	2.67E-4	3.88E-4	2.10E-4	4.97E-4	2.10E-5	3.05E-5	1.65E-5	5.98E-7	3.33E-4	4.17E-4	2.00E-4	4.34E-4	7.32E-6	9.40E-6	7.52E-6	1.10E-5	2.07E-9	2.78E-9	2.32E-9	4.13E-9
500	615023	4201592	2.74E-4	3.98E-4	2.16E-4	5.10E-4	2.16E-5	3.14E-5	1.70E-5	6.26E-7	3.43E-4	4.29E-4	2.06E-4	4.54E-4	7.54E-6	9.68E-6	7.87E-6	1.15E-5	2.15E-9	2.89E-9	2.42E-9	4.24E-9
501	615043	4201592	2.79E-4	4.06E-4	2.20E-4	5.20E-4	2.19E-5	3.19E-5	1.73E-5	6.47E-7	3.52E-4	4.41E-4	2.12E-4	4.76E-4	7.76E-6	9.96E-6	8.25E-6	1.20E-5	2.24E-9	3.00E-9	2.52E-9	4.34E-9
502	615083	4201592	2.93E-4	4.25E-4	2.30E-4	5.40E-4	2.28E-5	3.31E-5	1.79E-5	6.65E-7	3.62E-4	4.68E-4	2.24E-4	5.25E-4	8.23E-6	1.06E-5	9.11E-6	1.33E-5	2.44E-9	3.24E-9	2.75E-9	4.50E-9
503	615103	4201592	2.99E-4	4.35E-4	2.36E-4	5.48E-4	2.31E-5	3.36E-5	1.82E-5	6.61E-7	3.65E-4	4.82E-4	2.31E-4	5.53E-4	8.49E-6	1.09E-5	9.60E-6	1.40E-5	2.54E-9	3.37E-9	2.88E-9	4.56E-9
504	615123	4201592	3.09E-4	4.49E-4	2.43E-4	5.57E-4	2.35E-5	3.41E-5	1.85E-5	6.53E-7	3.66E-4	4.97E-4	2.38E-4	5.84E-4	8.76E-6	1.12E-5	1.01E-5	1.48E-5	2.66E-9	3.49E-9	3.01E-9	4.61E-9
505	615143	4201592	3.23E-4	4.69E-4	2.54E-4	5.67E-4	2.38E-5	3.47E-5	1.88E-5	6.44E-7	3.69E-4	5.12E-4	2.45E-4	6.18E-4	9.04E-6	1.15E-5	1.07E-5	1.56E-5	2.78E-9	3.61E-9	3.16E-9	4.67E-9
506	615163	4201592	3.47E-4	5.04E-4	2.73E-4	5.77E-4	2.42E-5	3.52E-5	1.91E-5	6.36E-7	3.72E-4	5.30E-4	2.52E-4	6.56E-4	9.35E-6	1.19E-5	1.14E-5	1.66E-5	2.92E-9	3.73E-9	3.32E-9	4.72E-9
507	615343	4201592	1.34E-4	1.95E-4	1.06E-4	6.86E-4	2.83E-5	4.12E-5	2.23E-5	6.19E-7	4.19E-4	7.51E-4	3.32E-4	1.38E-3	1.30E-5	1.56E-5	2.40E-5	3.50E-5	4.76E-9	5.12E-9	5.76E-9	5.30E-9
508	615383	4201592	1.06E-4	1.54E-4	8.31E-5	7.15E-4	2.94E-5	4.27E-5	2.31E-5	6.90E-7	4.20E-4	8.03E-4	3.55E-4	1.83E-3	1.39E-5	1.66E-5	3.17E-5	4.64E-5	5.12E-9	5.48E-9	6.75E-9	5.35E-9
509	615423	4201592	8.75E-5	1.27E-4	6.89E-5	7.46E-4	3.05E-5	4.43E-5	2.40E-5	8.07E-7	4.24E-4	8.50E-4	3.78E-4	2.80E-3	1.48E-5	1.77E-5	4.84E-5	7.09E-5	5.36E-9	5.80E-9	8.08E-9	5.40E-9
510	614783	4201612	1.22E-4	1.77E-4	9.58E-5	2.17E-4	9.33E-6	1.36E-5	7.35E-6	3.85E-7	2.47E-4	3.16E-4	1.52E-4	2.87E-4	5.53E-6	7.18E-6	4.97E-6	7.25E-6	1.51E-9	1.96E-9	1.67E-9	3.11E-9
511	614803	4201612	1.30E-4	1.89E-4	1.02E-4	2.33E-4	1.00E-5	1.46E-5	7.90E-6	4.02E-7	2.53E-4	3.24E-4	1.56E-4	2.97E-4	5.68E-6	7.36E-6	5.14E-6	7.50E-6	1.55E-9	2.02E-9	1.72E-9	3.19E-9
512	614823	4201612	1.36E-4	1.97E-4	1.07E-4	2.45E-4	1.06E-5	1.53E-5	8.31E-6	4.19E-7	2.59E-4	3.33E-4	1.60E-4	3.07E-4	5.83E-6	7.54E-6	5.32E-6	7.76E-6	1.59E-9	2.08E-9	1.77E-9	3.27E-9
513	614843	4201612	1.40E-4	2.03E-4	1.10E-4	2.53E-4	1.09E-5	1.59E-5	8.59E-6	4.34E-7	2.65E-4	3.42E-4	1.64E-4	3.18E-4	5.99E-6	7.73E-6	5.51E-6	8.04E-6	1.63E-9	2.14E-9	1.83E-9	3.35E-9
514	614863	4201612	1.44E-4	2.09E-4	1.13E-4	2.61E-4	1.13E-5	1.64E-5	8.88E-6	4.47E-7	2.71E-4	3.51E-4	1.68E-4	3.29E-4	6.15E-6	7.92E-6	5.72E-6	8.33E-6	1.68E-9	2.20E-9	1.89E-9	3.44E-9
515	614883	4201612	1.48E-4	2.15E-4	1.16E-4	2.68E-4	1.16E-5	1.69E-5	9.14E-6	4.60E-7	2.78E-4	3.60E-4	1.72E-4	3.42E-4	6.32E-6	8.13E-6	5.93E-6	8.65E-6	1.72E-9	2.27E-9	1.96E-9	3.53E-9
516	614903	4201612	1.52E-4	2.21E-4	1.20E-4	2.75E-4	1.19E-5	1.74E-5	9.39E-6	4.75E-7	2.86E-4	3.70E-4	1.77E-4	3.55E-4	6.49E-6	8.35E-6	6.16E-6	8.98E-6	1.77E-9	2.35E-9	2.03E-9	3.64E-9
517	614923	4201612	1.55E-4	2.25E-4	1.22E-4	2.80E-4	1.21E-5	1.76E-5	9.55E-6	4.92E-7	2.94E-4	3.80E-4	1.82E-4	3.69E-4	6.67E-6	8.57E-6	6.40E-6	9.33E-6	1.83E-9	2.41E-9	2.10E-9	3.74E-9
518	614943	4201612	1.57E-4	2.29E-4	1.24E-4	2.84E-4	1.23E-5	1.79E-5	9.72E-6	5.13E-7	3.04E-4	3.91E-4	1.86E-4	3.84E-4	6.86E-6	8.79E-6	6.66E-6	9.71E-6	1.88E-9	2.49E-9	2.17E-9	3.86E-9
519	614963	4201612	1.61E-4	2.34E-4	1.26E-4	2.89E-4	1.26E-5	1.83E-5	9.90E-6	5.40E-7	3.15E-4	4.02E-4	1.92E-4	4.00E-4	7.05E-6	9.03E-6	6.94E-6	1.01E-5	1.94E-9	2.57E-9	2.26E-9	3.98E-9
520	614983	4201612	1.64E-4	2.39E-4	1.29E-4	2.95E-4	1.28E-5	1.87E-5	1.01E-5	5.70E-7	3.28E-4	4.14E-4	1.97E-4	4.18E-4	7.26E-6	9.30E-6	7.25E-6	1.06E-5	2.01E-9	2.67E-9	2.35E-9	4.11E-9
521	615003	4201612	1.69E-4	2.45E-4	1.33E-4	3.01E-4	1.31E-5	1.91E-5	1.03E-5	6.04E-7	3.40E-4	4.26E-4	2.03E-4	4.37E-4	7.48E-6	9.57E-6	7.58E-6	1.10E-5	2.09E-9	2.78E-9	2.44E-9	4.24E-9
522	615023	4201612	1.74E-4	2.52E-4	1.37E-4	3.08E-4	1.35E-5	1.96E-5	1.06E-5	6.36E-7	3.53E-4	4.39E-4	2.09E-4	4.58E-4	7.71E-6	9.86E-6	7.94E-6	1.16E-5	2.18E-9	2.90E-9	2.55E-9	4.37E-9
523	615043	4201612	1.78E-4	2.58E-4	1.40E-4	3.12E-4	1.37E-5	1.99E-5	1.08E-5	6.63E-7	3.63E-4	4.52E-4	2.16E-4	4.80E-4	7.95E-6	1.02E-5	8.32E-6	1.21E-5	2.27E-9	3.04E-9	2.66E-9	4.49E-9
524	615163	4201612	2.50E-4	3.63E-4	1.97E-4	3.34E-4	1.46E-5	2.12E-5	1.15E-5	6.70E-7	3.88E-4	5.44E-4	2.58E-4	6.62E-4	9.60E-6	1.22E-5	1.15E-5	1.67E-5	2.95E-9	3.79E-9	3.54E-9	4.92E-9
525	614803	4201632	9.32E-5	1.35E-4	7.33E-5	1.64E-4	7.20E-6	1.05E-5	5.66E-6	4.02E-7	2.58E-4	3.28E-4	1.58E-4	2.98E-4	5.75E-6	7.44E-6	5.16E-6	7.53E-6	1.55E-9	2.01E-9	1.77E-9	3.26E-9
526	614823	4201632	9.82E-5	1.43E-4	7.73E-5	1.74E-4	7.62E-6	1.11E-5	5.99E-6	4.21E-7	2.65E-4	3.38E-4	1.62E-4	3.08E-4	5.91E-6	7.63E-6	5.35E-6	7.80E-6	1.60E-9	2.08E-9	1.82E-9	3.34E-9
527	614843	4201632	1.02E-4	1.48E-4	8.04E-5	1.81E-4	7.94E-6	1.15E-5	6.25E-6	4.38E-7	2.71E-4	3.47E-4	1.66E-4	3.19E-4	6.07E-6	7.83E-6	5.54E-6	8.08E-6	1.64E-9	2.14E-9	1.88E-9	3.43E-9
528	614863	4201632	1.05E-4	1.53E-4	8.27E-5	1.86E-4	8.16E-6	1.19E-5	6.43E-6	4.55E-7	2.78E-4	3.56E-4	1.70E-4	3.31E-4	6.24E-6	8.03E-6	5.74E-6	8.37E-6	1.69E-9	2.21E-9	1.95E-9	3.52E-9
529	614883	4201632	1.08E-4	1.57E-4	8.50E-5	1.91E-4	8.38E-6	1.22E-5	6.59E-6	4.70E-7	2.85E-4	3.66E-4	1.75E-4	3.43E-4	6.42E-6	8.24E-6	5.96E-6	8.69E-6	1.74E-9	2.27E-9	2.01E-9	3.62E-9
530	614903	4201632	1.11E-4	1.61E-4	8.74E-5	1.96E-4	8.61E-6	1.25E-5	6.77E-6	4.85E-7	2.93E-4	3.76E-4	1.80E-4	3.57E-4	6.60E-6	8.46E-6	6.20E-6	9.03E-6	1.79E-9	2.35E-9	2.09E-9	3.72E-9
531	614923	4201632	1.14E-4	1.66E-4	8.96E-5	2.00E-4	8.81E-6	1.28E-5	6.93E-6	5.01E-7	3.01E-4	3.87E-4	1.84E-4	3.71E-4	6.79E-6	8.70E-6	6.44E-6	9.39E-6	1.84E-9	2.41E-9	2.16E-9	3.83E-9
532	614943	4201632	1.16E-4	1.69E-4	9.16E-5	2.03E-4	8.97E-6	1.30E-5	7.06E-6	5.21E-7	3.11E-4	3.98E-4	1.89E-4	3.86E-4	6.99E-6	8.93E-6	6.71E-6	9.77E-6	1.90E-9	2.49E-9	2.24E-9	3.95E-9
533	614963	4201632	1.19E-4	1.72E-4	9.33E-5	2.06E-4	9.06E-6	1.32E-5	7.13E-6	5.44E-7	3.22E-4	4.09E-4	1.95E-4	4.02E-4	7.19E-6	9.17E-6	6.98E-6	1.02E-5	1.96E-9	2.58E-9	2.33E-9	4.07E-9
534	614983	4201632	1.22E-4	1.78E-4	9.63E-5	2.10E-4	9.30E-6	1.35E-5	7.32E-6	5.75E-7	3.34E-4	4.22E-4	2.00E-4	4.20E-4	7.41E-6	9.46E-6	7.30E-6	1.06E-5	2.03E-9	2.68E-9	2.42E-9	4.21E-9
535	615003	4201632	1.26E-4	1.83E-4	9.92E-5	2.14E-4	9.50E-6	1.38E-5	7.48E-6	6.09E-7	3.48E-4	4.35E-4	2.07E-4	4.40E-4	7.64E-6	9.74E-6	7.63E-6	1.11E-5	2.11E-9	2.79E-9	2.53E-9	4.35E-9
536	615023	4201632	1.30E-4	1.88E-4	1.02E-4	2.18E-4	9.65E-6	1.40E-5	7.60E-6	6.43E-7	3.61E-4	4.49E-4	2.13E-4	4.61E-4	7.88E-6	1.00E-5	7.99E-6	1.16E-5	2.20E-9	2.93E-9	2.63E-9	4.49E-9
537	615043	4201632	1.33E-4	1.94E-4	1.05E-4	2.20E-4	9.78E-6	1.42E-5	7.69E-6	6.76E-7	3.74E-4	4.63E-4	2.20E-4	4.83E-4	8.13E-6	1.03E-5	8.38E-6	1.22E-5	2.29E-9	3.05E-9	2.75E-9	4.62E-9
538	615163	4201632	2.17E-4	3.15E-4	1.70E-4	2.33E-4	1.03E-5	1.50E-5	8.15E-6	7.08E-7	4.06E-4	5.60E-4	2.65E-4	6.67E-4	9.87E-6	1.24E-5	1.16E-5	1.69E-5	2.98E-9	3.84E-9	3.67E-9	5.13E-9
539	615343	4201632	1.33E-4	1.93E-4	1.05E-4	2.51E-4	1.11E-5	1.62E-5	8.76E-6	6.76E-7	4.61E-4	8.08E-4	3.55E-4	1.40E-3	1.41E-5	1.67E-5	2.42E-5	3.54E-5	5.04E-9	5.37E-9	6.57E-9	5.82E-9
540	615383	4201632	1.05E-4	1.53E-4	8.28E-5	2.54E-4	1.13E-5	1.64E-5	8.88E-6	7.45E-7	4.62E-4	8.75E-4	3.82E-4	1.82E-3	1.52E-5	1.79E-5	3.16E-5	4.61E-5	5.54E-9	5.79E-9	7.78E-9	5.87E-9
541	615423	4201632	8.80E-5	1.28E-4	6.92E-5	2.57E-4	1.14E-5	1.66E-5	8.98E-6	8.72E-7	4.65E-4	9.38E-4	4.10E-4	2.64E-3	1.63E-5	1.92E-5	4.56E-5	6.68E-5	5.94E-9	6.23E-9	9.42E-9	5.93E-9
542	615463	4201632	7.62E-5	1.11E-4	6.00E-5	2.60E-4	1.15E-5	1.68E-5	9.07E-6	9.87E-7	4.70E-4	9.96E-4	4.40E-4	4.62E-3	1.73E-5	2.07E-5	7.89E-5	1.17E-4	6.17E-9	6.66E-9	1.17E-8	6.01E-9
543	615503	4201632	6.77E-5	9.84E-5	5.33E-5	2.62E-4	1.16E-5	1.69E-5	9.14E-6	1.02E-6	4.77E-4	1.04E-3	4.73E-4	7.59E-3	1.82E-5	2.21E-5	1.30E-4	1.92E-4	6.17E-9	7.09E-9	1.52E-8	6.11E-9
544	615543	4201632	6.13E-5	8.91E-5	4.82E-5	2.63E-4	1.17E-5	1.69E-5	9.17E-6	1.00E-6	4.86E-4	1.09E-3	5.04E-4	9.46E-3	1.91E-5	2.35E-5	1.62E-4	2.39E-4	6.04E-9	7.46E-9	2.06E-8	6.24E-9
545	615583	4201632	5.62E-5	8.16E-5	4.42E-5	2.63E-4	1.16E-5	1.69E-5	9.15E-6	1.03E-6	5.03E-4	1.13E-3	5.24E-4	1.06E-2	1.98E-5	2.46E-5	1.81E-4	2.67E-4	6.04E-9	7.58E-9	3.03E-8	6.44E-9
546	615623	4201632	5.20E-5	7.56E-5	4.09E-5	2.60E-4	1.15E-5	1.67E-5	9.03E-6	1.14E-6	5.29E-4	1.15E-3	5.41E-4	1.14E-2	2.04E-5	2.55E-5	1.96E-4	2.90E-4	6.54E-9	7.69E-9	5.06E-8	6.69E-9
547	615663	4201632	4.89E-5	7.10E-5	3.85E-5	2.54E-4	1.12E-5	1.64E-5	8.85E-6	1.24E-6	5.51E-4	1.17E-3	5.59E-4	1.27E-2	2.08E-5	2.64E-5	2.19E-4	3.21E-4	7.84E-9	8.22E-9	1.09E-7	6.93E-9
548	615703	4201632	4.62E-5	6.72E-5	3.64E-5	2.30E-4	1.02E-5	1.48E-5	8.04E-6	1.29E-6	5.65E-4	1.19E-3	5.66E-4	1.51E-2	2.13E-5	2.70E-5	2.59E-4	3.81E-4	8.96E-9	9.56E-9	4.10E-7	7.10E-9
549	615743	4201632	4.41E-5	6.41E-5	3.47E-5	1.72E-4	7.81E-6	1.14E-5	6.15E-6	1.34E-6	5.82E-4	1.23E-3	5.78E-4	3.09E-2	2.20E-5	2.77E-5	5.23E-4	7.82E-4	9.16E-9	1.09E-8	3.72E-6	7.32E-9
550	614823	4201652	7.71E-5	1.12E-4	6.07E-5	1.33E-4	5.89E-6	8.56E-6	4.64E-6	4.20E-7	2.71E-4	3.42E-4	1.64E-4	3.09E-4	5.98E-6	7.73E-6	5.37E-6	7.82E-6	1.59E-9	2.07E-9	1.85E-9	3.42E-9
551	614843	4201652	8.04E-5	1.17E-4	6.33E-5	1.39E-4	6.15E-6	8.94E-6	4.84E-6	4.41E-7	2.78E-4	3.51E-4	1.68E-4	3.21E-4	6.15E-6	7.93E-6	5.57E-6	8.11E-6	1.64E-9	2.14E-9	1.91E-9	3.51E-9
552	614863	4201652	8.29E-5	1.21E-4	6.52E-5	1.43E-4	6.33E-6	9.20E-6	4.98E-6	4.60E-7	2.85E-4	3.61E-4	1.73E-4	3.32E-4	6.33E-6	8.13E-6	5.77E-6	8.40E-6	1.69E-9	2.21E-9	1.97E-9	3.60E-9
553	614883	4201652	8.54E-5	1.24E-4	6.72E-5	1.46E-4	6.50E-6	9.45E-6	5.12E-6	4.78E-7	2.92E-4	3.72E-4	1.77E-4	3.45E-4	6.51E-6	8.35E-6	5.99E-6	8.72E-6	1.74E-9	2.28E-9	2.04E-9	3.70E-9
554	614903	4201652	8.81E-5	1.28E-4	6.93E-5	1.50E-4	6.68E-6	9.71E-6	5.25E-6	4.94E-7	3.00E-4	3.82E-4	1.82E-4	3.58E-4	6.70E-6	8.58E-6	6.22E-6	9.06E-6	1.80E-9	2.35E-9	2.11E-9	3.81E-9
555	614923	4201652	9.07E-5	1.32E-4	7.14E-5	1.54E-4	6.84E-6	9.94E-6	5.38E-6	5.11E-7	3.09E-4	3.94E-4	1.87E-4	3.73E-4	6.90E-6	8.82E-6	6.47E-6	9.43E-6	1.86E-9	2.43E-9	2.19E-9	3.92E-9
556	614943	4201652	9.30E-5	1.35E-4	7.32E-5	1.56E-4	6.96E-6	1.01E-5	5.48E-6	5.30E-7	3.18E-4	4.05E-4	1.92E-4	3.88E-4	7.11E-6	9.07E-6	6.74E-6	9.82E-6	1.92E-9	2.49E-9	2.27E-9	4.04E-9
557	614963	4201652	9.50E-5	1.38E-4	7.48E-5	1.58E-4	7.04E-6	1.02E-5	5.54E-6	5.51E-7	3.28E-4	4.17E-4	1.98E-4	4.04E-4	7.32E-6	9.31E-6	7.02E-6	1.02E-5	1.98E-9	2.57E-9	2.36E-9	4.17E-9
558	614983	4201652	9.81E-5	1.43E-4	7.72E-5	1.61E-4	7.18E-6	1.04E-5	5.65E-6	5.79E-7	3.41E-4	4.30E-4	2.04E-4	4.22E-4	7.55E-6	9.60E-6	7.33E-6	1.07E-5	2.05E-9	2.67E-9	2.45E-9	4.31E-9
559	615003	4201652	1.02E-4	1.48E-4	7.99E-5	1.64E-4	7.32E-6	1.06E-5	5.76E-6	6.13E-7	3.55E-4	4.44E-4	2.10E-4	4.42E-4	7.79E-6	9.89E-6	7.67E-6	1.12E-5	2.13E-9	2.79E-9	2.55E-9	4.46E-9
560	615023	4201652	1.05E-4	1.53E-4	8.30E-5	1.67E-4	7.46E-6	1.08E-5	5.87E-6	6.49E-7	3.70E-4	4.58E-4	2.16E-4	4.63E-4	8.05E-6	1.02E-5	8.04E-6	1.17E-5	2.21E-9	2.91E-9	2.66E-9	4.61E-9
561	615043	4201652	1.09E-4	1.59E-4	8.62E-5	1.69E-4	7.55E-6	1.10E-5	5.94E-6	6.86E-7	3.84E-4	4.73E-4	2.23E-4	4.85E-4	8.31E-6	1.05E-5	8.43E-6	1.23E-5	2.30E-9	3.05E-9	2.78E-9	4.76E-9
562	614823	4201672	6.37E-5	9.25E-5	5.01E-5	1.07E-4	4.77E-6	6.93E-6	3.75E-6	4.18E-7	2.77E-4	3.45E-4	1.66E-4	3.10E-4	6.04E-6	7.81E-6	5.39E-6	7.85E-6	1.59E-9	2.07E-9	1.85E-9	3.49E-9
563	614843	4201672	6.66E-5	9.68E-5	5.24E-5	1.11E-4	4.98E-6	7.24E-6	3.92E-6	4.40E-7	2.84E-4	3.56E-4	1.70E-4	3.22E-4	6.22E-6	8.02E-6	5.59E-6	8.14E-6	1.64E-9	2.14E-9	1.91E-9	3.59E-9
564	614863	4201672	6.89E-5	1.00E-4	5.42E-5	1.15E-4	5.14E-6	7.47E-6	4.04E-6	4.63E-7	2.92E-4	3.66E-4	1.75E-4	3.34E-4	6.41E-6	8.24E-6	5.79E-6	8.44E-6	1.69E-9	2.20E-9	1.97E-9	3.69E-9
565	614883	4201672	7.12E-5	1.03E-4	5.60E-5	1.18E-4	5.28E-6	7.68E-6	4.16E-6	4.83E-7	3.00E-4	3.77E-4	1.80E-4	3.46E-4	6.60E-6	8.46E-6	6.01E-6	8.76E-6	1.75E-9	2.28E-9	2.03E-9	3.79E-9
566	614903	4201672	7.35E-5	1.07E-4	5.79E-5	1.21E-4	5.42E-6	7.88E-6	4.27E-6	5.03E-7	3.08E-4	3.88E-4	1.85E-4	3.60E-4	6.80E-6	8.70E-6	6.25E-6	9.10E-6	1.80E-9	2.35E-9	2.10E-9	3.90E-9
567	614923	4201672	7.59E-5	1.10E-4	5.97E-5	1.24E-4	5.55E-6	8.07E-6	4.37E-6	5.21E-7	3.16E-4	4.00E-4	1.90E-4	3.74E-4	7.01E-6	8.94E-6	6.50E-6	9.47E-6	1.86E-9	2.43E-9	2.18E-9	4.02E-9
568	614943	4201672	7.81E-5	1.14E-4	6.15E-5	1.26E-4	5.65E-6	8.22E-6	4.45E-6	5.40E-7	3.26E-4	4.12E-4	1.95E-4	3.90E-4	7.22E-6	9.20E-6	6.77E-6	9.86E-6	1.92E-9	2.49E-9	2.26E-9	4.14E-9
569	614963	4201672	8.02E-5	1.17E-4	6.31E-5	1.28E-4	5.72E-6	8.31E-6	4.50E-6	5.60E-7	3.36E-4	4.24E-4	2.01E-4	4.06E-4	7.45E-6	9.45E-6	7.05E-6	1.03E-5	1.99E-9	2.57E-9	2.34E-9	4.27E-9
570	614983	4201672	8.29E-5	1.21E-4	6.53E-5	1.30E-4	5.81E-6	8.45E-6	4.58E-6	5.86E-7	3.48E-4	4.38E-4	2.07E-4	4.24E-4	7.68E-6	9.74E-6	7.36E-6	1.07E-5	2.06E-9	2.67E-9	2.43E-9	4.41E-9
571	615003	4201672	8.63E-5	1.25E-4	6.79E-5	1.32E-4	5.92E-6	8.61E-6	4.66E-6	6.18E-7	3.62E-4	4.52E-4	2.13E-4	4.43E-4	7.94E-6	1.00E-5	7.70E-6	1.12E-5	2.14E-9	2.78E-9	2.53E-9	4.57E-9
572	615023	4201672	9.04E-5	1.31E-4	7.12E-5	1.35E-4	6.05E-6	8.79E-6	4.76E-6	6.55E-7	3.78E-4	4.67E-4	2.20E-4	4.65E-4	8.21E-6	1.04E-5	8.07E-6	1.18E-5	2.23E-9	2.90E-9	2.64E-9	4.74E-9
573	615043	4201672	9.47E-5	1.38E-4	7.46E-5	1.36E-4	6.12E-6	8.90E-6	4.82E-6	6.94E-7	3.93E-4	4.83E-4	2.27E-4	4.88E-4	8.48E-6	1.07E-5	8.47E-6	1.23E-5	2.32E-9	3.05E-9	2.75E-9	4.90E-9
574	615103	4201672	1.16E-4	1.69E-4	9.13E-5	1.40E-4	6.30E-6	9.16E-6	4.96E-6	7.88E-7	4.31E-4	5.35E-4	2.51E-4	5.68E-4	9.39E-6	1.18E-5	9.86E-6	1.44E-5	2.65E-9	3.48E-9	3.13E-9	5.33E-9
575	615283	4201672	2.27E-4	3.30E-4	1.79E-4	1.48E-4	6.69E-6	9.72E-6	5.26E-6	7.45E-7	4.92E-4	7.51E-4	3.42E-4	1.04E-3	1.32E-5	1.61E-5	1.80E-5	2.62E-5	4.29E-9	5.00E-9	5.08E-9	6.18E-9
576	615303	4201672	1.84E-4	2.67E-4	1.45E-4	1.49E-4	6.72E-6	9.77E-6	5.29E-6	7.39E-7	5.00E-4	7.87E-4	3.55E-4	1.13E-3	1.38E-5	1.67E-5	1.96E-5	2.86E-5	4.60E-9	5.20E-9	5.43E-9	6.28E-9
577	615343	4201672	1.34E-4	1.95E-4	1.05E-4	1.50E-4	6.77E-6	9.84E-6	5.33E-6	7.45E-7	5.09E-4	8.66E-4	3.82E-4	1.38E-3	1.51E-5	1.80E-5	2.39E-5	3.49E-5	5.26E-9	5.64E-9	6.26E-9	6.41E-9
578	615383	4201672	1.07E-4	1.55E-4	8.41E-5	1.51E-4	6.81E-6	9.90E-6	5.36E-6	8.11E-7	5.11E-4	9.51E-4	4.11E-4	1.75E-3	1.65E-5	1.94E-5	3.03E-5	4.42E-5	5.93E-9	6.11E-9	7.33E-9	6.49E-9
579	615423	4201672	9.02E-5	1.31E-4	7.10E-5	1.52E-4	6.83E-6	9.93E-6	5.37E-6	9.48E-7	5.14E-4	1.03E-3	4.45E-4	2.34E-3	1.80E-5	2.09E-5	4.03E-5	5.91E-5	6.52E-9	6.64E-9	8.77E-9	6.56E-9
580	615463	4201672	7.89E-5	1.15E-4	6.21E-5	1.52E-4	6.83E-6	9.93E-6	5.37E-6	1.08E-6	5.21E-4	1.12E-3	4.83E-4	3.22E-3	1.94E-5	2.26E-5	5.53E-5	8.14E-5	6.98E-9	7.22E-9	1.08E-8	6.65E-9
581	615503	4201672	7.07E-5	1.03E-4	5.56E-5	1.51E-4	6.80E-6	9.89E-6	5.35E-6	1.13E-6	5.28E-4	1.19E-3	5.24E-4	4.18E-3	2.07E-5	2.45E-5	7.18E-5	1.06E-4	7.19E-9	7.83E-9	1.38E-8	6.77E-9
582	615543	4201672	6.44E-5	9.37E-5	5.07E-5	1.49E-4	6.73E-6	9.78E-6	5.30E-6	1.12E-6	5.40E-4	1.25E-3	5.68E-4	5.04E-3	2.18E-5	2.65E-5	8.66E-5	1.28E-4	7.13E-9	8.43E-9	1.88E-8	6.94E-9
583	615583	4201672	5.96E-5	8.66E-5	4.69E-5	1.47E-4	6.60E-6	9.59E-6	5.19E-6	1.16E-6	5.62E-4	1.30E-3	6.05E-4	5.78E-3	2.28E-5	2.83E-5	9.94E-5	1.46E-4	7.06E-9	8.87E-9	2.83E-8	7.19E-9
584	615623	4201672	5.58E-5	8.11E-5	4.39E-5	1.43E-4	6.43E-6	9.34E-6	5.06E-6	1.28E-6	5.93E-4	1.35E-3	6.30E-4	6.61E-3	2.37E-5	2.97E-5	1.14E-4	1.67E-4	7.54E-9	9.02E-9	5.00E-8	7.50E-9
585	615663	4201672	5.27E-5	7.66E-5	4.15E-5	1.34E-4	6.03E-6	8.77E-6	4.75E-6	1.39E-6	6.17E-4	1.37E-3	6.55E-4	7.79E-3	2.43E-5	3.09E-5	1.34E-4	1.97E-4	8.96E-9	9.45E-9	1.09E-7	7.75E-9
586	615703	4201672	5.02E-5	7.29E-5	3.95E-5	1.18E-4	5.33E-6	7.75E-6	4.19E-6	1.45E-6	6.33E-4	1.40E-3	6.67E-4	1.07E-2	2.49E-5	3.18E-5	1.83E-4	2.69E-4	1.04E-8	1.09E-8	2.63E-7	7.96E-9
587	615743	4201672	4.82E-5	7.00E-5	3.79E-5	9.54E-5	4.38E-6	6.36E-6	3.44E-6	1.51E-6	6.58E-4	1.45E-3	6.83E-4	2.90E-2	2.58E-5	3.28E-5	4.88E-4	7.33E-4	1.08E-8	1.27E-8	2.84E-7	8.25E-9
588	614843	4201692	5.71E-5	8.31E-5	4.50E-5	9.28E-5	4.17E-6	6.06E-6	3.28E-6	4.38E-7	2.91E-4	3.60E-4	1.72E-4	3.23E-4	6.29E-6	8.12E-6	5.60E-6	8.16E-6	1.63E-9	2.13E-9	1.87E-9	3.67E-9
589	614863	4201692	5.95E-5	8.64E-5	4.68E-5	9.60E-5	4.31E-6	6.27E-6	3.39E-6	4.62E-7	2.99E-4	3.71E-4	1.77E-4	3.35E-4	6.48E-6	8.34E-6	5.81E-6	8.47E-6	1.68E-9	2.20E-9	1.93E-9	3.77E-9
590	614883	4201692	6.16E-5	8.95E-5	4.85E-5	9.87E-5	4.44E-6	6.45E-6	3.49E-6	4.86E-7	3.07E-4	3.82E-4	1.82E-4	3.48E-4	6.68E-6	8.57E-6	6.03E-6	8.79E-6	1.74E-9	2.28E-9	2.00E-9	3.88E-9
591	614903	4201692	6.36E-5	9.24E-5	5.00E-5	1.01E-4	4.54E-6	6.60E-6	3.57E-6	5.09E-7	3.16E-4	3.94E-4	1.87E-4	3.61E-4	6.89E-6	8.81E-6	6.27E-6	9.13E-6	1.80E-9	2.35E-9	2.06E-9	3.99E-9
592	614923	4201692	6.58E-5	9.57E-5	5.18E-5	1.03E-4	4.65E-6	6.76E-6	3.66E-6	5.30E-7	3.25E-4	4.06E-4	1.92E-4	3.76E-4	7.11E-6	9.06E-6	6.52E-6	9.50E-6	1.86E-9	2.43E-9	2.13E-9	4.12E-9
593	614943	4201692	6.80E-5	9.89E-5	5.36E-5	1.05E-4	4.74E-6	6.88E-6	3.73E-6	5.50E-7	3.34E-4	4.19E-4	1.98E-4	3.91E-4	7.34E-6	9.33E-6	6.79E-6	9.89E-6	1.93E-9	2.49E-9	2.20E-9	4.24E-9
594	614963	4201692	7.02E-5	1.02E-4	5.52E-5	1.06E-4	4.80E-6	6.97E-6	3.77E-6	5.71E-7	3.44E-4	4.32E-4	2.03E-4	4.08E-4	7.57E-6	9.59E-6	7.07E-6	1.03E-5	1.99E-9	2.57E-9	2.28E-9	4.38E-9
595	614983	4201692	7.29E-5	1.06E-4	5.74E-5	1.08E-4	4.88E-6	7.09E-6	3.84E-6	5.96E-7	3.57E-4	4.46E-4	2.10E-4	4.26E-4	7.82E-6	9.88E-6	7.39E-6	1.08E-5	2.07E-9	2.67E-9	2.37E-9	4.53E-9
596	615003	4201692	7.62E-5	1.11E-4	6.00E-5	1.10E-4	4.96E-6	7.21E-6	3.91E-6	6.25E-7	3.70E-4	4.60E-4	2.16E-4	4.45E-4	8.08E-6	1.02E-5	7.73E-6	1.13E-5	2.15E-9	2.78E-9	2.46E-9	4.69E-9
597	615023	4201692	8.04E-5	1.17E-4	6.33E-5	1.12E-4	5.06E-6	7.36E-6	3.98E-6	6.62E-7	3.86E-4	4.76E-4	2.23E-4	4.67E-4	8.36E-6	1.05E-5	8.10E-6	1.18E-5	2.24E-9	2.90E-9	2.56E-9	4.87E-9
598	615043	4201692	8.49E-5	1.23E-4	6.68E-5	1.13E-4	5.12E-6	7.45E-6	4.03E-6	7.02E-7	4.03E-4	4.93E-4	2.31E-4	4.90E-4	8.65E-6	1.09E-5	8.50E-6	1.24E-5	2.33E-9	3.05E-9	2.66E-9	5.04E-9
599	615103	4201692	1.08E-4	1.57E-4	8.50E-5	1.17E-4	5.28E-6	7.67E-6	4.15E-6	8.14E-7	4.48E-4	5.48E-4	2.55E-4	5.71E-4	9.61E-6	1.20E-5	9.90E-6	1.44E-5	2.67E-9	3.48E-9	3.01E-9	5.53E-9
600	615143	4201692	1.47E-4	2.14E-4	1.16E-4	1.19E-4	5.36E-6	7.79E-6	4.22E-6	8.42E-7	4.64E-4	5.89E-4	2.74E-4	6.38E-4	1.03E-5	1.29E-5	1.11E-5	1.61E-5	2.94E-9	3.80E-9	3.29E-9	5.77E-9
601	615163	4201692	1.92E-4	2.79E-4	1.51E-4	1.19E-4	5.40E-6	7.85E-6	4.25E-6	8.40E-7	4.69E-4	6.11E-4	2.83E-4	6.77E-4	1.07E-5	1.33E-5	1.17E-5	1.71E-5	3.09E-9	3.97E-9	3.45E-9	5.87E-9
602	615183	4201692	2.96E-4	4.30E-4	2.33E-4	1.20E-4	5.43E-6	7.90E-6	4.28E-6	8.31E-7	4.73E-4	6.34E-4	2.94E-4	7.20E-4	1.11E-5	1.38E-5	1.25E-5	1.82E-5	3.25E-9	4.14E-9	3.63E-9	5.96E-9
603	615223	4201692	7.37E-4	1.07E-3	5.80E-4	1.21E-4	5.50E-6	7.99E-6	4.33E-6	8.09E-7	4.84E-4	6.84E-4	3.15E-4	8.22E-4	1.21E-5	1.48E-5	1.43E-5	2.08E-5	3.62E-9	4.49E-9	4.02E-9	6.14E-9
604	615243	4201692	4.26E-4	6.19E-4	3.35E-4	1.22E-4	5.52E-6	8.03E-6	4.35E-6	8.01E-7	4.93E-4	7.12E-4	3.27E-4	8.83E-4	1.26E-5	1.54E-5	1.53E-5	2.23E-5	3.83E-9	4.68E-9	4.25E-9	6.25E-9
605	615263	4201692	2.96E-4	4.30E-4	2.33E-4	1.23E-4	5.55E-6	8.07E-6	4.37E-6	7.94E-7	5.04E-4	7.42E-4	3.40E-4	9.53E-4	1.31E-5	1.60E-5	1.65E-5	2.41E-5	4.07E-9	4.88E-9	4.49E-9	6.36E-9
606	615283	4201692	2.26E-4	3.29E-4	1.78E-4	1.23E-4	5.57E-6	8.10E-6	4.39E-6	7.88E-7	5.15E-4	7.75E-4	3.53E-4	1.03E-3	1.37E-5	1.66E-5	1.79E-5	2.61E-5	4.34E-9	5.09E-9	4.77E-9	6.48E-9
607	615303	4201692	1.84E-4	2.67E-4	1.45E-4	1.23E-4	5.59E-6	8.13E-6	4.40E-6	7.82E-7	5.25E-4	8.12E-4	3.67E-4	1.13E-3	1.43E-5	1.72E-5	1.95E-5	2.85E-5	4.65E-9	5.31E-9	5.08E-9	6.59E-9
608	614863	4201712	5.25E-5	7.63E-5	4.13E-5	8.19E-5	3.69E-6	5.37E-6	2.91E-6	4.60E-7	3.06E-4	3.74E-4	1.79E-4	3.36E-4	6.55E-6	8.44E-6	5.82E-6	8.49E-6	1.67E-9	2.20E-9	1.87E-9	3.86E-9
609	614883	4201712	5.45E-5	7.93E-5	4.29E-5	8.43E-5	3.80E-6	5.53E-6	2.99E-6	4.86E-7	3.15E-4	3.86E-4	1.84E-4	3.49E-4	6.76E-6	8.68E-6	6.05E-6	8.82E-6	1.73E-9	2.28E-9	1.93E-9	3.97E-9
610	614903	4201712	5.64E-5	8.20E-5	4.44E-5	8.62E-5	3.89E-6	5.66E-6	3.06E-6	5.12E-7	3.24E-4	3.99E-4	1.89E-4	3.62E-4	6.97E-6	8.92E-6	6.28E-6	9.16E-6	1.79E-9	2.35E-9	1.99E-9	4.09E-9
611	614923	4201712	5.85E-5	8.50E-5	4.60E-5	8.80E-5	3.97E-6	5.78E-6	3.13E-6	5.37E-7	3.33E-4	4.12E-4	1.95E-4	3.77E-4	7.20E-6	9.18E-6	6.54E-6	9.53E-6	1.86E-9	2.41E-9	2.05E-9	4.22E-9
612	614943	4201712	6.07E-5	8.82E-5	4.78E-5	8.97E-5	4.05E-6	5.89E-6	3.19E-6	5.60E-7	3.43E-4	4.25E-4	2.01E-4	3.93E-4	7.44E-6	9.45E-6	6.81E-6	9.93E-6	1.92E-9	2.49E-9	2.12E-9	4.35E-9
613	614963	4201712	6.32E-5	9.19E-5	4.97E-5	9.14E-5	4.13E-6	6.00E-6	3.25E-6	5.83E-7	3.54E-4	4.39E-4	2.07E-4	4.09E-4	7.69E-6	9.74E-6	7.10E-6	1.04E-5	2.00E-9	2.58E-9	2.19E-9	4.49E-9
614	614983	4201712	6.60E-5	9.59E-5	5.19E-5	9.29E-5	4.20E-6	6.11E-6	3.31E-6	6.08E-7	3.66E-4	4.54E-4	2.13E-4	4.28E-4	7.95E-6	1.00E-5	7.42E-6	1.08E-5	2.07E-9	2.67E-9	2.27E-9	4.65E-9
615	615003	4201712	6.93E-5	1.01E-4	5.45E-5	9.43E-5	4.27E-6	6.21E-6	3.36E-6	6.36E-7	3.80E-4	4.69E-4	2.20E-4	4.47E-4	8.22E-6	1.04E-5	7.76E-6	1.13E-5	2.15E-9	2.78E-9	2.35E-9	4.82E-9
616	615023	4201712	7.33E-5	1.07E-4	5.77E-5	9.58E-5	4.34E-6	6.31E-6	3.41E-6	6.70E-7	3.96E-4	4.85E-4	2.27E-4	4.69E-4	8.51E-6	1.07E-5	8.13E-6	1.19E-5	2.24E-9	2.90E-9	2.44E-9	5.00E-9
617	615043	4201712	7.80E-5	1.13E-4	6.14E-5	9.69E-5	4.39E-6	6.38E-6	3.46E-6	7.09E-7	4.13E-4	5.02E-4	2.35E-4	4.92E-4	8.82E-6	1.11E-5	8.53E-6	1.24E-5	2.34E-9	3.05E-9	2.53E-9	5.19E-9
618	615103	4201712	1.03E-4	1.49E-4	8.08E-5	9.97E-5	4.52E-6	6.57E-6	3.56E-6	8.37E-7	4.64E-4	5.60E-4	2.60E-4	5.73E-4	9.83E-6	1.22E-5	9.93E-6	1.45E-5	2.68E-9	3.49E-9	2.85E-9	5.74E-9
619	615283	4201712	2.26E-4	3.28E-4	1.78E-4	1.05E-4	4.76E-6	6.91E-6	3.74E-6	8.35E-7	5.40E-4	8.02E-4	3.63E-4	1.03E-3	1.41E-5	1.71E-5	1.79E-5	2.60E-5	4.39E-9	5.17E-9	4.41E-9	6.80E-9
620	615303	4201712	1.84E-4	2.67E-4	1.45E-4	1.05E-4	4.77E-6	6.93E-6	3.75E-6	8.29E-7	5.51E-4	8.40E-4	3.78E-4	1.12E-3	1.48E-5	1.78E-5	1.94E-5	2.83E-5	4.70E-9	5.41E-9	4.69E-9	6.93E-9
621	615343	4201712	1.36E-4	1.97E-4	1.07E-4	1.05E-4	4.79E-6	6.96E-6	3.77E-6	8.30E-7	5.65E-4	9.29E-4	4.11E-4	1.35E-3	1.63E-5	1.93E-5	2.33E-5	3.40E-5	5.43E-9	5.92E-9	5.37E-9	7.11E-9
622	615383	4201712	1.09E-4	1.59E-4	8.61E-5	1.05E-4	4.79E-6	6.96E-6	3.77E-6	8.90E-7	5.69E-4	1.03E-3	4.46E-4	1.66E-3	1.80E-5	2.10E-5	2.87E-5	4.19E-5	6.26E-9	6.47E-9	6.28E-9	7.22E-9
623	615423	4201712	9.35E-5	1.36E-4	7.36E-5	1.05E-4	4.78E-6	6.95E-6	3.76E-6	1.04E-6	5.73E-4	1.14E-3	4.85E-4	2.08E-3	1.98E-5	2.28E-5	3.59E-5	5.27E-5	7.10E-9	7.06E-9	7.57E-9	7.31E-9

624	615463	4201712	8.28E-5	1.20E-4	6.52E-5	1.04E-4	4.75E-6	6.90E-6	3.74E-6	1.19E-6	5.80E-4	1.25E-3	5.29E-4	2.59E-3	2.17E-5	2.49E-5	4.47E-5	6.56E-5	7.83E-9	7.76E-9	9.55E-9	7.42E-9
625	615503	4201712	7.52E-5	1.09E-4	5.91E-5	1.03E-4	4.69E-6	6.82E-6	3.69E-6	1.25E-6	5.90E-4	1.36E-3	5.81E-4	3.14E-3	2.36E-5	2.73E-5	5.41E-5	7.94E-5	8.36E-9	8.57E-9	1.29E-8	7.57E-9
626	615543	4201712	6.94E-5	1.01E-4	5.46E-5	1.01E-4	4.60E-6	6.68E-6	3.62E-6	1.26E-6	6.06E-4	1.45E-3	6.40E-4	3.72E-3	2.53E-5	2.99E-5	6.41E-5	9.40E-5	8.52E-9	9.47E-9	1.88E-8	7.78E-9
627	615583	4201712	6.49E-5	9.44E-5	5.11E-5	9.81E-5	4.46E-6	6.48E-6	3.51E-6	1.32E-6	6.34E-4	1.52E-3	7.02E-4	4.34E-3	2.67E-5	3.27E-5	7.48E-5	1.10E-4	8.46E-9	1.03E-8	2.99E-8	8.09E-9
628	615623	4201712	6.13E-5	8.91E-5	4.83E-5	9.33E-5	4.24E-6	6.16E-6	3.34E-6	1.46E-6	6.68E-4	1.58E-3	7.46E-4	5.12E-3	2.78E-5	3.50E-5	8.83E-5	1.30E-4	8.82E-9	1.08E-8	5.10E-8	8.43E-9
629	615663	4201712	5.84E-5	8.49E-5	4.60E-5	8.63E-5	3.93E-6	5.72E-6	3.10E-6	1.58E-6	6.94E-4	1.62E-3	7.80E-4	6.45E-3	2.88E-5	3.69E-5	1.11E-4	1.63E-4	1.04E-8	1.12E-8	8.87E-8	8.72E-9
630	615703	4201712	5.61E-5	8.15E-5	4.41E-5	7.66E-5	3.51E-6	5.11E-6	2.76E-6	1.65E-6	7.17E-4	1.66E-3	8.06E-4	9.59E-3	2.97E-5	3.84E-5	1.65E-4	2.43E-4	1.22E-8	1.27E-8	1.14E-7	9.01E-9
631	615743	4201712	5.42E-5	7.88E-5	4.27E-5	6.57E-5	3.03E-6	4.40E-6	2.38E-6	1.71E-6	7.53E-4	1.73E-3	8.29E-4	2.52E-2	3.10E-5	3.98E-5	4.26E-4	6.37E-4	1.30E-8	1.52E-8	1.01E-7	9.37E-9
632	614883	4201732	4.92E-5	7.15E-5	3.87E-5	7.33E-5	3.32E-6	4.82E-6	2.61E-6	4.84E-7	3.22E-4	3.90E-4	1.86E-4	3.50E-4	6.82E-6	8.78E-6	6.06E-6	8.84E-6	1.71E-9	2.27E-9	1.84E-9	4.07E-9
633	614923	4201732	5.30E-5	7.71E-5	4.17E-5	7.65E-5	3.46E-6	5.04E-6	2.73E-6	5.40E-7	3.42E-4	4.17E-4	1.97E-4	3.78E-4	7.28E-6	9.30E-6	6.55E-6	9.55E-6	1.84E-9	2.41E-9	1.95E-9	4.32E-9
634	614943	4201732	5.52E-5	8.03E-5	4.35E-5	7.80E-5	3.53E-6	5.14E-6	2.78E-6	5.67E-7	3.53E-4	4.31E-4	2.03E-4	3.94E-4	7.53E-6	9.57E-6	6.82E-6	9.95E-6	1.91E-9	2.49E-9	2.01E-9	4.46E-9
635	614963	4201732	5.79E-5	8.42E-5	4.56E-5	7.98E-5	3.61E-6	5.25E-6	2.84E-6	5.94E-7	3.64E-4	4.46E-4	2.10E-4	4.11E-4	7.80E-6	9.88E-6	7.12E-6	1.04E-5	1.99E-9	2.59E-9	2.08E-9	4.62E-9
636	614983	4201732	6.08E-5	8.83E-5	4.78E-5	8.11E-5	3.68E-6	5.34E-6	2.89E-6	6.20E-7	3.77E-4	4.61E-4	2.16E-4	4.29E-4	8.07E-6	1.02E-5	7.44E-6	1.09E-5	2.07E-9	2.71E-9	2.15E-9	4.78E-9
637	615003	4201732	6.41E-5	9.31E-5	5.04E-5	8.23E-5	3.73E-6	5.42E-6	2.94E-6	6.48E-7	3.90E-4	4.77E-4	2.23E-4	4.49E-4	8.36E-6	1.05E-5	7.78E-6	1.13E-5	2.15E-9	2.81E-9	2.22E-9	4.95E-9
638	615023	4201732	6.80E-5	9.89E-5	5.35E-5	8.33E-5	3.78E-6	5.50E-6	2.98E-6	6.81E-7	4.06E-4	4.94E-4	2.30E-4	4.70E-4	8.66E-6	1.09E-5	8.15E-6	1.19E-5	2.24E-9	2.93E-9	2.30E-9	5.14E-9
639	615043	4201732	7.30E-5	1.06E-4	5.74E-5	8.43E-5	3.83E-6	5.56E-6	3.01E-6	7.19E-7	4.23E-4	5.12E-4	2.38E-4	4.93E-4	8.98E-6	1.12E-5	8.54E-6	1.25E-5	2.34E-9	3.05E-9	2.38E-9	5.33E-9
640	615903	4201732	4.79E-5	6.96E-5	3.77E-5	2.96E-5	1.40E-6	2.04E-6	1.10E-6	1.68E-6	7.35E-4	2.39E-3	1.17E-3	6.60E-3	4.13E-5	5.48E-5	1.14E-4	1.67E-4	1.91E-8	2.24E-8	1.84E-8	9.37E-9
641	615923	4201732	4.65E-5	6.75E-5	3.66E-5	2.77E-5	1.31E-6	1.91E-6	1.03E-6	1.68E-6	7.16E-4	2.37E-3	1.16E-3	5.73E-3	4.13E-5	5.50E-5	9.92E-5	1.45E-4	1.92E-8	2.26E-8	1.71E-8	9.18E-9
642	614883	4201752	4.50E-5	6.54E-5	3.54E-5	6.46E-5	2.93E-6	4.26E-6	2.31E-6	4.80E-7	3.29E-4	3.93E-4	1.88E-4	3.50E-4	6.88E-6	8.88E-6	6.06E-6	8.85E-6	1.69E-9	2.27E-9	1.74E-9	4.16E-9
643	614903	4201752	4.71E-5	6.84E-5	3.70E-5	6.64E-5	3.01E-6	4.38E-6	2.37E-6	5.10E-7	3.41E-4	4.07E-4	1.94E-4	3.64E-4	7.12E-6	9.15E-6	6.31E-6	9.22E-6	1.76E-9	2.36E-9	1.79E-9	4.30E-9
644	614923	4201752	4.90E-5	7.13E-5	3.86E-5	6.77E-5	3.07E-6	4.47E-6	2.42E-6	5.41E-7	3.51E-4	4.21E-4	2.00E-4	3.79E-4	7.37E-6	9.42E-6	6.57E-6	9.58E-6	1.83E-9	2.44E-9	1.84E-9	4.44E-9
645	614943	4201752	5.12E-5	7.44E-5	4.03E-5	6.90E-5	3.13E-6	4.56E-6	2.47E-6	5.72E-7	3.63E-4	4.36E-4	2.06E-4	3.95E-4	7.62E-6	9.71E-6	6.84E-6	9.98E-6	1.90E-9	2.50E-9	1.89E-9	4.58E-9
646	614963	4201752	5.37E-5	7.81E-5	4.23E-5	7.04E-5	3.20E-6	4.64E-6	2.51E-6	6.02E-7	3.75E-4	4.52E-4	2.12E-4	4.12E-4	7.90E-6	1.00E-5	7.13E-6	1.04E-5	1.98E-9	2.62E-9	1.95E-9	4.74E-9
647	614983	4201752	5.66E-5	8.22E-5	4.45E-5	7.15E-5	3.25E-6	4.72E-6	2.56E-6	6.31E-7	3.87E-4	4.68E-4	2.19E-4	4.30E-4	8.18E-6	1.03E-5	7.45E-6	1.09E-5	2.06E-9	2.71E-9	2.01E-9	4.91E-9
648	615003	4201752	5.99E-5	8.71E-5	4.72E-5	7.26E-5	3.30E-6	4.79E-6	2.60E-6	6.61E-7	4.01E-4	4.84E-4	2.26E-4	4.50E-4	8.48E-6	1.07E-5	7.79E-6	1.14E-5	2.15E-9	2.82E-9	2.08E-9	5.09E-9
649	615023	4201752	6.40E-5	9.30E-5	5.03E-5	7.35E-5	3.34E-6	4.86E-6	2.63E-6	6.93E-7	4.16E-4	5.02E-4	2.34E-4	4.71E-4	8.80E-6	1.10E-5	8.16E-6	1.19E-5	2.24E-9	2.93E-9	2.15E-9	5.28E-9
650	615043	4201752	6.90E-5	1.00E-4	5.43E-5	7.44E-5	3.38E-6	4.92E-6	2.66E-6	7.30E-7	4.34E-4	5.21E-4	2.42E-4	4.93E-4	9.13E-6	1.14E-5	8.55E-6	1.25E-5	2.33E-9	3.05E-9	2.22E-9	5.49E-9
651	615163	4201752	1.91E-4	2.77E-4	1.50E-4	7.80E-5	3.56E-6	5.17E-6	2.80E-6	9.85E-7	5.43E-4	6.59E-4	3.02E-4	6.78E-4	1.16E-5	1.42E-5	1.18E-5	1.72E-5	3.14E-9	4.03E-9	2.79E-9	6.74E-9
652	615343	4201752	1.38E-4	2.01E-4	1.09E-4	7.99E-5	3.65E-6	5.31E-6	2.87E-6	9.34E-7	6.31E-4	1.00E-3	4.39E-4	1.31E-3	1.76E-5	2.06E-5	2.26E-5	3.30E-5	5.58E-9	6.15E-9	4.84E-9	7.94E-9
653	615383	4201752	1.13E-4	1.65E-4	8.93E-5	7.97E-5	3.64E-6	5.29E-6	2.86E-6	9.89E-7	6.39E-4	1.12E-3	4.82E-4	1.57E-3	1.96E-5	2.26E-5	2.72E-5	3.98E-5	6.53E-9	6.80E-9	5.89E-9	8.10E-9
654	615423	4201752	9.85E-5	1.43E-4	7.76E-5	7.92E-5	3.62E-6	5.26E-6	2.85E-6	1.15E-6	6.43E-4	1.25E-3	5.30E-4	1.90E-3	2.19E-5	2.49E-5	3.28E-5	4.81E-5	7.60E-9	7.51E-9	7.49E-9	8.21E-9
655	615463	4201752	8.88E-5	1.29E-4	6.99E-5	7.83E-5	3.57E-6	5.20E-6	2.81E-6	1.33E-6	6.52E-4	1.40E-3	5.84E-4	2.27E-3	2.43E-5	2.75E-5	3.91E-5	5.74E-5	8.68E-9	8.32E-9	1.00E-8	8.35E-9
656	615503	4201752	8.22E-5	1.20E-4	6.47E-5	7.68E-5	3.51E-6	5.10E-6	2.76E-6	1.41E-6	6.65E-4	1.55E-3	6.46E-4	2.68E-3	2.69E-5	3.04E-5	4.63E-5	6.79E-5	9.62E-9	9.30E-9	1.41E-8	8.53E-9
657	615543	4201752	7.74E-5	1.12E-4	6.09E-5	7.48E-5	3.42E-6	4.97E-6	2.69E-6	1.43E-6	6.85E-4	1.70E-3	7.23E-4	3.17E-3	2.95E-5	3.39E-5	5.46E-5	8.00E-5	1.02E-8	1.05E-8	2.04E-8	8.80E-9
658	615583	4201752	7.34E-5	1.07E-4	5.78E-5	7.19E-5	3.29E-6	4.78E-6	2.59E-6	1.52E-6	7.22E-4	1.82E-3	8.12E-4	3.76E-3	3.17E-5	3.80E-5	6.49E-5	9.50E-5	1.04E-8	1.19E-8	3.03E-8	9.19E-9
659	615623	4201752	7.01E-5	1.02E-4	5.52E-5	6.78E-5	3.11E-6	4.51E-6	2.44E-6	1.68E-6	7.61E-4	1.90E-3	9.03E-4	4.60E-3	3.34E-5	4.21E-5	7.94E-5	1.16E-4	1.07E-8	1.32E-8	4.57E-8	9.59E-9
660	615663	4201752	6.71E-5	9.76E-5	5.28E-5	6.23E-5	2.87E-6	4.17E-6	2.26E-6	1.81E-6	7.90E-4	1.96E-3	9.58E-4	6.08E-3	3.48E-5	4.53E-5	1.05E-4	1.54E-4	1.23E-8	1.37E-8	5.92E-8	9.93E-9
661	615703	4201752	6.48E-5	9.43E-5	5.10E-5	5.63E-5	2.60E-6	3.78E-6	2.05E-6	1.89E-6	8.23E-4	2.03E-3	1.01E-3	9.64E-3	3.62E-5	4.80E-5	1.66E-4	2.44E-4	1.47E-8	1.53E-8	5.91E-8	1.03E-8
662	615743	4201752	6.29E-5	9.15E-5	4.95E-5	4.99E-5	2.31E-6	3.36E-6	1.82E-6	1.95E-6	8.68E-4	2.14E-3	1.05E-3	2.67E-2	3.82E-5	5.03E-5	4.51E-4	6.74E-4	1.61E-8	1.88E-8	5.24E-8	1.07E-8
663	615903	4201752	5.11E-5	7.43E-5	4.02E-5	2.78E-5	1.31E-6	1.91E-6	1.03E-6	1.80E-6	7.69E-4	2.65E-3	1.33E-3	6.50E-3	4.62E-5	6.28E-5	1.13E-4	1.64E-4	2.15E-8	2.57E-8	1.49E-8	9.86E-9
664	615923	4201752	4.93E-5	7.17E-5	3.88E-5	2.60E-5	1.23E-6	1.79E-6	9.67E-7	1.80E-6	7.49E-4	2.62E-3	1.32E-3	5.64E-3	4.59E-5	6.27E-5	9.77E-5	1.43E-4	2.16E-8	2.58E-8	1.39E-8	9.66E-9
665	614903	4201772	4.36E-5	6.34E-5	3.43E-5	5.91E-5	2.69E-6	3.91E-6	2.12E-6	5.06E-7	3.48E-4	4.10E-4	1.96E-4	3.64E-4	7.18E-6	9.25E-6	6.31E-6	9.22E-6	1.73E-9	2.36E-9	1.68E-9	4.40E-9
666	614923	4201772	4.57E-5	6.64E-5	3.59E-5	6.05E-5	2.75E-6	4.00E-6	2.17E-6	5.39E-7	3.60E-4	4.25E-4	2.02E-4	3.80E-4	7.44E-6	9.54E-6	6.57E-6	9.60E-6	1.81E-9	2.44E-9	1.73E-9	4.55E-9
667	614943	4201772	4.79E-5	6.97E-5	3.77E-5	6.18E-5	2.81E-6	4.08E-6	2.21E-6	5.73E-7	3.73E-4	4.41E-4	2.09E-4	3.95E-4	7.71E-6	9.84E-6	6.85E-6	1.00E-5	1.89E-9	2.53E-9	1.78E-9	4.71E-9
668	614963	4201772	5.05E-5	7.33E-5	3.97E-5	6.29E-5	2.86E-6	4.16E-6	2.25E-6	6.07E-7	3.86E-4	4.57E-4	2.15E-4	4.13E-4	7.99E-6	1.02E-5	7.15E-6	1.04E-5	1.97E-9	2.63E-9	1.83E-9	4.88E-9
669	614983	4201772	5.33E-5	7.74E-5	4.19E-5	6.38E-5	2.90E-6	4.22E-6	2.29E-6	6.40E-7	3.99E-4	4.74E-4	2.22E-4	4.30E-4	8.29E-6	1.05E-5	7.46E-6	1.09E-5	2.05E-9	2.72E-9	1.88E-9	5.05E-9
670	615003	4201772	5.66E-5	8.23E-5	4.46E-5	6.47E-5	2.95E-6	4.28E-6	2.32E-6	6.73E-7	4.13E-4	4.91E-4	2.30E-4	4.50E-4	8.60E-6	1.08E-5	7.80E-6	1.14E-5	2.13E-9	2.83E-9	1.94E-9	5.23E-9
671	615023	4201772	6.08E-5	8.83E-5	4.78E-5	6.56E-5	2.99E-6	4.34E-6	2.35E-6	7.07E-7	4.28E-4	5.10E-4	2.37E-4	4.71E-4	8.93E-6	1.12E-5	8.16E-6	1.19E-5	2.23E-9	2.94E-9	2.00E-9	5.43E-9
672	615043	4201772	6.59E-5	9.59E-5	5.19E-5	6.63E-5	3.02E-6	4.39E-6	2.38E-6	7.43E-7	4.46E-4	5.29E-4	2.46E-4	4.93E-4	9.28E-6	1.16E-5	8.56E-6	1.25E-5	2.33E-9	3.06E-9	2.07E-9	5.65E-9
673	615163	4201772	1.92E-4	2.79E-4	1.51E-4	6.96E-5	3.18E-6	4.62E-6	2.50E-6	1.03E-6	5.70E-4	6.74E-4	3.07E-4	6.78E-4	1.18E-5	1.45E-5	1.18E-5	1.71E-5	3.14E-9	4.04E-9	2.62E-9	7.05E-9
674	615223	4201772	6.81E-4	9.90E-4	5.36E-4	7.05E-5	3.22E-6	4.68E-6	2.53E-6	1.05E-6	5.98E-4	7.72E-4	3.47E-4	8.18E-4	1.36E-5	1.63E-5	1.42E-5	2.07E-5	3.76E-9	4.67E-9	3.06E-9	7.52E-9
675	615243	4201772	4.07E-4	5.92E-4	3.20E-4	7.07E-5	3.23E-6	4.70E-6	2.54E-6	1.04E-6	6.06E-4	8.09E-4	3.62E-4	8.75E-4	1.42E-5	1.70E-5	1.52E-5	2.21E-5	4.00E-9	4.89E-9	3.25E-9	7.66E-9
676	615263	4201772	2.89E-4	4.20E-4	2.27E-4	7.08E-5	3.24E-6	4.71E-6	2.55E-6	1.02E-6	6.16E-4	8.48E-4	3.77E-4	9.39E-4	1.49E-5	1.78E-5	1.63E-5	2.37E-5	4.27E-9	5.12E-9	3.47E-9	7.81E-9
677	615283	4201772	2.25E-4	3.26E-4	1.77E-4	7.09E-5	3.24E-6	4.72E-6	2.55E-6	1.01E-6	6.30E-4	8.91E-4	3.94E-4	1.01E-3	1.57E-5	1.86E-5	1.75E-5	2.55E-5	4.56E-9	5.37E-9	3.73E-9	7.96E-9
678	615303	4201772	1.85E-4	2.69E-4	1.46E-4	7.10E-5	3.25E-6	4.72E-6	2.56E-6	1.00E-6	6.44E-4	9.37E-4	4.12E-4	1.09E-3	1.65E-5	1.94E-5	1.89E-5	2.76E-5	4.89E-9	5.65E-9	4.04E-9	8.12E-9
679	615903	4201772	5.46E-5	7.94E-5	4.30E-5	2.61E-5	1.23E-6	1.79E-6	9.68E-7	1.94E-6	8.07E-4	2.96E-3	1.53E-3	6.39E-3	5.18E-5	7.30E-5	1.11E-4	1.62E-4	2.44E-8	3.00E-8	1.25E-8	1.04E-8
680	615923	4201772	5.27E-5	7.65E-5	4.14E-5	2.45E-5	1.16E-6	1.68E-6	9.11E-7	1.96E-6	7.88E-4	2.92E-3	1.54E-3	5.59E-3	5.16E-5	7.31E-5	9.67E-5	1.41E-4	2.47E-8	3.02E-8	1.16E-8	1.02E-8
681	614923	4201792	4.28E-5	6.23E-5	3.37E-5	5.45E-5	2.48E-6	3.61E-6	1.95E-6	5.35E-7	3.69E-4	4.28E-4	2.05E-4	3.79E-4	7.50E-6	9.65E-6	6.57E-6	9.59E-6	1.78E-9	2.45E-9	1.62E-9	4.67E-9
682	614943	4201792	4.52E-5	6.57E-5	3.56E-5	5.57E-5	2.53E-6	3.68E-6	1.99E-6	5.70E-7	3.83E-4	4.45E-4	2.11E-4	3.96E-4	7.78E-6	9.97E-6	6.85E-6	1.00E-5	1.86E-9	2.54E-9	1.67E-9	4.84E-9
683	614963	4201792	4.77E-5	6.94E-5	3.76E-5	5.67E-5	2.58E-6	3.75E-6	2.03E-6	6.07E-7	3.97E-4	4.62E-4	2.18E-4	4.13E-4	8.08E-6	1.03E-5	7.15E-6	1.04E-5	1.95E-9	2.64E-9	1.72E-9	5.02E-9
684	614983	4201792	5.06E-5	7.35E-5	3.98E-5	5.75E-5	2.62E-6	3.81E-6	2.06E-6	6.45E-7	4.11E-4	4.79E-4	2.25E-4	4.30E-4	8.38E-6	1.06E-5	7.46E-6	1.09E-5	2.03E-9	2.74E-9	1.77E-9	5.19E-9
685	615003	4201792	5.39E-5	7.84E-5	4.24E-5	5.83E-5	2.66E-6	3.86E-6	2.09E-6	6.82E-7	4.25E-4	4.98E-4	2.33E-4	4.49E-4	8.70E-6	1.10E-5	7.79E-6	1.14E-5	2.12E-9	2.84E-9	1.82E-9	5.38E-9
686	615023	4201792	5.81E-5	8.45E-5	4.57E-5	5.90E-5	2.69E-6	3.91E-6	2.12E-6	7.19E-7	4.41E-4	5.17E-4	2.41E-4	4.70E-4	9.05E-6	1.14E-5	8.16E-6	1.19E-5	2.21E-9	2.95E-9	1.88E-9	5.59E-9
687	615043	4201792	6.34E-5	9.22E-5	4.99E-5	5.97E-5	2.72E-6	3.96E-6	2.14E-6	7.58E-7	4.59E-4	5.38E-4	2.49E-4	4.93E-4	9.41E-6	1.18E-5	8.55E-6	1.25E-5	2.31E-9	3.07E-9	1.95E-9	5.82E-9
688	615163	4201792	1.93E-4	2.80E-4	1.52E-4	6.26E-5	2.86E-6	4.16E-6	2.25E-6	1.07E-6	5.96E-4	6.89E-4	3.13E-4	6.77E-4	1.21E-5	1.48E-5	1.18E-5	1.71E-5	3.12E-9	4.06E-9	2.50E-9	7.38E-9
689	615223	4201792	6.69E-4	9.73E-4	5.27E-4	6.34E-5	2.90E-6	4.21E-6	2.28E-6	1.12E-6	6.34E-4	7.92E-4	3.55E-4	8.15E-4	1.39E-5	1.67E-5	1.41E-5	2.06E-5	3.76E-9	4.70E-9	2.98E-9	7.95E-9
690	615243	4201792	4.03E-4	5.86E-4	3.17E-4	6.35E-5	2.91E-6	4.23E-6	2.29E-6	1.11E-6	6.43E-4	8.31E-4	3.70E-4	8.71E-4	1.46E-5	1.74E-5	1.51E-5	2.20E-5	4.01E-9	4.93E-9	3.19E-9	8.10E-9
691	615263	4201792	2.87E-4	4.18E-4	2.26E-4	6.37E-5	2.91E-6	4.23E-6	2.29E-6	1.10E-6	6.53E-4	8.74E-4	3.87E-4	9.33E-4	1.54E-5	1.82E-5	1.62E-5	2.36E-5	4.29E-9	5.18E-9	3.43E-9	8.26E-9
692	615283	4201792	2.25E-4	3.27E-4	1.77E-4	6.37E-5	2.92E-6	4.24E-6	2.30E-6	1.08E-6	6.66E-4	9.20E-4	4.05E-4	1.00E-3	1.62E-5	1.90E-5	1.74E-5	2.53E-5	4.60E-9	5.44E-9	3.73E-9	8.43E-9
693	615303	4201792	1.86E-4	2.71E-4	1.47E-4	6.37E-5	2.92E-6	4.24E-6	2.30E-6	1.07E-6	6.82E-4	9.69E-4	4.24E-4	1.08E-3	1.70E-5	1.99E-5	1.88E-5	2.73E-5	4.94E-9	5.71E-9	4.07E-9	8.60E-9
694	615343	4201792	1.43E-4	2.08E-4	1.13E-4	6.36E-5	2.91E-6	4.23E-6	2.29E-6	1.06E-6	7.10E-4	1.08E-3	4.66E-4	1.27E-3	1.90E-5	2.19E-5	2.20E-5	3.21E-5	5.74E-9	6.34E-9	5.00E-9	8.93E-9
695	615383	4201792	1.20E-4	1.75E-4	9.47E-5	6.32E-5	2.90E-6	4.21E-6	2.28E-6	1.11E-6	7.23E-4	1.22E-3	5.17E-4	1.50E-3	2.14E-5	2.43E-5	2.59E-5	3.80E-5	6.77E-9	7.07E-9	6.34E-9	9.16E-9
696	615423	4201792	1.07E-4	1.56E-4	8.42E-5	6.26E-5	2.87E-6	4.17E-6	2.26E-6	1.28E-6	7.30E-4	1.38E-3	5.76E-4	1.77E-3	2.41E-5	2.70E-5	3.06E-5	4.48E-5	8.03E-9	7.91E-9	8.29E-9	9.31E-9
697	615463	4201792	9.91E-5	1.44E-4	7.80E-5	6.16E-5	2.82E-6	4.10E-6	2.22E-6	1.49E-6	7.40E-4	1.56E-3	6.44E-4	2.08E-3	2.73E-5	3.02E-5	3.60E-5	5.27E-5	9.46E-9	8.80E-9	1.10E-8	9.48E-9
698	615503	4201792	9.42E-5	1.37E-4	7.41E-5	6.02E-5	2.76E-6	4.01E-6	2.17E-6	1.60E-6	7.56E-4	1.77E-3	7.24E-4	2.45E-3	3.08E-5	3.40E-5	4.23E-5	6.20E-5	1.09E-8	9.93E-9	1.49E-8	9.71E-9
699	615543	4201792	9.07E-5	1.32E-4	7.14E-5	5.83E-5	2.67E-6	3.89E-6	2.10E-6	1.64E-6	7.84E-4	1.99E-3	8.20E-4	2.91E-3	3.46E-5	3.85E-5	5.03E-5	7.36E-5	1.22E-8	1.14E-8	2.03E-8	1.01E-8
700	615583	4201792	8.75E-5	1.27E-4	6.88E-5	5.57E-5	2.56E-6	3.72E-6	2.01E-6	1.76E-6	8.30E-4	2.20E-3	9.40E-4	3.52E-3	3.83E-5	4.41E-5	6.08E-5	8.91E-5	1.30E-8	1.33E-8	2.83E-8	1.05E-8
701	615623	4201792	8.42E-5	1.22E-4	6.63E-5	5.24E-5	2.41E-6	3.51E-6	1.90E-6	1.95E-6	8.75E-4	2.35E-3	1.09E-3	4.45E-3	4.12E-5	5.10E-5	7.68E-5	1.12E-4	1.34E-8	1.56E-8	3.65E-8	1.10E-8
702	615663	4201792	8.10E-5	1.18E-4	6.37E-5	4.84E-5	2.24E-6	3.26E-6	1.76E-6	2.10E-6	9.12E-4	2.45E-3	1.24E-3	6.18E-3	4.35E-5	5.80E-5	1.07E-4	1.56E-4	1.52E-8	1.79E-8	3.74E-8	1.15E-8
703	615703	4201792	7.83E-5	1.14E-4	6.16E-5	4.43E-5	2.06E-6	2.99E-6	1.62E-6	2.19E-6	9.59E-4	2.56E-3	1.33E-3	1.07E-2	4.56E-5	6.31E-5	1.85E-4	2.72E-4	1.83E-8	1.94E-8	3.65E-8	1.20E-8
704	615743	4201792	7.58E-5	1.10E-4	5.97E-5	4.01E-5	1.86E-6	2.71E-6	1.47E-6	2.23E-6	1.00E-3	2.73E-3	1.41E-3	3.76E-2	4.87E-5	6.75E-5	6.26E-4	9.50E-4	2.07E-8	2.44E-8	3.27E-8	1.24E-8
705	615883	4201792	6.11E-5	8.88E-5	4.81E-5	2.62E-5	1.23E-6	1.79E-6	9.67E-7	2.09E-6	8.72E-4	3.36E-3	1.81E-3	7.30E-3	5.89E-5	8.62E-5	1.26E-4	1.84E-4	2.78E-8	3.53E-8	1.19E-8	1.12E-8
706	615903	4201792	5.87E-5	8.53E-5	4.62E-5	2.46E-5	1.16E-6	1.68E-6	9.12E-7	2.11E-6	8.50E-4	3.33E-3	1.82E-3	6.30E-3	5.88E-5	8.65E-5	1.09E-4	1.59E-4	2.82E-8	3.58E-8	1.08E-8	1.10E-8
707	615923	4201792	5.63E-5	8.19E-5	4.43E-5	2.32E-5	1.10E-6	1.59E-6	8.62E-7	2.14E-6	8.34E-4	3.30E-3	1.82E-3	5.55E-3	5.88E-5	8.63E-5	9.59E-5	1.40E-4	2.87E-8	3.63E-8	9.99E-9	1.09E-8
708	614943	4201812	4.27E-5	6.21E-5	3.36E-5	5.05E-5	2.30E-6	3.35E-6	1.81E-6	5.66E-7	3.92E-4	4.48E-4	2.14E-4	3.95E-4	7.84E-6	1.01E-5	6.84E-6	9.99E-6	1.84E-9	2.55E-9	1.57E-9	4.97E-9
709	614963	4201812	4.53E-5	6.59E-5	3.57E-5	5.14E-5	2.34E-6	3.41E-6	1.84E-6	6.05E-7	4.07E-4	4.65E-4	2.21E-4	4.12E-4	8.15E-6	1.04E-5	7.14E-6	1.04E-5	1.92E-9	2.65E-9	1.62E-9	5.15E-9
710	614983	4201812	4.82E-5	7.01E-5	3.79E-5	5.22E-5	2.38E-6	3.46E-6	1.87E-6	6.46E-7	4.22E-4	4.84E-4	2.28E-4	4.30E-4	8.46E-6	1.08E-5	7.45E-6	1.09E-5	2.01E-9	2.75E-9	1.67E-9	5.34E-9
711	615003	4201812	5.16E-5	7.50E-5	4.06E-5	5.28E-5	2.41E-6	3.51E-6	1.90E-6	6.88E-7	4.38E-4	5.03E-4	2.36E-4	4.49E-4	8.80E-6	1.11E-5	7.78E-6	1.13E-5	2.10E-9	2.86E-9	1.72E-9	5.54E-9
712	615023	4201812	5.59E-5	8.12E-5	4.40E-5	5.35E-5	2.44E-6	3.55E-6	1.92E-6	7.30E-7	4.55E-4	5.23E-4	2.44E-4	4.70E-4	9.16E-6	1.15E-5	8.15E-6	1.19E-5	2.19E-9	2.97E-9	1.78E-9	5.76E-9
713	615043	4201812	6.12E-5	8.90E-5	4.82E-5	5.42E-5	2.47E-6	3.59E-6	1.95E-6	7.72E-7	4.73E-4	5.45E-4	2.53E-4	4.92E-4	9.54E-6	1.19E-5	8.54E-6	1.24E-5	2.30E-9	3.09E-9	1.85E-9	6.00E-9
714	615083	4201812	7.75E-5	1.13E-4	6.10E-5	5.52E-5	2.52E-6	3.67E-6	1.99E-6	8.65E-7	5.16E-4	5.92E-4	2.72E-4	5.43E-4	1.04E-5	1.28E-5	9.43E-6	1.37E-5	2.52E-9	3.36E-9	2.00E-9	6.53E-9
715	615283	4201812	2.26E-4	3.28E-4	1.78E-4	5.77E-5	2.64E-6	3.84E-6	2.08E-6	1.17E-6	7.07E-4	9.48E-4	4.15E-4	9.94E-4	1.67E-5	1.95E-5	1.73E-5	2.51E-5	4.62E-9	5.50E-9	3.82E-9	8.94E-9
716	615303	4201812	1.88E-4	2.74E-4	1.48E-4	5.77E-5	2.64E-6	3.84E-6	2.08E-6	1.15E-6	7.23E-4	1.00E-3	4.35E-4	1.07E-3	1.76E-5	2.05E-5	1.86E-5	2.71E-5	4.97E-9	5.79E-9	4.22E-9	9.13E-9
717	615863	4201812	6.90E-5	1.00E-4	5.43E-5	2.61E-5	1.22E-6	1.78E-6	9.63E-7	2.26E-6	9.45E-4	3.86E-3	2.20E-3	8.44E-3	6.77E-5	1.05E-4	1.46E-4	2.14E-4	3.20E-8	4.37E-8	1.21E-8	1.22E-8
718	615883	4201812	6.61E-5	9.61E-5	5.20E-5	2.47E-5	1.16E-6	1.68E-6	9.11E-7	2.28E-6	9.21E-4	3.84E-3	2.21E-3	7.20E-3	6.79E-5	1.05E-4	1.25E-4	1.82E-4	3.27E-8	4.34E-8	1.06E-8	1.20E-8
719	615903	4201812	6.32E-5	9.18E-5	4.97E-5	2.33E-5	1.10E-6	1.59E-6	8.62E-7	2.32E-6	9.02E-4	3.82E-3	2.20E-3	6.26E-3	6.80E-5	1.04E-4	1.08E-4	1.58E-4	3.33E-8	4.40E-8	9.53E-9	1.18E-8
720	615923	4201812	6.03E-5	8.77E-5	4.75E-5	2.21E-5	1.04E-6	1.51E-6	8.18E-7	2.36E-6	8.89E-4	3.80E-3	2.18E-3	5.51E-3	6.80E-5	1.03E-4	9.50E-5	1.39E-4	3.38E-8	4.42E-8	8.78E-9	1.17E-8
721	614943	4201832	4.05E-5	5.89E-5	3.19E-5	4.61E-5	2.10E-6	3.06E-6	1.66E-6	5.64E-7	4.01E-4	4.50E-4	2.16E-4	3.93E-4	7.89E-6	1.02E-5	6.82E-6	9.95E-6	1.81E-9	2.57E-9	1.49E-9	5.09E-9
722	614963	4201832	4.32E-5	6.27E-5	3.40E-5	4.69E-5	2.14E-6	3.11E-6	1.69E-6	6.02E-7	4.18E-4	4.69E-4	2.24E-4	4.11E-4	8.21E-6	1.05E-5	7.13E-6	1.04E-5	1.90E-9	2.67E-9	1.54E-9	5.29E-9
723	615003	4201832	4.96E-5	7.21E-5	3.91E-5	4.83E-5	2.21E-6	3.21E-6	1.74E-6	6.90E-7	4.51E-4	5.08E-4	2.39E-4	4.48E-4	8.89E-6	1.13E-5	7.77E-6	1.13E-5	2.08E-9	2.88E-9	1.65E-9	5.71E-9
724	615023	4201832	5.39E-5	7.83E-5	4.24E-5	4.89E-5	2.23E-6	3.25E-6	1.76E-6	7.36E-7	4.69E-4	5.29E-4	2.48E-4	4.68E-4	9.25E-6	1.17E-5	8.13E-6	1.18E-5	2.18E-9	2.99E-9	1.71E-9	5.94E-9
725	615043	4201832	5.92E-5	8.61E-5	4.66E-5	4.94E-5	2.26E-6	3.28E-6	1.78E-6	7.83E-7	4.88E-4	5.51E-4	2.57E-4	4.91E-4	9.65E-6	1.21E-5	8.53E-6	1.24E-5	2.28E-9	3.12E-9	1.78E-9	6.19E-9
726	615083	4201832	7.56E-5	1.10E-4	5.95E-5	5.04E-5	2.30E-6	3.35E-6	1.81E-6	8.81E-7	5.32E-4	6.00E-4	2.76E-4	5.42E-4	1.05E-5	1.30E-5	9.41E-6	1.37E-5	2.51E-9	3.39E-9	1.95E-9	6.74E-9
727	615123	4201832	1.08E-4	1.57E-4	8.52E-5	5.12E-5	2.34E-6	3.40E-6	1.84E-6	1.00E-6	5.87E-4	6.55E-4	2.99E-4	6.02E-4	1.15E-5	1.41E-5	1.05E-5	1.52E-5	2.77E-9	3.71E-9	2.16E-9	7.38E-9
728	615143	4201832	1.39E-4	2.02E-4	1.10E-4	5.15E-5	2.36E-6	3.43E-6	1.85E-6	1.07E-6	6.18E-4	6.85E-4	3.11E-4	6.36E-4	1.20E-5	1.47E-5	1.10E-5	1.61E-5	2.93E-9	3.90E-9	2.29E-9	7.72E-9
729	615163	4201832	1.95E-4	2.83E-4	1.53E-4	5.18E-5	2.37E-6	3.44E-6	1.86E-6	1.14E-6	6.48E-4	7.18E-4	3.25E-4	6.73E-4	1.26E-5	1.53E-5	1.17E-5	1.70E-5	3.09E-9	4.10E-9	2.43E-9	8.05E-9
730	615183	4201832	3.27E-4	4.75E-4	2.57E-4	5.20E-5	2.38E-6	3.46E-6	1.87E-6	1.21E-6	6.75E-4	7.53E-4	3.39E-4	7.14E-4	1.32E-5	1.60E-5	1.24E-5	1.80E-5	3.28E-9	4.32E-9	2.60E-9	8.36E-9
731	615343	4201832	1.52E-4	2.22E-4	1.20E-4	5.23E-5	2.40E-6	3.48E-6	1.89E-6	1.23E-6	8.04E-4	1.16E-3	4.95E-4	1.23E-3	2.05E-5	2.33E-5	2.13E-5	3.12E-5	5.85E-9	6.53E-9	5.54E-9	1.01E-8
732	615383	4201832	1.33E-4	1.94E-4	1.05E-4	5.18E-5	2.38E-6	3.46E-6	1.87E-6	1.27E-6	8.27E-4	1.32E-3	5.52E-4	1.44E-3	2.32E-5	2.60E-5	2.49E-5	3.64E-5	6.96E-9	7.32E-9	7.02E-9	1.05E-8
733	615423	4201832	1.24E-4	1.80E-4	9.73E-5	5.12E-5	2.35E-6	3.41E-6	1.85E-6	1.44E-6	8.37E-4	1.52E-3	6.21E-4	1.69E-3	2.66E-5	2.92E-5	2.91E-5	4.26E-5	8.40E-9	8.26E-9	8.93E-9	1.07E-8
734	615463	4201832	1.18E-4	1.72E-4	9.29E-5	5.00E-5	2.30E-6	3.34E-6	1.81E-6	1.68E-6	8.48E-4	1.75E-3	7.01E-4	1.97E-3	3.06E-5	3.29E-5	3.40E-5	4.98E-5	1.01E-8	9.21E-9	1.14E-8	1.09E-8
735	615503	4201832	1.15E-4	1.67E-4	9.06E-5	4.87E-5	2.24E-6	3.25E-6	1.76E-6	1.83E-6	8.68E-4	2.01E-3	8.01E-4	2.32E-3	3.52E-5	3.76E-5	4.01E-5	5.87E-5	1.21E-8	1.05E-8	1.47E-8	1.12E-8
736	615543	4201832	1.13E-4	1.65E-4	8.92E-5	4.70E-5	2.16E-6	3.14E-6	1.70E-6	1.90E-6	9.06E-4	2.33E-3	9.29E-4	2.79E-3	4.06E-5	4.36E-5	4.82E-5	7.05E-5	1.43E-8	1.23E-8	1.94E-8	1.16E-8
737	615583	4201832	1.11E-4	1.61E-4	8.74E-5	4.47E-5	2.06E-6	3.00E-6	1.62E-6	2.07E-6	9.64E-4	2.68E-3	1.09E-3	3.44E-3	4.65E-5	5.13E-5	5.94E-5	8.71E-5	1.62E-8	1.47E-8	2.47E-8	1.22E-8
738	615623	4201832	1.07E-4	1.56E-4	8.45E-5	4.21E-5	1.95E-6	2.83E-6	1.53E-6	2.29E-6	1.02E-3	2.97E-3	1.31E-3	4.47E-3	5.19E-5	6.16E-5	7.70E-5	1.13E-4	1.74E-8	1.79E-8	2.69E-8	1.28E-8
739	615663	4201832	1.04E-4	1.51E-4	8.17E-5	3.94E-5	1.83E-6	2.66E-6	1.44E-6	2.47E-6	1.07E-3	3.20E-3	1.64E-3	6.52E-3	5.65E-5	7.64E-5	1.12E-4	1.65E-4	1.96E-8	2.35E-8	2.50E-8	1.34E-8
740	615703	4201832	1.00E-4	1.45E-4	7.87E-5	3.65E-5	1.69E-6	2.46E-6	1.33E-6	2.56E-6	1.13E-3	3.38E-3	1.92E-3	1.28E-2	6.02E-5	9.06E-5	2.20E-4	3.25E-4	2.39E-8	2.74E-8	2.52E-8	1.40E-8
741	615863	4201832	7.53E-5	1.09E-4	5.92E-5	2.46E-5	1.15E-6	1.67E-6	9.05E-7	2.47E-6	9.99E-4	4.48E-3	2.77E-3	8.31E-3	7.91E-5	1.31E-4	1.44E-4	2.10E-4	3.81E-8	5.53E-8	1.11E-8	1.30E-8
742	615883	4201832	7.17E-5	1.04E-4	5.64E-5	2.33E-5	1.09E-6	1.59E-6	8.60E-7	2.51E-6	9.79E-4	4.47E-3	2.75E-3	7.13E-3	7.97E-5	1.30E-4	1.23E-4	1.80E-4	3.91E-8	5.61E-8	9.66E-9	1.28E-8
743	615903	4201832	6.80E-5	9.89E-5	5.35E-5	2.21E-5	1.04E-6	1.51E-6	8.17E-7	2.55E-6	9.64E-4	4.47E-3	2.69E-3	6.20E-3	7.99E-5	1.27E-4	1.07E-4	1.57E-4	3.98E-8	5.59E-8	8.61E-9	1.27E-8
744	615923	4201832	6.43E-5	9.35E-5	5.06E-5	2.10E-5	9.86E-7	1.43E-6	7.76E-7	2.61E-6	9.54E-4	4.45E-3	2.61E-3	5.43E-3	7.96E-5	1.22E-4	9.35E-5	1.37E-4	4.03E-8	5.48E-8	7.85E-9	1.26E-8
745	615943	4201832	6.08E-5	8.84E-5	4.78E-5	1.99E-5	9.39E-7	1.36E-6	7.39E-7	2.66E-6	9.52E-4	4.43E-3	2.51E-3	4.82E-3	7.90E-5	1.18E-4	8.30E-5	1.22E-4	4.06E-8	5.35E-8	7.30E-9	1.27E-8
746	614963	4201852	4.12E-5	5.99E-5	3.24E-5	4.31E-5	1.97E-6	2.86E-6	1.55E-6	6.00E-7	4.28E-4	4.71E-4	2.26E-4	4.09E-4	8.26E-6	1.07E-5	7.10E-6	1.03E-5	1.88E-9	2.69E-9	1.49E-9	5.44E-9
747	614983	4201852	4.42E-5	6.42E-5	3.48E-5	4.38E-5	2.00E-6	2.91E-6	1.57E-6	6.41E-7	4.46E-4	4.91E-4	2.34E-4	4.28E-4	8.60E-6	1.10E-5	7.43E-6	1.08E-5	1.97E-9	2.80E-9	1.54E-9	5.66E-9
748	615003	4201852	4.77E-5	6.94E-5	3.76E-5	4.44E-5	2.03E-6	2.95E-6	1.60E-6	6.88E-7	4.65E-4	5.12E-4	2.42E-4	4.47E-4	8.96E-6	1.14E-5	7.76E-6	1.13E-5	2.06E-9	2.91E-9	1.60E-9	5.89E-9
749	615023	4201852	5.19E-5	7.55E-5	4.09E-5	4.49E-5	2.05E-6	2.98E-6	1.62E-6	7.38E-7	4.84E-4	5.33E-4	2.51E-4	4.67E-4	9.34E-6	1.18E-5	8.12E-6	1.18E-5	2.16E-9	3.03E-9	1.67E-9	6.12E-9

750	615043	4201852	5.73E-5	8.34E-5	4.51E-5	4.54E-5	2.08E-6	3.02E-6	1.63E-6	7.90E-7	5.04E-4	5.57E-4	2.60E-4	4.90E-4	9.75E-6	1.23E-5	8.51E-6	1.24E-5	2.26E-9	3.15E-9	1.74E-9	6.38E-9
751	615083	4201852	7.36E-5	1.07E-4	5.79E-5	4.63E-5	2.12E-6	3.08E-6	1.67E-6	8.98E-7	5.50E-4	6.08E-4	2.80E-4	5.41E-4	1.06E-5	1.32E-5	9.39E-6	1.37E-5	2.50E-9	3.42E-9	1.93E-9	6.97E-9
752	615123	4201852	1.06E-4	1.54E-4	8.36E-5	4.70E-5	2.15E-6	3.12E-6	1.69E-6	1.02E-6	6.07E-4	6.66E-4	3.04E-4	6.00E-4	1.17E-5	1.43E-5	1.04E-5	1.52E-5	2.76E-9	3.75E-9	2.16E-9	7.65E-9
753	615143	4201852	1.38E-4	2.01E-4	1.09E-4	4.73E-5	2.16E-6	3.14E-6	1.70E-6	1.10E-6	6.39E-4	6.97E-4	3.17E-4	6.34E-4	1.22E-5	1.49E-5	1.10E-5	1.60E-5	2.91E-9	3.93E-9	2.31E-9	8.02E-9
754	615163	4201852	1.96E-4	2.85E-4	1.54E-4	4.75E-5	2.17E-6	3.16E-6	1.71E-6	1.17E-6	6.73E-4	7.31E-4	3.30E-4	6.70E-4	1.28E-5	1.56E-5	1.16E-5	1.70E-5	3.08E-9	4.14E-9	2.47E-9	8.40E-9
755	615183	4201852	3.33E-4	4.83E-4	2.62E-4	4.77E-5	2.18E-6	3.18E-6	1.72E-6	1.25E-6	7.06E-4	7.68E-4	3.45E-4	7.10E-4	1.35E-5	1.63E-5	1.23E-5	1.80E-5	3.26E-9	4.36E-9	2.67E-9	8.77E-9
756	615243	4201852	3.94E-4	5.73E-4	3.10E-4	4.81E-5	2.20E-6	3.20E-6	1.73E-6	1.38E-6	7.76E-4	8.96E-4	3.96E-4	8.55E-4	1.57E-5	1.87E-5	1.48E-5	2.16E-5	3.96E-9	5.11E-9	3.45E-9	9.68E-9
757	615263	4201852	2.87E-4	4.18E-4	2.26E-4	4.81E-5	2.20E-6	3.20E-6	1.74E-6	1.38E-6	7.90E-4	9.47E-4	4.16E-4	9.13E-4	1.66E-5	1.96E-5	1.58E-5	2.31E-5	4.26E-9	5.39E-9	3.80E-9	9.91E-9
758	615283	4201852	2.31E-4	3.35E-4	1.82E-4	4.81E-5	2.20E-6	3.20E-6	1.74E-6	1.37E-6	8.04E-4	1.00E-3	4.36E-4	9.78E-4	1.76E-5	2.05E-5	1.70E-5	2.47E-5	4.59E-9	5.67E-9	4.21E-9	1.01E-8
759	615303	4201852	1.97E-4	2.86E-4	1.55E-4	4.81E-5	2.20E-6	3.20E-6	1.73E-6	1.35E-6	8.21E-4	1.06E-3	4.59E-4	1.05E-3	1.87E-5	2.16E-5	1.82E-5	2.66E-5	4.97E-9	5.97E-9	4.67E-9	1.04E-8
760	615843	4201852	8.72E-5	1.27E-4	6.87E-5	2.44E-5	1.14E-6	1.65E-6	8.96E-7	2.68E-6	1.09E-3	5.31E-3	3.66E-3	9.81E-3	9.38E-5	1.73E-4	1.69E-4	2.48E-4	4.52E-8	7.13E-8	1.15E-8	1.41E-8
761	615863	4201852	8.23E-5	1.20E-4	6.48E-5	2.32E-5	1.08E-6	1.58E-6	8.53E-7	2.72E-6	1.06E-3	5.31E-3	3.57E-3	8.21E-3	9.47E-5	1.68E-4	1.41E-4	2.08E-4	4.65E-8	7.14E-8	1.02E-8	1.39E-8
762	615883	4201852	7.76E-5	1.13E-4	6.11E-5	2.21E-5	1.03E-6	1.50E-6	8.14E-7	2.77E-6	1.05E-3	5.34E-3	3.45E-3	7.04E-3	9.56E-5	1.62E-4	1.21E-4	1.78E-4	4.77E-8	7.06E-8	8.93E-9	1.38E-8
763	615903	4201852	7.29E-5	1.06E-4	5.74E-5	2.10E-5	9.86E-7	1.43E-6	7.76E-7	2.83E-6	1.04E-3	5.35E-3	3.28E-3	6.10E-3	9.54E-5	1.54E-4	1.05E-4	1.54E-4	4.84E-8	6.84E-8	7.90E-9	1.38E-8
764	615923	4201852	6.82E-5	9.92E-5	5.37E-5	2.00E-5	9.38E-7	1.36E-6	7.38E-7	2.89E-6	1.03E-3	5.30E-3	3.09E-3	5.33E-3	9.41E-5	1.44E-4	9.18E-5	1.35E-4	4.84E-8	6.53E-8	7.14E-9	1.38E-8
765	615943	4201852	6.39E-5	9.29E-5	5.03E-5	1.90E-5	8.95E-7	1.30E-6	7.04E-7	2.95E-6	1.04E-3	5.23E-3	2.92E-3	4.73E-3	9.25E-5	1.36E-4	8.14E-5	1.20E-4	4.83E-8	6.25E-8	6.60E-9	1.38E-8
766	614983	4201872	4.24E-5	6.17E-5	3.34E-5	4.04E-5	1.85E-6	2.69E-6	1.45E-6	6.40E-7	4.59E-4	4.94E-4	2.37E-4	4.26E-4	8.66E-6	1.12E-5	7.40E-6	1.08E-5	1.96E-9	2.83E-9	1.51E-9	5.83E-9
767	615003	4201872	4.59E-5	6.67E-5	3.61E-5	4.10E-5	1.87E-6	2.72E-6	1.47E-6	6.85E-7	4.79E-4	5.15E-4	2.46E-4	4.46E-4	9.04E-6	1.16E-5	7.75E-6	1.13E-5	2.05E-9	2.95E-9	1.58E-9	6.07E-9
768	615023	4201872	5.01E-5	7.29E-5	3.95E-5	4.15E-5	1.90E-6	2.76E-6	1.49E-6	7.37E-7	4.99E-4	5.38E-4	2.55E-4	4.67E-4	9.42E-6	1.20E-5	8.10E-6	1.18E-5	2.15E-9	3.07E-9	1.66E-9	6.32E-9
769	615043	4201872	5.54E-5	8.05E-5	4.36E-5	4.19E-5	1.92E-6	2.79E-6	1.51E-6	7.93E-7	5.21E-4	5.62E-4	2.64E-4	4.89E-4	9.84E-6	1.24E-5	8.49E-6	1.24E-5	2.25E-9	3.19E-9	1.74E-9	6.59E-9
770	615083	4201872	7.15E-5	1.04E-4	5.63E-5	4.27E-5	1.95E-6	2.84E-6	1.54E-6	9.12E-7	5.69E-4	6.15E-4	2.85E-4	5.39E-4	1.08E-5	1.34E-5	9.36E-6	1.36E-5	2.49E-9	3.47E-9	1.94E-9	7.21E-9
771	615123	4201872	1.04E-4	1.51E-4	8.16E-5	4.33E-5	1.98E-6	2.88E-6	1.56E-6	1.04E-6	6.28E-4	6.75E-4	3.08E-4	5.98E-4	1.18E-5	1.46E-5	1.04E-5	1.51E-5	2.76E-9	3.80E-9	2.21E-9	7.93E-9
772	615143	4201872	1.36E-4	1.97E-4	1.07E-4	4.36E-5	1.99E-6	2.90E-6	1.57E-6	1.12E-6	6.62E-4	7.08E-4	3.22E-4	6.31E-4	1.24E-5	1.52E-5	1.10E-5	1.60E-5	2.91E-9	3.98E-9	2.37E-9	8.33E-9
773	615163	4201872	1.96E-4	2.85E-4	1.54E-4	4.38E-5	2.00E-6	2.91E-6	1.58E-6	1.20E-6	6.99E-4	7.44E-4	3.36E-4	6.67E-4	1.30E-5	1.58E-5	1.16E-5	1.69E-5	3.07E-9	4.19E-9	2.56E-9	8.76E-9
774	615183	4201872	3.38E-4	4.92E-4	2.66E-4	4.40E-5	2.01E-6	2.93E-6	1.58E-6	1.29E-6	7.37E-4	7.82E-4	3.51E-4	7.06E-4	1.37E-5	1.66E-5	1.23E-5	1.79E-5	3.26E-9	4.42E-9	2.77E-9	9.18E-9
775	615343	4201872	1.76E-4	2.56E-4	1.38E-4	4.40E-5	2.02E-6	2.93E-6	1.59E-6	1.44E-6	9.22E-4	1.24E-3	5.24E-4	1.20E-3	2.18E-5	2.47E-5	2.08E-5	3.03E-5	5.86E-9	6.80E-9	6.00E-9	1.16E-8
776	615383	4201872	1.64E-4	2.39E-4	1.29E-4	4.35E-5	2.00E-6	2.90E-6	1.57E-6	1.47E-6	9.56E-4	1.43E-3	5.88E-4	1.39E-3	2.51E-5	2.77E-5	2.41E-5	3.52E-5	7.05E-9	7.64E-9	7.35E-9	1.21E-8
777	615423	4201872	1.59E-4	2.31E-4	1.25E-4	4.27E-5	1.96E-6	2.85E-6	1.54E-6	1.65E-6	9.70E-4	1.66E-3	6.64E-4	1.62E-3	2.91E-5	3.12E-5	2.80E-5	4.09E-5	8.60E-9	8.47E-9	8.99E-9	1.24E-8
778	615463	4201872	1.57E-4	2.28E-4	1.24E-4	4.18E-5	1.92E-6	2.79E-6	1.51E-6	1.93E-6	9.85E-4	1.95E-3	7.61E-4	1.90E-3	3.41E-5	3.57E-5	3.29E-5	4.81E-5	1.07E-8	9.66E-9	1.12E-8	1.26E-8
779	615503	4201872	1.56E-4	2.27E-4	1.23E-4	4.06E-5	1.87E-6	2.71E-6	1.47E-6	2.13E-6	1.01E-3	2.31E-3	8.82E-4	2.27E-3	4.03E-5	4.14E-5	3.92E-5	5.73E-5	1.32E-8	1.12E-8	1.42E-8	1.30E-8
780	615543	4201872	1.56E-4	2.27E-4	1.23E-4	3.90E-5	1.80E-6	2.62E-6	1.42E-6	2.26E-6	1.07E-3	2.75E-3	1.04E-3	2.76E-3	4.79E-5	4.89E-5	4.78E-5	6.99E-5	1.64E-8	1.32E-8	1.79E-8	1.37E-8
781	615583	4201872	1.55E-4	2.25E-4	1.22E-4	3.72E-5	1.72E-6	2.50E-6	1.35E-6	2.48E-6	1.14E-3	3.28E-3	1.26E-3	3.50E-3	5.72E-5	5.93E-5	6.03E-5	8.85E-5	2.00E-8	1.61E-8	2.02E-8	1.44E-8
782	615623	4201872	1.51E-4	2.20E-4	1.19E-4	3.51E-5	1.63E-6	2.37E-6	1.28E-6	2.75E-6	1.21E-3	3.89E-3	1.60E-3	4.67E-3	6.77E-5	7.48E-5	8.04E-5	1.18E-4	2.34E-8	2.04E-8	1.94E-8	1.52E-8
783	615843	4201872	9.66E-5	1.40E-4	7.60E-5	2.30E-5	1.08E-6	1.56E-6	8.46E-7	2.96E-6	1.17E-3	6.51E-3	4.97E-3	9.74E-3	1.16E-4	2.33E-4	1.67E-4	2.46E-4	5.70E-8	9.71E-8	1.05E-8	1.52E-8
784	615863	4201872	8.99E-5	1.31E-4	7.07E-5	2.20E-5	1.03E-6	1.49E-6	8.08E-7	3.02E-6	1.15E-3	6.53E-3	4.62E-3	8.10E-3	1.17E-4	2.16E-4	1.39E-4	2.05E-4	5.83E-8	9.28E-8	9.40E-9	1.51E-8
785	615883	4201872	8.35E-5	1.21E-4	6.57E-5	2.09E-5	9.81E-7	1.43E-6	7.72E-7	3.09E-6	1.13E-3	6.55E-3	4.27E-3	6.90E-3	1.16E-4	1.99E-4	1.19E-4	1.74E-4	5.91E-8	8.77E-8	8.31E-9	1.50E-8
786	615903	4201872	7.75E-5	1.13E-4	6.10E-5	2.00E-5	9.37E-7	1.36E-6	7.38E-7	3.16E-6	1.13E-3	6.49E-3	3.93E-3	5.96E-3	1.15E-4	1.83E-4	1.03E-4	1.51E-4	5.91E-8	8.23E-8	7.34E-9	1.51E-8
787	615923	4201872	7.20E-5	1.05E-4	5.66E-5	1.91E-5	8.95E-7	1.30E-6	7.05E-7	3.22E-6	1.14E-3	6.37E-3	3.62E-3	5.22E-3	1.12E-4	1.69E-4	8.99E-5	1.32E-4	5.85E-8	7.70E-8	6.60E-9	1.51E-8
788	615943	4201872	6.69E-5	9.73E-5	5.27E-5	1.82E-5	8.56E-7	1.24E-6	6.74E-7	3.29E-6	1.15E-3	6.19E-3	3.35E-3	4.63E-3	1.09E-4	1.56E-4	7.97E-5	1.17E-4	5.76E-8	7.22E-8	6.06E-9	1.53E-8
789	615003	4201892	4.42E-5	6.42E-5	3.48E-5	3.80E-5	1.74E-6	2.53E-6	1.37E-6	6.85E-7	4.92E-4	5.17E-4	2.48E-4	4.44E-4	9.08E-6	1.17E-5	7.71E-6	1.12E-5	2.04E-9	2.98E-9	1.58E-9	6.25E-9
790	615023	4201892	4.83E-5	7.02E-5	3.80E-5	3.84E-5	1.76E-6	2.56E-6	1.38E-6	7.35E-7	5.14E-4	5.41E-4	2.58E-4	4.65E-4	9.49E-6	1.21E-5	8.08E-6	1.18E-5	2.15E-9	3.11E-9	1.67E-9	6.52E-9
791	615863	4201892	9.70E-5	1.41E-4	7.63E-5	2.08E-5	9.73E-7	1.41E-6	7.66E-7	3.38E-6	1.24E-3	8.24E-3	5.79E-3	7.84E-3	1.46E-4	2.69E-4	1.35E-4	1.98E-4	7.40E-8	1.16E-7	8.67E-9	1.65E-8
792	615883	4201892	8.88E-5	1.29E-4	6.99E-5	1.99E-5	9.32E-7	1.35E-6	7.33E-7	3.46E-6	1.24E-3	8.12E-3	5.14E-3	6.66E-3	1.43E-4	2.38E-4	1.15E-4	1.69E-4	7.35E-8	1.05E-7	7.76E-9	1.65E-8
793	615003	4201912	4.24E-5	6.17E-5	3.34E-5	3.52E-5	1.61E-6	2.35E-6	1.27E-6	6.90E-7	5.06E-4	5.19E-4	2.51E-4	4.41E-4	9.12E-6	1.18E-5	7.67E-6	1.12E-5	2.05E-9	3.02E-9	1.60E-9	6.44E-9
794	615023	4201912	4.65E-5	6.76E-5	3.66E-5	3.57E-5	1.64E-6	2.38E-6	1.29E-6	7.36E-7	5.30E-4	5.44E-4	2.61E-4	4.63E-4	9.55E-6	1.23E-5	8.04E-6	1.17E-5	2.15E-9	3.15E-9	1.70E-9	6.74E-9
795	615343	4201912	2.51E-4	3.65E-4	1.98E-4	3.76E-5	1.72E-6	2.51E-6	1.36E-6	1.73E-6	1.07E-3	1.32E-3	5.52E-4	1.17E-3	2.32E-5	2.60E-5	2.02E-5	2.95E-5	5.85E-9	7.11E-9	6.15E-9	1.35E-8
796	615383	4201912	2.47E-4	3.59E-4	1.94E-4	3.70E-5	1.70E-6	2.47E-6	1.34E-6	1.73E-6	1.11E-3	1.52E-3	6.22E-4	1.34E-3	2.68E-5	2.93E-5	2.33E-5	3.40E-5	7.04E-9	7.96E-9	7.31E-9	1.41E-8
797	615423	4201912	2.47E-4	3.60E-4	1.95E-4	3.64E-5	1.67E-6	2.43E-6	1.32E-6	1.92E-6	1.14E-3	1.79E-3	7.10E-4	1.57E-3	3.15E-5	3.34E-5	2.72E-5	3.97E-5	8.69E-9	9.05E-9	8.85E-9	1.45E-8
798	615463	4201912	2.48E-4	3.60E-4	1.95E-4	3.55E-5	1.63E-6	2.37E-6	1.29E-6	2.26E-6	1.16E-3	2.15E-3	8.21E-4	1.86E-3	3.76E-5	3.86E-5	3.21E-5	4.69E-5	1.10E-8	1.04E-8	1.10E-8	1.49E-8
799	615503	4201912	2.49E-4	3.62E-4	1.96E-4	3.45E-5	1.59E-6	2.31E-6	1.25E-6	2.53E-6	1.21E-3	2.63E-3	9.66E-4	2.24E-3	4.59E-5	4.54E-5	3.88E-5	5.68E-5	1.42E-8	1.22E-8	1.36E-8	1.55E-8
800	615543	4201912	2.49E-4	3.63E-4	1.96E-4	3.32E-5	1.53E-6	2.23E-6	1.21E-6	2.73E-6	1.28E-3	3.24E-3	1.16E-3	2.79E-3	5.66E-5	5.45E-5	4.82E-5	7.05E-5	1.83E-8	1.45E-8	1.56E-8	1.63E-8
801	615583	4201912	2.50E-4	3.63E-4	1.97E-4	3.17E-5	1.46E-6	2.13E-6	1.15E-6	3.02E-6	1.37E-3	4.06E-3	1.44E-3	3.62E-3	7.07E-5	6.76E-5	6.25E-5	9.16E-5	2.39E-8	1.79E-8	1.57E-8	1.73E-8
802	615623	4201912	2.48E-4	3.60E-4	1.95E-4	3.00E-5	1.39E-6	2.02E-6	1.09E-6	3.35E-6	1.46E-3	5.17E-3	1.89E-3	5.05E-3	8.99E-5	8.84E-5	8.68E-5	1.28E-4	3.16E-8	2.31E-8	1.43E-8	1.83E-8
803	615023	4201932	4.48E-5	6.51E-5	3.52E-5	3.33E-5	1.53E-6	2.22E-6	1.20E-6	7.42E-7	5.47E-4	5.46E-4	2.64E-4	4.61E-4	9.60E-6	1.24E-5	7.99E-6	1.16E-5	2.17E-9	3.20E-9	1.75E-9	6.97E-9
804	615043	4201932	4.95E-5	7.20E-5	3.90E-5	3.37E-5	1.54E-6	2.24E-6	1.22E-6	7.94E-7	5.73E-4	5.72E-4	2.74E-4	4.83E-4	1.00E-5	1.29E-5	8.37E-6	1.22E-5	2.28E-9	3.34E-9	1.87E-9	7.29E-9
805	615043	4201952	4.74E-5	6.89E-5	3.73E-5	3.15E-5	1.44E-6	2.10E-6	1.14E-6	8.01E-7	5.93E-4	5.75E-4	2.77E-4	4.79E-4	1.01E-5	1.31E-5	8.31E-6	1.21E-5	2.32E-9	3.39E-9	1.95E-9	7.55E-9
806	615063	4201952	5.30E-5	7.71E-5	4.17E-5	3.18E-5	1.46E-6	2.12E-6	1.15E-6	8.60E-7	6.22E-4	6.03E-4	2.89E-4	5.03E-4	1.06E-5	1.36E-5	8.72E-6	1.27E-5	2.44E-9	3.55E-9	2.09E-9	7.91E-9
807	615343	4201952	5.78E-4	8.40E-4	4.55E-4	3.25E-5	1.49E-6	2.17E-6	1.17E-6	2.12E-6	1.26E-3	1.39E-3	5.80E-4	1.13E-3	2.44E-5	2.73E-5	1.96E-5	2.87E-5	5.95E-9	7.55E-9	6.08E-9	1.59E-8
808	615383	4201952	5.74E-4	8.34E-4	4.51E-4	3.21E-5	1.47E-6	2.14E-6	1.16E-6	2.10E-6	1.33E-3	1.62E-3	6.57E-4	1.31E-3	2.85E-5	3.09E-5	2.27E-5	3.31E-5	7.18E-9	8.53E-9	7.20E-9	1.68E-8
809	615423	4201952	5.62E-4	8.18E-4	4.43E-4	3.14E-5	1.44E-6	2.10E-6	1.14E-6	2.28E-6	1.37E-3	1.92E-3	7.51E-4	1.52E-3	3.34E-5	3.50E-5	2.64E-5	3.85E-5	8.85E-9	9.69E-9	8.74E-9	1.74E-8
810	615463	4201952	5.57E-4	8.10E-4	4.38E-4	3.06E-5	1.41E-6	2.05E-6	1.11E-6	2.68E-6	1.40E-3	2.33E-3	8.75E-4	1.82E-3	4.06E-5	4.08E-5	3.14E-5	4.59E-5	1.13E-8	1.12E-8	1.06E-8	1.79E-8
811	616103	4201952	3.81E-5	5.54E-5	3.00E-5	1.15E-5	5.42E-7	7.88E-7	4.26E-7	4.83E-6	1.63E-3	5.57E-3	2.19E-3	2.06E-3	9.51E-5	1.03E-4	3.54E-5	5.20E-5	5.47E-8	5.28E-8	2.97E-9	2.00E-8
812	615063	4201972	5.04E-5	7.33E-5	3.97E-5	2.98E-5	1.37E-6	1.99E-6	1.08E-6	8.69E-7	6.46E-4	6.06E-4	2.92E-4	4.99E-4	1.06E-5	1.38E-5	8.65E-6	1.26E-5	2.50E-9	3.60E-9	2.19E-9	8.22E-9
813	615083	4201972	5.71E-5	8.30E-5	4.49E-5	3.01E-5	1.38E-6	2.00E-6	1.09E-6	9.35E-7	6.79E-4	6.37E-4	3.04E-4	5.23E-4	1.12E-5	1.43E-5	9.08E-6	1.32E-5	2.63E-9	3.77E-9	2.35E-9	8.64E-9
814	615063	4201992	4.76E-5	6.93E-5	3.75E-5	2.80E-5	1.28E-6	1.87E-6	1.01E-6	8.84E-7	6.71E-4	6.09E-4	2.94E-4	4.94E-4	1.07E-5	1.39E-5	8.57E-6	1.25E-5	2.57E-9	3.65E-9	2.28E-9	8.53E-9
815	615083	4201992	5.36E-5	7.79E-5	4.22E-5	2.83E-5	1.30E-6	1.88E-6	1.02E-6	9.46E-7	7.07E-4	6.40E-4	3.08E-4	5.19E-4	1.12E-5	1.45E-5	9.00E-6	1.31E-5	2.70E-9	3.83E-9	2.45E-9	8.99E-9
816	615103	4201992	6.09E-5	8.86E-5	4.80E-5	2.84E-5	1.30E-6	1.89E-6	1.03E-6	1.02E-6	7.43E-4	6.73E-4	3.21E-4	5.44E-4	1.18E-5	1.51E-5	9.44E-6	1.38E-5	2.84E-9	4.01E-9	2.62E-9	9.46E-9
817	615083	4202012	5.01E-5	7.28E-5	3.94E-5	2.66E-5	1.22E-6	1.77E-6	9.61E-7	9.61E-7	7.39E-4	6.44E-4	3.11E-4	5.14E-4	1.13E-5	1.47E-5	8.92E-6	1.30E-5	2.80E-9	3.88E-9	2.53E-9	9.38E-9
818	615103	4202012	5.64E-5	8.19E-5	4.44E-5	2.68E-5	1.23E-6	1.79E-6	9.67E-7	1.03E-6	7.77E-4	6.77E-4	3.25E-4	5.39E-4	1.19E-5	1.53E-5	9.36E-6	1.36E-5	2.94E-9	4.06E-9	2.70E-9	9.88E-9
819	615783	4202012	1.77E-4	2.57E-4	1.39E-4	1.78E-5	8.24E-7	1.20E-6	6.49E-7	7.03E-6	2.46E-3	5.86E-2	4.11E-2	1.13E-2	1.01E-3	1.85E-3	1.96E-4	2.87E-4	4.52E-7	5.23E-7	6.66E-9	3.26E-8
820	615803	4202012	1.45E-4	2.11E-4	1.14E-4	1.72E-5	8.01E-7	1.16E-6	6.30E-7	7.18E-6	2.49E-3	4.09E-2	2.23E-2	9.22E-3	7.12E-4	1.03E-3	1.59E-4	2.33E-4	3.42E-7	3.53E-7	6.28E-9	3.27E-8
821	615823	4202012	1.23E-4	1.79E-4	9.70E-5	1.67E-5	7.77E-7	1.13E-6	6.12E-7	7.29E-6	2.53E-3	3.14E-2	1.50E-2	7.74E-3	5.47E-4	7.02E-4	1.34E-4	1.96E-4	2.73E-7	2.68E-7	5.98E-9	3.30E-8
822	615103	4202032	5.19E-5	7.54E-5	4.08E-5	2.53E-5	1.16E-6	1.69E-6	9.13E-7	1.05E-6	8.14E-4	6.81E-4	3.28E-4	5.34E-4	1.20E-5	1.55E-5	9.27E-6	1.35E-5	3.05E-9	4.10E-9	2.76E-9	1.03E-8
823	615123	4202032	5.82E-5	8.46E-5	4.58E-5	2.54E-5	1.17E-6	1.70E-6	9.18E-7	1.14E-6	8.60E-4	7.18E-4	3.43E-4	5.61E-4	1.26E-5	1.62E-5	9.73E-6	1.42E-5	3.20E-9	4.30E-9	2.93E-9	1.09E-8
824	615783	4202032	1.70E-4	2.47E-4	1.34E-4	1.69E-5	7.86E-7	1.14E-6	6.19E-7	8.29E-6	2.87E-3	6.02E-2	4.07E-2	1.09E-2	1.04E-3	1.84E-3	1.88E-4	2.75E-4	4.64E-7	5.25E-7	6.16E-9	3.77E-8
825	615803	4202032	1.40E-4	2.04E-4	1.10E-4	1.65E-5	7.64E-7	1.11E-6	6.02E-7	8.41E-6	2.91E-3	4.20E-2	2.23E-2	8.88E-3	7.32E-4	1.04E-3	1.53E-4	2.25E-4	3.50E-7	3.55E-7	5.82E-9	3.78E-8
826	615823	4202032	1.20E-4	1.74E-4	9.42E-5	1.60E-5	7.43E-7	1.08E-6	5.85E-7	8.47E-6	2.96E-3	3.24E-2	1.52E-2	7.48E-3	5.65E-4	7.09E-4	1.29E-4	1.89E-4	2.80E-7	2.73E-7	5.55E-9	3.79E-8
827	615123	4202052	5.26E-5	7.65E-5	4.14E-5	2.40E-5	1.10E-6	1.60E-6	8.68E-7	1.15E-6	9.03E-4	7.22E-4	3.47E-4	5.56E-4	1.27E-5	1.64E-5	9.64E-6	1.41E-5	3.31E-9	4.34E-9	2.95E-9	1.14E-8
828	615143	4202052	5.81E-5	8.45E-5	4.57E-5	2.41E-5	1.11E-6	1.61E-6	8.71E-7	1.25E-6	9.58E-4	7.62E-4	3.64E-4	5.84E-4	1.34E-5	1.72E-5	1.01E-5	1.48E-5	3.48E-9	4.56E-9	3.11E-9	1.22E-8
829	615243	4202052	9.09E-5	1.32E-4	7.15E-5	2.42E-5	1.11E-6	1.62E-6	8.76E-7	2.16E-6	1.38E-3	1.04E-3	4.71E-4	7.69E-4	1.82E-5	2.22E-5	1.33E-5	1.94E-5	4.71E-9	6.01E-9	4.12E-9	1.75E-8
830	615263	4202052	9.61E-5	1.40E-4	7.57E-5	2.42E-5	1.11E-6	1.62E-6	8.75E-7	2.45E-6	1.51E-3	1.11E-3	4.99E-4	8.17E-4	1.96E-5	2.35E-5	1.41E-5	2.06E-5	5.05E-9	6.39E-9	4.39E-9	1.90E-8
831	615283	4202052	9.94E-5	1.45E-4	7.82E-5	2.41E-5	1.11E-6	1.61E-6	8.72E-7	2.76E-6	1.64E-3	1.20E-3	5.29E-4	8.67E-4	2.10E-5	2.49E-5	1.50E-5	2.19E-5	5.42E-9	6.73E-9	4.71E-9	2.06E-8
832	615303	4202052	1.02E-4	1.48E-4	8.02E-5	2.40E-5	1.10E-6	1.60E-6	8.68E-7	3.08E-6	1.79E-3	1.29E-3	5.63E-4	9.24E-4	2.27E-5	2.65E-5	1.60E-5	2.34E-5	5.85E-9	7.18E-9	5.09E-9	2.23E-8
833	615783	4202052	1.65E-4	2.39E-4	1.29E-4	1.62E-5	7.51E-7	1.09E-6	5.91E-7	9.80E-6	3.39E-3	6.17E-2	4.02E-2	1.05E-2	1.07E-3	1.81E-3	1.82E-4	2.66E-4	4.69E-7	5.25E-7	5.71E-9	4.39E-8
834	615803	4202052	1.37E-4	1.99E-4	1.08E-4	1.58E-5	7.31E-7	1.06E-6	5.75E-7	9.85E-6	3.42E-3	4.33E-2	2.23E-2	8.61E-3	7.54E-4	1.03E-3	1.49E-4	2.18E-4	3.53E-7	3.57E-7	5.41E-9	4.37E-8
835	615123	4202072	4.77E-5	6.93E-5	3.75E-5	2.27E-5	1.04E-6	1.52E-6	8.21E-7	1.16E-6	9.45E-4	7.25E-4	3.51E-4	5.50E-4	1.27E-5	1.65E-5	9.53E-6	1.39E-5	3.42E-9	4.37E-9	2.95E-9	1.19E-8
836	615143	4202072	5.18E-5	7.53E-5	4.08E-5	2.28E-5	1.05E-6	1.52E-6	8.25E-7	1.27E-6	1.01E-3	7.66E-4	3.68E-4	5.78E-4	1.35E-5	1.73E-5	1.00E-5	1.46E-5	3.59E-9	4.59E-9	3.10E-9	1.27E-8
837	615783	4202072	1.62E-4	2.35E-4	1.27E-4	1.55E-5	7.18E-7	1.04E-6	5.65E-7	1.16E-5	4.02E-3	6.41E-2	3.99E-2	1.03E-2	1.11E-3	1.80E-3	1.77E-4	2.59E-4	4.73E-7	5.30E-7	5.32E-9	5.12E-8
838	615803	4202072	1.35E-4	1.96E-4	1.06E-4	1.51E-5	7.00E-7	1.02E-6	5.51E-7	1.15E-5	4.02E-3	4.48E-2	2.24E-2	8.40E-3	7.79E-4	1.04E-3	1.45E-4	2.12E-4	3.58E-7	3.67E-7	5.05E-9	5.05E-8
839	615143	4202092	4.66E-5	6.77E-5	3.67E-5	2.16E-5	9.93E-7	1.44E-6	7.82E-7	1.27E-6	1.05E-3	7.69E-4	3.72E-4	5.71E-4	1.35E-5	1.75E-5	9.90E-6	1.44E-5	3.69E-9	4.61E-9	3.07E-9	1.33E-8
840	615163	4202092	4.99E-5	7.25E-5	3.93E-5	2.17E-5	9.97E-7	1.45E-6	7.85E-7	1.40E-6	1.13E-3	8.14E-4	3.90E-4	6.01E-4	1.43E-5	1.84E-5	1.04E-5	1.52E-5	3.88E-9	4.85E-9	3.23E-9	1.43E-8
841	615783	4202092	1.59E-4	2.32E-4	1.25E-4	1.48E-5	6.88E-7	1.00E-6	5.41E-7	1.35E-5	4.75E-3	6.47E-2	3.95E-2	1.00E-2	1.12E-3	1.79E-3	1.73E-4	2.53E-4	4.76E-7	5.37E-7	4.97E-9	5.95E-8
842	615803	4202092	1.33E-4	1.93E-4	1.05E-4	1.45E-5	6.71E-7	9.75E-7	5.28E-7	1.32E-5	4.66E-3	4.57E-2	2.24E-2	8.20E-3	7.96E-4	1.04E-3	1.42E-4	2.07E-4	3.61E-7	3.74E-7	4.72E-9	5.79E-8
843	615163	4202112	4.48E-5	6.51E-5	3.52E-5	2.06E-5	9.46E-7	1.38E-6	7.45E-7	1.40E-6	1.18E-3	8.17E-4	3.94E-4	5.93E-4	1.43E-5	1.86E-5	1.03E-5	1.50E-5	3.96E-9	4.87E-9	3.20E-9	1.49E-8
844	615183	4202112	4.74E-5	6.89E-5	3.73E-5	2.06E-5	9.49E-7	1.38E-6	7.47E-7	1.56E-6	1.28E-3	8.67E-4	4.15E-4	6.24E-4	1.52E-5	1.96E-5	1.08E-5	1.58E-5	4.17E-9	5.13E-9	3.38E-9	1.62E-8
845	615783	4202112	1.57E-4	2.28E-4	1.24E-4	1.42E-5	6.59E-7	9.58E-7	5.19E-7	1.56E-5	5.53E-3	6.61E-2	3.93E-2	9.80E-3	1.15E-3	1.78E-3	1.69E-4	2.48E-4	4.80E-7	5.47E-7	4.66E-9	6.84E-8
846	615803	4202112	1.30E-4	1.90E-4	1.03E-4	1.39E-5	6.44E-7	9.36E-7	5.07E-7	1.50E-5	5.31E-3	4.66E-2	2.22E-2	7.96E-3	8.12E-4	1.03E-3	1.38E-4	2.01E-4	3.59E-7	3.76E-7	4.43E-9	6.52E-8
847	615183	4202132	4.26E-5	6.20E-5	3.36E-5	1.96E-5	9.02E-7	1.31E-6	7.10E-7	1.55E-6	1.34E-3	8.69E-4	4.18E-4	6.15E-4	1.52E-5	1.97E-5	1.06E-5	1.55E-5	4.24E-9	5.15E-9	3.37E-9	1.68E-8
848	615203	4202132	4.47E-5	6.49E-5	3.51E-5	1.96E-5	9.03E-7	1.31E-6	7.11E-7	1.74E-6	1.46E-3	9.23E-4	4.41E-4	6.47E-4	1.62E-5	2.08E-5	1.12E-5	1.64E-5	4.47E-9	5.44E-9	3.59E-9	1.84E-8
849	615183	4202152	3.88E-5	5.63E-5	3.05E-5	1.87E-5	8.59E-7	1.25E-6	6.76E-7	1.52E-6	1.38E-3	8.69E-4	4.21E-4	6.05E-4	1.52E-5	1.99E-5	1.05E-5	1.53E-5	4.29E-9	5.17E-9	3.37E-9	1.74E-8
850	615203	4202152	4.04E-5	5.87E-5	3.18E-5	1.87E-5	8.60E-7	1.25E-6	6.77E-7	1.72E-6	1.52E-3	9.23E-4	4.44E-4	6.36E-4	1.62E-5	2.09E-5	1.10E-5	1.61E-5	4.52E-9	5.46E-9	3.59E-9	1.91E-8
851	614923	4202172	1.98E-5	2.88E-5	1.56E-5	1.63E-5	7.52E-7	1.09E-6	5.92E-7	5.25E-7	5.25E-4	4.52E-4	2.32E-4	3.39E-4	7.94E-6	1.09E-5	5.89E-6	8.58E-6	2.51E-9	2.84E-9	1.86E-9	6.64E-9
852	614943	4202172	2.07E-5	3.01E-5	1.63E-5	1.65E-5	7.61E-7	1.11E-6	5.99E-7	5.53E-7	5.57E-4	4.72E-4	2.42E-4	3.52E-4	8.28E-6	1.14E-5	6.11E-6	8.91E-6	2.60E-9	2.99E-9	1.94E-9	7.05E-9
853	615203	4202172	3.69E-5	5.37E-5	2.91E-5	1.78E-5	8.19E-7	1.19E-6	6.45E-7	1.69E-6	1.57E-3	9.21E-4	4.47E-4	6.25E-4	1.62E-5	2.11E-5	1.08E-5	1.58E-5	4.56E-9	5.49E-9	3.61E-9	1.98E-8
854	615923	4202172	5.46E-5	7.94E-5	4.30E-5	1.08E-5	5.00E-7	7.27E-7	3.94E-7	1.08E-5	3.78E-3	1.17E-2	5.54E-3	2.70E-3	2.04E-4	2.61E-4	4.66E-5	6.82E-5	9.86E-8	1.21E-7	3.02E-9	4.66E-8
855	615943	4202172	4.91E-5	7.13E-5	3.86E-5	1.05E-5	4.88E-7	7.10E-7	3.84E-7	9.86E-6	3.47E-3	9.93E-3	4.86E-3	2.39E-3	1.73E-4	2.29E-4	4.13E-5	6.05E-5	8.43E-8	1.09E-7	2.91E-9	4.27E-8
856	615963	4202172	4.43E-5	6.44E-5	3.49E-5	1.03E-5	4.76E-7	6.93E-7	3.75E-7	9.04E-6	3.19E-3	8.50E-3	4.32E-3	2.14E-3	1.48E-4	2.04E-4	3.70E-5	5.41E-5	7.27E-8	9.87E-8	2.78E-9	3.93E-8
857	614923	4202192	1.91E-5	2.78E-5	1.51E-5	1.57E-5	7.21E-7	1.05E-6	5.68E-7	5.61E-7	5.29E-4	4.52E-4	2.33E-4	3.36E-4	7.94E-6	1.10E-5	5.83E-6	8.51E-6	2.52E-9	2.86E-9	1.87E-9	6.70E-9
858	614943	4202192	2.00E-5	2.90E-5	1.57E-5	1.58E-5	7.30E-7	1.06E-6	5.74E-7	5.88E-7	5.62E-4	4.72E-4	2.42E-4	3.49E-4	8.28E-6	1.14E-5	6.06E-6	8.83E-6	2.60E-9	2.97E-9	1.94E-9	7.11E-9
859	615203	4202192	3.40E-5	4.94E-5	2.68E-5	1.70E-5	7.82E-7	1.14E-6	6.15E-7	1.67E-6	1.61E-3	9.18E-4	4.50E-4	6.14E-4	1.61E-5	2.12E-5	1.06E-5	1.55E-5	4.60E-9	5.53E-9	3.64E-9	2.03E-8
860	615923	4202192	5.19E-5	7.55E-5	4.09E-5	1.05E-5	4.85E-7	7.05E-7	3.82E-7	1.04E-5	3.75E-3	1.05E-2	5.53E-3	2.44E-3	1.84E-4	2.61E-4	4.22E-5	6.16E-5	8.75E-8	1.22E-7	2.88E-9	4.61E-8
861	615943	4202192	4.65E-5	6.76E-5	3.66E-5	1.02E-5	4.74E-7	6.88E-7	3.73E-7	9.48E-6	3.43E-3	8.88E-3	4.86E-3	2.17E-3	1.55E-4	2.29E-4	3.75E-5	5.48E-5	7.43E-8	1.10E-7	2.78E-9	4.21E-8
862	615963	4202192	4.19E-5	6.09E-5	3.29E-5	9.97E-6	4.62E-7	6.72E-7	3.64E-7	8.66E-6	3.14E-3	7.58E-3	4.33E-3	1.94E-3	1.33E-4	2.04E-4	3.37E-5	4.91E-5	6.38E-8	9.97E-8	2.67E-9	3.86E-8
863	614923	4202212	1.85E-5	2.68E-5	1.45E-5	1.50E-5	6.92E-7	1.01E-6	5.45E-7	6.08E-7	5.33E-4	4.52E-4	2.33E-4	3.33E-4	7.93E-6	1.10E-5	5.78E-6	8.42E-6	2.50E-9	2.85E-9	1.86E-9	6.75E-9
864	614943	4202212	1.92E-5	2.80E-5	1.51E-5	1.52E-5	7.00E-7	1.02E-6	5.51E-7	6.37E-7	5.66E-4	4.71E-4	2.42E-4	3.45E-4	8.26E-6	1.14E-5	5.99E-6	8.74E-6	2.59E-9	2.96E-9	1.93E-9	7.17E-9
865	615203	4202212	3.15E-5	4.58E-5	2.48E-5	1.62E-5	7.47E-7	1.09E-6	5.88E-7	1.69E-6	1.64E-3	9.14E-4	4.52E-4	6.03E-4	1.60E-5	2.13E-5	1.04E-5	1.52E-5	4.63E-9	5.57E-9	3.66E-9	2.07E-8
866	615923	4202212	4.88E-5	7.09E-5	3.84E-5	1.01E-5	4.70E-7	6.83E-7	3.70E-7	9.85E-6	3.66E-3	9.18E-3	5.53E-3	2.17E-3	1.61E-4	2.61E-4	3.77E-5	5.49E-5	7.48E-8	1.24E-7	2.75E-9	4.49E-8
867	615943	4202212	4.36E-5	6.33E-5	3.43E-5	9.92E-6	4.59E-7	6.68E-7	3.62E-7	8.93E-6	3.33E-3	7.75E-3	4.87E-3	1.94E-3	1.36E-4	2.30E-4	3.37E-5	4.90E-5	6.33E-8	1.11E-7	2.65E-9	4.09E-8
868	615963	4202212	3.92E-5	5.70E-5	3.08E-5	9.68E-6	4.49E-7	6.53E-7	3.53E-7	8.14E-6	3.05E-3	6.63E-3	4.35E-3	1.74E-3	1.17E-4	2.05E-4	3.04E-5	4.41E-5	5.42E-8	1.01E-7	2.56E-9	3.74E-8
869	614923	4202232	1.78E-5	2.59E-5	1.40E-5	1.44E-5	6.64E-7	9.65E-7	5.23E-7	6.65E-7	5.36E-4	4.50E-4	2.33E-4	3.29E-4	7.90E-6	1.10E-5	5.71E-6	8.32E-6	2.47E-9	2.84E-9	1.85E-9	6.79E-9
870	614943	4202232	1.85E-5	2.69E-5	1.46E-5	1.45E-5	6.71E-7	9.75E-7	5.28E-7	6.97E-7	5.69E-4	4.69E-4	2.42E-4	3.41E-4	8.23E-6	1.14E-5	5.92E-6	8.63E-6	2.56E-9	2.95E-9	1.92E-9	7.21E-9
871	615203	4202232	2.94E-5	4.27E-5	2.31E-5	1.55E-5	7.14E-7	1.04E-6	5.62E-7	1.77E-6	1.67E-3	9.09E-4	4.54E-4	5.92E-4	1.60E-5	2.14E-5	1.02E-5	1.50E-5	4.64E-9	5.62E-9	3.68E-9	2.11E-8
872	614923	4202252	1.71E-5	2.49E-5	1.35E-5	1.38E-5	6.37E-7	9.27E-7	5.02E-7	7.24E-7	5.39E-4	4.48E-4	2.32E-4	3.25E-4	7.86E-6	1.09E-5	5.64E-6	8.22E-6	2.43E-9	2.78E-9	1.84E-9	6.81E-9
873	614943	4202252	1.78E-5	2.59E-5	1.40E-5	1.40E-5	6.44E-7	9.36E-7	5.07E-7	7.61E-7	5.72E-4	4.67E-4	2.41E-4	3.37E-4	8.19E-6	1.14E-5	5.84E-6	8.52E-6	2.51E-9	2.88E-9	1.90E-9	7.23E-9
874	615203	4202252	2.74E-5	3.99E-5	2.16E-5	1.48E-5	6.83E-7	9.92E-7	5.37E-7	1.92E-6	1.70E-3	9.03E-4	4.56E-4	5.80E-4	1.59E-5	2.15E-5	1.00E-5	1.47E-5	4.64E-9	5.67E-9	3.69E-9	2.14E-8
875	614923	4202272	1.65E-5	2.40E-5	1.30E-5	1.33E-5	6.12E-7	8.90E-7	4.82E-7	7.81E-7	5.40E-4	4.45E-4	2.31E-4	3.21E-4	7.81E-6	1.09E-5	5.56E-6	8.11E-6	2.37E-9	2.77E-9	1.82E-9	6.82E-9

876	614943	4202272	1.71E-5	2.49E-5	1.35E-5	1.34E-5	6.18E-7	8.99E-7	4.87E-7	8.22E-7	5.74E-4	4.64E-4	2.41E-4	3.32E-4	8.13E-6	1.13E-5	5.76E-6	8.40E-6	2.46E-9	2.87E-9	1.88E-9	7.25E-9
877	615183	4202272	2.51E-5	3.65E-5	1.97E-5	1.42E-5	6.55E-7	9.52E-7	5.15E-7	1.91E-6	1.53E-3	8.41E-4	4.30E-4	5.42E-4	1.48E-5	2.02E-5	9.39E-6	1.37E-5	4.33E-9	5.34E-9	3.48E-9	1.93E-8
878	615203	4202272	2.57E-5	3.74E-5	2.03E-5	1.42E-5	6.53E-7	9.49E-7	5.14E-7	2.11E-6	1.72E-3	8.94E-4	4.56E-4	5.68E-4	1.57E-5	2.15E-5	9.82E-6	1.44E-5	4.61E-9	5.71E-9	3.68E-9	2.16E-8
879	614923	4202292	1.59E-5	2.31E-5	1.25E-5	1.27E-5	5.88E-7	8.55E-7	4.63E-7	8.27E-7	5.40E-4	4.36E-4	2.26E-4	3.15E-4	7.45E-6	1.04E-5	5.45E-6	7.98E-6	2.30E-9	2.77E-9	1.80E-9	6.82E-9
880	614943	4202292	1.64E-5	2.39E-5	1.29E-5	1.29E-5	5.94E-7	8.63E-7	4.67E-7	8.73E-7	5.74E-4	4.58E-4	2.38E-4	3.27E-4	7.88E-6	1.10E-5	5.66E-6	8.28E-6	2.39E-9	2.87E-9	1.86E-9	7.24E-9
881	615183	4202292	2.37E-5	3.44E-5	1.86E-5	1.36E-5	6.28E-7	9.14E-7	4.95E-7	2.08E-6	1.55E-3	8.32E-4	4.29E-4	5.31E-4	1.46E-5	2.02E-5	9.19E-6	1.34E-5	4.29E-9	5.36E-9	3.48E-9	1.95E-8
882	615203	4202292	2.43E-5	3.53E-5	1.91E-5	1.36E-5	6.26E-7	9.11E-7	4.93E-7	2.29E-6	1.73E-3	8.84E-4	4.55E-4	5.56E-4	1.55E-5	2.14E-5	9.61E-6	1.40E-5	4.58E-9	5.74E-9	3.66E-9	2.18E-8
883	614923	4202312	1.53E-5	2.22E-5	1.20E-5	1.23E-5	5.64E-7	8.20E-7	4.44E-7	8.59E-7	5.35E-4	4.25E-4	2.22E-4	3.09E-4	7.14E-6	1.00E-5	5.21E-6	7.80E-6	2.19E-9	2.79E-9	1.78E-9	6.50E-9
884	614943	4202312	1.58E-5	2.30E-5	1.24E-5	1.24E-5	5.72E-7	8.31E-7	4.50E-7	9.06E-7	5.74E-4	4.50E-4	2.35E-4	3.22E-4	7.70E-6	1.08E-5	5.56E-6	8.15E-6	2.32E-9	2.90E-9	1.84E-9	7.24E-9
885	615183	4202312	2.24E-5	3.26E-5	1.76E-5	1.31E-5	6.04E-7	8.78E-7	4.75E-7	2.18E-6	1.55E-3	8.23E-4	4.27E-4	5.20E-4	1.45E-5	2.02E-5	9.00E-6	1.31E-5	4.24E-9	5.38E-9	3.47E-9	1.96E-8
886	614923	4202332	1.47E-5	2.14E-5	1.16E-5	1.18E-5	5.43E-7	7.90E-7	4.28E-7	8.70E-7	5.32E-4	4.19E-4	2.20E-4	3.03E-4	7.03E-6	9.95E-6	5.12E-6	7.67E-6	2.10E-9	2.83E-9	1.76E-9	6.45E-9
887	614943	4202332	1.52E-5	2.21E-5	1.20E-5	1.19E-5	5.49E-7	7.98E-7	4.32E-7	9.17E-7	5.69E-4	4.40E-4	2.31E-4	3.16E-4	7.39E-6	1.05E-5	5.33E-6	7.99E-6	2.18E-9	2.93E-9	1.83E-9	6.93E-9
888	615183	4202332	2.13E-5	3.09E-5	1.67E-5	1.26E-5	5.81E-7	8.44E-7	4.57E-7	2.20E-6	1.55E-3	8.12E-4	4.26E-4	5.08E-4	1.43E-5	2.01E-5	8.80E-6	1.29E-5	4.20E-9	5.42E-9	3.45E-9	1.95E-8
889	615183	4202352	2.02E-5	2.94E-5	1.59E-5	1.21E-5	5.59E-7	8.12E-7	4.40E-7	2.15E-6	1.54E-3	8.01E-4	4.24E-4	4.97E-4	1.41E-5	2.00E-5	8.59E-6	1.26E-5	4.16E-9	5.48E-9	3.41E-9	1.93E-8
890	615183	4202372	1.93E-5	2.80E-5	1.52E-5	1.17E-5	5.38E-7	7.83E-7	4.24E-7	2.05E-6	1.51E-3	7.89E-4	4.21E-4	4.85E-4	1.38E-5	1.99E-5	8.39E-6	1.23E-5	4.14E-9	5.57E-9	3.35E-9	1.91E-8
891	615183	4202392	1.84E-5	2.67E-5	1.45E-5	1.12E-5	5.19E-7	7.54E-7	4.08E-7	1.96E-6	1.48E-3	7.76E-4	4.19E-4	4.73E-4	1.36E-5	1.97E-5	8.19E-6	1.20E-5	4.15E-9	5.69E-9	3.29E-9	1.87E-8
892	615183	4202412	1.75E-5	2.55E-5	1.38E-5	1.08E-5	5.00E-7	7.27E-7	3.94E-7	1.90E-6	1.45E-3	7.63E-4	4.16E-4	4.62E-4	1.34E-5	1.96E-5	7.99E-6	1.17E-5	4.17E-9	5.84E-9	3.20E-9	1.83E-8
893	615183	4202432	1.68E-5	2.44E-5	1.32E-5	1.04E-5	4.82E-7	7.01E-7	3.80E-7	1.90E-6	1.41E-3	7.50E-4	4.14E-4	4.51E-4	1.32E-5	1.95E-5	7.80E-6	1.14E-5	4.22E-9	6.00E-9	3.11E-9	1.79E-8
894	615183	4202452	1.61E-5	2.34E-5	1.26E-5	1.01E-5	4.66E-7	6.77E-7	3.67E-7	1.95E-6	1.37E-3	7.35E-4	4.10E-4	4.40E-4	1.29E-5	1.93E-5	7.61E-6	1.11E-5	4.27E-9	6.16E-9	3.01E-9	1.73E-8
895	615203	4202452	1.64E-5	2.38E-5	1.29E-5	1.01E-5	4.65E-7	6.76E-7	3.66E-7	2.23E-6	1.52E-3	7.74E-4	4.34E-4	4.57E-4	1.36E-5	2.05E-5	7.90E-6	1.15E-5	4.59E-9	6.55E-9	3.01E-9	1.92E-8
896	615203	4202472	1.57E-5	2.29E-5	1.24E-5	9.73E-6	4.50E-7	6.54E-7	3.54E-7	2.32E-6	1.47E-3	7.57E-4	4.29E-4	4.45E-4	1.33E-5	2.02E-5	7.69E-6	1.12E-5	4.66E-9	6.69E-9	2.89E-9	1.85E-8
897	615223	4202472	1.60E-5	2.33E-5	1.26E-5	9.71E-6	4.49E-7	6.53E-7	3.53E-7	2.67E-6	1.63E-3	7.97E-4	4.55E-4	4.62E-4	1.40E-5	2.14E-5	7.98E-6	1.17E-5	5.03E-9	7.13E-9	2.86E-9	2.05E-8
898	615243	4202472	1.64E-5	2.38E-5	1.29E-5	9.68E-6	4.48E-7	6.51E-7	3.52E-7	3.10E-6	1.81E-3	8.41E-4	4.84E-4	4.79E-4	1.48E-5	2.28E-5	8.29E-6	1.21E-5	5.44E-9	7.64E-9	2.80E-9	2.28E-8
899	615263	4202472	1.67E-5	2.43E-5	1.32E-5	9.65E-6	4.46E-7	6.48E-7	3.51E-7	3.61E-6	2.03E-3	8.88E-4	5.15E-4	4.98E-4	1.56E-5	2.43E-5	8.61E-6	1.26E-5	5.89E-9	8.20E-9	2.74E-9	2.55E-8
900	615283	4202472	1.71E-5	2.49E-5	1.35E-5	9.61E-6	4.45E-7	6.46E-7	3.50E-7	4.23E-6	2.28E-3	9.39E-4	5.51E-4	5.18E-4	1.65E-5	2.59E-5	8.96E-6	1.31E-5	6.41E-9	8.83E-9	2.67E-9	2.87E-8
901	615303	4202472	1.75E-5	2.54E-5	1.38E-5	9.57E-6	4.43E-7	6.44E-7	3.49E-7	4.97E-6	2.58E-3	9.95E-4	5.90E-4	5.40E-4	1.75E-5	2.78E-5	9.32E-6	1.36E-5	6.99E-9	9.54E-9	2.60E-9	3.24E-8
902	615323	4202472	1.79E-5	2.60E-5	1.41E-5	9.53E-6	4.41E-7	6.41E-7	3.47E-7	5.84E-6	2.94E-3	1.06E-3	6.34E-4	5.62E-4	1.85E-5	2.99E-5	9.70E-6	1.42E-5	7.64E-9	1.03E-8	2.53E-9	3.69E-8
903	615343	4202472	1.84E-5	2.67E-5	1.45E-5	9.48E-6	4.39E-7	6.38E-7	3.45E-7	6.79E-6	3.37E-3	1.12E-3	6.85E-4	5.86E-4	1.97E-5	3.22E-5	1.01E-5	1.48E-5	8.37E-9	1.13E-8	2.47E-9	4.20E-8
904	615363	4202472	1.89E-5	2.75E-5	1.49E-5	9.43E-6	4.37E-7	6.35E-7	3.44E-7	7.75E-6	3.85E-3	1.20E-3	7.43E-4	6.11E-4	2.09E-5	3.49E-5	1.05E-5	1.54E-5	9.17E-9	1.23E-8	2.40E-9	4.79E-8
905	615383	4202472	1.94E-5	2.83E-5	1.53E-5	9.38E-6	4.34E-7	6.31E-7	3.42E-7	8.58E-6	4.36E-3	1.28E-3	8.09E-4	6.37E-4	2.23E-5	3.80E-5	1.10E-5	1.61E-5	1.00E-8	1.35E-8	2.34E-9	5.40E-8
906	615403	4202472	2.00E-5	2.91E-5	1.58E-5	9.32E-6	4.32E-7	6.27E-7	3.40E-7	9.18E-6	4.85E-3	1.36E-3	8.87E-4	6.64E-4	2.38E-5	4.17E-5	1.14E-5	1.68E-5	1.10E-8	1.48E-8	2.28E-9	6.00E-8
907	615423	4202472	2.07E-5	3.01E-5	1.63E-5	9.25E-6	4.29E-7	6.23E-7	3.38E-7	9.55E-6	5.25E-3	1.46E-3	9.78E-4	6.93E-4	2.54E-5	4.59E-5	1.19E-5	1.75E-5	1.20E-8	1.64E-8	2.21E-9	6.51E-8
908	615443	4202472	2.14E-5	3.11E-5	1.68E-5	9.19E-6	4.26E-7	6.19E-7	3.35E-7	9.69E-6	5.51E-3	1.56E-3	1.09E-3	7.23E-4	2.71E-5	5.11E-5	1.25E-5	1.83E-5	1.30E-8	1.83E-8	2.14E-9	6.86E-8
909	615463	4202472	2.21E-5	3.22E-5	1.74E-5	9.12E-6	4.23E-7	6.15E-7	3.33E-7	9.48E-6	5.64E-3	1.67E-3	1.22E-3	7.55E-4	2.90E-5	5.73E-5	1.30E-5	1.91E-5	1.40E-8	2.05E-8	2.07E-9	7.05E-8
910	615483	4202472	2.30E-5	3.34E-5	1.81E-5	9.05E-6	4.20E-7	6.10E-7	3.30E-7	8.96E-6	5.63E-3	1.78E-3	1.39E-3	7.88E-4	3.10E-5	6.51E-5	1.35E-5	1.99E-5	1.50E-8	2.32E-8	2.01E-9	7.06E-8
911	615503	4202472	2.39E-5	3.47E-5	1.88E-5	8.98E-6	4.16E-7	6.05E-7	3.28E-7	8.26E-6	5.53E-3	1.90E-3	1.60E-3	8.21E-4	3.30E-5	7.52E-5	1.41E-5	2.07E-5	1.60E-8	2.68E-8	1.97E-9	6.95E-8
912	615523	4202472	2.49E-5	3.61E-5	1.96E-5	8.91E-6	4.13E-7	6.00E-7	3.25E-7	7.44E-6	5.36E-3	2.03E-3	1.89E-3	8.52E-4	3.52E-5	8.88E-5	1.46E-5	2.15E-5	1.68E-8	3.15E-8	1.97E-9	6.72E-8
913	615543	4202472	2.59E-5	3.77E-5	2.04E-5	8.84E-6	4.10E-7	5.96E-7	3.23E-7	6.47E-6	5.10E-3	2.16E-3	2.31E-3	8.78E-4	3.74E-5	1.08E-4	1.51E-5	2.22E-5	1.75E-8	3.83E-8	2.00E-9	6.39E-8
914	615563	4202472	2.70E-5	3.93E-5	2.13E-5	8.77E-6	4.07E-7	5.91E-7	3.20E-7	5.56E-6	4.76E-3	2.28E-3	2.92E-3	8.98E-4	3.95E-5	1.37E-4	1.55E-5	2.27E-5	1.80E-8	4.92E-8	2.08E-9	5.97E-8
915	615243	4202492	1.57E-5	2.28E-5	1.24E-5	9.36E-6	4.33E-7	6.29E-7	3.41E-7	3.14E-6	1.72E-3	8.20E-4	4.78E-4	4.66E-4	1.44E-5	2.25E-5	8.05E-6	1.18E-5	5.51E-9	7.75E-9	2.67E-9	2.17E-8
916	615263	4202492	1.60E-5	2.33E-5	1.26E-5	9.33E-6	4.32E-7	6.27E-7	3.40E-7	3.63E-6	1.91E-3	8.65E-4	5.09E-4	4.84E-4	1.52E-5	2.40E-5	8.35E-6	1.22E-5	5.97E-9	8.33E-9	2.60E-9	2.41E-8
917	615283	4202492	1.64E-5	2.38E-5	1.29E-5	9.30E-6	4.30E-7	6.25E-7	3.39E-7	4.20E-6	2.14E-3	9.14E-4	5.43E-4	5.02E-4	1.60E-5	2.56E-5	8.67E-6	1.27E-5	6.49E-9	8.98E-9	2.53E-9	2.69E-8
918	615303	4202492	1.67E-5	2.43E-5	1.32E-5	9.26E-6	4.29E-7	6.23E-7	3.37E-7	4.87E-6	2.40E-3	9.67E-4	5.82E-4	5.22E-4	1.69E-5	2.74E-5	9.01E-6	1.32E-5	7.07E-9	9.70E-9	2.47E-9	3.01E-8
919	615323	4202492	1.71E-5	2.49E-5	1.35E-5	9.22E-6	4.27E-7	6.21E-7	3.36E-7	5.61E-6	2.70E-3	1.02E-3	6.25E-4	5.42E-4	1.79E-5	2.94E-5	9.36E-6	1.37E-5	7.70E-9	1.05E-8	2.41E-9	3.38E-8
920	615343	4202492	1.75E-5	2.55E-5	1.38E-5	9.18E-6	4.25E-7	6.18E-7	3.35E-7	6.36E-6	3.05E-3	1.09E-3	6.74E-4	5.64E-4	1.90E-5	3.17E-5	9.72E-6	1.43E-5	8.41E-9	1.14E-8	2.35E-9	3.80E-8
921	615363	4202492	1.80E-5	2.62E-5	1.42E-5	9.13E-6	4.23E-7	6.15E-7	3.33E-7	7.02E-6	3.42E-3	1.15E-3	7.31E-4	5.86E-4	2.02E-5	3.44E-5	1.01E-5	1.48E-5	9.16E-9	1.25E-8	2.29E-9	4.24E-8
922	615383	4202492	1.85E-5	2.69E-5	1.46E-5	9.08E-6	4.21E-7	6.12E-7	3.31E-7	7.51E-6	3.78E-3	1.23E-3	7.96E-4	6.09E-4	2.14E-5	3.74E-5	1.05E-5	1.54E-5	9.97E-9	1.37E-8	2.23E-9	4.68E-8
923	615403	4202492	1.90E-5	2.77E-5	1.50E-5	9.02E-6	4.18E-7	6.08E-7	3.29E-7	7.78E-6	4.09E-3	1.31E-3	8.71E-4	6.33E-4	2.28E-5	4.09E-5	1.09E-5	1.60E-5	1.08E-8	1.51E-8	2.17E-9	5.07E-8
924	615423	4202492	1.96E-5	2.85E-5	1.54E-5	8.95E-6	4.15E-7	6.03E-7	3.27E-7	7.89E-6	4.31E-3	1.39E-3	9.60E-4	6.59E-4	2.42E-5	4.51E-5	1.14E-5	1.67E-5	1.17E-8	1.67E-8	2.10E-9	5.36E-8
925	615443	4202492	2.02E-5	2.94E-5	1.59E-5	8.89E-6	4.12E-7	5.99E-7	3.24E-7	7.86E-6	4.44E-3	1.48E-3	1.07E-3	6.85E-4	2.57E-5	5.01E-5	1.18E-5	1.73E-5	1.26E-8	1.86E-8	2.03E-9	5.54E-8
926	615463	4202492	2.08E-5	3.03E-5	1.64E-5	8.82E-6	4.09E-7	5.95E-7	3.22E-7	7.64E-6	4.48E-3	1.57E-3	1.20E-3	7.12E-4	2.74E-5	5.62E-5	1.23E-5	1.80E-5	1.34E-8	2.09E-8	1.97E-9	5.62E-8
927	615483	4202492	2.15E-5	3.13E-5	1.69E-5	8.76E-6	4.06E-7	5.91E-7	3.20E-7	7.24E-6	4.46E-3	1.67E-3	1.36E-3	7.40E-4	2.91E-5	6.38E-5	1.27E-5	1.87E-5	1.42E-8	2.37E-8	1.91E-9	5.61E-8
928	615503	4202492	2.23E-5	3.24E-5	1.75E-5	8.69E-6	4.03E-7	5.86E-7	3.17E-7	6.73E-6	4.39E-3	1.78E-3	1.57E-3	7.66E-4	3.08E-5	7.38E-5	1.31E-5	1.94E-5	1.50E-8	2.73E-8	1.89E-9	5.52E-8
929	615523	4202492	2.30E-5	3.35E-5	1.81E-5	8.63E-6	4.00E-7	5.81E-7	3.15E-7	6.10E-6	4.28E-3	1.88E-3	1.86E-3	7.89E-4	3.26E-5	8.74E-5	1.35E-5	1.99E-5	1.56E-8	3.22E-8	1.89E-9	5.37E-8
930	615543	4202492	2.38E-5	3.46E-5	1.87E-5	8.56E-6	3.97E-7	5.77E-7	3.12E-7	5.37E-6	4.11E-3	1.98E-3	2.29E-3	8.07E-4	3.43E-5	1.07E-4	1.39E-5	2.04E-5	1.60E-8	3.92E-8	1.93E-9	5.16E-8
931	615563	4202492	2.45E-5	3.57E-5	1.93E-5	8.49E-6	3.94E-7	5.72E-7	3.10E-7	4.69E-6	3.90E-3	2.07E-3	2.96E-3	8.19E-4	3.59E-5	1.39E-4	1.41E-5	2.07E-5	1.62E-8	5.06E-8	2.01E-9	4.89E-8
932	615583	4202492	2.51E-5	3.64E-5	1.97E-5	8.43E-6	3.91E-7	5.68E-7	3.07E-7	4.12E-6	3.64E-3	2.15E-3	4.20E-3	8.27E-4	3.73E-5	1.96E-4	1.43E-5	2.09E-5	1.61E-8	7.28E-8	2.12E-9	4.57E-8
933	615583	4202512	2.26E-5	3.28E-5	1.78E-5	8.17E-6	3.78E-7	5.50E-7	2.98E-7	3.58E-6	3.08E-3	1.94E-3	4.23E-3	7.54E-4	3.37E-5	1.98E-4	1.31E-5	1.91E-5	1.42E-8	7.67E-8	2.06E-9	3.86E-8
934	615603	4202512	2.27E-5	3.29E-5	1.78E-5	8.10E-6	3.75E-7	5.45E-7	2.95E-7	3.19E-6	2.88E-3	1.97E-3	8.00E-3	7.55E-4	3.44E-5	3.71E-4	1.31E-5	1.91E-5	1.40E-8	1.45E-7	2.17E-9	3.61E-8
935	615603	4202532	2.05E-5	2.98E-5	1.61E-5	7.86E-6	3.64E-7	5.29E-7	2.87E-7	2.84E-6	2.50E-3	1.78E-3	6.92E-3	6.92E-4	3.11E-5	3.20E-4	1.21E-5	1.75E-5	1.24E-8	1.50E-7	2.11E-9	3.13E-8
936	615603	4202552	1.87E-5	2.72E-5	1.47E-5	7.64E-6	3.54E-7	5.14E-7	2.78E-7	2.56E-6	2.19E-3	1.61E-3	4.80E-3	6.39E-4	2.82E-5	2.21E-4	1.11E-5	1.61E-5	1.11E-8	1.12E-7	2.05E-9	2.75E-8
937	615623	4202552	1.85E-5	2.69E-5	1.46E-5	7.58E-6	3.51E-7	5.10E-7	2.76E-7	2.31E-6	2.07E-3	1.62E-3	6.41E-3	6.37E-4	2.84E-5	2.94E-4	1.11E-5	1.61E-5	1.11E-8	1.34E-7	2.13E-9	2.59E-8
938	615623	4202572	1.71E-5	2.48E-5	1.34E-5	7.37E-6	3.41E-7	4.96E-7	2.68E-7	2.11E-6	1.84E-3	1.47E-3	3.93E-3	5.92E-4	2.58E-5	1.82E-4	1.03E-5	1.50E-5	1.01E-8	8.56E-8	2.06E-9	2.31E-8
939	615623	4202592	1.58E-5	2.30E-5	1.24E-5	7.17E-6	3.32E-7	4.82E-7	2.61E-7	1.94E-6	1.66E-3	1.34E-3	2.82E-3	5.52E-4	2.36E-5	1.31E-4	9.62E-6	1.40E-5	9.22E-9	6.17E-8	2.01E-9	2.08E-8
940	615623	4202612	1.47E-5	2.14E-5	1.16E-5	6.98E-6	3.23E-7	4.70E-7	2.54E-7	1.79E-6	1.49E-3	1.23E-3	2.18E-3	5.17E-4	2.17E-5	1.01E-4	9.01E-6	1.31E-5	8.49E-9	4.74E-8	1.95E-9	1.87E-8
941	615623	4202632	1.38E-5	2.01E-5	1.09E-5	6.79E-6	3.15E-7	4.57E-7	2.48E-7	1.66E-6	1.35E-3	1.14E-3	1.76E-3	4.86E-4	2.01E-5	8.22E-5	8.47E-6	1.23E-5	7.86E-9	3.78E-8	1.89E-9	1.70E-8
942	615603	4202652	1.31E-5	1.90E-5	1.03E-5	6.67E-6	3.09E-7	4.49E-7	2.43E-7	1.63E-6	1.27E-3	1.06E-3	1.44E-3	4.58E-4	1.86E-5	6.72E-5	7.99E-6	1.16E-5	7.14E-9	3.18E-8	1.79E-9	1.59E-8
943	615623	4202652	1.30E-5	1.89E-5	1.02E-5	6.62E-6	3.06E-7	4.45E-7	2.41E-7	1.54E-6	1.23E-3	1.05E-3	1.47E-3	4.58E-4	1.86E-5	6.87E-5	7.98E-6	1.16E-5	7.31E-9	3.11E-8	1.84E-9	1.55E-8
944	615603	4202672	1.23E-5	1.79E-5	9.72E-6	6.50E-6	3.01E-7	4.37E-7	2.37E-7	1.51E-6	1.15E-3	9.82E-4	1.24E-3	4.33E-4	1.73E-5	5.78E-5	7.56E-6	1.10E-5	6.64E-9	2.68E-8	1.74E-9	1.45E-8
945	615623	4202672	1.23E-5	1.78E-5	9.65E-6	6.45E-6	2.99E-7	4.34E-7	2.35E-7	1.43E-6	1.13E-3	9.79E-4	1.25E-3	4.33E-4	1.73E-5	5.87E-5	7.55E-6	1.10E-5	6.83E-9	2.61E-8	1.79E-9	1.42E-8
946	615603	4202692	1.17E-5	1.70E-5	9.20E-6	6.33E-6	2.93E-7	4.26E-7	2.31E-7	1.40E-6	1.05E-3	9.16E-4	1.08E-3	4.11E-4	1.62E-5	5.05E-5	7.16E-6	1.04E-5	6.22E-9	2.29E-8	1.70E-9	1.33E-8
947	615583	4202712	1.12E-5	1.62E-5	8.79E-6	6.22E-6	2.88E-7	4.19E-7	2.27E-7	1.37E-6	9.79E-4	8.60E-4	9.42E-4	3.90E-4	1.51E-5	4.40E-5	6.81E-6	9.86E-6	5.70E-9	2.02E-8	1.60E-9	1.24E-8
948	615603	4202712	1.11E-5	1.61E-5	8.73E-6	6.18E-6	2.86E-7	4.16E-7	2.25E-7	1.30E-6	9.68E-4	8.57E-4	9.53E-4	3.90E-4	1.51E-5	4.47E-5	6.80E-6	9.87E-6	5.84E-9	1.98E-8	1.66E-9	1.22E-8
949	615583	4202732	1.06E-5	1.54E-5	8.36E-6	6.06E-6	2.81E-7	4.08E-7	2.21E-7	1.27E-6	9.00E-4	8.06E-4	8.43E-4	3.71E-4	1.42E-5	3.95E-5	6.48E-6	9.38E-6	5.35E-9	1.78E-8	1.56E-9	1.14E-8
950	615603	4202732	1.06E-5	1.53E-5	8.31E-6	6.03E-6	2.79E-7	4.05E-7	2.20E-7	1.21E-6	8.92E-4	8.03E-4	8.49E-4	3.71E-4	1.42E-5	3.99E-5	6.47E-6	9.39E-6	5.50E-9	1.74E-8	1.62E-9	1.12E-8
951	615583	4202752	1.01E-5	1.47E-5	7.96E-6	5.91E-6	2.74E-7	3.98E-7	2.15E-7	1.19E-6	8.31E-4	7.58E-4	7.60E-4	3.54E-4	1.34E-5	3.56E-5	6.17E-6	8.94E-6	5.04E-9	1.57E-8	1.53E-9	1.05E-8
952	615603	4202752	1.01E-5	1.46E-5	7.92E-6	5.88E-6	2.72E-7	3.95E-7	2.14E-7	1.13E-6	8.23E-4	7.55E-4	7.64E-4	3.54E-4	1.33E-5	3.59E-5	6.17E-6	8.95E-6	5.20E-9	1.55E-8	1.58E-9	1.04E-8
953	615603	4202772	9.60E-6	1.40E-5	7.56E-6	5.73E-6	2.65E-7	3.86E-7	2.09E-7	1.06E-6	7.63E-4	7.11E-4	6.91E-4	3.38E-4	1.26E-5	3.25E-5	5.88E-6	8.55E-6	4.92E-9	1.38E-8	1.54E-9	9.63E-9
954	615603	4202792	9.20E-6	1.34E-5	7.24E-6	5.60E-6	2.59E-7	3.77E-7	2.04E-7	1.00E-6	7.11E-4	6.73E-4	6.31E-4	3.24E-4	1.19E-5	2.97E-5	5.64E-6	8.19E-6	4.69E-9	1.25E-8	1.50E-9	8.98E-9

AERMOD Outputs

This sheet includes AERMOD GLC outputs averaged over period of 3-years of meteorological data based on unitized emission rate (1 g/s). Concentration Units: micrograms per cubic meter.

X	Y	HAUL_E	HAUL_F	HAUL_TE	HAUL_TF	IDLE_1	IDLE_2	IDLE_3	IDLE_TE	ON_1E	ON_1F	ON_2E	ON_2F	ON_3E	ON_3F	TRENCH_E	TRENCH_F
614702.88	4201251.51	0.49266	0.48531	0.68975	0.6827	0.12849	0.09874	0.0922	0.09016	0.15489	0.15332	0.14072	0.14043	0.12967	0.1294	0.18143	0.18028
614722.88	4201251.51	0.512	0.50393	0.72019	0.71162	0.13477	0.10205	0.09423	0.09379	0.15845	0.1577	0.14333	0.14305	0.13192	0.13161	0.18631	0.18511
614742.88	4201251.51	0.53184	0.52323	0.7514	0.74121	0.14151	0.10551	0.09657	0.09777	0.16207	0.16231	0.14599	0.14572	0.13426	0.13391	0.19142	0.19014
614762.88	4201251.51	0.55229	0.54339	0.78361	0.77185	0.14831	0.10906	0.09915	0.10208	0.16565	0.16697	0.14871	0.14842	0.13668	0.13633	0.19676	0.19541
614782.88	4201251.51	0.57341	0.56471	0.81702	0.80427	0.1547	0.11268	0.10187	0.10679	0.16909	0.17144	0.15148	0.15116	0.13918	0.13887	0.20237	0.20092
614802.88	4201251.51	0.59517	0.58709	0.85163	0.83871	0.16022	0.11634	0.10481	0.11182	0.17226	0.17543	0.1543	0.15394	0.14176	0.14151	0.20824	0.20671
614822.88	4201251.51	0.61745	0.60985	0.88734	0.87427	0.16447	0.12001	0.108	0.11733	0.17508	0.17865	0.15719	0.15676	0.14441	0.14426	0.21442	0.2128
614842.88	4201251.51	0.64015	0.63286	0.92404	0.9108	0.1672	0.12367	0.11141	0.12328	0.17747	0.18091	0.16015	0.15966	0.14713	0.1471	0.22091	0.21921
614862.88	4201251.51	0.66312	0.65651	0.96157	0.94907	0.16835	0.12733	0.11484	0.12972	0.1794	0.18217	0.16321	0.16264	0.14991	0.15	0.22774	0.22599
614882.88	4201251.51	0.6861	0.68067	0.99965	0.98895	0.16802	0.13103	0.11848	0.13663	0.1809	0.18257	0.16638	0.16573	0.15275	0.15297	0.23491	0.23315
614902.88	4201251.51	0.70873	0.70434	1.0378	1.02872	0.16654	0.13482	0.12223	0.14408	0.18206	0.18241	0.1697	0.16896	0.15564	0.15598	0.24246	0.24071
614922.88	4201251.51	0.73069	0.72654	1.07562	1.06664	0.16433	0.13876	0.12595	0.15197	0.183	0.18204	0.17318	0.17237	0.15859	0.15904	0.25038	0.24868
614942.88	4201251.51	0.75173	0.74693	1.11288	1.10226	0.16188	0.14292	0.12977	0.16045	0.18387	0.18183	0.17685	0.17602	0.16158	0.16215	0.25868	0.25705
614962.88	4201251.51	0.77171	0.76537	1.1496	1.13582	0.15963	0.14742	0.13368	0.16938	0.18479	0.18203	0.18075	0.17996	0.16462	0.16532	0.26736	0.26579
614982.88	4201251.51	0.7935	0.7841	1.18996	1.17161	0.15803	0.15249	0.13785	0.17904	0.18608	0.18293	0.18803	0.18552	0.17046	0.16972	0.27711	0.2753
615002.88	4201251.51	0.81285	0.79972	1.22855	1.20485	0.15701	0.15799	0.14185	0.18899	0.18757	0.18432	0.19258	0.19028	0.17389	0.17317	0.28674	0.28494
615022.88	4201251.51	0.82983	0.81246	1.26474	1.23559	0.15648	0.16388	0.14558	0.19904	0.18929	0.1861	0.19721	0.19531	0.17717	0.1765	0.29658	0.29476
615042.88	4201251.51	0.8459	0.82471	1.30079	1.26661	0.15634	0.17025	0.14911	0.20933	0.19135	0.18832	0.20203	0.20069	0.18049	0.17986	0.30682	0.30494
615162.88	4201251.51	0.92129	0.89148	1.50413	1.46313	0.15056	0.20779	0.16675	0.26829	0.20671	0.20704	0.23058	0.23249	0.2011	0.20036	0.37864	0.37559
615182.88	4201251.51	0.93004	0.90065	1.53377	1.49386	0.14839	0.21116	0.1694	0.27748	0.20861	0.20925	0.23446	0.23619	0.20463	0.20396	0.39293	0.3894
615202.88	4201251.51	0.93796	0.90911	1.56173	1.52312	0.14643	0.21308	0.172	0.28702	0.21006	0.21055	0.23791	0.23922	0.20816	0.20761	0.40816	0.40412
615222.88	4201251.51	0.94516	0.91702	1.58789	1.55084	0.14505	0.21358	0.17446	0.29786	0.21106	0.21099	0.24096	0.2416	0.21164	0.21127	0.42449	0.42009
615242.88	4201251.51	0.95165	0.92468	1.61219	1.57699	0.14467	0.21289	0.17654	0.31104	0.2117	0.21082	0.24367	0.24344	0.21503	0.21485	0.44202	0.43759
615262.88	4201251.51	0.95726	0.93276	1.63457	1.60156	0.14574	0.21138	0.17824	0.32803	0.21211	0.21041	0.24616	0.24494	0.21828	0.21825	0.46076	0.45671
615282.88	4201251.51	0.9616	0.94112	1.65498	1.62453	0.14868	0.20944	0.17908	0.35026	0.21241	0.2101	0.24856	0.24637	0.22135	0.22133	0.48053	0.47711
615302.88	4201251.51	0.96433	0.94751	1.67342	1.64579	0.15386	0.20749	0.17904	0.37892	0.21273	0.21013	0.25106	0.24806	0.22421	0.224	0.50108	0.4982
615322.88	4201251.51	0.96533	0.95097	1.68986	1.66516	0.16153	0.2058	0.17807	0.41398	0.21313	0.21052	0.25379	0.25029	0.22686	0.22623	0.52216	0.51958
615342.88	4201251.51	0.96467	0.95256	1.7043	1.68244	0.17156	0.2044	0.1763	0.45423	0.21364	0.21119	0.25687	0.25326	0.22935	0.22817	0.54368	0.54123
615362.88	4201251.51	0.96241	0.95288	1.71673	1.69744	0.18353	0.20317	0.17415	0.49697	0.21425	0.21194	0.26032	0.25702	0.23175	0.23005	0.56561	0.56335
615382.88	4201251.51	0.95851	0.95147	1.72714	1.71008	0.19648	0.20187	0.17201	0.53973	0.21491	0.2126	0.26408	0.26143	0.23416	0.23216	0.58783	0.58587
615402.88	4201251.51	0.95299	0.94762	1.73553	1.72032	0.20919	0.20026	0.17009	0.58217	0.21559	0.21305	0.268	0.26624	0.23666	0.23464	0.61005	0.60826
614702.88	4201271.51	0.52204	0.51476	0.73394	0.72682	0.12804	0.09863	0.09318	0.08775	0.15687	0.15479	0.14267	0.14235	0.13149	0.13132	0.18293	0.18178
614722.88	4201271.51	0.54403	0.53573	0.76871	0.75989	0.134	0.10185	0.0952	0.09108	0.16049	0.15911	0.14536	0.14505	0.13379	0.13356	0.18791	0.18671
614742.88	4201271.51	0.56664	0.55745	0.80447	0.79383	0.14067	0.10527	0.09736	0.09466	0.16423	0.16375	0.14812	0.14781	0.13617	0.13589	0.19311	0.19185
614762.88	4201271.51	0.59002	0.58026	0.84149	0.82914	0.14772	0.10886	0.09981	0.09862	0.16801	0.16859	0.15093	0.15062	0.13864	0.13832	0.19856	0.19722
614782.88	4201271.51	0.61426	0.6046	0.87999	0.86673	0.15469	0.11256	0.10249	0.10292	0.17172	0.17341	0.15381	0.15348	0.14119	0.14088	0.20427	0.20285
614802.88	4201271.51	0.6393	0.63028	0.91996	0.90661	0.16107	0.11635	0.10537	0.10752	0.17523	0.17793	0.15674	0.15638	0.14383	0.14355	0.21027	0.20876
614822.88	4201271.51	0.66504	0.65654	0.96128	0.94771	0.16639	0.12018	0.10843	0.11266	0.17843	0.18184	0.15974	0.15933	0.14655	0.14633	0.21658	0.21497
614842.88	4201271.51	0.69133	0.68348	1.00379	0.99033	0.17028	0.12404	0.1117	0.1182	0.18123	0.18485	0.16281	0.16235	0.14934	0.14922	0.22322	0.22151
614862.88	4201271.51	0.71796	0.71137	1.04723	1.03517	0.17252	0.12792	0.11518	0.12425	0.18356	0.18684	0.16598	0.16544	0.1522	0.15219	0.23022	0.22843
614882.88	4201271.51	0.74459	0.73943	1.09115	1.08113	0.17312	0.13182	0.11878	0.13078	0.18542	0.18782	0.16924	0.16863	0.15513	0.15524	0.23761	0.23575
614902.88	4201271.51	0.77081	0.76624	1.13499	1.1258	0.17228	0.1358	0.12248	0.13792	0.18686	0.18801	0.17264	0.17195	0.15812	0.15835	0.2454	0.24351
614922.88	4201271.51	0.79632	0.79115	1.17837	1.16789	0.17039	0.13991	0.12631	0.14561	0.188	0.18777	0.1762	0.17544	0.16117	0.16151	0.25363	0.25174
614942.88	4201271.51	0.82092	0.81417	1.22122	1.20751	0.16796	0.14419	0.13024	0.15393	0.18896	0.18747	0.17994	0.17913	0.16427	0.16473	0.2623	0.26047
614962.88	4201271.51	0.84451	0.83542	1.26364	1.24514	0.16548	0.14874	0.13424	0.16283	0.18992	0.18746	0.18389	0.18307	0.16743	0.16802	0.27143	0.26969
614982.88	4201271.51	0.87042	0.85772	1.31063	1.28604	0.16352	0.15383	0.13861	0.17264	0.19118	0.18813	0.19128	0.18867	0.17341	0.17257	0.28172	0.27979
615002.88	4201271.51	0.89361	0.87696	1.3557	1.32476	0.16209	0.15929	0.14289	0.18301	0.1926	0.1893	0.19592	0.19342	0.17699	0.17618	0.29195	0.29011
615022.88	4201271.51	0.91393	0.89296	1.39795	1.36136	0.16123	0.16514	0.14684	0.19367	0.19425	0.19093	0.20066	0.19843	0.18043	0.17969	0.30246	0.30068
615042.88	4201271.51	0.933	0.90812	1.43991	1.39895	0.16088	0.17148	0.15071	0.20477	0.19625	0.19305	0.20562	0.20384	0.18392	0.18324	0.31343	0.31165
615162.88	4201271.51	1.01753	0.98695	1.66967	1.62873	0.15564	0.21188	0.17009	0.27487	0.21222	0.21236	0.23623	0.23807	0.20563	0.20482	0.39052	0.38768
615182.88	4201271.51	1.02636	0.99658	1.70193	1.66278	0.15342	0.21635	0.17285	0.28593	0.21435	0.21492	0.24062	0.24246	0.20938	0.20859	0.40586	0.40261
615202.88	4201271.51	1.03406	1.00534	1.73202	1.69491	0.15132	0.21939	0.17555	0.29691	0.216	0.21657	0.24459	0.24617	0.21313	0.21244	0.42218	0.41843
615222.88	4201271.51	1.04082	1.01336	1.75988	1.72506	0.14972	0.22089	0.17822	0.30832	0.21719	0.21727	0.24813	0.24918	0.21687	0.21635	0.43966	0.43538
615242.88	4201271.51	1.04665	1.02102	1.78546	1.75319	0.14906	0.22098	0.18076	0.32073	0.21796	0.21725	0.25126	0.25155	0.22056	0.22023	0.45848	0.45385
615262.88	4201271.51	1.05132	1.02905	1.80873	1.77926	0.14984	0.21994	0.18287	0.33557	0.21845	0.21687	0.25409	0.25343	0.22413	0.22401	0.47873	0.47414
615282.88	4201271.51	1.05436	1.03673	1.8297	1.80315	0.15249	0.21818	0.18425	0.3544	0.2188	0.21652	0.25673	0.25504	0.22754	0.22753	0.50036	0.49622
615302.88	4201271.51	1.05542	1.04136	1.84838	1.82477	0.15747	0.21613	0.18493	0.37892	0.21913	0.21646	0.25936	0.25673	0.23074	0.23068	0.52312	0.51958
615322.88	4201271.51	1.05446	1.04273	1.86481	1.84401	0.16504	0.21419	0.18453	0.41068	0.21954	0.2168	0.26216	0.25881	0.23371	0.23336	0.5467	0.54359
615342.88	4201271.51	1.05156	1.0422	1.87902	1.86081	0.17516	0.21252	0.18326	0.45006	0.22006	0.21745	0.26526	0.26159	0.23646	0.23562	0.5709	0.56799
615362.88	4201271.51	1.04676	1.04001	1.89103	1.87512	0.1874	0.2111	0.18125	0.49579	0.22068	0.21823	0.26874	0.26519	0.23907	0.23764	0.59567	0.59297
615382.88	4201271.51	1.04007	1.0354	1.90086	1.88695	0.20082	0.20974	0.17899	0.54511	0.22138	0.21893	0.27258	0.26956	0.24162	0.23974	0.62093	0.6186
614702.88	4201291.51	0.55492	0.54787	0.78371	0.77656	0.128	0.09873	0.0943	0.0861	0.15895	0.15644	0.14469	0.14435	0.13336	0.13328	0.18443	0.18324
614722.88	4201291.51	0.58015	0.57185	0.82377	0.8147	0.13346	0.10181	0.09625	0.08909	0.16261	0.16065	0.14744	0.1471	0.13571	0.13557	0.1895	0.18827
614742.88	4201291.51	0.60617	0.59668	0.86509	0.85396	0.13988	0.10514	0.09837	0.09233	0.16644	0.16527	0.15028	0.14994	0.13814	0.13794	0.1948	0.19352
614762.88	4201291.51	0.63316	0.62282	0.90802	0.89505	0.14695	0.10869	0.10068	0.09587	0.17037	0.17019	0.15319	0.15285	0.14066	0.14042	0.20035	0.19901
614782.88	4201291.51	0.66124	0.65087	0.95281	0.93905	0.15429	0.11241	0.10323	0.09977	0.17431	0.17525	0.15617	0.15582	0.14327	0.143	0.20617	0.20476
614802.88	4201291.51	0.69034	0.68044	0.99942	0.9856	0.16139	0.11628	0.10603	0.10396	0.17813	0.18021	0.15921	0.15884	0.14597	0.14569	0.21228	0.21079
614822.88	4201291.51	0.72032	0.7109	1.04768	1.03365	0.1677	0.12024	0.10907	0.10862	0.18171	0.18473	0.16233	0.16192	0.14875	0.14851	0.21871	0.21712
614842.88	4201291.51	0.75101	0.74262	1.09737	1.08401	0.17275	0.12425	0.11225	0.11368	0.18492	0.18851	0.16552	0.16507	0.15162	0.15144	0.22548	0.22379
614862.88	4201291.51	0.78209	0.77547	1.14805	1.13677	0.1762	0.12832	0.11567	0.11922	0.18768	0.19128	0.1688	0.16828	0.15457	0.15447	0.23264	0.23084
614882.88	4201291.51	0.81312	0.80784	1.19909	1.18946	0.17789	0.13244	0.11926	0.12531	0.18995	0.19297	0.17218	0.1716	0.15758	0.15759	0.24019	0.2383
614902.88	4201291.51	0.8437	0.83828	1.24989	1.23961	0.17792	0.13662	0.12289	0.13201	0.19174	0.19369	0.17567	0.17502	0.16067	0.16079	0.2482	0.24622
614922.88	4201291.51	0.87358	0.86652	1.30022	1.28675	0.17658	0.14091	0.12673	0.13922	0.19314	0.19372	0.17932	0.1786	0.16382	0.16405	0.25667	0.25464
614942.88	4201291.51	0.90363	0.89366	1.35144	1.33268	0.17439	0.14539	0.13084	0.14721	0.19432	0.1935	0.18354	0.18282	0.1674	0.16774	0.26583	0.26373
614962.88	4201291.51	0.93402	0.92032	1.40421	1.37866	0.1719	0.15016	0.13511	0.15599	0.19544	0.19345	0.19025	0.18767	0.17286	0.17187	0.27581	0.27352
614982.88	4201291.51	0.96308	0.94572	1.45688	1.42409	0.16955	0.15523	0.13951	0.16544	0.19661	0.19379	0.19473	0.19208	0.17655	0.17554	0.28602	0.28383
615002.88	4201291.51	0.99013	0.96917	1.50826	1.46895	0.16766	0.16067	0.14375	0.17564	0.19794	0.19467	0.1994	0.19677	0.18015	0.17922	0.29673	0.29468
615022.88	4201291.51	1.01464	0.99021	1.55775	1.51365	0.1664	0.16651	0.14797	0.18654	0.19951	0.19609	0.20425	0.20178	0.18376	0.18291	0.3079	0.30601
615042.88	4201291.51	1.03733	1.00973	1.60652	1.5597	0.16577	0.17283	0.15219	0.19811	0.20144	0.19808	0.20934	0.20719	0.18741	0.18665	0.31962	0.31784
615062.88	4201291.51	1.05807	1.02836	1.65418	1.60652	0.16555	0.17964	0.15631	0.21036	0.20374	0.20057	0.21464	0.21301	0.19112	0.19042	0.33188	0.33013
615082.88	4201291.51	1.07683	1.04657	1.70031	1.65315	0.16542	0.18687	0.16022	0.22313	0.20638	0.20352	0.2201	0.21915	0.19487	0.1942	0.3447	0.34288
615102.88	4201291.51	1.09354	1.06362	1.74459	1.69874	0.16506	0.19434	0.16393	0.23649	0.20926	0.20689	0.22566	0.22547	0.19866	0.19799	0.35811	0.35612
615122.88	4201291.51	1.10807	1.07803	1.78672	1.74268	0.16425	0.20183	0.16739	0.25012	0.21226	0.21056	0.23123	0.23179	0.2025	0.20177	0.37217	0.36995
615142.88	4201291.51	1.12037	1.08965	1.82649	1.78462	0.16286	0.20904	0.17062	0.264	0.21521	0.21433	0.23668	0.23789	0.20638	0.20558	0.38695	0.38448
615162.88	4201291.51	1.13058	1.10001	1.86376	1.82437	0.16095	0.2156	0.17355	0.27773	0.21795	0.21787	0.24192	0.24357	0.2103	0.20945	0.40255	0.39981
615182.88	4201291.51	1.13902	1.10973	1.8984	1.86181	0.15873	0.22114	0.17645	0.29143	0.22031	0.22079	0.24684	0.24867	0.21426	0.21339	0.41908	0.41603
615202.88	4201291.51	1.14599	1.11844	1.93034	1.89684	0.15652	0.22534	0.17924	0.30487	0.22221	0.2228	0.25136	0.25311	0.21826	0.21744	0.43668	0.43321
615222.88	4201291.51	1.15176	1.12615	1.95956	1.9293	0.1547	0.22799	0.18216	0.31823	0.22359	0.22381	0.25544	0.25682	0.22226	0.22157	0.45551	0.45151
615242.88	4201291.51	1.15637	1.13329	1.98606	1.95902	0.15377	0.22908	0.18482	0.33183	0.22452	0.22398	0.25907	0.25983	0.22623	0.22574	0.47579	0.47127
615262.88	4201291.51	1.15948	1.14058	2.00985	1.98586	0.15423	0.22876	0.18725	0.34651	0.22512	0.22366	0.26232	0.26222	0.23013	0.22987	0.49771	0.49289
615282.88	4201291.51	1.16055	1.14651	2.03101	2.00975	0.15659	0.22738	0.18939	0.36339	0.22552	0.22328	0.26529	0.26417	0.2339	0.23383	0.52133	0.51666
615302.88	4201291.51	1.15925	1.1483	2.04959	2.03077	0.16132	0.22538	0.19061	0.38441	0.22587	0.22315	0.26814	0.26597	0.23747	0.23748	0.54651	0.54234
615322.88	4201291.51	1.15557	1.14674	2.06567	2.04905	0.16877	0.22327	0.191	0.41168	0.22629	0.22342	0.27106	0.26799	0.2408	0.24068	0.57291	0.56923
615342.88	4201291.51	1.14962	1.14324	2.07933	2.06476	0.17895	0.22133	0.19028	0.44719	0.22681	0.22405	0.27421	0.27059	0.24389	0.24337	0.60019	0.59676
615362.88	4201291.51	1.14231	1.13829	2.09257	2.07994	0.19152	0.21972	0.18869	0.49206	0.22752	0.2249	0.27781	0.27407	0.24692	0.24576	0.62864	0.62537
615382.88	4201291.51	1.13378	1.13124	2.10574	2.09495	0.20559	0.21837	0.18664	0.54542	0.2284	0.22581	0.28189	0.27852	0.24992	0.24811	0.65839	0.6555
614702.88	4201311.51	0.59195	0.5852	0.84024	0.83312	0.12849	0.09909	0.09553	0.08523	0.16116	0.1583	0.14678	0.14646	0.13526	0.13526	0.1859	0.18465
614722.88	4201311.51	0.62119	0.61301	0.88685	0.87754	0.13334	0.10199	0.09738	0.08795	0.16482	0.16238	0.1496	0.14925	0.13767	0.13762	0.19107	0.18979
614742.88	4201311.51	0.65145	0.64184	0.93508	0.92344	0.13929	0.10518	0.09948	0.09088	0.1687	0.1669	0.1525	0.15214	0.14016	0.14006	0.19647	0.19516
614762.88	4201311.51	0.68296	0.67233	0.98539	0.97179	0.14617	0.10863	0.10176	0.09405	0.17275	0.17183	0.1555	0.15513	0.14274	0.14259	0.20213	0.20076
614782.88	4201311.51	0.71586	0.70512	1.03807	1.02383	0.15364	0.11231	0.10422	0.09757	0.17688	0.17703	0.15857	0.1582	0.14542	0.14521	0.20806	0.20663
614802.88	4201311.51	0.75005	0.73958	1.09303	1.07871	0.16124	0.1162	0.10687	0.10129	0.18097	0.18231	0.16173	0.16133	0.14818	0.14795	0.21429	0.21279

614822.88	4201311.51	0.78537	0.77534	1.15005	1.13574	0.1684	0.12023	0.10982	0.1055	0.1849	0.18737	0.16496	0.16454	0.15103	0.15081	0.22084	0.21925
614842.88	4201311.51	0.82154	0.81293	1.20875	1.19595	0.17458	0.12437	0.11299	0.11004	0.18853	0.19185	0.16827	0.16782	0.15398	0.15378	0.22774	0.22606
614862.88	4201311.51	0.85812	0.85135	1.26844	1.25798	0.17928	0.12859	0.11629	0.11508	0.19175	0.19545	0.17167	0.17117	0.157	0.15686	0.23503	0.23324
614882.88	4201311.51	0.89459	0.88841	1.32832	1.31818	0.18222	0.13289	0.1198	0.12063	0.19447	0.19795	0.17517	0.17461	0.16011	0.16005	0.24274	0.24084
614902.88	4201311.51	0.9306	0.92314	1.3879	1.37486	0.18332	0.13727	0.12351	0.12666	0.19667	0.19934	0.17878	0.17816	0.16329	0.16332	0.25091	0.2489
614922.88	4201311.51	0.96687	0.95636	1.44826	1.42951	0.18281	0.14179	0.12737	0.13338	0.19843	0.19985	0.18283	0.18217	0.16686	0.16693	0.2597	0.25757
614942.88	4201311.51	1.00397	0.98912	1.51056	1.4841	0.18109	0.14649	0.13156	0.14089	0.1999	0.19987	0.1878	0.18685	0.17112	0.17101	0.26925	0.26694
614962.88	4201311.51	1.04166	1.02235	1.57539	1.54042	0.17873	0.15146	0.13603	0.14924	0.20122	0.19983	0.19383	0.19127	0.17608	0.17488	0.2795	0.27698
614982.88	4201311.51	1.07511	1.05212	1.63493	1.5926	0.17608	0.15658	0.14026	0.15805	0.20235	0.19989	0.19831	0.19565	0.1797	0.17855	0.28998	0.28749
615002.88	4201311.51	1.10685	1.08135	1.69377	1.64617	0.17376	0.16205	0.14464	0.16776	0.20359	0.20045	0.20302	0.20032	0.18338	0.18232	0.30108	0.29871
615022.88	4201311.51	1.13645	1.10925	1.75163	1.70132	0.17206	0.16794	0.14904	0.17838	0.20509	0.20164	0.20798	0.20534	0.18714	0.18617	0.31285	0.31066
615042.88	4201311.51	1.1634	1.13455	1.80797	1.75718	0.17107	0.17429	0.15343	0.18983	0.20695	0.20345	0.21319	0.21077	0.19097	0.1901	0.32529	0.3233
615062.88	4201311.51	1.18743	1.157	1.8623	1.81251	0.17062	0.18113	0.15785	0.20232	0.2092	0.20583	0.21866	0.21662	0.19487	0.19408	0.33839	0.33657
615082.88	4201311.51	1.20852	1.17753	1.91419	1.86631	0.17044	0.18843	0.16225	0.21561	0.21182	0.20872	0.22433	0.22287	0.19882	0.1981	0.35215	0.35041
615102.88	4201311.51	1.22671	1.19646	1.96333	1.91795	0.17017	0.19609	0.16634	0.22979	0.21474	0.21209	0.23016	0.22941	0.20282	0.20213	0.36659	0.36478
615122.88	4201311.51	1.24202	1.21253	2.00951	1.96707	0.16952	0.20392	0.17028	0.24468	0.21784	0.21583	0.23606	0.23609	0.20687	0.20615	0.38176	0.37974
615142.88	4201311.51	1.25443	1.22484	2.05258	2.01348	0.16831	0.21166	0.17389	0.2602	0.22096	0.21976	0.24193	0.2427	0.21096	0.21018	0.39771	0.39539
615162.88	4201311.51	1.26412	1.23491	2.09243	2.05705	0.16652	0.219	0.17721	0.2762	0.22391	0.22357	0.24765	0.249	0.21511	0.21425	0.41456	0.41191
615182.88	4201311.51	1.27149	1.24407	2.12901	2.09763	0.16432	0.22553	0.1803	0.29252	0.22653	0.22686	0.25311	0.25482	0.2193	0.21838	0.43242	0.42946
615202.88	4201311.51	1.277	1.25193	2.16234	2.13496	0.16201	0.2309	0.18328	0.30884	0.22867	0.22927	0.25821	0.26001	0.22354	0.22262	0.45146	0.44815
615222.88	4201311.51	1.28104	1.25836	2.19244	2.1688	0.16001	0.23479	0.18621	0.32515	0.23029	0.23063	0.26288	0.26449	0.22781	0.22697	0.47185	0.4681
615242.88	4201311.51	1.28367	1.26395	2.21939	2.19901	0.1588	0.23704	0.18903	0.3414	0.2314	0.23103	0.26708	0.26823	0.23208	0.23141	0.49382	0.48953
615262.88	4201311.51	1.28443	1.26947	2.24327	2.22561	0.15894	0.23768	0.19188	0.35787	0.23212	0.23082	0.27084	0.27127	0.2363	0.23586	0.51761	0.51284
615282.88	4201311.51	1.28268	1.27242	2.26421	2.24876	0.16098	0.23695	0.1944	0.37529	0.23259	0.23042	0.27423	0.2737	0.24043	0.24024	0.54343	0.53848
615302.88	4201311.51	1.2785	1.27079	2.28318	2.26958	0.16547	0.23527	0.19634	0.39503	0.233	0.23024	0.27742	0.27581	0.24443	0.24441	0.5714	0.56675
615322.88	4201311.51	1.27198	1.2664	2.30042	2.28849	0.17283	0.23317	0.19747	0.41912	0.23348	0.23049	0.2806	0.27795	0.2483	0.24823	0.60131	0.59716
615342.88	4201311.51	1.2619	1.25888	2.31321	2.30298	0.18305	0.231	0.19745	0.44989	0.23402	0.23108	0.28386	0.28041	0.25179	0.25148	0.63225	0.62838
615362.88	4201311.51	1.25074	1.24963	2.32698	2.31847	0.19593	0.22914	0.19653	0.49055	0.23479	0.23199	0.28756	0.28375	0.25514	0.25434	0.66489	0.66107
615382.88	4201311.51	1.23873	1.23855	2.34226	2.33548	0.21061	0.22767	0.19485	0.54273	0.23579	0.23304	0.29182	0.28816	0.25849	0.25699	0.6995	0.6959
615402.88	4201311.51	1.22145	1.22196	2.34785	2.34302	0.22519	0.22601	0.19454	0.60378	0.23662	0.2337	0.29617	0.29313	0.26143	0.25938	0.73357	0.73048
614702.88	4201331.51	0.63396	0.62755	0.90505	0.89805	0.12959	0.09975	0.09676	0.08523	0.16351	0.1604	0.14896	0.1487	0.1372	0.13724	0.18736	0.186
614722.88	4201331.51	0.66824	0.66019	0.9599	0.95042	0.13374	0.10244	0.09866	0.0877	0.16716	0.16432	0.15183	0.15152	0.13967	0.13968	0.19263	0.19125
614742.88	4201331.51	0.70384	0.69417	1.01688	1.00473	0.13907	0.10544	0.10067	0.09037	0.17107	0.16872	0.1548	0.15445	0.14222	0.14221	0.19813	0.19673
614762.88	4201331.51	0.74111	0.73033	1.07659	1.06238	0.14554	0.10875	0.10291	0.09321	0.17519	0.17358	0.15787	0.1575	0.14487	0.14481	0.2039	0.20247
614782.88	4201331.51	0.78016	0.76932	1.13936	1.1247	0.1529	0.11234	0.1053	0.09633	0.17946	0.17883	0.16104	0.16064	0.14761	0.1475	0.20995	0.20847
614802.88	4201331.51	0.82089	0.8102	1.20505	1.19029	0.16076	0.11618	0.10795	0.09975	0.18379	0.18432	0.1643	0.16388	0.15045	0.1503	0.21629	0.21476
614822.88	4201331.51	0.86305	0.85304	1.27331	1.25914	0.16858	0.12023	0.11077	0.10351	0.18804	0.18979	0.16764	0.16721	0.15338	0.15321	0.22297	0.22136
614842.88	4201331.51	0.9062	0.89793	1.3435	1.33175	0.17575	0.12443	0.11386	0.10757	0.19207	0.1949	0.17108	0.17061	0.15641	0.15624	0.23	0.22831
614862.88	4201331.51	0.94974	0.94258	1.41463	1.40441	0.1817	0.12877	0.11714	0.11202	0.19574	0.1993	0.1746	0.17409	0.15952	0.15938	0.23743	0.23564
614882.88	4201331.51	0.99312	0.98493	1.48584	1.4734	0.18598	0.13321	0.12059	0.11699	0.19894	0.20267	0.17823	0.17767	0.16272	0.16262	0.24529	0.24338
614902.88	4201331.51	1.03613	1.02489	1.55684	1.53841	0.18834	0.13776	0.12421	0.12243	0.2016	0.20487	0.18197	0.18135	0.166	0.16597	0.25362	0.25159
614922.88	4201331.51	1.08313	1.06692	1.63417	1.60685	0.18897	0.14257	0.12845	0.12866	0.20391	0.20614	0.18861	0.18634	0.17175	0.17033	0.26312	0.26069
614942.88	4201331.51	1.12818	1.10685	1.70974	1.67263	0.18795	0.14748	0.13263	0.13548	0.2057	0.20654	0.19293	0.19053	0.17545	0.17406	0.27272	0.27016
614962.88	4201331.51	1.17076	1.14499	1.78234	1.73666	0.18576	0.15251	0.13678	0.14297	0.2071	0.20645	0.19735	0.19482	0.17913	0.17779	0.28285	0.28019
614982.88	4201331.51	1.21127	1.18276	1.85301	1.80155	0.18305	0.15777	0.141	0.15113	0.20832	0.20637	0.20194	0.19929	0.18286	0.18158	0.29362	0.29091
615002.88	4201331.51	1.24969	1.22041	1.92227	1.86823	0.18041	0.16336	0.14541	0.16015	0.20957	0.20669	0.20677	0.20404	0.18669	0.18547	0.30512	0.30242
615022.88	4201331.51	1.28518	1.25635	1.9894	1.9354	0.17827	0.16935	0.14987	0.17013	0.21103	0.20762	0.21185	0.20911	0.19061	0.18948	0.31738	0.3148
615042.88	4201331.51	1.31698	1.28843	2.05375	2.00147	0.17684	0.17578	0.1545	0.18105	0.21281	0.20921	0.2172	0.21457	0.19461	0.19358	0.33044	0.32806
615062.88	4201331.51	1.3446	1.3154	2.11485	2.06528	0.17609	0.18269	0.1593	0.19314	0.21498	0.21144	0.22282	0.22046	0.19869	0.19778	0.34431	0.34218
615082.88	4201331.51	1.36796	1.33812	2.17236	2.12617	0.17577	0.19009	0.16392	0.20636	0.21757	0.21424	0.22869	0.22678	0.20285	0.20204	0.359	0.35711
615102.88	4201331.51	1.38728	1.35823	2.22605	2.1838	0.17552	0.19789	0.16851	0.22066	0.22051	0.21758	0.23477	0.23349	0.20706	0.20633	0.37451	0.37274
615122.88	4201331.51	1.40277	1.37542	2.27581	2.23798	0.17501	0.20599	0.17284	0.23613	0.22369	0.22136	0.24098	0.24046	0.21134	0.21062	0.39087	0.38904
615142.88	4201331.51	1.41457	1.38801	2.32159	2.28853	0.17397	0.21417	0.17691	0.25266	0.22697	0.22543	0.24724	0.2475	0.21567	0.21491	0.40811	0.40604
615162.88	4201331.51	1.42289	1.39686	2.36339	2.33519	0.17235	0.22216	0.18069	0.2702	0.23014	0.2295	0.25344	0.25439	0.22006	0.21922	0.42634	0.4239
615182.88	4201331.51	1.42825	1.40406	2.40128	2.37766	0.17021	0.22958	0.18417	0.28858	0.23301	0.23314	0.25944	0.26091	0.2245	0.22357	0.44568	0.44283
615202.88	4201331.51	1.43132	1.40955	2.43534	2.41576	0.16784	0.23605	0.18738	0.30753	0.23542	0.23597	0.26514	0.26688	0.22899	0.22802	0.46631	0.46308
615222.88	4201331.51	1.43265	1.41326	2.46572	2.44951	0.16568	0.2412	0.19047	0.32702	0.23729	0.23772	0.27043	0.27217	0.23353	0.23258	0.48845	0.48483
615242.88	4201331.51	1.43232	1.41617	2.49255	2.47914	0.16419	0.24475	0.19356	0.34659	0.23861	0.23841	0.27527	0.27671	0.2381	0.23726	0.51233	0.50825
615262.88	4201331.51	1.4297	1.41893	2.51603	2.50496	0.16399	0.24656	0.19652	0.36646	0.23948	0.23835	0.27961	0.28049	0.24266	0.24203	0.53825	0.53365
615282.88	4201331.51	1.42401	1.41776	2.53631	2.52726	0.16568	0.24673	0.19934	0.3866	0.24004	0.23797	0.28352	0.28357	0.24716	0.24678	0.56652	0.56151
615302.88	4201331.51	1.41697	1.41307	2.55792	2.55059	0.16999	0.24569	0.20201	0.40798	0.24058	0.2378	0.28723	0.28623	0.25174	0.25154	0.59791	0.59293
615322.88	4201331.51	1.4088	1.40725	2.58168	2.5758	0.1774	0.24398	0.20415	0.43229	0.24127	0.23816	0.29095	0.28883	0.25627	0.25615	0.6326	0.62812
615342.88	4201331.51	1.39326	1.39412	2.59374	2.58938	0.18765	0.24169	0.20495	0.46014	0.24184	0.23872	0.29441	0.29129	0.26022	0.26003	0.66808	0.66401
615362.88	4201331.51	1.37472	1.37681	2.60327	2.60039	0.20069	0.23948	0.20459	0.49538	0.24255	0.23956	0.2981	0.29435	0.26388	0.26334	0.70504	0.70093
615382.88	4201331.51	1.35387	1.35651	2.61114	2.60974	0.2156	0.23755	0.20446	0.54151	0.24339	0.24047	0.3022	0.29834	0.26731	0.26617	0.74347	0.73924
615402.88	4201331.51	1.33011	1.33343	2.61478	2.61493	0.23084	0.23573	0.20289	0.60034	0.24426	0.24119	0.30665	0.30323	0.2705	0.26872	0.78283	0.77889
615422.88	4201331.51	1.30451	1.30891	2.6158	2.61749	0.24465	0.23383	0.20108	0.67172	0.24516	0.24169	0.3114	0.30884	0.27362	0.27139	0.82308	0.81952
614702.88	4201351.51	0.68209	0.67609	0.98017	0.97346	0.13127	0.10071	0.098	0.08611	0.16601	0.16275	0.15124	0.15107	0.13917	0.13921	0.1888	0.18731
614722.88	4201351.51	0.72278	0.71491	1.04561	1.03606	0.13476	0.10319	0.0999	0.08838	0.16964	0.16651	0.15415	0.15392	0.1417	0.14174	0.19416	0.19266
614742.88	4201351.51	0.76525	0.75551	1.11389	1.10129	0.13939	0.10599	0.10195	0.09083	0.17355	0.17075	0.15719	0.15689	0.14432	0.14435	0.19977	0.19825
614762.88	4201351.51	0.80995	0.79908	1.18583	1.17113	0.14526	0.10911	0.10415	0.09339	0.17772	0.17549	0.16033	0.15998	0.14704	0.14705	0.20565	0.20411
614782.88	4201351.51	0.85703	0.84617	1.2618	1.24685	0.15227	0.11256	0.10652	0.09624	0.1821	0.18071	0.16358	0.16319	0.14985	0.14983	0.21182	0.21024
614802.88	4201351.51	0.9063	0.89569	1.34157	1.32661	0.16011	0.1163	0.1091	0.09933	0.18661	0.1863	0.16694	0.16651	0.15277	0.15272	0.21829	0.21667
614822.88	4201351.51	0.95739	0.94811	1.42457	1.41126	0.16833	0.12029	0.11196	0.10268	0.19113	0.19206	0.17039	0.16994	0.15579	0.1557	0.2251	0.22343
614842.88	4201351.51	1.00962	1.00207	1.50973	1.49904	0.17631	0.12451	0.11495	0.10631	0.19553	0.1977	0.17394	0.17346	0.1589	0.1588	0.23227	0.23053
614862.88	4201351.51	1.06222	1.05411	1.59577	1.58409	0.18342	0.12891	0.11816	0.1103	0.19965	0.20283	0.1776	0.17707	0.16211	0.16201	0.23984	0.23801
614882.88	4201351.51	1.11614	1.10439	1.68406	1.66623	0.18911	0.1335	0.12173	0.1148	0.2034	0.20714	0.1817	0.18112	0.1658	0.16563	0.24801	0.24603
614902.88	4201351.51	1.17179	1.15418	1.77534	1.74748	0.19298	0.13828	0.12556	0.11979	0.20668	0.21036	0.1878	0.18562	0.17109	0.16959	0.25694	0.25464
614922.88	4201351.51	1.22706	1.20322	1.86689	1.82756	0.1948	0.1432	0.12956	0.12528	0.2094	0.21235	0.19206	0.18979	0.17483	0.17328	0.26613	0.26368
614942.88	4201351.51	1.28068	1.25165	1.95642	1.90708	0.19468	0.14823	0.13359	0.13131	0.21153	0.21324	0.19645	0.19406	0.17853	0.17703	0.27585	0.27325
614962.88	4201351.51	1.33161	1.29959	2.0424	1.98674	0.19301	0.15341	0.13771	0.13796	0.21318	0.21338	0.20097	0.19845	0.18227	0.18082	0.28615	0.28342
614982.88	4201351.51	1.38052	1.3479	2.12626	2.06838	0.19044	0.15883	0.14192	0.14532	0.21456	0.21329	0.20569	0.20305	0.18613	0.18472	0.29716	0.29432
615002.88	4201351.51	1.42646	1.39515	2.20702	2.14998	0.18761	0.16457	0.14624	0.15352	0.21588	0.21342	0.21065	0.2079	0.19009	0.18873	0.30896	0.30605
615022.88	4201351.51	1.46842	1.4395	2.28385	2.22954	0.18506	0.17069	0.15082	0.16269	0.21732	0.21408	0.21587	0.21306	0.19416	0.19287	0.32161	0.3187
615042.88	4201351.51	1.50547	1.47887	2.3562	2.30572	0.18317	0.17725	0.15559	0.17277	0.21904	0.21541	0.22136	0.21858	0.19833	0.19713	0.33516	0.33235
615062.88	4201351.51	1.53689	1.51135	2.42373	2.37788	0.18203	0.18428	0.16044	0.18405	0.22114	0.21744	0.22713	0.22452	0.2026	0.20152	0.34968	0.34708
615082.88	4201351.51	1.56243	1.53675	2.48627	2.44566	0.18146	0.19179	0.1654	0.19657	0.22367	0.22012	0.23319	0.23092	0.20696	0.20601	0.36519	0.36287
615102.88	4201351.51	1.58235	1.55725	2.54377	2.50886	0.18117	0.19975	0.17035	0.21033	0.2266	0.2234	0.23951	0.23775	0.2114	0.21057	0.38172	0.37969
615122.88	4201351.51	1.59718	1.5742	2.59627	2.56716	0.18075	0.2081	0.1752	0.22563	0.22985	0.2272	0.24602	0.24495	0.21592	0.21515	0.39928	0.39743
615142.88	4201351.51	1.60731	1.5858	2.64387	2.62027	0.17989	0.21664	0.1798	0.24232	0.23326	0.23138	0.25266	0.25236	0.2205	0.21974	0.4179	0.41602
615162.88	4201351.51	1.61311	1.5917	2.68674	2.66801	0.17843	0.22517	0.18404	0.26044	0.23664	0.23567	0.2593	0.25978	0.22515	0.22433	0.43765	0.4355
615182.88	4201351.51	1.61522	1.59484	2.72506	2.71045	0.1764	0.23336	0.188	0.28	0.23977	0.23967	0.26584	0.26696	0.22986	0.22895	0.45863	0.45603
615202.88	4201351.51	1.61455	1.59621	2.75906	2.74786	0.17402	0.24085	0.19157	0.30085	0.24247	0.24292	0.27215	0.2737	0.23462	0.23363	0.48102	0.47793
615222.88	4201351.51	1.61191	1.59587	2.78898	2.7807	0.1717	0.24722	0.195	0.32291	0.24462	0.2451	0.2781	0.27982	0.23945	0.23842	0.50508	0.50152
615242.88	4201351.51	1.60735	1.5952	2.81507	2.80941	0.16996	0.25212	0.19816	0.3458	0.24617	0.24614	0.28361	0.28523	0.24432	0.24335	0.53109	0.52709
615262.88	4201351.51	1.59997	1.59417	2.83756	2.83431	0.16943	0.25527	0.20127	0.36941	0.24722	0.24627	0.28862	0.28985	0.24922	0.2484	0.5594	0.55492
615282.88	4201351.51	1.58882	1.58749	2.85668	2.85564	0.17075	0.25661	0.20442	0.39349	0.24789	0.24594	0.29314	0.2937	0.25409	0.25351	0.5904	0.58541
615302.88	4201351.51	1.57639	1.57765	2.87862	2.87938	0.17475	0.25644	0.20753	0.41863	0.24852	0.24575	0.2974	0.29702	0.25912	0.25875	0.62519	0.61996
615322.88	4201351.51	1.56291	1.56665	2.90467	2.90671	0.18203	0.25523	0.21041	0.44556	0.24929	0.24608	0.3016	0.30009	0.26418	0.26398	0.66435	0.65948
615342.88	4201351.51	1.53981	1.54508	2.91522	2.91848	0.19225	0.25301	0.21311	0.47376	0.24988	0.24659	0.30533	0.30269	0.26862	0.2685	0.70493	0.7007
615362.88	4201351.51	1.51294	1.5184	2.92235	2.92654	0.20549	0.25059	0.21358	0.50651	0.25059	0.2474	0.30917	0.30563	0.27274	0.27245	0.74762	0.74357
615382.88	4201351.51	1.48315	1.48881	2.92669	2.93161	0.22082	0.2483	0.21317	0.54734	0.25142	0.24831	0.31331	0.30937	0.27656	0.2758	0.79197	0.78753
615402.88	4201351.51	1.45101	1.4576	2.92825	2.93384	0.23675	0.24623	0.21159	0.60029	0.25234	0.24911	0.31786	0.31412	0.2801	0.27868	0.83789	0.83326
615422.88	4201351.51	1.41697	1.42521	2.92702	2.93336	0.25134	0.24423	0.20993	0.66881	0.25329	0.24968	0.32278	0.31976	0.28347	0.28143	0.88521	0.88077
614762.88	4201371.51	0.89296	0.88214	1.31921	1.30439	0.14548	0.10977	0.10543	0.09472	0.18037	0.17763	0.16288	0.1626	0.14924	0.14928	0.20738	0.2057

614782.88	4201371.51	0.95071	0.93995	1.41292	1.398	0.15192	0.11302	0.10782	0.09733	0.18481	0.18274	0.16621	0.16587	0.15213	0.15216	0.21367	0.21196
614802.88	4201371.51	1.01142	1.00127	1.51168	1.49728	0.15949	0.11662	0.11037	0.10016	0.18946	0.18834	0.16966	0.16926	0.15513	0.15515	0.22028	0.21853
614822.88	4201371.51	1.07444	1.06635	1.61449	1.60291	0.16782	0.12051	0.11315	0.10314	0.19422	0.19428	0.17322	0.17277	0.15824	0.15824	0.22723	0.22544
614842.88	4201371.51	1.13878	1.13138	1.7197	1.70894	0.17636	0.12468	0.11619	0.10645	0.19894	0.2003	0.17689	0.1764	0.16146	0.16144	0.23454	0.2327
614862.88	4201371.51	1.20485	1.19411	1.82779	1.81124	0.18449	0.12912	0.11944	0.11008	0.20352	0.20611	0.18094	0.18036	0.16511	0.16498	0.24236	0.24043
614882.88	4201371.51	1.27342	1.25585	1.94002	1.91211	0.19154	0.13381	0.12308	0.11417	0.20783	0.21131	0.18575	0.18478	0.16952	0.16889	0.25081	0.24872
614902.88	4201371.51	1.34454	1.3189	2.05719	2.01549	0.19695	0.13874	0.12709	0.11875	0.21172	0.21556	0.19129	0.18907	0.17429	0.17268	0.25988	0.25753
614922.88	4201371.51	1.40999	1.37761	2.16549	2.11218	0.20013	0.14371	0.13083	0.12351	0.21486	0.21838	0.19558	0.19327	0.17794	0.17634	0.26913	0.26664
614942.88	4201371.51	1.47392	1.43788	2.27177	2.2117	0.20117	0.14884	0.1347	0.12883	0.21741	0.21995	0.20004	0.19762	0.18168	0.18011	0.27896	0.27634
614962.88	4201371.51	1.53553	1.49917	2.3748	2.31316	0.20035	0.15417	0.13877	0.13471	0.21943	0.22055	0.2047	0.20216	0.18554	0.18399	0.28947	0.28669
614982.88	4201371.51	1.59377	1.55947	2.47315	2.41361	0.19818	0.15975	0.14297	0.14124	0.22107	0.22061	0.20956	0.2069	0.18952	0.18799	0.3007	0.29778
615002.88	4201371.51	1.64766	1.61679	2.56577	2.51042	0.19535	0.16565	0.14735	0.14851	0.22252	0.22064	0.21466	0.21189	0.19361	0.19211	0.31275	0.30971
615022.88	4201371.51	1.69628	1.66964	2.65205	2.60216	0.19248	0.17191	0.15188	0.15668	0.22399	0.22105	0.22002	0.21717	0.19782	0.19637	0.32571	0.32258
615042.88	4201371.51	1.73868	1.7165	2.73171	2.68819	0.19012	0.17861	0.15663	0.16583	0.22566	0.22211	0.22567	0.22279	0.20215	0.20078	0.33965	0.33651
615062.88	4201371.51	1.77397	1.75524	2.80471	2.76812	0.18851	0.1858	0.16158	0.17601	0.22769	0.2239	0.23161	0.22881	0.2066	0.20534	0.35467	0.3516
615082.88	4201371.51	1.80154	1.78402	2.87115	2.84159	0.18761	0.19348	0.16676	0.18753	0.23015	0.22641	0.23786	0.23529	0.21117	0.21004	0.37084	0.36797
615102.88	4201371.51	1.82148	1.80384	2.93124	2.90829	0.18716	0.20163	0.17195	0.20034	0.23306	0.22959	0.2444	0.24223	0.21584	0.21485	0.38823	0.38565
615122.88	4201371.51	1.83455	1.81791	2.98523	2.96809	0.18677	0.21022	0.17724	0.21468	0.23635	0.23337	0.2512	0.24962	0.2206	0.21973	0.40689	0.40463
615142.88	4201371.51	1.84164	1.82624	3.03345	3.02122	0.18607	0.21909	0.18239	0.23069	0.23988	0.23763	0.25819	0.25734	0.22545	0.22464	0.42686	0.42484
615162.88	4201371.51	1.8434	1.82731	3.07625	3.06814	0.1848	0.2281	0.18724	0.24841	0.24345	0.24212	0.26527	0.26522	0.23038	0.22956	0.44819	0.44619
615182.88	4201371.51	1.84061	1.82444	3.11396	3.10941	0.1829	0.23696	0.19178	0.26813	0.24684	0.24645	0.27233	0.27302	0.23537	0.23449	0.47095	0.46868
615202.88	4201371.51	1.8345	1.82005	3.14694	3.14558	0.18055	0.24534	0.19586	0.28968	0.24984	0.25014	0.27924	0.2805	0.24044	0.23946	0.49531	0.49253
615222.88	4201371.51	1.82618	1.8143	3.17554	3.17714	0.17813	0.25286	0.1996	0.31313	0.25228	0.25278	0.28587	0.28747	0.24557	0.24451	0.52149	0.51811
615242.88	4201371.51	1.81638	1.80951	3.20156	3.20585	0.17617	0.25912	0.2031	0.33837	0.25413	0.25424	0.29213	0.29381	0.2508	0.24972	0.54994	0.546
615262.88	4201371.51	1.80384	1.80417	3.22553	3.23217	0.17535	0.26378	0.20652	0.36534	0.25544	0.25468	0.29795	0.29943	0.25617	0.25513	0.58115	0.5767
615282.88	4201371.51	1.78505	1.78964	3.24287	3.25153	0.17631	0.26648	0.20982	0.39349	0.25626	0.25444	0.30317	0.30416	0.26143	0.26058	0.61522	0.61025
615302.88	4201371.51	1.76398	1.77154	3.26295	3.27303	0.17993	0.26744	0.21324	0.42316	0.25695	0.25421	0.30806	0.30825	0.2668	0.26621	0.65356	0.64814
615322.88	4201371.51	1.74063	1.75011	3.28667	3.29754	0.18691	0.26695	0.21661	0.45451	0.25772	0.25441	0.31272	0.31186	0.27227	0.27191	0.69702	0.69163
615342.88	4201371.51	1.70709	1.71655	3.29504	3.30663	0.19706	0.26505	0.22019	0.48644	0.25832	0.25486	0.31683	0.31477	0.27723	0.27706	0.74334	0.73867
615362.88	4201371.51	1.66935	1.67818	3.29996	3.31195	0.2105	0.26257	0.22161	0.52083	0.25905	0.25566	0.32092	0.31776	0.2819	0.28174	0.79307	0.78912
615382.88	4201371.51	1.62845	1.63769	3.30192	3.31406	0.2263	0.26003	0.22185	0.56011	0.25991	0.25661	0.32522	0.32136	0.28623	0.28579	0.84531	0.84117
615402.88	4201371.51	1.58508	1.59606	3.30093	3.3131	0.24294	0.25767	0.22098	0.6082	0.26088	0.25747	0.32989	0.32592	0.29022	0.28921	0.8996	0.89482
615422.88	4201371.51	1.53982	1.55332	3.29698	3.30927	0.25837	0.25547	0.2194	0.67033	0.2619	0.25813	0.33497	0.33152	0.29394	0.29223	0.95583	0.9508
615442.88	4201371.51	1.49324	1.50915	3.29002	3.30269	0.27053	0.25322	0.21764	0.75106	0.26294	0.25859	0.34032	0.33785	0.29753	0.29527	1.01346	1.00792
614602.88	4201391.51	0.55384	0.54865	0.76695	0.7599	0.12511	0.09666	0.09112	0.08308	0.15721	0.15591	0.14505	0.1438	0.13311	0.13194	0.16825	0.1665
614802.88	4201391.51	1.14423	1.13515	1.72947	1.71689	0.1591	0.11719	0.11167	0.10232	0.1924	0.19052	0.17248	0.17215	0.15753	0.15758	0.22224	0.22034
614822.88	4201391.51	1.22364	1.21645	1.85979	1.84992	0.16726	0.12094	0.11441	0.1051	0.19733	0.19651	0.17614	0.17574	0.16073	0.16079	0.22933	0.22739
614842.88	4201391.51	1.30468	1.29529	1.99293	1.97869	0.17607	0.12501	0.11742	0.10811	0.20233	0.2028	0.17992	0.17946	0.16405	0.16411	0.2368	0.23482
614862.88	4201391.51	1.39373	1.37695	2.13882	2.11167	0.18506	0.1295	0.12103	0.11165	0.20745	0.20926	0.1863	0.18414	0.16997	0.16841	0.24523	0.24296
614882.88	4201391.51	1.48122	1.45521	2.28287	2.23929	0.19328	0.13422	0.12465	0.11534	0.21225	0.21524	0.19048	0.18826	0.17367	0.17206	0.25374	0.25139
614902.88	4201391.51	1.56544	1.53134	2.4217	2.36432	0.20004	0.13909	0.12835	0.11932	0.21655	0.22028	0.19475	0.19246	0.17735	0.17574	0.26266	0.26022
614922.88	4201391.51	1.64662	1.60805	2.55565	2.49123	0.20477	0.14413	0.13214	0.12356	0.22025	0.2241	0.19915	0.19679	0.1811	0.1795	0.27209	0.26953
614942.88	4201391.51	1.72459	1.68548	2.68445	2.61974	0.20727	0.14938	0.13602	0.12831	0.22334	0.22658	0.20375	0.20129	0.18496	0.18336	0.28212	0.27944
614962.88	4201391.51	1.79804	1.7613	2.80602	2.74537	0.20761	0.15484	0.14006	0.13352	0.22582	0.22785	0.20854	0.20597	0.18894	0.18734	0.29283	0.29
614982.88	4201391.51	1.86598	1.83359	2.919	2.86472	0.20614	0.16056	0.14422	0.13928	0.22781	0.22827	0.21355	0.21086	0.19304	0.19143	0.30429	0.30131
615002.88	4201391.51	1.92771	1.90099	3.02277	2.97631	0.20354	0.16659	0.14856	0.14571	0.22948	0.22834	0.21881	0.216	0.19727	0.19565	0.31658	0.31345
615022.88	4201391.51	1.98263	1.96234	3.11725	3.07948	0.20052	0.173	0.15306	0.15292	0.23103	0.22858	0.22432	0.22142	0.20162	0.20002	0.32981	0.32654
615042.88	4201391.51	2.03002	2.01616	3.20269	3.17374	0.19775	0.17986	0.1578	0.16105	0.2327	0.22935	0.23013	0.22717	0.2061	0.20455	0.34407	0.34071
615062.88	4201391.51	2.06894	2.06038	3.27948	3.2587	0.19563	0.18721	0.16282	0.17005	0.23467	0.23086	0.23625	0.23331	0.21073	0.20926	0.35948	0.35609
615082.88	4201391.51	2.09839	2.09229	3.34809	3.33432	0.1943	0.19508	0.16805	0.18032	0.23706	0.23315	0.24269	0.23989	0.21549	0.21415	0.37616	0.37282
615102.88	4201391.51	2.11791	2.1108	3.40904	3.40109	0.19359	0.20346	0.17344	0.19189	0.23993	0.2362	0.24946	0.24695	0.22038	0.21919	0.39422	0.39104
615122.88	4201391.51	2.12811	2.11951	3.4629	3.45986	0.19315	0.21233	0.17896	0.20491	0.24323	0.23992	0.25654	0.2545	0.22539	0.22436	0.41378	0.41086
615142.88	4201391.51	2.13044	2.12212	3.51024	3.51153	0.19255	0.22154	0.18453	0.21966	0.24685	0.24422	0.26387	0.26248	0.23051	0.2296	0.43492	0.43234
615162.88	4201391.51	2.12613	2.11686	3.55157	3.55675	0.19146	0.23099	0.19	0.23627	0.2506	0.24888	0.27137	0.27075	0.23573	0.23488	0.45774	0.45544
615182.88	4201391.51	2.11624	2.10584	3.58738	3.5961	0.18973	0.24044	0.19513	0.25503	0.25425	0.25352	0.27894	0.27911	0.24104	0.24017	0.48232	0.4801
615202.88	4201391.51	2.10234	2.09329	3.61815	3.63004	0.18745	0.24961	0.19987	0.27595	0.25755	0.25765	0.28644	0.28731	0.24642	0.24547	0.50878	0.50633
615222.88	4201391.51	2.08596	2.07965	3.64434	3.65897	0.18496	0.25817	0.20419	0.29939	0.26032	0.26078	0.29375	0.29512	0.25188	0.25084	0.53733	0.53432
615242.88	4201391.51	2.07085	2.07062	3.67418	3.69089	0.18288	0.26581	0.2083	0.32568	0.26256	0.26277	0.30089	0.30251	0.25764	0.25646	0.56875	0.56501
615262.88	4201391.51	2.05516	2.06215	3.70917	3.72721	0.18197	0.27216	0.21228	0.35486	0.26431	0.26372	0.3078	0.3094	0.26362	0.2624	0.60381	0.59936
615282.88	4201391.51	2.02566	2.03667	3.72481	3.74407	0.18256	0.27642	0.21589	0.38596	0.26533	0.26365	0.31383	0.31513	0.26929	0.26819	0.64145	0.63642
615302.88	4201391.51	1.98991	2.00425	3.73743	3.75758	0.18571	0.27869	0.21936	0.41946	0.26602	0.26333	0.31932	0.32002	0.27497	0.27411	0.6834	0.67782
615322.88	4201391.51	1.94851	1.96357	3.74861	3.76936	0.19215	0.27906	0.22429	0.4551	0.26664	0.26328	0.32436	0.32414	0.28065	0.28006	0.73064	0.72473
615342.88	4201391.51	1.90022	1.91403	3.75377	3.77507	0.20218	0.27781	0.22726	0.49251	0.26726	0.26363	0.32897	0.32758	0.28613	0.28582	0.78323	0.77773
615362.88	4201391.51	1.84742	1.86088	3.75583	3.77753	0.21579	0.27553	0.22953	0.53205	0.26801	0.26441	0.33343	0.33081	0.29138	0.29123	0.84121	0.83686
615382.88	4201391.51	1.7912	1.80633	3.7548	3.7768	0.23206	0.27284	0.23067	0.57463	0.26891	0.26539	0.33797	0.33437	0.29631	0.29608	0.90338	0.89961
615402.88	4201391.51	1.73254	1.75072	3.75067	3.7729	0.24944	0.27017	0.23072	0.62257	0.26994	0.26633	0.34281	0.33877	0.30085	0.30023	0.96858	0.9642
615422.88	4201391.51	1.67239	1.69374	3.7434	3.76582	0.26575	0.2677	0.22951	0.68041	0.27103	0.26707	0.34806	0.34425	0.30504	0.30374	1.03644	1.0314
615442.88	4201391.51	1.61172	1.63534	3.73294	3.75569	0.27878	0.26529	0.22772	0.7544	0.27214	0.26762	0.35365	0.35067	0.30897	0.30697	1.10649	1.10059
614602.88	4201411.51	0.5775	0.57126	0.80163	0.79295	0.1255	0.09836	0.0914	0.08643	0.15972	0.15865	0.14705	0.14583	0.13458	0.13344	0.16919	0.16742
614622.88	4201411.51	0.63026	0.62582	0.88638	0.88049	0.12936	0.0997	0.09349	0.08804	0.16267	0.16129	0.14982	0.14853	0.13711	0.13592	0.17371	0.17189
614802.88	4201411.51	1.31784	1.31112	2.01814	2.00991	0.15917	0.11806	0.11291	0.1058	0.19544	0.19291	0.1754	0.17517	0.15995	0.16	0.22416	0.22213
614822.88	4201411.51	1.42306	1.41527	2.19205	2.1821	0.16692	0.12167	0.11581	0.10852	0.20056	0.19892	0.17958	0.17917	0.16367	0.16368	0.23155	0.22941
614842.88	4201411.51	1.53401	1.51845	2.37529	2.3516	0.17575	0.12568	0.11903	0.11152	0.20592	0.20546	0.18564	0.18352	0.16922	0.16771	0.23954	0.23717
614862.88	4201411.51	1.64642	1.62004	2.56125	2.51756	0.18513	0.13003	0.1225	0.11477	0.2113	0.21221	0.18975	0.18756	0.17298	0.17138	0.24774	0.24532
614882.88	4201411.51	1.75675	1.72142	2.74349	2.68325	0.19425	0.13465	0.12611	0.11817	0.21649	0.21876	0.19399	0.19172	0.1767	0.1751	0.25637	0.25387
614902.88	4201411.51	1.86177	1.82261	2.91648	2.84934	0.20231	0.1395	0.12972	0.12179	0.22129	0.22464	0.19834	0.196	0.18047	0.17888	0.26543	0.26285
614922.88	4201411.51	1.96193	1.92357	3.08094	3.01571	0.20866	0.14459	0.13353	0.12569	0.22559	0.2295	0.20287	0.20044	0.18436	0.18277	0.27506	0.27238
614942.88	4201411.51	2.05538	2.02042	3.23385	3.17567	0.21281	0.14992	0.1375	0.12996	0.22928	0.23303	0.20759	0.20507	0.18836	0.18677	0.28531	0.28251
614962.88	4201411.51	2.14097	2.11097	3.37354	3.32499	0.21456	0.15547	0.1416	0.13468	0.23231	0.23517	0.21252	0.20989	0.19248	0.19087	0.29624	0.29332
614982.88	4201411.51	2.21821	2.19453	3.49957	3.4621	0.21415	0.16131	0.14576	0.13983	0.23474	0.23617	0.21768	0.21494	0.19671	0.19508	0.30794	0.30487
615002.88	4201411.51	2.28698	2.27068	3.61232	3.58627	0.2121	0.16746	0.15005	0.14557	0.23672	0.23648	0.22309	0.22023	0.20107	0.1994	0.32049	0.31726
615022.88	4201411.51	2.34726	2.33869	3.71259	3.69696	0.20914	0.17398	0.15454	0.15193	0.23845	0.23666	0.22877	0.2258	0.20557	0.20387	0.33398	0.33061
615042.88	4201411.51	2.39875	2.39717	3.80133	3.79445	0.20606	0.18097	0.15927	0.15907	0.24018	0.23719	0.23475	0.2317	0.21021	0.20851	0.34855	0.34503
615062.88	4201411.51	2.44069	2.44469	3.87943	3.87959	0.20345	0.18848	0.16414	0.16703	0.24211	0.2384	0.24105	0.23799	0.215	0.21334	0.3643	0.36069
615082.88	4201411.51	2.47181	2.47914	3.94781	3.95391	0.20161	0.19656	0.16942	0.17599	0.24443	0.24043	0.2477	0.2447	0.21995	0.21838	0.38139	0.37773
615102.88	4201411.51	2.49078	2.49775	4.00739	4.01874	0.20055	0.20518	0.17496	0.18624	0.24724	0.24328	0.2547	0.2519	0.22505	0.22363	0.39998	0.39634
615122.88	4201411.51	2.49731	2.50091	4.05906	4.07508	0.19994	0.21434	0.18068	0.19779	0.25052	0.2469	0.26205	0.25962	0.23031	0.22905	0.42021	0.41669
615142.88	4201411.51	2.4929	2.49471	4.10359	4.12381	0.19939	0.22393	0.18652	0.21092	0.25421	0.2512	0.26971	0.26783	0.2357	0.23461	0.44228	0.43896
615162.88	4201411.51	2.47978	2.48041	4.14166	4.16548	0.19845	0.23383	0.19235	0.22592	0.25812	0.25599	0.27762	0.27645	0.24122	0.24025	0.46633	0.46331
615182.88	4201411.51	2.45968	2.45771	4.17388	4.20065	0.19691	0.24384	0.19816	0.24295	0.26201	0.26091	0.28568	0.2853	0.24685	0.24594	0.49254	0.48981
615202.88	4201411.51	2.43461	2.43281	4.20088	4.23006	0.19474	0.25375	0.20361	0.26241	0.26563	0.26547	0.29377	0.29417	0.25258	0.25164	0.52107	0.5185
615222.88	4201411.51	2.41331	2.41373	4.23609	4.26681	0.19237	0.26342	0.20888	0.2849	0.26889	0.26926	0.30199	0.30301	0.25868	0.25759	0.55267	0.54992
615242.88	4201411.51	2.38787	2.39547	4.26656	4.29831	0.19018	0.27228	0.21353	0.31039	0.2715	0.27179	0.30996	0.3114	0.26484	0.2636	0.58719	0.58386
615262.88	4201411.51	2.35557	2.37053	4.29278	4.32523	0.18885	0.27994	0.21795	0.33917	0.27344	0.27302	0.31754	0.31915	0.27101	0.26973	0.62512	0.62095
615282.88	4201411.51	2.30989	2.32951	4.30428	4.33756	0.18902	0.28577	0.22313	0.37113	0.27465	0.27315	0.32442	0.32591	0.27708	0.27585	0.66646	0.66144
615302.88	4201411.51	2.25554	2.27822	4.31211	4.34626	0.19173	0.28963	0.22706	0.4065	0.27546	0.27286	0.33073	0.33181	0.28319	0.28212	0.71265	0.70692
615322.88	4201411.51	2.19302	2.21495	4.31671	4.35175	0.19778	0.29136	0.23077	0.44552	0.27609	0.27269	0.33648	0.33682	0.2893	0.28848	0.76484	0.75853
615342.88	4201411.51	2.12373	2.1447	4.31813	4.35414	0.20767	0.29111	0.23433	0.48801	0.27674	0.27296	0.34175	0.34104	0.29534	0.29481	0.82421	0.81777
615362.88	4201411.51	2.0494	2.07186	4.31638	4.35338	0.2214	0.28937	0.23738	0.5338	0.27752	0.2737	0.34672	0.34475	0.30121	0.30094	0.8914	0.88595
615382.88	4201411.51	1.97168	1.99765	4.31147	4.34947	0.23815	0.28675	0.23969	0.58291	0.27846	0.27471	0.35162	0.34846	0.30679	0.30664	0.96566	0.96166
615402.88	4201411.51	1.89223	1.92198	4.30337	4.34231	0.25628	0.28385	0.24049	0.63622	0.27954	0.27572	0.3567	0.35275	0.31199	0.31166	1.04509	1.0412
615422.88	4201411.51	1.8127	1.84513	4.29201	4.3318	0.27352	0.28106	0.24014	0.69593	0.2807	0.27655	0.36214	0.35809	0.31676	0.31591	1.12847	1.12383
615442.88	4201411.51	1.73451	1.76812	4.27728	4.31778	0.28747	0.27842	0.23874	0.76689	0.28191	0.27719	0.36797	0.36451	0.32117	0.31956	1.21526	1.2097
615462.88	4201411.51	1.65881	1.69212	4.25902	4.30021	0.29612	0.27577	0.23709	0.85693	0.28314	0.27776	0.37403	0.37162	0.32534	0.32307	1.3045	1.29668
614622.88	4201431.51	0.66237	0.65681	0.93451	0.92692	0.12974	0.10144	0.09379	0.09229	0.1654	0.16427	0.15191	0.15067	0.13867	0.1375	0.17475	0.17293

614642.88	4201431.51	0.73451	0.73203	1.0518	1.04924	0.1338	0.10298	0.09603	0.09418	0.16861	0.16716	0.15489	0.15357	0.14138	0.14015	0.17958	0.17769
614662.88	4201431.51	0.81369	0.81327	1.18227	1.18415	0.13731	0.10439	0.09816	0.0959	0.17167	0.16981	0.15786	0.15647	0.14406	0.14278	0.18449	0.18254
614802.88	4201431.51	1.55862	1.55485	2.42373	2.4218	0.15991	0.11928	0.11417	0.11067	0.19872	0.19564	0.17895	0.17873	0.16289	0.16285	0.22621	0.22401
614822.88	4201431.51	1.70248	1.69083	2.66402	2.64907	0.167	0.12272	0.11715	0.1134	0.20396	0.20158	0.18368	0.18296	0.16726	0.16676	0.23378	0.23147
614842.88	4201431.51	1.85614	1.83068	2.921	2.88121	0.17556	0.12662	0.12053	0.11643	0.20958	0.20822	0.18917	0.18708	0.17223	0.17059	0.24192	0.23943
614862.88	4201431.51	1.99977	1.9637	3.16018	3.10066	0.18491	0.13075	0.12386	0.11948	0.21513	0.21507	0.19331	0.19113	0.17592	0.17429	0.25018	0.24762
614882.88	4201431.51	2.13888	2.10014	3.3905	3.32516	0.1946	0.13524	0.12739	0.1227	0.22065	0.22203	0.19761	0.19534	0.17973	0.17811	0.25892	0.25628
614902.88	4201431.51	2.27007	2.23515	3.60603	3.54648	0.20381	0.14004	0.13116	0.12617	0.22596	0.22868	0.20208	0.19971	0.18365	0.18206	0.26818	0.26545
614922.88	4201431.51	2.39068	2.36271	3.8024	3.75472	0.21171	0.14513	0.13506	0.12987	0.23086	0.23454	0.20673	0.20427	0.18769	0.18612	0.27802	0.27519
614942.88	4201431.51	2.49943	2.4796	3.97779	3.94473	0.2176	0.1505	0.13906	0.13389	0.23519	0.23919	0.21159	0.20901	0.19185	0.19029	0.2885	0.28555
614962.88	4201431.51	2.59614	2.58456	4.13242	4.11457	0.22104	0.15613	0.14327	0.13829	0.23885	0.24238	0.21666	0.21397	0.19612	0.19455	0.29967	0.2966
614982.88	4201431.51	2.68134	2.67723	4.26776	4.26368	0.22199	0.16205	0.1475	0.14303	0.24183	0.2442	0.22196	0.21916	0.20052	0.19891	0.31162	0.30841
615002.88	4201431.51	2.7558	2.75818	4.38576	4.39288	0.22085	0.16828	0.15185	0.14828	0.24423	0.24498	0.22753	0.2246	0.20504	0.20337	0.32444	0.32109
615022.88	4201431.51	2.82009	2.82854	4.48825	4.50415	0.21827	0.1749	0.15632	0.15395	0.24623	0.24527	0.23338	0.23033	0.20969	0.20795	0.33823	0.33473
615042.88	4201431.51	2.87439	2.88903	4.57679	4.59985	0.21507	0.18199	0.16099	0.16037	0.24808	0.24565	0.23953	0.2364	0.21449	0.2127	0.35311	0.34946
615062.88	4201431.51	2.91828	2.93879	4.65281	4.6822	0.21203	0.18963	0.16584	0.16748	0.25003	0.24657	0.24603	0.24284	0.21945	0.21764	0.36922	0.36543
615082.88	4201431.51	2.95058	2.97563	4.71776	4.75278	0.20966	0.19786	0.17107	0.17538	0.2523	0.24829	0.25288	0.24971	0.22457	0.22281	0.3867	0.3828
615102.88	4201431.51	2.9692	2.99581	4.77302	4.81293	0.20812	0.20672	0.17651	0.18434	0.25504	0.2509	0.26012	0.25708	0.22988	0.22822	0.40574	0.40178
615122.88	4201431.51	2.97197	2.99499	4.81975	4.86377	0.20724	0.21619	0.18236	0.1945	0.25829	0.25437	0.26774	0.26497	0.23537	0.23386	0.42653	0.42257
615142.88	4201431.51	2.95898	2.97648	4.85887	4.90621	0.20662	0.22618	0.18843	0.20603	0.26201	0.25863	0.27573	0.27341	0.24103	0.2397	0.4493	0.4454
615162.88	4201431.51	2.9333	2.94799	4.89117	4.9412	0.20581	0.23657	0.19469	0.21914	0.26605	0.2635	0.28403	0.28234	0.24685	0.24569	0.47429	0.47052
615182.88	4201431.51	2.89834	2.90864	4.91746	4.96958	0.20444	0.24717	0.20094	0.23428	0.27018	0.26866	0.29258	0.29164	0.25281	0.25178	0.50179	0.49822
615202.88	4201431.51	2.85702	2.86567	4.93862	4.9924	0.20243	0.25777	0.20701	0.25164	0.27411	0.27363	0.30125	0.30112	0.2589	0.25792	0.53207	0.52875
615222.88	4201431.51	2.82812	2.83844	4.98618	5.04039	0.20024	0.26848	0.21321	0.27221	0.27788	0.2781	0.31037	0.31097	0.26564	0.2645	0.56651	0.56336
615242.88	4201431.51	2.78634	2.8057	5.01586	5.07065	0.19795	0.27848	0.21996	0.2957	0.28088	0.2812	0.31916	0.32032	0.27216	0.27095	0.60413	0.60093
615262.88	4201431.51	2.72737	2.75491	5.02514	5.08121	0.19615	0.2873	0.22476	0.32235	0.28298	0.28274	0.32738	0.32886	0.27858	0.27729	0.64506	0.64135
615282.88	4201431.51	2.65716	2.69052	5.03103	5.08848	0.19591	0.29471	0.22925	0.35297	0.28443	0.28313	0.33517	0.33671	0.28509	0.28378	0.69052	0.68586
615302.88	4201431.51	2.575	2.60986	5.0336	5.09248	0.19817	0.30028	0.23331	0.38804	0.2854	0.28292	0.34241	0.34374	0.29166	0.29043	0.7415	0.73579
615322.88	4201431.51	2.48224	2.51604	5.03294	5.09333	0.20385	0.30367	0.23748	0.42784	0.28612	0.2827	0.34906	0.34986	0.29828	0.29723	0.7994	0.79282
615342.88	4201431.51	2.38148	2.41667	5.02909	5.09101	0.21355	0.30482	0.24153	0.47271	0.28682	0.28289	0.35514	0.35507	0.30489	0.3041	0.86601	0.85884
615362.88	4201431.51	2.27567	2.31477	5.0221	5.08554	0.22738	0.304	0.24533	0.5229	0.28763	0.28359	0.36078	0.35952	0.31139	0.31091	0.94312	0.93621
615382.88	4201431.51	2.16786	2.21096	5.01195	5.07689	0.24457	0.30177	0.24838	0.5785	0.28861	0.28461	0.36618	0.36362	0.31768	0.31744	1.03137	1.02619
615402.88	4201431.51	2.06089	2.10642	4.99859	5.06493	0.26348	0.29881	0.25049	0.63943	0.28974	0.28569	0.37161	0.36797	0.32361	0.32344	1.12899	1.12519
615422.88	4201431.51	1.9571	2.00314	4.98191	5.04948	0.28171	0.29572	0.2511	0.70664	0.29098	0.28662	0.37731	0.37318	0.3291	0.32863	1.23333	1.22903
615442.88	4201431.51	1.85813	1.90291	4.96174	5.03033	0.29664	0.29276	0.25045	0.78207	0.29228	0.28736	0.38339	0.37954	0.33412	0.333	1.34315	1.33803
615462.88	4201431.51	1.76496	1.80714	4.93787	5.0072	0.30611	0.28991	0.24896	0.87128	0.29362	0.28802	0.38979	0.38684	0.33877	0.33684	1.45726	1.44989
614662.88	4201451.51	0.88421	0.88568	1.29303	1.29755	0.13851	0.1064	0.09868	0.10139	0.17497	0.17345	0.16025	0.15889	0.14587	0.14461	0.18581	0.18389
614682.88	4201451.51	0.99708	1.00047	1.4821	1.4912	0.14228	0.10794	0.1009	0.10317	0.17821	0.17625	0.16342	0.16198	0.14871	0.14739	0.191	0.18901
614822.88	4201451.51	2.12119	2.10219	3.38204	3.35522	0.16777	0.12412	0.11846	0.11968	0.20759	0.20459	0.18853	0.18658	0.17123	0.16957	0.23609	0.23359
614842.88	4201451.51	2.32229	2.29028	3.72174	3.67174	0.17555	0.12773	0.12171	0.12266	0.21316	0.21098	0.19268	0.19064	0.17497	0.17329	0.24409	0.24152
614862.88	4201451.51	2.51266	2.47964	4.04062	3.9883	0.18463	0.13169	0.12511	0.12577	0.21893	0.2179	0.19695	0.19481	0.1788	0.17712	0.25251	0.24986
614882.88	4201451.51	2.68879	2.66373	4.33216	4.29287	0.19457	0.13605	0.12866	0.12908	0.22479	0.22518	0.20138	0.19914	0.18276	0.1811	0.26143	0.25869
614902.88	4201451.51	2.8471	2.83403	4.5904	4.57083	0.20463	0.14076	0.13253	0.13251	0.23057	0.23245	0.20598	0.20363	0.18685	0.18522	0.27089	0.26805
614922.88	4201451.51	2.98659	2.98656	4.81428	4.81625	0.2139	0.14582	0.13657	0.1362	0.23606	0.23922	0.21077	0.2083	0.19106	0.18948	0.28094	0.27798
614942.88	4201451.51	3.1081	3.11987	5.00596	5.02746	0.22153	0.15119	0.14071	0.14015	0.24105	0.24499	0.21576	0.21316	0.1954	0.19385	0.29165	0.28856
614962.88	4201451.51	3.21335	3.23429	5.16916	5.20602	0.22683	0.15687	0.14501	0.1444	0.2454	0.24937	0.22098	0.21824	0.19986	0.19833	0.30307	0.29985
614982.88	4201451.51	3.30433	3.33176	5.30802	5.35631	0.22948	0.16283	0.14933	0.14898	0.24902	0.25221	0.22643	0.22356	0.20444	0.20288	0.3153	0.31194
615002.88	4201451.51	3.38272	3.41503	5.42611	5.48313	0.22961	0.16913	0.1538	0.15393	0.25195	0.25372	0.23215	0.22915	0.20914	0.20753	0.32841	0.3249
615022.88	4201451.51	3.44941	3.48596	5.52586	5.59035	0.22775	0.17581	0.15833	0.15932	0.25434	0.25435	0.23817	0.23504	0.21397	0.21227	0.34252	0.33885
615042.88	4201451.51	3.50485	3.54618	5.60923	5.6803	0.22472	0.18297	0.16297	0.16517	0.25642	0.25473	0.2445	0.24126	0.21895	0.21714	0.35774	0.35393
615062.88	4201451.51	3.54913	3.59587	5.67834	5.7549	0.2214	0.19068	0.16778	0.17172	0.25846	0.25542	0.25119	0.24787	0.22409	0.2222	0.37422	0.37026
615082.88	4201451.51	3.58156	3.63326	5.73533	5.81637	0.21851	0.19904	0.17294	0.17889	0.26071	0.25683	0.25826	0.25492	0.2294	0.22748	0.39211	0.38802
615102.88	4201451.51	3.59985	3.65451	5.78203	5.86676	0.21642	0.20808	0.17837	0.18691	0.26338	0.25914	0.26574	0.26246	0.2349	0.23302	0.41161	0.40742
615122.88	4201451.51	3.5997	3.65268	5.81973	5.90761	0.21515	0.21784	0.18411	0.19592	0.26658	0.2624	0.27363	0.27055	0.24061	0.23884	0.43293	0.42867
615142.88	4201451.51	3.57725	3.62221	5.84941	5.94021	0.21436	0.22822	0.19026	0.20609	0.27031	0.26655	0.28194	0.27922	0.24652	0.24492	0.45632	0.45203
615162.88	4201451.51	3.53427	3.57251	5.8721	5.96544	0.21359	0.23911	0.19676	0.21765	0.27445	0.27145	0.29064	0.28846	0.25264	0.25122	0.48208	0.47778
615182.88	4201451.51	3.47725	3.50965	5.88904	5.98461	0.21239	0.25034	0.20336	0.23084	0.27879	0.27682	0.29966	0.29818	0.25893	0.2577	0.51055	0.50628
615202.88	4201451.51	3.41153	3.43975	5.90132	5.99882	0.21055	0.26168	0.20994	0.24605	0.28302	0.28217	0.3089	0.30822	0.2654	0.26429	0.54216	0.53795
615222.88	4201451.51	3.36232	3.39186	5.95079	6.04793	0.20845	0.27326	0.21701	0.2642	0.28719	0.28719	0.31872	0.31883	0.27257	0.27137	0.57849	0.57437
615242.88	4201451.51	3.29467	3.33581	5.97797	6.07558	0.20607	0.2843	0.2247	0.28501	0.29058	0.29088	0.32831	0.32909	0.27953	0.27832	0.61872	0.61477
615262.88	4201451.51	3.20205	3.25229	5.97931	6.07872	0.20401	0.29437	0.23025	0.30884	0.29305	0.29294	0.33742	0.33867	0.28641	0.28513	0.66313	0.65926
615282.88	4201451.51	3.09194	3.1474	5.9773	6.07848	0.20336	0.30328	0.23528	0.33666	0.29478	0.29368	0.34616	0.34764	0.29339	0.29206	0.71303	0.70881
615302.88	4201451.51	2.96443	3.01925	5.97205	6.07483	0.20515	0.3106	0.24006	0.36912	0.29594	0.29361	0.35441	0.35586	0.30046	0.29913	0.76941	0.7642
615322.88	4201451.51	2.82327	2.87908	5.96365	6.0679	0.2104	0.31583	0.24464	0.407	0.29678	0.29338	0.36207	0.3632	0.30761	0.30637	0.83375	0.82726
615342.88	4201451.51	2.67397	2.73389	5.95219	6.05774	0.21987	0.31869	0.24895	0.45102	0.29753	0.29348	0.36911	0.36959	0.3148	0.31376	0.9083	0.90072
615362.88	4201451.51	2.52247	2.58606	5.93767	6.04445	0.23375	0.31924	0.25329	0.50199	0.29838	0.29412	0.3756	0.37504	0.32196	0.32121	0.996	0.98791
615382.88	4201451.51	2.37403	2.43865	5.9201	6.02789	0.25139	0.3178	0.25713	0.5605	0.2994	0.29514	0.38168	0.37983	0.32898	0.32854	1.0997	1.09258
615402.88	4201451.51	2.23249	2.29548	5.89937	6.00808	0.27109	0.31508	0.26042	0.62709	0.3006	0.29629	0.38761	0.38448	0.33572	0.33552	1.21971	1.21505
615422.88	4201451.51	2.10014	2.15946	5.87536	5.98483	0.29035	0.31181	0.26232	0.70243	0.30192	0.29732	0.39367	0.38967	0.34204	0.34182	1.35245	1.34838
615442.88	4201451.51	1.97802	2.03261	5.84783	5.95785	0.30633	0.30851	0.26253	0.78719	0.30332	0.29817	0.40005	0.39594	0.34783	0.34718	1.49458	1.4897
615462.88	4201451.51	1.86626	1.91607	5.81652	5.92681	0.31671	0.30536	0.26169	0.88404	0.30477	0.29894	0.40679	0.40332	0.35312	0.35168	1.6444	1.63758
614682.88	4201471.51	1.1118	1.12034	1.66582	1.68347	0.14362	0.10979	0.1013	0.10933	0.18155	0.17994	0.16583	0.16445	0.15052	0.14923	0.19226	0.19033
614702.88	4201471.51	1.28287	1.29481	1.95783	1.98274	0.14754	0.11149	0.10357	0.11146	0.18501	0.18294	0.16921	0.16774	0.15352	0.15217	0.19777	0.19576
614822.88	4201471.51	2.7984	2.77905	4.56031	4.53541	0.16939	0.12586	0.11971	0.12737	0.2115	0.20803	0.19213	0.19021	0.1741	0.17233	0.23827	0.23579
614842.88	4201471.51	3.07414	3.05847	5.02962	5.01174	0.17631	0.12927	0.12293	0.13055	0.21712	0.21423	0.19641	0.19442	0.17795	0.17614	0.2464	0.24383
614862.88	4201471.51	3.30301	3.30403	5.41195	5.42363	0.1847	0.13296	0.1263	0.1337	0.2229	0.22097	0.20075	0.19867	0.18179	0.18	0.25486	0.2522
614882.88	4201471.51	3.50534	3.52635	5.74335	5.78883	0.19443	0.13711	0.1299	0.13707	0.22896	0.22833	0.20528	0.2031	0.18579	0.18406	0.26388	0.26111
614902.88	4201471.51	3.68615	3.72534	6.03368	6.10877	0.20495	0.14172	0.13378	0.14071	0.23516	0.23604	0.21003	0.20774	0.19005	0.18835	0.27354	0.27066
614922.88	4201471.51	3.83908	3.8927	6.27318	6.37082	0.21531	0.14669	0.13796	0.14454	0.2412	0.24358	0.21498	0.21255	0.19445	0.1928	0.28381	0.2808
614942.88	4201471.51	3.96844	4.0327	6.47028	6.58412	0.22454	0.15204	0.1423	0.14864	0.24685	0.25042	0.22012	0.21754	0.19898	0.1974	0.29475	0.29159
614962.88	4201471.51	4.0784	4.15027	6.63295	6.75863	0.23175	0.15772	0.14675	0.15299	0.25192	0.25603	0.22549	0.22276	0.20365	0.20211	0.30643	0.30312
614982.88	4201471.51	4.17238	4.24996	6.76781	6.90206	0.23635	0.16373	0.15127	0.15761	0.25626	0.26009	0.2311	0.22821	0.20844	0.20693	0.31893	0.31545
615002.88	4201471.51	4.25233	4.33424	6.87885	7.01957	0.23813	0.17007	0.15585	0.16262	0.25984	0.26257	0.23698	0.23393	0.21335	0.21182	0.33234	0.3287
615022.88	4201471.51	4.31902	4.40456	6.9683	7.11456	0.23741	0.1768	0.16056	0.16797	0.26275	0.26382	0.24317	0.23996	0.2184	0.21678	0.34678	0.34297
615042.88	4201471.51	4.37323	4.4619	7.03879	7.18958	0.23491	0.18399	0.16529	0.17366	0.26517	0.26441	0.24968	0.24633	0.22359	0.22185	0.36237	0.35839
615062.88	4201471.51	4.41576	4.50751	7.09356	7.24814	0.23156	0.19173	0.17013	0.17993	0.26738	0.26498	0.25657	0.25311	0.22893	0.22706	0.37925	0.3751
615082.88	4201471.51	4.44651	4.54218	7.13548	7.29369	0.22823	0.20014	0.17524	0.18681	0.26967	0.26609	0.26385	0.26033	0.23444	0.23246	0.39759	0.3933
615102.88	4201471.51	4.46345	4.56334	7.16663	7.32847	0.22557	0.2093	0.18058	0.19427	0.2723	0.26807	0.27156	0.26807	0.24015	0.23813	0.41758	0.41317
615122.88	4201471.51	4.46113	4.563	7.18823	7.3538	0.22378	0.21926	0.18627	0.20261	0.27545	0.27106	0.27973	0.27636	0.24608	0.24408	0.43945	0.43495
615142.88	4201471.51	4.43055	4.527	7.20153	7.37076	0.22269	0.22999	0.19234	0.21194	0.27916	0.27505	0.28837	0.28527	0.25224	0.25035	0.46348	0.45891
615162.88	4201471.51	4.36604	4.45013	7.20836	7.38064	0.22185	0.24139	0.19879	0.22236	0.28337	0.27993	0.29745	0.29481	0.25863	0.25692	0.48996	0.48534
615182.88	4201471.51	4.28401	4.35847	7.22528	7.39902	0.22087	0.25335	0.20582	0.23421	0.28797	0.28552	0.30705	0.30504	0.26543	0.26384	0.51953	0.51485
615202.88	4201471.51	4.19641	4.26082	7.25533	7.42882	0.21938	0.26567	0.21317	0.24797	0.29268	0.29139	0.31713	0.31588	0.27257	0.27109	0.55279	0.548
615222.88	4201471.51	4.09743	4.16309	7.27868	7.45169	0.21727	0.278	0.22052	0.26374	0.29708	0.29679	0.32741	0.32699	0.2798	0.27845	0.59008	0.58515
615242.88	4201471.51	3.97757	4.0571	7.28543	7.45876	0.21475	0.28996	0.22923	0.28178	0.3008	0.30103	0.33766	0.33799	0.28712	0.28584	0.63195	0.62692
615262.88	4201471.51	3.82627	3.91462	7.27427	7.44857	0.21246	0.30124	0.23548	0.30264	0.30366	0.30367	0.34767	0.34859	0.29449	0.2932	0.67917	0.67418
615282.88	4201471.51	3.64526	3.7342	7.26	7.43486	0.21141	0.31158	0.24145	0.32706	0.30573	0.30483	0.35741	0.35871	0.30199	0.30066	0.73311	0.72825
615302.88	4201471.51	3.43848	3.52697	7.24274	7.41791	0.21272	0.32059	0.24697	0.35584	0.30713	0.30497	0.36673	0.36817	0.3096	0.30823	0.79505	0.79006
615322.88	4201471.51	3.21703	3.30871	7.22259	7.39777	0.2175	0.32773	0.2519	0.38988	0.30811	0.30476	0.3755	0.37681	0.31732	0.31597	0.86661	0.86074
615342.88	4201471.51	2.99385	3.0873	7.19961	7.37451	0.22668	0.33256	0.25677	0.43027	0.30894	0.30479	0.38364	0.38452	0.32512	0.32387	0.9502	0.94282
615362.88	4201471.51	2.77938	2.87057	7.1738	7.3484	0.24057	0.33486	0.26149	0.47824	0.30984	0.30535	0.39114	0.39122	0.33295	0.33192	1.04956	1.0409
615382.88	4201471.51	2.57996	2.66527	7.14511	7.31913	0.25863	0.33471	0.26619	0.53511	0.3109	0.30637	0.39811	0.39701	0.34073	0.34001	1.16995	1.16106
615402.88	4201471.51	2.39833	2.47579	7.11341	7.28684	0.27915	0.33265	0.2703	0.60222	0.31216	0.30758	0.40473	0.40226	0.34832	0.34794	1.3161	1.30945
615422.88	4201471.51	2.23493	2.30435	7.07855	7.25135	0.29949	0.32945	0.27353	0.68106	0.31358	0.30872	0.41129	0.40766	0.35556	0.3554	1.48697	1.48311
615442.88	4201471.51	2.08886	2.15104	7.04027	7.21224	0.3166	0.32586	0.27518	0.77304	0.31508	0.30969	0.41807	0.41389	0.36229	0.362	1.67594	1.67161

615462.88	4201471.51	1.95861	2.01454	6.99821	7.16938	0.32795	0.32236	0.27523	0.87998	0.31666	0.31057	0.42518	0.42129	0.36841	0.36751	1.87887	1.87282
614702.88	4201491.51	1.51044	1.53754	2.33153	2.38315	0.14901	0.11335	0.10407	0.11859	0.18865	0.18695	0.17175	0.17035	0.15545	0.15412	0.19914	0.19722
614822.88	4201491.51	3.95516	3.99757	6.6015	6.69397	0.17176	0.12778	0.12115	0.13631	0.21559	0.21181	0.19571	0.1938	0.17676	0.17499	0.24034	0.23791
614842.88	4201491.51	4.31774	4.38957	7.21704	7.36188	0.17784	0.13106	0.1246	0.13971	0.22126	0.21782	0.20017	0.1982	0.18077	0.17893	0.24863	0.24611
614862.88	4201491.51	4.5706	4.67769	7.63078	7.83643	0.18533	0.13454	0.12735	0.1431	0.22708	0.22435	0.20465	0.20261	0.18478	0.18291	0.25719	0.25458
614882.88	4201491.51	4.78205	4.91475	7.96647	8.21458	0.19454	0.1385	0.131	0.14675	0.23331	0.23168	0.20933	0.20721	0.18892	0.18708	0.26635	0.26363
614902.88	4201491.51	4.97449	5.12317	8.26544	8.53759	0.20511	0.14297	0.13504	0.15072	0.23985	0.23966	0.21427	0.21205	0.19336	0.19153	0.2762	0.27337
614922.88	4201491.51	5.12138	5.28232	8.4826	8.77235	0.21612	0.14781	0.13924	0.15483	0.24633	0.24774	0.21936	0.21701	0.19785	0.19611	0.28663	0.28366
614942.88	4201491.51	5.24578	5.41514	8.65907	8.95976	0.22667	0.15308	0.14372	0.1592	0.25259	0.25548	0.22466	0.22216	0.20256	0.20089	0.29776	0.29464
614962.88	4201491.51	5.35605	5.53021	8.80973	9.11562	0.23573	0.15875	0.14841	0.16388	0.2584	0.26231	0.2302	0.22753	0.20745	0.20586	0.3097	0.3064
614982.88	4201491.51	5.44935	5.62641	8.93009	9.23837	0.2424	0.16477	0.15312	0.16882	0.26352	0.26769	0.23599	0.23312	0.21248	0.21095	0.32247	0.319
615002.88	4201491.51	5.52636	5.70605	9.02186	9.33214	0.24615	0.17115	0.15799	0.17408	0.26785	0.27139	0.24205	0.23898	0.21764	0.21614	0.33619	0.33252
615022.88	4201491.51	5.58827	5.77084	9.08784	9.40051	0.247	0.17791	0.16288	0.17971	0.2714	0.27354	0.24841	0.24515	0.22293	0.22141	0.35097	0.34709
615042.88	4201491.51	5.63696	5.82277	9.13241	9.44724	0.24547	0.18511	0.16774	0.18568	0.2743	0.2746	0.25511	0.25167	0.22837	0.22674	0.36692	0.36285
615062.88	4201491.51	5.67385	5.86313	9.15972	9.47761	0.24241	0.19287	0.17273	0.19214	0.2768	0.27525	0.26218	0.2586	0.23395	0.23218	0.38422	0.37994
615082.88	4201491.51	5.69928	5.8919	9.17316	9.49424	0.23885	0.20128	0.17788	0.19908	0.27922	0.27615	0.26968	0.26599	0.2397	0.23777	0.40302	0.39857
615102.88	4201491.51	5.71142	5.90718	9.17486	9.4992	0.23565	0.21047	0.18316	0.20662	0.28186	0.27779	0.27763	0.27391	0.24564	0.24358	0.42354	0.41893
615122.88	4201491.51	5.70522	5.90442	9.16618	9.49372	0.23327	0.22054	0.18883	0.2148	0.28495	0.28046	0.28607	0.28241	0.2518	0.24967	0.446	0.44128
615142.88	4201491.51	5.66957	5.86819	9.1502	9.47986	0.23174	0.23152	0.19485	0.22379	0.28862	0.28421	0.29502	0.29156	0.2582	0.25609	0.4707	0.4659
615162.88	4201491.51	5.59504	5.77831	9.14708	9.47595	0.23078	0.24341	0.20146	0.23387	0.29294	0.28905	0.30457	0.30148	0.26502	0.26295	0.49813	0.49327
615182.88	4201491.51	5.48012	5.64075	9.16858	9.4931	0.22992	0.25609	0.2087	0.2452	0.29778	0.29482	0.31476	0.31222	0.27216	0.27026	0.52885	0.52393
615202.88	4201491.51	5.34637	5.48363	9.21513	9.53082	0.22875	0.26935	0.21643	0.25813	0.30288	0.30109	0.32557	0.32376	0.27977	0.27799	0.56352	0.5585
615222.88	4201491.51	5.1569	5.29232	9.1913	9.50534	0.22662	0.28247	0.22622	0.27225	0.30751	0.30686	0.33631	0.33532	0.28725	0.28565	0.60162	0.59637
615242.88	4201491.51	4.93972	5.08806	9.16225	9.47417	0.22402	0.29543	0.23347	0.2883	0.31158	0.31165	0.34722	0.34705	0.29494	0.29348	0.64473	0.63915
615262.88	4201491.51	4.67299	4.82195	9.13056	9.43983	0.22154	0.30792	0.24062	0.30684	0.31488	0.31495	0.35815	0.35868	0.30282	0.30145	0.69402	0.68807
615282.88	4201491.51	4.35185	4.49548	9.0963	9.40257	0.22014	0.31966	0.24733	0.32831	0.31732	0.31662	0.36892	0.36996	0.31088	0.30953	0.75099	0.74476
615302.88	4201491.51	3.99931	4.14188	9.05959	9.36268	0.22094	0.33029	0.25351	0.35357	0.31901	0.31705	0.37937	0.38069	0.31908	0.31771	0.81754	0.81127
615322.88	4201491.51	3.64793	3.78571	9.02042	9.32021	0.22522	0.33933	0.25941	0.3834	0.32018	0.31691	0.38934	0.3907	0.32742	0.32602	0.89604	0.88982
615342.88	4201491.51	3.32083	3.44824	8.97882	9.27533	0.23404	0.34625	0.26488	0.41903	0.32111	0.31688	0.3987	0.39984	0.33587	0.33449	0.9895	0.98274
615362.88	4201491.51	3.02808	3.14193	8.93473	9.22792	0.2479	0.35065	0.27016	0.46174	0.32206	0.31736	0.4074	0.40798	0.3444	0.34314	1.10223	1.09395
615382.88	4201491.51	2.77118	2.87112	8.88806	9.17783	0.26634	0.35226	0.27524	0.51338	0.32318	0.31837	0.41545	0.41506	0.35297	0.35194	1.24116	1.23145
615402.88	4201491.51	2.54763	2.6348	8.83867	9.12512	0.28769	0.35137	0.28029	0.57581	0.32451	0.31963	0.42298	0.42129	0.36145	0.36077	1.41649	1.40729
615422.88	4201491.51	2.35349	2.42935	8.78637	9.0694	0.30915	0.34866	0.28469	0.65162	0.32602	0.32088	0.43026	0.42719	0.36968	0.36938	1.63652	1.63149
615442.88	4201491.51	2.18467	2.25096	8.73085	9.01075	0.32749	0.345	0.28793	0.74347	0.32764	0.32198	0.43756	0.43355	0.37747	0.37734	1.89607	1.8926
615462.88	4201491.51	2.03739	2.09593	8.67175	8.94843	0.33988	0.34113	0.28935	0.8545	0.32935	0.32299	0.44512	0.44096	0.38462	0.38422	2.18378	2.1781
614722.88	4201511.51	2.37376	2.4618	3.80828	3.9741	0.15474	0.11716	0.10703	0.12921	0.19642	0.19463	0.17806	0.17663	0.16071	0.15934	0.20653	0.20463
614902.88	4201511.51	7.15411	7.54892	12.06673	12.78367	0.20557	0.14463	0.13633	0.16246	0.24487	0.24361	0.21876	0.21659	0.19678	0.19483	0.27901	0.27628
614922.88	4201511.51	7.21991	7.63542	12.12129	12.86654	0.21662	0.14921	0.14047	0.1669	0.25156	0.25186	0.22392	0.22165	0.20134	0.19946	0.28944	0.28659
614942.88	4201511.51	7.29604	7.72048	12.1934	12.94761	0.22802	0.15432	0.14494	0.17166	0.25827	0.26024	0.22935	0.22694	0.20612	0.20435	0.30068	0.29768
614962.88	4201511.51	7.40228	7.82429	12.31664	13.05841	0.23872	0.15995	0.1498	0.17683	0.26481	0.26819	0.2351	0.23253	0.21124	0.20955	0.31286	0.30969
614982.88	4201511.51	7.48743	7.90628	12.40156	13.13248	0.24748	0.16598	0.15482	0.18233	0.27076	0.27493	0.24109	0.23832	0.21652	0.21492	0.32591	0.32255
615002.88	4201511.51	7.55142	7.96914	12.44858	13.17162	0.25344	0.17238	0.15995	0.18811	0.27592	0.28003	0.24735	0.24435	0.22195	0.22042	0.33993	0.33635
615022.88	4201511.51	7.59851	8.01556	12.46556	13.18136	0.25627	0.17919	0.16513	0.19433	0.28024	0.28335	0.25391	0.25067	0.22752	0.22603	0.35503	0.35123
615042.88	4201511.51	7.63159	8.04965	12.4579	13.16843	0.25616	0.18641	0.1703	0.20091	0.28376	0.2852	0.26081	0.25734	0.23324	0.23171	0.37135	0.36731
615062.88	4201511.51	7.65225	8.07304	12.4293	13.13581	0.25384	0.19416	0.17543	0.20789	0.2867	0.28618	0.26809	0.26441	0.23911	0.23747	0.38905	0.38478
615082.88	4201511.51	7.66152	8.08524	12.38363	13.08725	0.25035	0.20254	0.18072	0.21544	0.28936	0.28702	0.27579	0.27195	0.24514	0.24334	0.40832	0.40382
615102.88	4201511.51	7.65809	8.08441	12.32332	13.02433	0.24673	0.21171	0.1861	0.22351	0.29207	0.28837	0.28398	0.28004	0.25136	0.24937	0.42936	0.42466
615122.88	4201511.51	7.6404	8.06659	12.25335	12.95184	0.24373	0.22178	0.19169	0.2322	0.29514	0.29067	0.29268	0.28873	0.25778	0.25564	0.45243	0.44756
615142.88	4201511.51	7.60078	8.02505	12.18254	12.8766	0.24164	0.23288	0.19774	0.24156	0.29877	0.29413	0.30194	0.29811	0.26445	0.26222	0.47782	0.47283
615162.88	4201511.51	7.58687	7.98945	12.23955	12.90769	0.24059	0.24532	0.20474	0.25228	0.30334	0.29904	0.31218	0.30864	0.2719	0.26952	0.50667	0.50162
615182.88	4201511.51	7.43103	7.78765	12.24971	12.89534	0.23972	0.25857	0.21203	0.26388	0.30832	0.30484	0.32287	0.31981	0.27936	0.27708	0.53846	0.53338
615202.88	4201511.51	7.13875	7.44905	12.20615	12.83776	0.23841	0.27235	0.22229	0.27642	0.31344	0.31113	0.33391	0.33151	0.28699	0.28487	0.57362	0.56846
615222.88	4201511.51	6.79275	7.08363	12.14041	12.76196	0.23645	0.28647	0.22976	0.29024	0.31843	0.31736	0.34531	0.34372	0.29486	0.29293	0.61298	0.60766
615242.88	4201511.51	6.37864	6.66409	12.0735	12.68461	0.23391	0.3006	0.23752	0.30573	0.32297	0.32281	0.35701	0.35629	0.30301	0.30128	0.65761	0.65198
615262.88	4201511.51	5.83992	6.0983	12.00502	12.60543	0.23131	0.31439	0.24521	0.32317	0.32674	0.32681	0.36888	0.36895	0.31142	0.30985	0.70873	0.70262
615282.88	4201511.51	5.21714	5.45366	11.93506	12.52483	0.22956	0.32756	0.2528	0.34318	0.32962	0.32909	0.38071	0.38141	0.32006	0.3186	0.76803	0.76128
615302.88	4201511.51	4.60886	4.81886	11.86328	12.44274	0.22987	0.33979	0.26008	0.3662	0.33164	0.32989	0.39234	0.39345	0.3289	0.32749	0.83787	0.83043
615322.88	4201511.51	4.0724	4.25119	11.78982	12.35927	0.23361	0.35069	0.26688	0.39304	0.33304	0.32989	0.40359	0.40488	0.33791	0.3365	0.92154	0.91358
615342.88	4201511.51	3.61991	3.77006	11.71456	12.27398	0.24202	0.35973	0.27318	0.42471	0.33411	0.32983	0.41429	0.41553	0.34706	0.34563	1.02355	1.01553
615362.88	4201511.51	3.24345	3.36966	11.63748	12.18732	0.25578	0.3664	0.27904	0.46247	0.33513	0.33023	0.42433	0.42526	0.35635	0.35494	1.15014	1.14213
615382.88	4201511.51	2.93016	3.03617	11.55839	12.09856	0.27458	0.37021	0.28475	0.50798	0.33631	0.3312	0.43368	0.43389	0.36574	0.36444	1.31028	1.30118
615402.88	4201511.51	2.6679	2.75697	11.47706	12.00816	0.29675	0.37107	0.29052	0.56335	0.33771	0.33251	0.44237	0.44146	0.37514	0.37412	1.51856	1.50795
615422.88	4201511.51	2.44668	2.52158	11.39352	11.91541	0.3194	0.36939	0.29592	0.63147	0.33932	0.33387	0.4506	0.44828	0.38442	0.38382	1.79806	1.78929
615442.88	4201511.51	2.25857	2.32197	11.30708	11.82052	0.33906	0.36602	0.30054	0.7162	0.34107	0.33511	0.45863	0.45506	0.39338	0.39317	2.16437	2.16126
615462.88	4201511.51	2.09735	2.15153	11.21765	11.72222	0.35257	0.36192	0.3038	0.82168	0.34292	0.33626	0.46677	0.46259	0.40175	0.40165	2.59933	2.59447
614722.88	4201531.51	3.3963	3.6686	5.519	6.0145	0.15539	0.11842	0.10707	0.1374	0.20007	0.19858	0.18048	0.17917	0.16256	0.16122	0.20768	0.20589
614742.88	4201531.51	5.10556	5.61217	8.66911	9.64359	0.16095	0.12093	0.10999	0.14089	0.20453	0.20264	0.18466	0.18323	0.16618	0.16477	0.21422	0.21234
614742.88	4201551.51	14.00437	18.58107	13.31876	17.28077	0.1616	0.12217	0.11007	0.1496	0.20859	0.207	0.1872	0.18589	0.16817	0.16679	0.21547	0.21368
614762.88	4201571.51	10.18624	12.57587	15.01255	18.31099	0.16823	0.12605	0.11321	0.16264	0.21781	0.21613	0.19434	0.19301	0.17413	0.1727	0.22375	0.22191
614762.88	4201591.51	4.54774	5.02791	6.98615	7.71973	0.168	0.1265	0.11302	0.17059	0.22196	0.22046	0.19672	0.19553	0.17609	0.17469	0.22474	0.2229
614782.88	4201591.51	5.02622	5.52204	7.8039	8.57122	0.17543	0.12993	0.11644	0.17582	0.22759	0.22581	0.20185	0.20052	0.18038	0.1789	0.2324	0.23046
614802.88	4201591.51	5.32715	5.82545	8.3246	9.10869	0.18234	0.13318	0.11985	0.1811	0.23308	0.23082	0.20703	0.20557	0.18471	0.18314	0.24026	0.23824
614822.88	4201591.51	5.55375	6.05008	8.71912	9.51104	0.18854	0.13648	0.1233	0.18665	0.23875	0.2359	0.21237	0.21076	0.18918	0.18753	0.24857	0.24646
614842.88	4201591.51	5.72834	6.22114	9.02727	9.82222	0.19413	0.13989	0.12688	0.19253	0.24468	0.24122	0.21787	0.21611	0.19382	0.19207	0.25736	0.25515
614862.88	4201591.51	5.91719	6.40306	9.35656	10.14935	0.19956	0.14358	0.13073	0.19887	0.25116	0.24718	0.22364	0.22171	0.19871	0.19687	0.26682	0.26452
614882.88	4201591.51	6.09329	6.57314	9.66343	10.45454	0.20544	0.14749	0.13482	0.20558	0.25811	0.25383	0.22962	0.22754	0.20381	0.20187	0.27689	0.27449
614902.88	4201591.51	6.26712	6.74327	9.96543	10.7566	0.21247	0.15169	0.13917	0.21268	0.26558	0.26135	0.23583	0.23362	0.20913	0.20711	0.28762	0.28512
614922.88	4201591.51	6.35326	6.83474	10.11961	10.92838	0.22085	0.15599	0.14266	0.21997	0.2732	0.26949	0.24207	0.23977	0.21441	0.21239	0.29873	0.29615
614942.88	4201591.51	6.46882	6.95521	10.3187	11.14366	0.23149	0.16083	0.14748	0.22782	0.28148	0.27883	0.24863	0.24626	0.21998	0.21797	0.31073	0.30806
614962.88	4201591.51	6.6185	7.10984	10.57319	11.41031	0.24424	0.16627	0.15287	0.23633	0.29035	0.28927	0.25558	0.25315	0.22601	0.22397	0.32379	0.32103
614982.88	4201591.51	6.75854	7.25533	10.80444	11.65745	0.25822	0.17223	0.15864	0.2454	0.29934	0.30017	0.2628	0.26033	0.2323	0.23027	0.33781	0.33495
615002.88	4201591.51	6.91929	7.42149	11.06509	11.93403	0.27229	0.1788	0.16493	0.25518	0.30825	0.31097	0.27039	0.26785	0.23899	0.23695	0.35301	0.35002
615022.88	4201591.51	7.10919	7.61221	11.365	12.24534	0.28501	0.18601	0.17163	0.2657	0.31674	0.32087	0.27838	0.27572	0.24603	0.24401	0.36957	0.36642
615042.88	4201591.51	7.24796	7.7597	11.56595	12.47007	0.29465	0.19357	0.17838	0.27679	0.32415	0.32875	0.28654	0.2837	0.25313	0.2512	0.38722	0.38388
615082.88	4201591.51	7.5972	8.12378	12.01449	12.96021	0.3026	0.2105	0.1924	0.30182	0.33608	0.3384	0.30423	0.30075	0.26828	0.26648	0.42769	0.42387
615102.88	4201591.51	7.77374	8.31762	12.17659	13.15376	0.3011	0.21967	0.20025	0.31568	0.34051	0.34061	0.31362	0.30971	0.27613	0.27432	0.45057	0.44648
615122.88	4201591.51	8.01405	8.5773	12.36014	13.3687	0.29753	0.22954	0.20729	0.33064	0.34443	0.34228	0.32354	0.31919	0.28421	0.28234	0.47572	0.47135
615142.88	4201591.51	8.36705	8.96137	12.5608	13.60181	0.2933	0.24032	0.21437	0.34688	0.34831	0.34436	0.33408	0.32933	0.29254	0.29057	0.50351	0.49887
615162.88	4201591.51	8.96732	9.63525	12.77156	13.84792	0.28952	0.25228	0.22169	0.36457	0.35259	0.34758	0.34534	0.34031	0.30116	0.29903	0.53439	0.52951
615342.88	4201591.51	3.80725	3.72894	14.93097	16.45916	0.28174	0.41164	0.30447	0.6322	0.39595	0.39185	0.48197	0.4827	0.39657	0.39444	1.12452	1.11766
615382.88	4201591.51	2.9986	2.93294	15.4835	17.14964	0.31412	0.44252	0.32537	0.74101	0.39914	0.39281	0.51523	0.51619	0.4229	0.4212	1.4883	1.4804
615422.88	4201591.51	2.48516	2.42997	16.06889	17.89047	0.36753	0.46311	0.34477	0.88656	0.403	0.39601	0.54604	0.54644	0.45069	0.4489	2.27015	2.26195
614782.88	4201611.51	3.19461	3.38082	4.91832	5.21802	0.17519	0.13019	0.11625	0.18278	0.23212	0.2305	0.2043	0.20309	0.18244	0.181	0.23337	0.2314
614802.88	4201611.51	3.41785	3.60405	5.29109	5.59494	0.18319	0.13387	0.11983	0.1886	0.23812	0.2362	0.2098	0.20846	0.18699	0.18546	0.24149	0.23942
614822.88	4201611.51	3.58206	3.76835	5.56425	5.8718	0.19063	0.13748	0.12341	0.19462	0.24414	0.24173	0.21542	0.21394	0.19164	0.19002	0.24995	0.24778
614842.88	4201611.51	3.69606	3.88556	5.75189	6.068	0.19737	0.14105	0.12709	0.20085	0.2502	0.24718	0.22115	0.21953	0.19638	0.19467	0.25878	0.2565
614862.88	4201611.51	3.81414	4.00173	5.94243	6.25847	0.20354	0.1449	0.13093	0.2076	0.25679	0.25314	0.22716	0.22537	0.2014	0.19959	0.26829	0.26591
614882.88	4201611.51	3.92557	4.11078	6.1184	6.43327	0.20961	0.14895	0.13503	0.21478	0.26384	0.25969	0.2334	0.23143	0.20665	0.20473	0.27845	0.27596
614902.88	4201611.51	4.03647	4.21818	6.28935	6.6013	0.21628	0.15326	0.13941	0.22239	0.27145	0.26704	0.2399	0.23777	0.21213	0.21012	0.28931	0.28671
614922.88	4201611.51	4.11039	4.2919	6.39522	6.70964	0.22396	0.15769	0.14298	0.23028	0.2793	0.27504	0.2465	0.24422	0.21771	0.21561	0.30062	0.29792
614942.88	4201611.51	4.19049	4.37217	6.50539	6.82144	0.23365	0.16255	0.1477	0.23874	0.28781	0.28424	0.25339	0.251	0.22348	0.22138	0.31277	0.30998
614962.88	4201611.51	4.28249	4.46316	6.62868	6.94425	0.24566	0.16795	0.15301	0.24786	0.29698	0.29467	0.26064	0.25817	0.2296	0.22752	0.32593	0.32305
614982.88	4201611.51	4.38945	4.56782	6.76838	7.07937	0.25969	0.17396	0.15894	0.25771	0.30663	0.3061	0.2683	0.26576	0.23625	0.23409	0.34022	0.33723
615002.88	4201611.51	4.51325	4.68613	6.92492	7.22627	0.2748	0.18063	0.16544	0.26834	0.31648	0.31799	0.27637	0.27378	0.24321	0.24108	0.35576	0.35265
615022.88	4201611.51	4.65919	4.82062	7.10391	7.3855	0.28961	0.188	0.17252	0.27987	0.32617	0.32954	0.2849	0.28225	0.25063	0.24849	0.37271	0.36946

615042.88	4201611.51	4.77058	4.93108	7.20618	7.48652	0.30198	0.1957	0.18055	0.29199	0.33477	0.3393	0.29354	0.29079	0.25808	0.25602	0.39064	0.38723
615162.88	4201611.51	6.62339	6.93642	7.69196	8.00921	0.30507	0.25479	0.2252	0.38809	0.36732	0.36263	0.35476	0.34973	0.30878	0.3067	0.5393	0.53429
614802.88	4201631.51	2.49669	2.58802	3.79156	3.9439	0.183	0.13386	0.11958	0.19379	0.24296	0.24122	0.21229	0.21109	0.18914	0.18764	0.2424	0.24025
614822.88	4201631.51	2.63651	2.7275	4.01351	4.16763	0.19158	0.13793	0.1234	0.20021	0.24954	0.24749	0.21825	0.21691	0.19402	0.19244	0.25113	0.24887
614842.88	4201631.51	2.7458	2.83634	4.1829	4.33796	0.1996	0.14193	0.12724	0.20686	0.25615	0.25358	0.22435	0.22285	0.19902	0.19733	0.26022	0.25785
614862.88	4201631.51	2.82649	2.91818	4.3021	4.46044	0.20698	0.14587	0.13109	0.21369	0.26277	0.25956	0.23056	0.22892	0.2041	0.20232	0.26967	0.2672
614882.88	4201631.51	2.90611	2.99841	4.41522	4.57573	0.21379	0.15004	0.13516	0.22105	0.26988	0.26603	0.23704	0.23522	0.20945	0.20756	0.27983	0.27723
614902.88	4201631.51	2.99336	3.08352	4.53593	4.69431	0.22062	0.15454	0.13955	0.22898	0.27766	0.27332	0.24384	0.24184	0.21511	0.21311	0.2908	0.28808
614922.88	4201631.51	3.07574	3.16286	4.64298	4.79766	0.22814	0.15926	0.14329	0.23739	0.28595	0.28142	0.25089	0.2487	0.22099	0.2189	0.30246	0.29962
614942.88	4201631.51	3.14662	3.2328	4.72454	4.8784	0.23701	0.16422	0.14803	0.24627	0.2947	0.29046	0.25815	0.2558	0.22707	0.22489	0.31479	0.31184
614962.88	4201631.51	3.20411	3.29194	4.77595	4.93287	0.24785	0.16949	0.15303	0.25562	0.30387	0.30049	0.26561	0.26313	0.23317	0.23106	0.32783	0.32476
614982.88	4201631.51	3.31259	3.39667	4.89953	5.04854	0.26162	0.17571	0.15927	0.26609	0.31432	0.31245	0.27382	0.27123	0.24029	0.238	0.34257	0.33939
615002.88	4201631.51	3.41833	3.4993	5.00509	5.14639	0.27708	0.18245	0.16585	0.27723	0.32494	0.32506	0.28234	0.27967	0.24752	0.24523	0.35833	0.35503
615022.88	4201631.51	3.51942	3.5993	5.08558	5.22201	0.29296	0.18968	0.17399	0.28904	0.33529	0.33753	0.29113	0.28841	0.25499	0.25273	0.37515	0.37173
615042.88	4201631.51	3.62606	3.70598	5.15115	5.28531	0.30772	0.19748	0.18115	0.30168	0.34508	0.34905	0.30026	0.29749	0.26276	0.26057	0.39328	0.3897
615162.88	4201631.51	5.76421	6.0143	5.45394	5.59779	0.32221	0.25776	0.2284	0.4024	0.3832	0.37914	0.36471	0.35992	0.31638	0.31425	0.5434	0.53822
615342.88	4201631.51	3.70985	3.69413	5.86499	6.02144	0.30773	0.43533	0.31932	0.72094	0.4342	0.43041	0.51917	0.5191	0.42481	0.42168	1.13612	1.1294
615382.88	4201631.51	2.94991	2.923	5.94247	6.10291	0.33915	0.47833	0.34408	0.8538	0.43837	0.4315	0.56126	0.56204	0.45555	0.45299	1.48132	1.4731
615422.88	4201631.51	2.47039	2.44269	6.0123	6.17733	0.39708	0.51296	0.37028	1.03363	0.44283	0.43485	0.60222	0.60289	0.489	0.48695	2.14061	2.13146
615462.88	4201631.51	2.14285	2.11654	6.07197	6.24171	0.44944	0.53306	0.39599	1.28715	0.44871	0.43954	0.6402	0.63995	0.52485	0.52279	3.70446	3.72592
615502.88	4201631.51	1.90571	1.88003	6.1172	6.29224	0.46403	0.53291	0.42134	1.66411	0.45593	0.44518	0.67396	0.67116	0.56226	0.56134	6.07912	6.12885
615542.88	4201631.51	1.72664	1.70125	6.14051	6.32094	0.45616	0.52208	0.44357	2.26569	0.46581	0.45395	0.7045	0.69997	0.59761	0.59824	7.58158	7.63491
615582.88	4201631.51	1.5869	1.55947	6.1271	6.31314	0.47081	0.52175	0.45066	3.32994	0.48081	0.46998	0.73183	0.7266	0.62558	0.62185	8.48015	8.5188
615622.88	4201631.51	1.47495	1.44471	6.04767	6.23775	0.51746	0.56518	0.45688	5.55223	0.49955	0.49375	0.75183	0.74172	0.64908	0.64216	9.22021	9.24173
615662.88	4201631.51	1.3876	1.35696	5.92698	6.08943	0.56283	0.67704	0.48824	11.91154	0.51705	0.5151	0.76918	0.75317	0.67203	0.6635	10.26682	10.25864
615702.88	4201631.51	1.313	1.28325	5.38146	5.52122	0.58825	0.77393	0.5681	45.05757	0.53012	0.52741	0.78698	0.76787	0.68665	0.67165	12.16126	12.14968
615742.88	4201631.51	1.25044	1.22368	4.11703	4.12581	0.60812	0.79148	0.65004	407.9231	0.54608	0.54339	0.81162	0.79004	0.7036	0.68589	24.54086	24.97189
614822.88	4201651.51	2.09051	2.14018	3.10436	3.19046	0.19135	0.13776	0.1232	0.20295	0.25493	0.25305	0.22085	0.21962	0.19634	0.19477	0.25209	0.24977
614842.88	4201651.51	2.18285	2.23263	3.2393	3.3271	0.20067	0.14209	0.12717	0.20969	0.26194	0.25973	0.22724	0.22589	0.20151	0.19985	0.26132	0.25889
614862.88	4201651.51	2.25309	2.30225	3.335	3.42272	0.20946	0.14626	0.13107	0.21654	0.26883	0.26607	0.23373	0.23225	0.20673	0.20498	0.27081	0.26826
614882.88	4201651.51	2.32254	2.37175	3.42479	3.51347	0.21744	0.15067	0.13522	0.22395	0.27619	0.27277	0.2405	0.23885	0.21223	0.21037	0.28103	0.27836
614902.88	4201651.51	2.3977	2.44574	3.51838	3.60594	0.225	0.15539	0.13965	0.23197	0.2842	0.28014	0.24762	0.24578	0.21806	0.21609	0.2921	0.28929
614922.88	4201651.51	2.47211	2.51835	3.60436	3.68974	0.2327	0.16034	0.14433	0.24051	0.29275	0.28823	0.25503	0.25298	0.22415	0.22207	0.30392	0.30098
614942.88	4201651.51	2.53779	2.58259	3.66863	3.75234	0.2411	0.16546	0.14816	0.24946	0.30171	0.29709	0.26264	0.2604	0.23044	0.22825	0.31637	0.31331
614962.88	4201651.51	2.59329	2.63774	3.70734	3.79048	0.251	0.17078	0.153	0.25881	0.31106	0.30687	0.27042	0.26801	0.2367	0.23457	0.32946	0.32627
614982.88	4201651.51	2.68028	2.72426	3.78371	3.86484	0.26379	0.17696	0.15897	0.26921	0.32175	0.31866	0.27893	0.27635	0.24388	0.24162	0.34416	0.34085
615002.88	4201651.51	2.77613	2.82024	3.85827	3.93631	0.27894	0.18373	0.16559	0.28035	0.33299	0.33164	0.28786	0.28515	0.25144	0.24907	0.36004	0.35661
615022.88	4201651.51	2.88362	2.9281	3.93043	4.00457	0.29569	0.19114	0.17275	0.29232	0.34444	0.34527	0.29723	0.29442	0.25929	0.25693	0.37722	0.37366
615042.88	4201651.51	2.99431	3.04025	3.9803	4.05229	0.31231	0.19907	0.18151	0.30502	0.35541	0.35839	0.30688	0.30402	0.26739	0.26507	0.39553	0.39184
614822.88	4201671.51	1.73986	1.76774	2.51336	2.56289	0.19014	0.13697	0.12288	0.20269	0.26026	0.25832	0.22316	0.22201	0.19857	0.19701	0.25283	0.25049
614842.88	4201671.51	1.8199	1.84838	2.62338	2.67532	0.2005	0.14163	0.127	0.20933	0.26773	0.26569	0.22988	0.22863	0.20392	0.20228	0.26219	0.25975
614862.88	4201671.51	1.88625	1.91327	2.70781	2.75855	0.21068	0.14613	0.13102	0.21606	0.27508	0.27268	0.2367	0.23535	0.20933	0.2076	0.27183	0.26927
614882.88	4201671.51	1.95003	1.9765	2.78331	2.83407	0.22012	0.15082	0.13524	0.22329	0.28279	0.27983	0.24379	0.2423	0.215	0.21317	0.28214	0.27946
614902.88	4201671.51	2.01589	2.0416	2.85636	2.90655	0.22889	0.15575	0.13971	0.23105	0.29104	0.2874	0.2512	0.24953	0.22098	0.21904	0.29324	0.29043
614922.88	4201671.51	2.08354	2.10831	2.92525	2.97439	0.23731	0.16093	0.14443	0.2393	0.29985	0.29557	0.25895	0.25707	0.22726	0.2252	0.30514	0.3022
614942.88	4201671.51	2.14655	2.17031	2.97847	3.02639	0.24578	0.16624	0.14814	0.24793	0.30905	0.30435	0.26692	0.26484	0.23374	0.23157	0.31769	0.31461
614962.88	4201671.51	2.20441	2.2272	3.01358	3.05999	0.25513	0.17172	0.15294	0.25697	0.31864	0.31394	0.27508	0.2728	0.24021	0.23807	0.33087	0.32767
614982.88	4201671.51	2.28049	2.30284	3.0634	3.10842	0.26687	0.17788	0.15864	0.26689	0.32944	0.32538	0.28386	0.28136	0.24741	0.24519	0.34546	0.34213
615002.88	4201671.51	2.37241	2.39552	3.11986	3.16336	0.28128	0.18471	0.16511	0.27762	0.34119	0.33847	0.2932	0.29051	0.25521	0.25287	0.36143	0.35798
615022.88	4201671.51	2.48645	2.51167	3.18606	3.22785	0.2983	0.19234	0.17253	0.28928	0.35373	0.35302	0.30319	0.30034	0.26356	0.26111	0.37898	0.37541
615042.88	4201671.51	2.60286	2.63083	3.22604	3.26617	0.31606	0.20036	0.18153	0.30148	0.36581	0.36741	0.31336	0.31041	0.27197	0.26954	0.39743	0.39375
615102.88	4201671.51	3.17682	3.22224	3.32197	3.35971	0.35858	0.2289	0.20658	0.3437	0.39771	0.40257	0.34693	0.34377	0.2997	0.29748	0.46293	0.45878
615282.88	4201671.51	6.15015	6.3111	3.52453	3.56154	0.33911	0.37104	0.29701	0.55812	0.46147	0.4597	0.4886	0.48254	0.40879	0.40622	0.84313	0.83632
615302.88	4201671.51	5.03662	5.10381	3.54038	3.57735	0.33664	0.39708	0.3093	0.59612	0.46861	0.46746	0.5106	0.5055	0.4239	0.42126	0.92077	0.91367
615342.88	4201671.51	3.71481	3.72055	3.5674	3.60443	0.33924	0.45452	0.33545	0.68692	0.4787	0.47528	0.55884	0.55677	0.45629	0.45316	1.12214	1.11451
615382.88	4201671.51	2.9757	2.96794	3.58728	3.62434	0.36907	0.51237	0.36337	0.8047	0.48444	0.47714	0.61096	0.61118	0.49193	0.48833	1.42064	1.41188
615422.88	4201671.51	2.51355	2.50405	3.59846	3.63588	0.43155	0.56356	0.39459	0.96274	0.48975	0.48061	0.66425	0.66483	0.53149	0.52821	1.89405	1.88641
615462.88	4201671.51	2.20107	2.19136	3.59848	3.63638	0.49255	0.60312	0.42916	1.18508	0.49674	0.48633	0.71635	0.71668	0.57546	0.57285	2.59564	2.59781
615502.88	4201671.51	1.97668	1.96328	3.58339	3.62216	0.5127	0.62119	0.46514	1.51861	0.5056	0.4935	0.76443	0.76357	0.6236	0.62143	3.37049	3.37124
615542.88	4201671.51	1.8084	1.7898	3.54663	3.58644	0.50826	0.61569	0.50121	2.06902	0.518	0.50471	0.80639	0.80247	0.67391	0.67388	4.06731	4.0703
615582.88	4201671.51	1.67795	1.6552	3.47687	3.51749	0.53022	0.61027	0.52733	3.10788	0.53656	0.52535	0.843	0.83676	0.71888	0.71858	4.66376	4.66407
615622.88	4201671.51	1.57736	1.55017	3.38594	3.4229	0.58452	0.65166	0.53589	5.48869	0.55951	0.55418	0.87513	0.8644	0.75538	0.74739	5.34287	5.33457
615662.88	4201671.51	1.49203	1.46391	3.17782	3.21079	0.63281	0.77378	0.56186	11.93338	0.57817	0.57605	0.89729	0.87889	0.78637	0.77714	6.30262	6.28551
615702.88	4201671.51	1.42086	1.39359	2.80876	2.81975	0.6611	0.89601	0.64724	28.83385	0.59428	0.59096	0.92034	0.89739	0.80862	0.79123	8.61204	8.6004
615742.88	4201671.51	1.36092	1.3382	2.30627	2.2898	0.68602	0.93223	0.75754	31.21118	0.61546	0.61492	0.95446	0.92888	0.83234	0.81086	22.89394	23.40543
614842.88	4201691.51	1.57032	1.58678	2.19503	2.2262	0.19926	0.1406	0.12672	0.20566	0.27358	0.27145	0.23225	0.23106	0.20629	0.20464	0.26291	0.26053
614862.88	4201691.51	1.63504	1.65115	2.27245	2.30431	0.21046	0.14556	0.13099	0.21226	0.28162	0.2794	0.23946	0.23819	0.21197	0.21024	0.27284	0.27035
614882.88	4201691.51	1.69562	1.71032	2.3385	2.36921	0.22144	0.15054	0.13529	0.21912	0.28979	0.28721	0.24691	0.24553	0.21784	0.21601	0.28326	0.28066
614902.88	4201691.51	1.7524	1.76601	2.39282	2.42262	0.23177	0.15556	0.13972	0.22622	0.29813	0.29496	0.25456	0.25305	0.22387	0.22195	0.29421	0.29149
614922.88	4201691.51	1.81589	1.82875	2.44996	2.47904	0.24145	0.161	0.14452	0.23394	0.30727	0.30341	0.26266	0.26096	0.23034	0.2283	0.30618	0.30334
614942.88	4201691.51	1.87762	1.88978	2.49549	2.52366	0.25063	0.16655	0.14814	0.24202	0.31678	0.31227	0.271	0.2691	0.23702	0.23486	0.31881	0.31584
614962.88	4201691.51	1.93736	1.94869	2.52735	2.55434	0.26	0.17222	0.15292	0.25051	0.32664	0.32177	0.27955	0.27744	0.24369	0.24156	0.33207	0.32898
614982.88	4201691.51	2.0134	2.02425	2.56911	2.59503	0.27115	0.17854	0.15855	0.25981	0.33778	0.33306	0.28873	0.28638	0.25112	0.24888	0.34675	0.34353
615002.88	4201691.51	2.10518	2.11642	2.61508	2.63989	0.28477	0.18549	0.16494	0.26976	0.35	0.34613	0.29851	0.29592	0.25918	0.25679	0.3628	0.35946
615022.88	4201691.51	2.21901	2.23261	2.66739	2.69142	0.30128	0.19321	0.17226	0.28056	0.36326	0.36103	0.30897	0.30615	0.26781	0.26528	0.38044	0.37699
615042.88	4201691.51	2.34157	2.35883	2.7005	2.72318	0.31943	0.20131	0.18144	0.29185	0.37632	0.37634	0.31966	0.31667	0.27653	0.27399	0.39898	0.39542
615102.88	4201691.51	2.96043	2.99787	2.78096	2.80072	0.37056	0.23038	0.20706	0.33053	0.4129	0.41812	0.35515	0.35187	0.30543	0.30306	0.46474	0.46077
615142.88	4201691.51	3.98231	4.08929	2.82523	2.84375	0.38357	0.25406	0.22599	0.36151	0.43097	0.43354	0.382	0.37849	0.32712	0.32484	0.5195	0.51507
615162.88	4201691.51	5.10201	5.33814	2.84514	2.86334	0.38246	0.26716	0.23575	0.37899	0.43805	0.43782	0.3965	0.39274	0.33874	0.3364	0.55117	0.54642
615182.88	4201691.51	7.52005	8.22118	2.86365	2.88161	0.37834	0.28116	0.24574	0.39795	0.44451	0.44147	0.41181	0.40764	0.35089	0.34845	0.58631	0.58117
615222.88	4201691.51	16.58192	20.47595	2.89662	2.91416	0.3684	0.31266	0.26678	0.44113	0.45821	0.45217	0.44526	0.43985	0.37701	0.37431	0.6696	0.66351
615242.88	4201691.51	10.67622	11.83459	2.91112	2.92846	0.36463	0.33092	0.27806	0.46597	0.46626	0.46067	0.46372	0.45762	0.39106	0.3883	0.71945	0.71283
615262.88	4201691.51	7.81884	8.22216	2.92427	2.94142	0.36155	0.35151	0.28995	0.49324	0.47497	0.47085	0.48358	0.47698	0.40586	0.4031	0.77626	0.76914
615282.88	4201691.51	6.12704	6.28906	2.93605	2.95313	0.35866	0.37494	0.30253	0.52362	0.48374	0.4813	0.50504	0.49831	0.42142	0.41872	0.84151	0.83401
615302.88	4201691.51	5.03222	5.1023	2.9464	2.96328	0.35603	0.40138	0.31574	0.55746	0.49181	0.49034	0.52824	0.52196	0.43779	0.43515	0.9171	0.9094
614862.88	4201711.51	1.44805	1.45706	1.94578	1.96469	0.20926	0.14422	0.13077	0.2054	0.28792	0.28558	0.24186	0.24064	0.21444	0.21269	0.27343	0.27108
614882.88	4201711.51	1.50629	1.51455	2.0042	2.02304	0.22136	0.14955	0.13525	0.21173	0.29669	0.29425	0.24966	0.24837	0.22053	0.2187	0.28402	0.28159
614902.88	4201711.51	1.56053	1.56741	2.05073	2.06853	0.23325	0.15479	0.13971	0.21817	0.30541	0.30259	0.25764	0.25627	0.22672	0.2248	0.29499	0.29245
614922.88	4201711.51	1.6178	1.62377	2.09408	2.11129	0.24429	0.16035	0.14323	0.22512	0.31473	0.31131	0.266	0.26448	0.23327	0.23124	0.30683	0.30418
614942.88	4201711.51	1.68024	1.68549	2.13572	2.15223	0.25488	0.16621	0.14811	0.23263	0.3247	0.32058	0.27476	0.27306	0.24019	0.23803	0.3196	0.31683
614962.88	4201711.51	1.75023	1.75498	2.17652	2.19237	0.26545	0.17243	0.15336	0.2406	0.33549	0.33076	0.28399	0.28205	0.24752	0.24524	0.33339	0.33049
614982.88	4201711.51	1.8279	1.83225	2.21338	2.22843	0.27664	0.17897	0.15896	0.24896	0.34704	0.34204	0.29363	0.29145	0.25521	0.25282	0.34818	0.34515
615002.88	4201711.51	1.91879	1.92323	2.24931	2.26355	0.28957	0.18602	0.16516	0.25794	0.35958	0.3549	0.3038	0.30135	0.26337	0.26087	0.36419	0.36103
615022.88	4201711.51	2.02895	2.03518	2.28582	2.29938	0.3051	0.19369	0.1721	0.26759	0.37314	0.36958	0.31457	0.31186	0.27204	0.26946	0.38161	0.37833
615042.88	4201711.51	2.1573	2.16733	2.31364	2.32612	0.32298	0.20186	0.18132	0.27758	0.38706	0.38542	0.32577	0.32282	0.28105	0.27842	0.40018	0.39678
615102.88	4201711.51	2.81651	2.85065	2.38262	2.39199	0.38098	0.2313	0.20736	0.31231	0.4283	0.43329	0.36315	0.35975	0.3111	0.30859	0.46603	0.46217
615282.88	4201711.51	6.10783	6.2691	2.50606	2.51106	0.38013	0.37948	0.30749	0.48413	0.50787	0.50462	0.52248	0.51563	0.434	0.43103	0.83861	0.83085
615302.88	4201711.51	5.03218	5.10262	2.51291	2.51773	0.37732	0.40605	0.32161	0.51477	0.51691	0.51495	0.54698	0.54002	0.45167	0.44878	0.91176	0.90394
615342.88	4201711.51	3.75305	3.76315	2.52203	2.52676	0.37777	0.46908	0.35181	0.58906	0.53088	0.52775	0.60202	0.59675	0.49002	0.48733	1.09436	1.08618
615382.88	4201711.51	3.04092	3.0397	2.52426	2.529	0.40541	0.54122	0.38437	0.68905	0.53904	0.53149	0.66464	0.66277	0.5325	0.52948	1.34527	1.33738
615422.88	4201711.51	2.60017	2.59643	2.51823	2.52322	0.47232	0.61301	0.41981	0.83123	0.5456	0.53517	0.73244	0.73263	0.57956	0.57551	1.68666	1.6825
615462.88	4201711.51	2.30698	2.2999	2.50179	2.50725	0.54337	0.6762	0.46092	1.04882	0.55398	0.54207	0.8024	0.80261	0.63253	0.62815	2.09843	2.09431
615502.88	4201711.51	2.10028	2.08721	2.47169	2.47759	0.57077	0.72184	0.50957	1.41068	0.56497	0.55123	0.8712	0.87139	0.69306	0.68978	2.54112	2.53436
615542.88	4201711.51	1.94666	1.92617	2.42292	2.42879	0.57143	0.7361	0.56263	2.05937	0.58071	0.5658	0.93333	0.93167	0.76113	0.75915	3.00696	2.99975
615582.88	4201711.51	1.8272	1.80309	2.34765	2.35299	0.60264	0.73063	0.61468	3.27679	0.60374	0.59234	0.98534	0.97882	0.8319	0.83293	3.50943	3.50074

615622.88	4201711.51	1.72999	1.70274	2.23348	2.23814	0.66586	0.76224	0.64225	5.60217	0.62922	0.6243	1.02786	1.01616	0.89021	0.88549	4.14487	4.13579
615662.88	4201711.51	1.65068	1.62276	2.07334	2.07141	0.71819	0.89747	0.66284	9.74186	0.65121	0.64871	1.06228	1.04137	0.9372	0.92551	5.22273	5.20561
615702.88	4201711.51	1.58243	1.55703	1.8511	1.83749	0.75086	1.05511	0.75335	12.55604	0.67271	0.66953	1.09587	1.06786	0.97568	0.95617	7.74553	7.74204
615742.88	4201711.51	1.52229	1.505	1.59551	1.57671	0.77893	1.12158	0.90366	11.03734	0.69952	0.70323	1.14481	1.11419	1.01126	0.98452	20.00247	20.33689
614882.88	4201731.51	1.36188	1.36609	1.74714	1.75789	0.22019	0.14797	0.13512	0.20205	0.30357	0.30098	0.25209	0.25082	0.22313	0.22127	0.2845	0.28226
614922.88	4201731.51	1.47067	1.47275	1.82546	1.83518	0.24586	0.15926	0.14323	0.21408	0.32259	0.31952	0.26912	0.26773	0.23624	0.23419	0.30741	0.30499
614942.88	4201731.51	1.53302	1.53415	1.86246	1.87174	0.25816	0.1654	0.1482	0.2208	0.33308	0.3294	0.2783	0.27676	0.2433	0.24121	0.32025	0.31771
614962.88	4201731.51	1.60814	1.60895	1.9047	1.9139	0.27053	0.1721	0.15388	0.22807	0.34475	0.34038	0.28813	0.28637	0.25113	0.24883	0.33444	0.33176
614982.88	4201731.51	1.68717	1.68766	1.93715	1.94573	0.28245	0.17889	0.16097	0.23553	0.35676	0.35181	0.29823	0.29623	0.25907	0.25665	0.34929	0.34647
615002.88	4201731.51	1.7785	1.77901	1.96641	1.97424	0.29523	0.18607	0.16714	0.24355	0.36963	0.36452	0.30882	0.30656	0.26743	0.26489	0.36525	0.36228
615022.88	4201731.51	1.88743	1.88891	1.99296	1.99996	0.3099	0.19372	0.17386	0.25201	0.38345	0.37887	0.31995	0.3174	0.27624	0.2736	0.38244	0.37931
615042.88	4201731.51	2.02123	2.026	2.01703	2.02318	0.32722	0.20198	0.18126	0.2609	0.39814	0.39497	0.33166	0.32884	0.28555	0.28284	0.40102	0.39771
615902.88	4201731.51	1.32974	1.32915	0.73904	0.71078	0.76311	1.65387	1.33054	2.01922	0.69926	0.68639	1.5269	1.53534	1.39246	1.38345	5.35801	5.32369
615922.88	4201731.51	1.29043	1.29013	0.69157	0.66366	0.76398	1.66175	1.34102	1.87184	0.68544	0.66848	1.52656	1.52594	1.3986	1.38148	4.65823	4.62653
614882.88	4201751.51	1.24793	1.24922	1.54341	1.54889	0.21838	0.14591	0.13499	0.19098	0.31047	0.30738	0.25417	0.25283	0.22563	0.22371	0.28468	0.28259
614902.88	4201751.51	1.30524	1.30691	1.58649	1.59283	0.23203	0.15209	0.14001	0.1966	0.32102	0.31817	0.26311	0.26174	0.23253	0.23054	0.29637	0.29421
614922.88	4201751.51	1.36087	1.36131	1.62015	1.62557	0.24633	0.15801	0.14487	0.20197	0.33123	0.32829	0.27217	0.27078	0.23942	0.23734	0.30819	0.30595
614942.88	4201751.51	1.42209	1.42146	1.65159	1.6567	0.26037	0.1643	0.14869	0.20779	0.34215	0.33883	0.28169	0.28023	0.24672	0.24453	0.32098	0.31862
614962.88	4201751.51	1.49307	1.49157	1.68367	1.68844	0.27415	0.17105	0.1555	0.21418	0.35401	0.35007	0.2918	0.29019	0.25453	0.25222	0.33491	0.33241
614982.88	4201751.51	1.57284	1.57078	1.71199	1.71619	0.28748	0.17806	0.16127	0.22094	0.36652	0.36187	0.30235	0.30054	0.26271	0.26026	0.34978	0.3471
615002.88	4201751.51	1.66601	1.66389	1.73776	1.74127	0.30097	0.18546	0.16746	0.228	0.37989	0.37472	0.31343	0.31137	0.27133	0.26875	0.36574	0.36288
615022.88	4201751.51	1.77796	1.77654	1.76116	1.76396	0.31559	0.19328	0.17409	0.23557	0.39426	0.38908	0.32506	0.32273	0.28042	0.27772	0.38293	0.37985
615042.88	4201751.51	1.91649	1.9176	1.78242	1.78451	0.3324	0.20167	0.18137	0.24367	0.40966	0.40527	0.33732	0.33468	0.29003	0.28723	0.4015	0.39817
615162.88	4201751.51	5.04254	5.3004	1.87478	1.8725	0.44838	0.27137	0.23937	0.30672	0.50304	0.50775	0.42769	0.42368	0.36055	0.35792	0.55288	0.54754
615342.88	4201751.51	3.82244	3.83654	1.92317	1.91697	0.42518	0.48244	0.36574	0.53173	0.5926	0.58948	0.65027	0.64308	0.52393	0.52058	1.06233	1.0542
615382.88	4201751.51	3.14859	3.15183	1.91811	1.912	0.45017	0.56431	0.40413	0.64634	0.60441	0.59676	0.72373	0.71843	0.57494	0.57197	1.27593	1.27035
615422.88	4201751.51	2.74075	2.7366	1.90547	1.89961	0.52134	0.65688	0.44655	0.82205	0.61288	0.60106	0.80748	0.80549	0.63268	0.62965	1.53786	1.53386
615462.88	4201751.51	2.47897	2.46699	1.88353	1.87777	0.6041	0.74951	0.49439	1.09974	0.62309	0.6093	0.89915	0.89885	0.69793	0.69353	1.83766	1.8319
615502.88	4201751.51	2.30145	2.28408	1.84989	1.84381	0.64105	0.83114	0.5527	1.54244	0.63688	0.62111	0.99547	0.99539	0.77305	0.76733	2.17433	2.16651
615542.88	4201751.51	2.17085	2.14852	1.80105	1.79479	0.64918	0.88424	0.62596	2.23823	0.65708	0.64039	1.08994	1.09036	0.86175	0.8577	2.56477	2.55508
615582.88	4201751.51	2.06537	2.03866	1.73196	1.7257	0.69202	0.89661	0.708	3.32862	0.68573	0.67433	1.17115	1.16678	0.96509	0.96341	3.04603	3.03397
615622.88	4201751.51	1.97438	1.9467	1.63624	1.6272	0.76535	0.92191	0.78402	5.01262	0.71566	0.71094	1.23556	1.22256	1.07115	1.07232	3.72784	3.71568
615662.88	4201751.51	1.89252	1.86488	1.51077	1.49541	0.82325	1.06606	0.81604	6.49433	0.74119	0.73821	1.28558	1.26176	1.15056	1.13683	4.92476	4.91053
615702.88	4201751.51	1.82377	1.8007	1.36976	1.35036	0.86155	1.27186	0.9065	6.48245	0.77009	0.76882	1.33691	1.30214	1.21876	1.19778	7.77469	7.77823
615742.88	4201751.51	1.75787	1.74709	1.21715	1.19792	0.88786	1.38822	1.11526	5.75045	0.80117	0.81086	1.4096	1.37266	1.2776	1.24326	21.1916	21.52139
615902.88	4201751.51	1.41583	1.41852	0.6909	0.66627	0.8181	1.85701	1.52616	1.64055	0.73564	0.71828	1.7057	1.7048	1.59511	1.57428	5.28529	5.24382
615922.88	4201751.51	1.36667	1.37007	0.64743	0.623	0.82171	1.86578	1.53094	1.52288	0.72119	0.69931	1.69414	1.68113	1.59465	1.56738	4.58583	4.55254
614902.88	4201771.51	1.21144	1.21051	1.41667	1.41885	0.23034	0.14981	0.14002	0.18446	0.3285	0.32508	0.26517	0.2637	0.23512	0.23308	0.29626	0.2942
614922.88	4201771.51	1.26932	1.26843	1.44961	1.45176	0.24523	0.1562	0.14517	0.18955	0.33978	0.33661	0.27475	0.27329	0.24242	0.2403	0.30849	0.30634
614942.88	4201771.51	1.33256	1.33124	1.47967	1.4817	0.26069	0.16285	0.15055	0.19493	0.35162	0.3484	0.28479	0.28329	0.25006	0.24784	0.32152	0.31924
614962.88	4201771.51	1.40328	1.4011	1.50715	1.50891	0.2762	0.16978	0.15611	0.20075	0.36406	0.36046	0.2953	0.29373	0.25809	0.25574	0.33543	0.33299
614982.88	4201771.51	1.48229	1.47909	1.53062	1.53188	0.29141	0.17687	0.16185	0.20672	0.37688	0.37263	0.30621	0.30452	0.26639	0.26391	0.35009	0.34745
615002.88	4201771.51	1.57585	1.57217	1.55245	1.55314	0.30637	0.18438	0.16797	0.21305	0.39066	0.38572	0.3177	0.31583	0.27519	0.27257	0.36592	0.36304
615022.88	4201771.51	1.6903	1.68716	1.57329	1.57337	0.3217	0.1924	0.17457	0.21997	0.40563	0.40026	0.32987	0.32774	0.28456	0.28181	0.38309	0.37994
615042.88	4201771.51	1.83256	1.83154	1.59223	1.5917	0.33847	0.20094	0.18177	0.22743	0.42173	0.41653	0.34268	0.34027	0.29447	0.29159	0.40163	0.39817
615162.88	4201771.51	5.05552	5.32192	1.67373	1.66964	0.46885	0.27097	0.24019	0.28797	0.52652	0.53224	0.43753	0.43338	0.36774	0.36494	0.55248	0.54694
615222.88	4201771.51	15.55861	18.91666	1.69711	1.6913	0.47757	0.32474	0.27725	0.33606	0.56167	0.55891	0.50065	0.49594	0.41497	0.41197	0.66658	0.66023
615242.88	4201771.51	10.27646	11.30586	1.70248	1.69616	0.47171	0.34592	0.29046	0.35702	0.57183	0.56626	0.52474	0.51973	0.43262	0.42941	0.71318	0.70645
615262.88	4201771.51	7.64654	8.01762	1.70664	1.69986	0.46549	0.36895	0.3045	0.38121	0.58259	0.5759	0.55059	0.54518	0.45141	0.44797	0.76513	0.7579
615282.88	4201771.51	6.08111	6.23723	1.70954	1.70239	0.4601	0.39417	0.31938	0.40952	0.59422	0.58825	0.57842	0.57249	0.47146	0.46782	0.82332	0.81555
615302.88	4201771.51	5.06841	5.13808	1.71115	1.7037	0.45582	0.42217	0.33553	0.44316	0.60627	0.60196	0.60844	0.60196	0.49294	0.48916	0.88884	0.88067
615902.88	4201771.51	1.5108	1.51765	0.64812	0.62624	0.8829	2.1101	1.78021	1.37184	0.77644	0.75354	1.91407	1.89986	1.85432	1.82134	5.19682	5.15545
615922.88	4201771.51	1.45371	1.46232	0.61009	0.58826	0.89204	2.1319	1.79769	1.27563	0.76391	0.73588	1.90591	1.8758	1.85805	1.82235	4.53891	4.51037
614922.88	4201791.51	1.1924	1.18972	1.30761	1.30748	0.2435	0.15404	0.14555	0.17799	0.34839	0.34459	0.27695	0.27529	0.24528	0.24312	0.30837	0.30618
614942.88	4201791.51	1.25675	1.25496	1.33535	1.33574	0.2595	0.16105	0.15117	0.18315	0.36121	0.3577	0.28748	0.28584	0.2533	0.25104	0.32168	0.31934
614962.88	4201791.51	1.32792	1.3261	1.35982	1.36003	0.27642	0.16816	0.15688	0.18848	0.37436	0.37082	0.29841	0.29677	0.26157	0.2592	0.33562	0.3331
614982.88	4201791.51	1.40704	1.40391	1.38052	1.37967	0.29371	0.17528	0.1626	0.19394	0.3876	0.38366	0.30967	0.308	0.27001	0.26751	0.35007	0.34733
615002.88	4201791.51	1.50108	1.49704	1.39935	1.39805	0.31062	0.1829	0.16873	0.19985	0.40191	0.39732	0.3216	0.31982	0.27901	0.27636	0.36578	0.36277
615022.88	4201791.51	1.61751	1.61355	1.41802	1.41627	0.3275	0.19113	0.17534	0.20646	0.41758	0.41235	0.33431	0.33234	0.28867	0.28587	0.38294	0.37963
615042.88	4201791.51	1.76252	1.76048	1.43502	1.43276	0.34502	0.19984	0.18251	0.21352	0.43442	0.42886	0.3477	0.34549	0.29889	0.29594	0.40145	0.39779
615162.88	4201791.51	5.07535	5.35018	1.50747	1.50235	0.48771	0.26992	0.24106	0.27463	0.5507	0.55676	0.44709	0.44286	0.37489	0.37186	0.55164	0.54614
615222.88	4201791.51	15.33973	18.57904	1.52729	1.52092	0.5112	0.32476	0.27945	0.32682	0.59332	0.59254	0.51386	0.50896	0.42443	0.42136	0.66405	0.65786
615242.88	4201791.51	10.19576	11.19524	1.53159	1.52483	0.50659	0.34685	0.2932	0.34983	0.60478	0.60046	0.53954	0.53437	0.44303	0.43976	0.70961	0.70297
615262.88	4201791.51	7.6207	7.98323	1.53472	1.52759	0.50005	0.37101	0.3077	0.37691	0.61644	0.60994	0.56721	0.56171	0.46284	0.45933	0.76025	0.75307
615282.88	4201791.51	6.08884	6.2426	1.53665	1.52918	0.49369	0.39743	0.32304	0.409	0.62889	0.62222	0.59708	0.59116	0.48403	0.48026	0.81683	0.80915
615302.88	4201791.51	5.10145	5.17319	1.53733	1.52958	0.48847	0.42658	0.33952	0.44722	0.64198	0.63669	0.62943	0.623	0.50677	0.50279	0.8803	0.8724
615342.88	4201791.51	3.9486	3.97144	1.53472	1.52651	0.48424	0.49591	0.37688	0.54836	0.6665	0.66287	0.70271	0.69545	0.55769	0.55354	1.03141	1.02461
615382.88	4201791.51	3.33539	3.33998	1.52627	1.51763	0.50621	0.58469	0.42037	0.69579	0.68355	0.67588	0.78949	0.78251	0.61719	0.61324	1.21707	1.212
615422.88	4201791.51	2.98331	2.97178	1.51108	1.50187	0.5814	0.69394	0.47029	0.90984	0.69507	0.68181	0.89137	0.88629	0.68687	0.68318	1.43625	1.43138
615462.88	4201791.51	2.77017	2.75085	1.48687	1.47706	0.67751	0.81697	0.52308	1.21274	0.70742	0.69131	1.00773	1.00504	0.7682	0.76446	1.68856	1.68145
615502.88	4201791.51	2.63505	2.61542	1.45338	1.44341	0.7268	0.94323	0.59017	1.6334	0.72478	0.70649	1.13804	1.13675	0.86424	0.85956	1.98739	1.97826
615542.88	4201791.51	2.53755	2.51971	1.40836	1.39847	0.74586	1.05483	0.67512	2.23027	0.75105	0.73247	1.2786	1.27887	0.97952	0.9728	2.35987	2.34949
615582.88	4201791.51	2.44946	2.42914	1.34822	1.33702	0.80339	1.11979	0.78878	3.10105	0.78686	0.77556	1.41323	1.41284	1.1215	1.11608	2.85541	2.84294
615622.88	4201791.51	2.3602	2.33805	1.27104	1.25619	0.88906	1.15647	0.92609	4.01131	0.82258	0.81789	1.52115	1.50884	1.29653	1.29528	3.60303	3.59056
615662.88	4201791.51	2.27287	2.24874	1.1802	1.16211	0.9554	1.3128	1.0631	4.10967	0.85522	0.85218	1.60538	1.5776	1.47322	1.46888	5.00588	4.989
615702.88	4201791.51	2.19266	2.17361	1.08316	1.06406	0.99745	1.5846	1.15434	4.0092	0.89225	0.89561	1.6862	1.64245	1.60443	1.5808	8.66688	8.67181
615742.88	4201791.51	2.1085	2.10635	0.98131	0.96327	1.0144	1.7853	1.45201	3.59128	0.92309	0.93872	1.79806	1.75315	1.71482	1.66889	29.36716	30.31759
615882.88	4201791.51	1.68569	1.69599	0.64748	0.62783	0.95115	2.4051	2.09857	1.30136	0.83813	0.81433	2.17642	2.16086	2.19139	2.15237	5.93739	5.88858
615902.88	4201791.51	1.61639	1.62891	0.61039	0.59066	0.96047	2.43714	2.12698	1.18163	0.82384	0.79408	2.1737	2.13937	2.19764	2.15756	5.12216	5.08907
615922.88	4201791.51	1.54974	1.5645	0.57715	0.55739	0.97564	2.47627	2.15683	1.09633	0.81432	0.77887	2.17146	2.12046	2.19391	2.15653	4.49979	4.48023
614942.88	4201811.51	1.19074	1.18691	1.2132	1.21174	0.25789	0.15889	0.15181	0.17262	0.37069	0.36646	0.28968	0.28781	0.25631	0.25401	0.32125	0.31873
614962.88	4201811.51	1.26186	1.25882	1.23516	1.23356	0.2755	0.16612	0.15765	0.1778	0.38451	0.3806	0.30099	0.29916	0.26482	0.26242	0.33519	0.33248
614982.88	4201811.51	1.34156	1.33845	1.25379	1.25138	0.29427	0.17338	0.16352	0.18305	0.3985	0.39455	0.31268	0.31088	0.27351	0.27099	0.34965	0.34671
615002.88	4201811.51	1.43671	1.43342	1.27079	1.26807	0.31321	0.18118	0.16977	0.18889	0.41359	0.40926	0.32508	0.32326	0.28278	0.28011	0.36535	0.36214
615022.88	4201811.51	1.55457	1.55118	1.28762	1.28457	0.33215	0.18958	0.17648	0.19555	0.43008	0.42513	0.33833	0.33641	0.29273	0.2899	0.38251	0.37899
615042.88	4201811.51	1.70143	1.69933	1.30293	1.29952	0.35128	0.19847	0.18362	0.20275	0.44774	0.4422	0.35232	0.35023	0.30326	0.30027	0.40101	0.39716
615082.88	4201811.51	2.14076	2.15257	1.32942	1.32521	0.39363	0.21801	0.19974	0.21965	0.48716	0.48219	0.38279	0.38015	0.3263	0.32302	0.44267	0.43816
615282.88	4201811.51	6.11134	6.26452	1.39153	1.38429	0.53178	0.39891	0.32693	0.41939	0.66722	0.66025	0.61537	0.60929	0.49667	0.4928	0.81007	0.80272
615302.88	4201811.51	5.15405	5.23018	1.3915	1.384	0.52547	0.42938	0.34388	0.46294	0.68144	0.67521	0.6501	0.64355	0.5207	0.51657	0.87164	0.86427
615862.88	4201811.51	1.90212	1.91717	0.64478	0.6269	1.02801	2.76824	2.59415	1.3324	0.90756	0.88307	2.49951	2.48257	2.65627	2.6085	6.86865	6.81618
615882.88	4201811.51	1.81773	1.83554	0.60981	0.59179	1.03851	2.82085	2.58017	1.16324	0.89203	0.8605	2.50924	2.46925	2.66965	2.62476	5.85026	5.81481
615902.88	4201811.51	1.73392	1.7547	0.57741	0.55937	1.0546	2.87288	2.61223	1.04634	0.88078	0.8427	2.51281	2.45335	2.65385	2.61462	5.07273	5.05306
615922.88	4201811.51	1.65162	1.67486	0.54755	0.52947	1.07434	2.92174	2.62381	0.96409	0.8741	0.83026	2.51302	2.44304	2.61551	2.58408	4.45838	4.44794
614942.88	4201831.51	1.1322	1.12593	1.10872	1.10554	0.25683	0.15665	0.15258	0.1638	0.38028	0.37502	0.29146	0.2893	0.25911	0.25677	0.32033	0.31753
614962.88	4201831.51	1.20382	1.19853	1.12915	1.12619	0.27404	0.1641	0.15865	0.16923	0.39503	0.3903	0.30322	0.3011	0.26799	0.26556	0.33449	0.3315
615002.88	4201831.51	1.38132	1.37811	1.16272	1.15899	0.31398	0.17957	0.17124	0.18092	0.42613	0.42174	0.32831	0.32628	0.28665	0.28398	0.36495	0.36151
615022.88	4201831.51	1.49776	1.49573	1.17669	1.17271	0.33506	0.18794	0.17794	0.18778	0.44311	0.43836	0.34191	0.33988	0.29674	0.2939	0.38184	0.37816
615042.88	4201831.51	1.64541	1.64484	1.19046	1.18624	0.35638	0.19699	0.18522	0.19543	0.46169	0.45635	0.35647	0.35437	0.30758	0.30457	0.40032	0.39637
615082.88	4201831.51	2.08738	2.09834	1.2144	1.20961	0.40133	0.21682	0.20132	0.21359	0.50325	0.49748	0.38829	0.3858	0.33133	0.32798	0.44188	0.43746
615122.88	4201831.51	2.94602	3.00679	1.23367	1.22833	0.45608	0.23971	0.22062	0.23684	0.55083	0.5485	0.42425	0.42107	0.35828	0.35471	0.49071	0.48594
615142.88	4201831.51	3.73711	3.86738	1.24166	1.23607	0.48786	0.25272	0.2317	0.25093	0.57598	0.57694	0.44406	0.44046	0.37313	0.36954	0.51837	0.51342
615162.88	4201831.51	5.1194	5.41286	1.24859	1.24278	0.52004	0.26712	0.24381	0.26714	0.60084	0.6051	0.46529	0.46125	0.38899	0.38545	0.54851	0.54335
615182.88	4201831.51	8.14267	9.07511	1.25448	1.24847	0.5489	0.2832	0.25681	0.28578	0.62429	0.63062	0.48811	0.48364	0.40592	0.40247	0.58143	0.57602
615342.88	4201831.51	4.20783	4.2344	1.26274	1.25486	0.55917	0.50506	0.38823	0.60778	0.75637	0.75151	0.75557	0.74776	0.59194	0.5872	1.00187	0.99556
615382.88	4201831.51	3.70471	3.7044	1.25281	1.24405	0.5775	0.60124	0.43506	0.77005	0.78067	0.77281	0.85878	0.85071	0.65985	0.65505	1.16899	1.16323

615422.88	4201831.51	3.44666	3.43308	1.23704	1.22749	0.65656	0.72541	0.49066	0.97971	0.79699	0.78232	0.98375	0.97729	0.74123	0.73657	1.36705	1.36129
615462.88	4201831.51	3.29386	3.27799	1.21067	1.20065	0.76669	0.87469	0.54733	1.24764	0.81108	0.7921	1.12878	1.12415	0.83724	0.83243	1.59741	1.5897
615502.88	4201831.51	3.2058	3.19641	1.17796	1.16771	0.83162	1.04699	0.62665	1.61045	0.83255	0.81111	1.29886	1.29467	0.9559	0.95065	1.88312	1.87329
615542.88	4201831.51	3.14819	3.14788	1.13787	1.12669	0.8666	1.23359	0.73309	2.12699	0.8672	0.84673	1.4985	1.49587	1.10789	1.10257	2.26141	2.25037
615582.88	4201831.51	3.08154	3.08355	1.08705	1.07347	0.94278	1.39893	0.87343	2.71582	0.91231	0.90104	1.71808	1.71932	1.30401	1.29768	2.79044	2.77975
615622.88	4201831.51	2.98707	2.98019	1.026	1.00998	1.0445	1.50281	1.0667	2.94782	0.95622	0.95158	1.91825	1.9111	1.56472	1.55742	3.61459	3.60507
615662.88	4201831.51	2.89538	2.88305	0.96243	0.9448	1.12348	1.69726	1.39393	2.74046	1.00124	0.99985	2.08558	2.05386	1.9426	1.94518	5.27995	5.26005
615702.88	4201831.51	2.78342	2.77662	0.89234	0.87489	1.1636	2.068	1.6301	2.77034	1.04544	1.05591	2.22569	2.17008	2.30174	2.27495	10.32923	10.36085
615862.88	4201831.51	2.06438	2.09035	0.60581	0.58935	1.12328	3.29198	3.28394	1.21625	0.96692	0.93374	2.92302	2.87684	3.33842	3.28973	6.73888	6.70402
615882.88	4201831.51	1.96088	1.99049	0.57597	0.55929	1.14091	3.37681	3.33442	1.06083	0.9556	0.91472	2.94616	2.87558	3.30791	3.26929	5.77664	5.7591
615902.88	4201831.51	1.85613	1.88874	0.54722	0.53055	1.1627	3.44141	3.32	0.94502	0.94786	0.90032	2.9535	2.87253	3.22623	3.19861	5.0117	5.00347
615922.88	4201831.51	1.75179	1.78569	0.5196	0.50298	1.18661	3.47889	3.25506	0.86175	0.94332	0.89094	2.94002	2.8618	3.10918	3.09237	4.38932	4.38411
615942.88	4201831.51	1.65473	1.68787	0.49459	0.478	1.21135	3.50905	3.18099	0.80136	0.94481	0.88981	2.91906	2.84927	2.98783	2.97992	3.89528	3.88895
614962.88	4201851.51	1.15133	1.14416	1.03768	1.03364	0.2732	0.16227	0.15985	0.16304	0.40592	0.40008	0.30508	0.30264	0.271	0.26855	0.33344	0.33017
614982.88	4201851.51	1.23353	1.2273	1.05451	1.05061	0.292	0.17012	0.16636	0.16934	0.42228	0.41698	0.31784	0.31544	0.28059	0.27804	0.34854	0.34509
615002.88	4201851.51	1.33049	1.32573	1.06954	1.06541	0.31322	0.17822	0.17305	0.17595	0.43932	0.43441	0.3312	0.32885	0.29052	0.28785	0.36443	0.36082
615022.88	4201851.51	1.44532	1.44268	1.08175	1.07717	0.33609	0.18653	0.17983	0.18316	0.4569	0.452	0.34513	0.34284	0.30077	0.29794	0.38108	0.37732
615042.88	4201851.51	1.59183	1.59267	1.09384	1.08911	0.35966	0.19563	0.1872	0.19149	0.47636	0.47113	0.36017	0.35789	0.31187	0.30887	0.39943	0.39553
615082.88	4201851.51	2.03229	2.04419	1.11528	1.11021	0.4088	0.21574	0.20348	0.21163	0.52015	0.51402	0.39328	0.39081	0.33631	0.33292	0.44077	0.4366
615122.88	4201851.51	2.89524	2.95098	1.13265	1.12721	0.46539	0.23881	0.22273	0.23758	0.57102	0.56679	0.43086	0.42785	0.36412	0.36043	0.48917	0.48467
615142.88	4201851.51	3.7053	3.83609	1.13979	1.13418	0.49864	0.2518	0.23383	0.25341	0.59866	0.59729	0.45159	0.44819	0.37949	0.37572	0.51647	0.51174
615162.88	4201851.51	5.13193	5.43721	1.14593	1.14017	0.53417	0.26605	0.24602	0.27166	0.62681	0.62905	0.47383	0.46998	0.39594	0.39217	0.54617	0.54116
615182.88	4201851.51	8.26125	9.23617	1.15107	1.14518	0.56883	0.28187	0.25925	0.29288	0.65425	0.65968	0.49774	0.49341	0.41354	0.40983	0.57857	0.57324
615242.88	4201851.51	10.02156	10.9397	1.16054	1.15424	0.62849	0.34228	0.30393	0.37892	0.72226	0.72458	0.58176	0.57608	0.47411	0.47049	0.69595	0.68975
615262.88	4201851.51	7.63584	7.98096	1.16167	1.15519	0.62901	0.36793	0.32017	0.41733	0.73998	0.73787	0.61475	0.60867	0.49721	0.49342	0.74342	0.73712
615282.88	4201851.51	6.24491	6.40939	1.16176	1.15504	0.62357	0.39682	0.33711	0.46161	0.75689	0.75112	0.65078	0.64427	0.52203	0.51796	0.79593	0.78964
615302.88	4201851.51	5.38127	5.47035	1.16077	1.15377	0.61583	0.42927	0.35506	0.51255	0.77406	0.7668	0.69023	0.68324	0.54878	0.54439	0.8539	0.8477
615842.88	4201851.51	2.38362	2.42265	0.59988	0.58518	1.21934	3.90899	4.23828	1.26599	1.05289	1.01816	3.46604	3.41243	4.3909	4.34183	7.94223	7.92028
615862.88	4201851.51	2.24211	2.28501	0.57131	0.5561	1.23808	4.01571	4.24415	1.11827	1.03792	0.99424	3.49794	3.41405	4.27363	4.24258	6.64108	6.62974
615882.88	4201851.51	2.1097	2.15579	0.54521	0.52969	1.26181	4.12125	4.19723	0.97991	1.03127	0.9797	3.53015	3.43496	4.11542	4.09583	5.69093	5.6863
615902.88	4201851.51	1.97827	2.0251	0.51948	0.50396	1.28855	4.17785	4.06688	0.86745	1.02781	0.97047	3.52548	3.43828	3.90589	3.89649	4.92984	4.92701
615922.88	4201851.51	1.85003	1.89455	0.49419	0.47877	1.31676	4.18179	3.88279	0.78366	1.02661	0.96653	3.47738	3.40561	3.66989	3.66956	4.30819	4.3052
615942.88	4201851.51	1.73442	1.77531	0.47148	0.45611	1.34454	4.17571	3.7163	0.72442	1.03231	0.97253	3.41824	3.35993	3.45617	3.46259	3.82095	3.81565
614982.88	4201871.51	1.18488	1.17786	0.97371	0.9694	0.29132	0.16905	0.16816	0.16615	0.43496	0.42847	0.31991	0.31718	0.28395	0.28137	0.34754	0.34394
615002.88	4201871.51	1.28014	1.27444	0.98715	0.98314	0.31187	0.17745	0.17523	0.17353	0.45336	0.44743	0.33386	0.33115	0.29441	0.29172	0.36369	0.36001
615022.88	4201871.51	1.39692	1.39256	1.00006	0.9954	0.33556	0.18576	0.18227	0.18182	0.47191	0.46637	0.34818	0.34552	0.30495	0.30214	0.38044	0.37671
615042.88	4201871.51	1.53917	1.53815	1.01026	1.00526	0.36102	0.19472	0.18967	0.19094	0.49191	0.48644	0.3635	0.3609	0.31617	0.3132	0.39838	0.39463
615082.88	4201871.51	1.97208	1.98656	1.02901	1.02384	0.41504	0.21499	0.20622	0.21334	0.53788	0.53166	0.3977	0.39509	0.34121	0.33784	0.43925	0.43537
615122.88	4201871.51	2.82785	2.88026	1.04468	1.03933	0.47503	0.23836	0.22563	0.24243	0.59208	0.58643	0.4369	0.43395	0.36989	0.36614	0.48714	0.4829
615142.88	4201871.51	3.64638	3.77053	1.05108	1.04562	0.50962	0.25142	0.23672	0.26032	0.62213	0.61856	0.45858	0.45532	0.38577	0.38188	0.51408	0.50956
615162.88	4201871.51	5.11988	5.43663	1.05652	1.05096	0.54766	0.26563	0.24896	0.28086	0.65349	0.6533	0.48184	0.47818	0.40279	0.39884	0.54336	0.53851
615182.88	4201871.51	8.37267	9.39519	1.06103	1.05536	0.58717	0.28128	0.26241	0.30452	0.68505	0.6887	0.50689	0.50275	0.42107	0.41713	0.57527	0.57007
615342.88	4201871.51	4.85722	4.88532	1.06227	1.05464	0.65699	0.50633	0.40428	0.65892	0.86781	0.86111	0.80689	0.7984	0.62668	0.62148	0.97417	0.96781
615382.88	4201871.51	4.5461	4.5602	1.05196	1.04377	0.66994	0.60889	0.45429	0.80644	0.90173	0.89317	0.92706	0.91726	0.70331	0.6977	1.12975	1.12296
615422.88	4201871.51	4.38681	4.4073	1.03277	1.02421	0.74909	0.7428	0.50362	0.98698	0.92211	0.90616	1.07343	1.06405	0.79392	0.78858	1.31274	1.30563
615462.88	4201871.51	4.33173	4.36095	1.01128	1.00244	0.87993	0.92155	0.57411	1.22739	0.9431	0.92056	1.26025	1.25397	0.9082	0.9029	1.54271	1.53475
615502.88	4201871.51	4.30588	4.34375	0.98334	0.97374	0.96884	1.14455	0.66301	1.56303	0.97286	0.94734	1.49023	1.48597	1.05292	1.04654	1.83825	1.82831
615542.88	4201871.51	4.28409	4.33133	0.94829	0.93689	1.02735	1.41534	0.78455	1.96392	1.01928	0.99689	1.77087	1.76479	1.24367	1.23584	2.2415	2.22985
615582.88	4201871.51	4.24345	4.29631	0.90598	0.8925	1.12816	1.7295	0.95814	2.214	1.07683	1.06518	2.11411	2.11095	1.50827	1.50017	2.83168	2.82332
615622.88	4201871.51	4.14937	4.19428	0.85759	0.84256	1.25125	2.02552	1.21262	2.12581	1.13289	1.1287	2.49991	2.49929	1.90037	1.89483	3.77582	3.76887
615842.88	4201871.51	2.61894	2.68217	0.56655	0.55284	1.34874	4.92636	5.76949	1.14841	1.137	1.09013	4.28356	4.18078	5.91356	5.8975	7.85387	7.86008
615862.88	4201871.51	2.43103	2.49607	0.54118	0.52706	1.37524	5.03928	5.51262	1.0319	1.12594	1.07002	4.31196	4.19879	5.48535	5.48164	6.53788	6.54051
615882.88	4201871.51	2.2559	2.32	0.517	0.50255	1.40512	5.10227	5.2103	0.91192	1.12191	1.05925	4.3038	4.20687	5.06004	5.06546	5.56564	5.56628
615902.88	4201871.51	2.09347	2.1534	0.49382	0.4793	1.43647	5.10637	4.89057	0.80617	1.12339	1.05728	4.24634	4.17411	4.65599	4.66916	4.81503	4.81363
615922.88	4201871.51	1.94417	1.99834	0.4717	0.45726	1.46792	5.0576	4.57549	0.72437	1.12912	1.0635	4.14342	4.09147	4.28438	4.30268	4.21973	4.21498
615942.88	4201871.51	1.8092	1.858	0.45104	0.43668	1.49815	4.97589	4.28812	0.66522	1.13883	1.07756	4.01366	3.97642	3.95491	3.97712	3.74277	3.7342
615002.88	4201891.51	1.23238	1.22622	0.9155	0.91066	0.31202	0.17664	0.17717	0.17371	0.46667	0.45948	0.33557	0.33257	0.29755	0.29486	0.36197	0.35834
615022.88	4201891.51	1.34608	1.34124	0.92706	0.92225	0.33482	0.18541	0.1847	0.183	0.48697	0.4803	0.3506	0.34759	0.30876	0.30595	0.37906	0.37544
615862.88	4201891.51	2.6069	2.69371	0.51274	0.49965	1.53967	6.39422	6.90843	0.95129	1.22952	1.16095	5.4014	5.29491	6.83417	6.86984	6.32425	6.3281
615882.88	4201891.51	2.38825	2.46753	0.49091	0.47747	1.57515	6.34699	6.26807	0.8514	1.23074	1.15819	5.28883	5.22141	6.05764	6.09687	5.38175	5.37902
615002.88	4201911.51	1.18371	1.17808	0.85074	0.84559	0.31406	0.17693	0.17935	0.17609	0.48101	0.4728	0.33705	0.33384	0.30056	0.29784	0.35985	0.35637
615022.88	4201911.51	1.29555	1.29175	0.86234	0.85744	0.33518	0.18598	0.18734	0.18668	0.50287	0.49491	0.35267	0.34939	0.31238	0.30956	0.37726	0.37378
615342.88	4201911.51	6.80316	6.97446	0.90847	0.90127	0.78799	0.50511	0.42255	0.67468	1.00856	1.00038	0.85637	0.84752	0.66111	0.65578	0.94818	0.94188
615382.88	4201911.51	6.66347	6.86142	0.89543	0.88804	0.7885	0.60839	0.47325	0.80228	1.05097	1.04104	0.9897	0.97907	0.74378	0.73801	1.09265	1.08532
615422.88	4201911.51	6.6657	6.86893	0.88067	0.87318	0.87324	0.7509	0.53785	0.971	1.08553	1.06807	1.16378	1.15154	0.84867	0.84264	1.27462	1.26615
615462.88	4201911.51	6.66415	6.87508	0.86083	0.85289	1.02685	0.94906	0.61765	1.20363	1.11453	1.08767	1.39089	1.37969	0.9805	0.97451	1.50667	1.49779
615502.88	4201911.51	6.69139	6.91414	0.83736	0.8282	1.14999	1.22277	0.72273	1.48934	1.15738	1.12658	1.69503	1.68766	1.15412	1.14699	1.82153	1.81158
615542.88	4201911.51	6.68912	6.92837	0.80706	0.79622	1.24312	1.58261	0.86261	1.71214	1.22033	1.19596	2.09005	2.08465	1.38536	1.37649	2.26148	2.2506
615582.88	4201911.51	6.68387	6.93436	0.77169	0.7595	1.37698	2.06855	1.06415	1.72407	1.29478	1.28229	2.61365	2.60768	1.71696	1.70717	2.93212	2.92512
615622.88	4201911.51	6.63203	6.88475	0.73303	0.71973	1.52711	2.72853	1.372	1.57267	1.36899	1.36717	3.32183	3.32137	2.24571	2.23758	4.07585	4.0742
615022.88	4201931.51	1.24585	1.24314	0.8048	0.79994	0.33769	0.1879	0.19017	0.19244	0.52013	0.51125	0.35458	0.35114	0.31588	0.31301	0.37518	0.37182
615042.88	4201931.51	1.37485	1.37467	0.81355	0.80874	0.3614	0.19726	0.19861	0.20535	0.54402	0.53523	0.37125	0.36771	0.32841	0.32544	0.39309	0.38968
615042.88	4201951.51	1.31597	1.31638	0.76104	0.75623	0.36483	0.20056	0.20163	0.21387	0.56341	0.55388	0.37311	0.36947	0.33197	0.32895	0.39028	0.38693
615062.88	4201951.51	1.46833	1.4728	0.76829	0.76351	0.39137	0.21074	0.21088	0.22955	0.59073	0.58106	0.39134	0.38756	0.34567	0.34253	0.40921	0.40575
615342.88	4201951.51	14.08871	16.03852	0.7865	0.77989	0.96371	0.51444	0.44857	0.66718	1.18799	1.18079	0.90175	0.89272	0.69349	0.68839	0.9222	0.91594
615382.88	4201951.51	14.0492	15.92918	0.77588	0.76921	0.95736	0.62054	0.50711	0.7908	1.25037	1.23842	1.054	1.04307	0.78627	0.78032	1.0641	1.05661
615422.88	4201951.51	13.81272	15.6212	0.76014	0.75324	1.03717	0.76473	0.57593	0.95892	1.29649	1.2769	1.23561	1.23208	0.89013	0.89104	1.23778	1.22983
615462.88	4201951.51	13.7245	15.47309	0.74252	0.73485	1.21997	0.97306	0.66671	1.16864	1.33954	1.30758	1.49833	1.49511	1.0367	1.0389	1.47337	1.46508
616102.88	4201951.51	1.05635	1.05828	0.28552	0.27512	2.19809	4.72152	3.13969	0.32583	1.49461	1.52194	3.51172	3.57826	2.60673	2.60069	1.66216	1.66112
615062.88	4201971.51	1.39622	1.40067	0.72065	0.71591	0.39551	0.21578	0.21407	0.23994	0.61334	0.60317	0.39342	0.38956	0.34951	0.3463	0.406	0.40254
615082.88	4201971.51	1.57532	1.58526	0.72666	0.72191	0.42548	0.22701	0.22429	0.2582	0.64501	0.63442	0.41344	0.40942	0.36455	0.36121	0.42612	0.4225
615062.88	4201991.51	1.31962	1.32312	0.67695	0.67211	0.40249	0.22207	0.21678	0.24991	0.63663	0.6272	0.39499	0.39111	0.35286	0.34955	0.40213	0.39869
615082.88	4201991.51	1.47982	1.48825	0.68302	0.67821	0.43053	0.23366	0.22734	0.2688	0.67097	0.6602	0.41557	0.4115	0.36856	0.36512	0.42231	0.41867
615102.88	4201991.51	1.67667	1.69227	0.68685	0.68179	0.46525	0.24556	0.2381	0.28813	0.70611	0.69459	0.4369	0.43264	0.38449	0.38093	0.44296	0.43913
615082.88	4202011.51	1.38439	1.39125	0.64339	0.63864	0.43732	0.24194	0.23029	0.27783	0.69978	0.69015	0.41802	0.4139	0.37277	0.36923	0.41876	0.4151
615102.88	4202011.51	1.55332	1.56545	0.6476	0.64255	0.47083	0.25395	0.24118	0.29684	0.73743	0.72611	0.43957	0.43525	0.38909	0.38544	0.43917	0.43533
615782.88	4202011.51	4.93217	4.90266	0.43446	0.42609	3.20048	39.07475	31.09582	0.73096	2.43038	2.29641	37.47896	37.64758	47.079	48.78089	9.19461	9.15611
615802.88	4202011.51	4.09182	4.03314	0.422	0.41369	3.26918	29.50617	20.96182	0.68925	2.44412	2.3253	26.29809	26.27996	26.27363	26.48893	7.48689	7.44284
615822.88	4202011.51	3.48971	3.42351	0.40962	0.40142	3.32093	23.55742	15.95365	0.65663	2.46206	2.36772	20.19909	20.15968	17.82921	17.83152	6.28978	6.24413
615102.88	4202031.51	1.43142	1.44088	0.61122	0.60621	0.47789	0.26323	0.24379	0.3029	0.77053	0.7608	0.44215	0.43777	0.39355	0.38981	0.4352	0.4314
615122.88	4202031.51	1.59993	1.61528	0.61448	0.60921	0.51724	0.27661	0.25567	0.32165	0.81533	0.80352	0.46585	0.46124	0.41149	0.40762	0.45689	0.453
615782.88	4202031.51	4.7097	4.71106	0.41419	0.40642	3.77289	40.04478	31.22936	0.67593	2.81277	2.68054	38.53693	38.71697	46.6574	48.29284	8.80376	8.77953
615802.88	4202031.51	3.92584	3.89774	0.40283	0.39513	3.82986	30.22224	21.1119	0.6387	2.82203	2.71964	27.03743	27.00198	26.30767	26.52253	7.19887	7.1667
615822.88	4202031.51	3.36432	3.32305	0.39147	0.38393	3.85671	24.20682	16.22257	0.60957	2.8313	2.76354	20.86342	20.79898	18.03114	18.0301	6.07704	6.0415
615122.88	4202051.51	1.44976	1.46058	0.58089	0.57575	0.52408	0.28626	0.25788	0.32371	0.85343	0.84364	0.46852	0.46385	0.41621	0.41228	0.45244	0.44868
615142.88	4202051.51	1.6006	1.6141	0.58337	0.57799	0.57098	0.30106	0.2708	0.34166	0.90717	0.89493	0.49455	0.48962	0.43589	0.43182	0.47538	0.47157
615242.88	4202051.51	2.4662	2.52466	0.58675	0.58134	0.9836	0.40661	0.35703	0.45173	1.30314	1.28909	0.674	0.66757	0.56486	0.55951	0.62497	0.62062
615262.88	4202051.51	2.60022	2.67015	0.58601	0.58067	1.11399	0.43604	0.37985	0.48226	1.41737	1.40869	0.72311	0.71642	0.59843	0.59278	0.66359	0.65914
615282.88	4202051.51	2.68607	2.76062	0.58381	0.57853	1.25532	0.46843	0.39982	0.51738	1.53745	1.53671	0.77671	0.76983	0.63403	0.62842	0.70473	0.70017
615302.88	4202051.51	2.75434	2.83084	0.5814	0.57616	1.40416	0.50533	0.42667	0.55851	1.66501	1.67224	0.83754	0.8305	0.67385	0.66817	0.75041	0.74573
615782.88	4202051.51	4.54921	4.56953	0.39553	0.38829	4.4603	40.48645	31.21903	0.62727	3.27641	3.16537	39.39196	39.63735	46.12182	47.6901	8.5243	8.50084
615802.88	4202051.51	3.80482	3.79624	0.38515	0.37797	4.48517	30.52964	21.23145	0.59402	3.26403	3.19478	27.8436	27.85072	26.22635	26.44305	6.97746	6.94623
615122.88	4202071.51	1.31635	1.32397	0.54982	0.54491	0.52941	0.29526	0.2595	0.32327	0.88971	0.88272	0.47054	0.46584	0.42035	0.41642	0.44747	0.44387
615142.88	4202071.51	1.43196	1.43936	0.55237	0.54717	0.57713	0.31034	0.27255	0.33999	0.95079	0.94094	0.49717	0.49221	0.44079	0.43669	0.47027	0.46661
615782.88	4202071.51	4.4512	4.49044	0.37832	0.37153	5.26152	40.84354	31.49144	0.5842	3.82413	3.75541	40.93459	41.1909	45.84092	47.37839	8.30682	8.28158

615802.88	4202071.51	3.73405	3.74041	0.36881	0.36209	5.21716	30.92697	21.78115	0.55421	3.77311	3.75205	28.79552	28.7836	26.3959	26.58324	6.81294	6.78115
615142.88	4202091.51	1.28889	1.29371	0.52344	0.51862	0.57983	0.31865	0.27398	0.33727	0.99189	0.98495	0.49924	0.49432	0.44522	0.44112	0.46473	0.46124
615162.88	4202091.51	1.38261	1.38565	0.52546	0.52028	0.63825	0.33505	0.28814	0.35463	1.06636	1.05637	0.52837	0.52316	0.46754	0.46325	0.48857	0.48495
615782.88	4202091.51	4.37638	4.42406	0.36235	0.35595	6.15797	41.15112	31.9031	0.54581	4.44277	4.43519	41.37149	41.60766	45.41657	46.893	8.11759	8.08971
615802.88	4202091.51	3.67415	3.68753	0.35336	0.34721	6.00251	31.1447	22.25035	0.51827	4.31903	4.35659	29.4093	29.36599	26.42125	26.57937	6.64787	6.61631
615162.88	4202111.51	1.24209	1.24332	0.49868	0.49387	0.63763	0.34218	0.28935	0.35154	1.11238	1.10523	0.53009	0.52502	0.47202	0.46772	0.48219	0.4787
615182.88	4202111.51	1.31433	1.31555	0.49993	0.49493	0.7089	0.36035	0.30514	0.37131	1.20569	1.19538	0.56253	0.55718	0.49686	0.49234	0.50737	0.50371
615782.88	4202111.51	4.31185	4.36211	0.34731	0.34139	7.10218	41.48692	32.51312	0.51104	5.10551	5.1695	42.32387	42.48487	45.20563	46.6012	7.93853	7.90784
615802.88	4202111.51	3.60601	3.62312	0.33921	0.33339	6.8123	30.98457	22.3256	0.48623	4.86606	4.96172	29.98688	29.95714	26.15178	26.31322	6.45573	6.42565
615182.88	4202131.51	1.18497	1.1839	0.47527	0.47048	0.70449	0.36604	0.30616	0.36999	1.25615	1.24841	0.56334	0.55818	0.50107	0.49648	0.49981	0.49624
615202.88	4202131.51	1.24118	1.24004	0.47585	0.47094	0.79314	0.38578	0.32349	0.39369	1.37131	1.36028	0.59868	0.59322	0.52811	0.52323	0.52586	0.52211
615182.88	4202151.51	1.07939	1.07645	0.45253	0.44789	0.69297	0.37056	0.30736	0.36994	1.29874	1.29187	0.56317	0.5582	0.50466	0.50004	0.49189	0.48837
615202.88	4202151.51	1.12528	1.12209	0.453	0.44824	0.78432	0.39043	0.32468	0.39459	1.42726	1.41838	0.59845	0.59318	0.53212	0.52713	0.51715	0.51345
614922.88	4202171.51	0.5555	0.55031	0.39634	0.39182	0.23898	0.21675	0.16893	0.20454	0.49584	0.49027	0.29329	0.29059	0.27818	0.27576	0.27631	0.27395
614942.88	4202171.51	0.5808	0.57599	0.40124	0.39669	0.25166	0.22451	0.17744	0.21344	0.52586	0.52006	0.306	0.3032	0.28966	0.28715	0.28697	0.28447
615202.88	4202171.51	1.02959	1.02518	0.4318	0.42718	0.77053	0.39433	0.32636	0.39657	1.47423	1.46532	0.59729	0.59215	0.53565	0.5306	0.50822	0.50454
615922.88	4202171.51	1.5051	1.51688	0.26367	0.25909	4.90409	8.52223	7.20227	0.33131	3.4773	3.53507	7.53103	7.54704	6.62713	6.57309	2.18524	2.17766
615942.88	4202171.51	1.35421	1.3623	0.25734	0.25273	4.48847	7.28243	6.46193	0.31892	3.18794	3.23846	6.38071	6.38472	5.81963	5.76482	1.94083	1.93094
615962.88	4202171.51	1.22556	1.23015	0.25108	0.24637	4.1172	6.28047	5.864	0.30565	2.93104	2.97597	5.46725	5.46009	5.17609	5.12317	1.73797	1.7267
614922.88	4202191.51	0.53623	0.53132	0.38016	0.37564	0.25538	0.21729	0.16978	0.20528	0.50028	0.49449	0.29325	0.29071	0.27862	0.2762	0.27383	0.27148
614942.88	4202191.51	0.55936	0.55482	0.38455	0.38001	0.26755	0.22504	0.17659	0.21344	0.53074	0.52474	0.3059	0.30328	0.29009	0.28758	0.28427	0.2818
615202.88	4202191.51	0.94913	0.94402	0.41209	0.4076	0.76124	0.39738	0.32848	0.39917	1.51201	1.50039	0.59516	0.59007	0.53865	0.53364	0.49908	0.49544
615922.88	4202191.51	1.43181	1.44165	0.25544	0.25108	4.74153	7.55839	7.26511	0.31578	3.44402	3.50711	6.78774	6.7732	6.62834	6.56477	1.98099	1.96695
615942.88	4202191.51	1.28573	1.29073	0.24952	0.24515	4.31753	6.41567	6.52667	0.30473	3.14615	3.20226	5.73387	5.70754	5.82859	5.76764	1.76251	1.74806
615962.88	4202191.51	1.16191	1.1626	0.24366	0.23923	3.94307	5.50748	5.92585	0.29312	2.88362	2.93365	4.90628	4.87348	5.19116	5.13778	1.58179	1.5671
614922.88	4202211.51	0.51731	0.51265	0.36479	0.3603	0.27696	0.2163	0.16913	0.2047	0.50419	0.49836	0.29283	0.29045	0.27882	0.2764	0.27112	0.26878
614942.88	4202211.51	0.53841	0.53409	0.36874	0.36424	0.28983	0.22397	0.17578	0.21231	0.53497	0.52889	0.30533	0.30287	0.29022	0.28769	0.28128	0.27886
615202.88	4202211.51	0.88042	0.87502	0.39374	0.38935	0.76993	0.39965	0.33102	0.40187	1.54417	1.52911	0.59241	0.58725	0.54131	0.53644	0.48995	0.48639
615922.88	4202211.51	1.34939	1.35491	0.24762	0.24344	4.48324	6.46475	7.34498	0.30148	3.35483	3.41943	5.95286	5.90203	6.63368	6.56114	1.77168	1.75259
615942.88	4202211.51	1.2102	1.21003	0.24208	0.23792	4.06762	5.46779	6.60322	0.29139	3.05566	3.11325	5.03169	4.97838	5.84285	5.78043	1.58228	1.5639
615962.88	4202211.51	1.09292	1.08811	0.23658	0.23238	3.70394	4.68655	5.99533	0.28121	2.79371	2.84606	4.31266	4.25881	5.21004	5.16483	1.42559	1.40799
614922.88	4202231.51	0.49845	0.494	0.34996	0.34552	0.3027	0.21368	0.16858	0.20326	0.50675	0.50109	0.29171	0.28944	0.27852	0.27606	0.26793	0.26561
614942.88	4202231.51	0.51785	0.51365	0.35361	0.34912	0.31726	0.22127	0.17505	0.21041	0.53787	0.53189	0.30407	0.30172	0.28987	0.2873	0.27784	0.27546
615202.88	4202231.51	0.82042	0.81548	0.37642	0.37225	0.80801	0.40123	0.33393	0.40383	1.57526	1.5588	0.58955	0.58424	0.54391	0.5392	0.48109	0.47766
614922.88	4202251.51	0.48014	0.47586	0.3359	0.33152	0.32981	0.20976	0.16505	0.20148	0.50847	0.50325	0.29024	0.28802	0.27799	0.27547	0.26457	0.26227
614942.88	4202251.51	0.49799	0.49391	0.3393	0.33487	0.34664	0.21726	0.17134	0.20825	0.5399	0.53432	0.30246	0.30016	0.2893	0.28666	0.27425	0.27192
615202.88	4202251.51	0.76591	0.76232	0.35967	0.35594	0.87579	0.40067	0.33707	0.40455	1.59878	1.58446	0.58568	0.58025	0.54564	0.54106	0.47144	0.4683
614922.88	4202271.51	0.4624	0.45829	0.3226	0.31829	0.35555	0.2048	0.16467	0.19932	0.50925	0.50456	0.28842	0.28621	0.2765	0.27441	0.26107	0.25881
614942.88	4202271.51	0.47887	0.47488	0.32578	0.32142	0.37446	0.21219	0.17085	0.20608	0.54094	0.53592	0.30052	0.29821	0.2881	0.28572	0.27053	0.26826
615182.88	4202271.51	0.70144	0.69676	0.34513	0.34136	0.87108	0.37419	0.31729	0.38159	1.44408	1.43178	0.54573	0.54047	0.5146	0.50992	0.44061	0.43762
615202.88	4202271.51	0.71762	0.71486	0.34401	0.34057	0.96118	0.39834	0.33956	0.40405	1.61492	1.60399	0.57954	0.57423	0.54519	0.54071	0.46104	0.45828
614922.88	4202291.51	0.4434	0.44089	0.30992	0.30569	0.37669	0.19899	0.16465	0.19708	0.50872	0.50448	0.27523	0.27992	0.26378	0.26862	0.25564	0.25463
614942.88	4202291.51	0.45953	0.45648	0.31297	0.30868	0.39747	0.20631	0.17085	0.20386	0.54075	0.53619	0.29121	0.29434	0.27982	0.28276	0.26569	0.26428
615182.88	4202291.51	0.66243	0.65761	0.33117	0.32741	0.94525	0.37064	0.31837	0.38202	1.45567	1.44422	0.54014	0.53479	0.51371	0.50889	0.43149	0.42866
615202.88	4202291.51	0.67719	0.67406	0.33007	0.32659	1.04358	0.39537	0.34093	0.40227	1.62938	1.61961	0.57325	0.56795	0.54436	0.53971	0.45108	0.44847
614922.88	4202311.51	0.41881	0.42415	0.29731	0.29422	0.39091	0.18895	0.16603	0.19521	0.48553	0.49992	0.26369	0.27334	0.25535	0.26375	0.24451	0.24911
614942.88	4202311.51	0.44141	0.43921	0.30116	0.29698	0.41265	0.20018	0.17214	0.20216	0.54022	0.53585	0.28431	0.28906	0.2736	0.27854	0.26113	0.26022
615182.88	4202311.51	0.6275	0.62245	0.31815	0.31436	0.99265	0.36664	0.31976	0.38095	1.46039	1.4495	0.53389	0.5286	0.51223	0.50736	0.42228	0.41957
614922.88	4202331.51	0.40335	0.40887	0.28632	0.28355	0.39596	0.18154	0.16831	0.19368	0.48133	0.49661	0.25976	0.26905	0.25295	0.2611	0.24041	0.24489
614942.88	4202331.51	0.41671	0.42235	0.28942	0.28606	0.41767	0.18846	0.17435	0.20111	0.51702	0.53123	0.27289	0.28285	0.26591	0.27428	0.25027	0.25494
615182.88	4202331.51	0.59583	0.5906	0.30596	0.3021	1.00231	0.36278	0.32209	0.37832	1.45695	1.44673	0.52699	0.52195	0.51023	0.5054	0.41295	0.41031
615182.88	4202351.51	0.56691	0.56145	0.29452	0.29059	0.9777	0.35962	0.32568	0.37412	1.4441	1.43418	0.51927	0.51456	0.50763	0.50288	0.40338	0.40078
615182.88	4202371.51	0.54013	0.53462	0.28366	0.2797	0.93348	0.3579	0.33103	0.36826	1.42331	1.41315	0.51122	0.5068	0.50481	0.50016	0.39383	0.39127
615182.88	4202391.51	0.51535	0.50991	0.27335	0.26943	0.89079	0.3581	0.33834	0.36076	1.39677	1.38591	0.50291	0.49866	0.50178	0.49722	0.38442	0.3819
615182.88	4202411.51	0.49237	0.48711	0.26356	0.25973	0.86603	0.36033	0.34713	0.35172	1.36665	1.35478	0.49455	0.49034	0.49867	0.49422	0.37527	0.37281
615182.88	4202431.51	0.47093	0.46594	0.25423	0.25053	0.86581	0.36423	0.35681	0.34163	1.33307	1.32024	0.486	0.48177	0.49526	0.49093	0.3663	0.3639
615182.88	4202451.51	0.45094	0.44612	0.24545	0.24185	0.88664	0.36901	0.3662	0.33076	1.29476	1.2816	0.47686	0.4726	0.49109	0.48689	0.35725	0.35491
615202.88	4202451.51	0.46007	0.45552	0.24499	0.24141	1.01701	0.39682	0.38948	0.33068	1.43276	1.4195	0.50222	0.49772	0.5199	0.51544	0.37082	0.36849
615202.88	4202471.51	0.44133	0.43656	0.23699	0.23338	1.05482	0.40283	0.39738	0.31739	1.38271	1.37027	0.49112	0.48664	0.51399	0.50961	0.36116	0.35891
615222.88	4202471.51	0.45042	0.44571	0.23654	0.2329	1.21682	0.43439	0.42393	0.31348	1.53144	1.51905	0.51709	0.51234	0.54488	0.54021	0.37479	0.37256
615242.88	4202471.51	0.4597	0.45511	0.2359	0.23226	1.41059	0.46966	0.45374	0.30773	1.70387	1.69189	0.5453	0.54031	0.57912	0.57418	0.38918	0.38702
615262.88	4202471.51	0.46906	0.46468	0.23504	0.23145	1.64239	0.50912	0.48749	0.30071	1.90379	1.89301	0.57572	0.57059	0.6169	0.61177	0.40426	0.40226
615282.88	4202471.51	0.47954	0.475	0.23428	0.23065	1.92567	0.55383	0.52466	0.29304	2.14125	2.13077	0.60875	0.60351	0.65888	0.65352	0.42038	0.4185
615302.88	4202471.51	0.49058	0.48588	0.23339	0.22973	2.26434	0.60412	0.56688	0.28535	2.42154	2.41289	0.64471	0.63954	0.70591	0.70036	0.4374	0.43567
615322.88	4202471.51	0.50217	0.49752	0.23234	0.22867	2.65728	0.66039	0.61468	0.2777	2.75121	2.74849	0.68385	0.67899	0.75882	0.75317	0.45532	0.45376
615342.88	4202471.51	0.51484	0.51036	0.23126	0.22755	3.09324	0.72321	0.66873	0.27071	3.13722	3.14565	0.72666	0.72227	0.81895	0.81314	0.47432	0.47285
615362.88	4202471.51	0.52845	0.52442	0.23009	0.22633	3.53033	0.79247	0.73004	0.26362	3.57234	3.59762	0.77331	0.76953	0.88765	0.88167	0.49433	0.49289
615382.88	4202471.51	0.54307	0.53974	0.22882	0.225	3.90784	0.86781	0.80009	0.25676	4.0337	4.07636	0.82404	0.82092	0.96682	0.96064	0.51537	0.5139
615402.88	4202471.51	0.55885	0.55637	0.22746	0.22357	4.17928	0.94849	0.8807	0.24985	4.48017	4.53243	0.87905	0.87653	1.05898	1.05253	0.53747	0.53598
615422.88	4202471.51	0.57584	0.57431	0.22599	0.22204	4.34698	1.03325	0.97428	0.24241	4.85845	4.90436	0.93844	0.93647	1.16755	1.1608	0.56063	0.55923
615442.88	4202471.51	0.59417	0.59366	0.22442	0.22043	4.41086	1.12053	1.08477	0.23454	5.1233	5.15107	1.0023	1.00089	1.29739	1.29032	0.58479	0.58371
615462.88	4202471.51	0.61417	0.61464	0.22277	0.21877	4.31806	1.20874	1.21724	0.22698	5.25869	5.26638	1.07073	1.07005	1.45586	1.44841	0.6099	0.60935
615482.88	4202471.51	0.6361	0.63754	0.22108	0.21708	4.07836	1.29572	1.38078	0.22052	5.27268	5.26205	1.14365	1.14402	1.65428	1.64629	0.63567	0.63581
615502.88	4202471.51	0.66012	0.66263	0.21934	0.21539	3.7625	1.37861	1.59026	0.21637	5.18418	5.16877	1.22055	1.22248	1.911	1.90223	0.66143	0.6623
615522.88	4202471.51	0.68685	0.6903	0.21766	0.21374	3.38738	1.45413	1.87017	0.21584	5.01564	5.00566	1.30065	1.30434	2.25799	2.24767	0.68637	0.68746
615542.88	4202471.51	0.71553	0.72003	0.21597	0.2121	2.94733	1.51605	2.27516	0.21988	4.76914	4.76126	1.38109	1.38655	2.7486	2.73656	0.70875	0.70899
615562.88	4202471.51	0.74488	0.75025	0.21428	0.21044	2.53124	1.55775	2.92676	0.22827	4.45483	4.44379	1.45751	1.46381	3.48152	3.46772	0.72682	0.72486
615242.88	4202491.51	0.44043	0.43591	0.22816	0.2246	1.43101	0.47639	0.46059	0.29267	1.6188	1.60859	0.53179	0.52707	0.57173	0.56693	0.37799	0.37609
615262.88	4202491.51	0.44941	0.44497	0.22745	0.22388	1.65166	0.51613	0.49499	0.28568	1.79703	1.78693	0.56068	0.55591	0.60877	0.60378	0.39214	0.3904
615282.88	4202491.51	0.45911	0.45456	0.22673	0.22312	1.91388	0.56075	0.53337	0.27822	2.00494	1.99525	0.59185	0.58713	0.64983	0.64466	0.40709	0.40547
615302.88	4202491.51	0.46939	0.46467	0.22591	0.22225	2.21745	0.61051	0.57659	0.27098	2.24655	2.23989	0.62565	0.62116	0.69581	0.69046	0.42279	0.42128
615322.88	4202491.51	0.48029	0.47548	0.225	0.22129	2.55283	0.66564	0.6252	0.26407	2.52432	2.52506	0.66232	0.65821	0.74758	0.74208	0.43926	0.43781
615342.88	4202491.51	0.4919	0.48718	0.22398	0.22023	2.89399	0.72618	0.68041	0.2575	2.83495	2.84753	0.70205	0.69846	0.80625	0.8006	0.4565	0.45503
615362.88	4202491.51	0.50427	0.4999	0.22287	0.21907	3.19797	0.79174	0.74287	0.25101	3.16554	3.19112	0.74502	0.74197	0.87325	0.86742	0.47452	0.47296
615382.88	4202491.51	0.51747	0.5137	0.22167	0.21781	3.42125	0.86174	0.81441	0.24456	3.49273	3.52716	0.79136	0.7888	0.95043	0.94437	0.49332	0.49168
615402.88	4202491.51	0.53112	0.52839	0.22025	0.21639	3.54228	0.93474	0.89727	0.23783	3.78111	3.81733	0.84107	0.83898	1.04033	1.03414	0.51278	0.51122
615422.88	4202491.51	0.5456	0.54408	0.21874	0.21487	3.59144	1.00967	0.99371	0.23049	4.0014	4.02686	0.89411	0.89253	1.14604	1.13986	0.53292	0.53167
615442.88	4202491.51	0.561	0.56072	0.21715	0.21329	3.57641	1.08492	1.1073	0.22298	4.13601	4.14586	0.95044	0.94959	1.27232	1.26636	0.55367	0.55295
615462.88	4202491.51	0.57812	0.57871	0.21564	0.21175	3.47946	1.15953	1.24266	0.21597	4.19578	4.18956	1.01057	1.01055	1.42752	1.42146	0.57514	0.57503
615482.88	4202491.51	0.59642	0.59783	0.21407	0.21019	3.29844	1.23045	1.4093	0.21018	4.18455	4.16524	1.07366	1.07493	1.62251	1.61632	0.59658	0.59712
615502.88	4202491.51	0.61575	0.6182	0.21243	0.2086	3.06489	1.29428	1.62295	0.20711	4.11829	4.09713	1.13876	1.14177	1.87603	1.86944	0.61717	0.61818
615522.88	4202491.51	0.63581	0.63963	0.21075	0.207	2.7757	1.34638	1.91143	0.20734	4.00523	3.99409	1.20424	1.20913	2.22123	2.21342	0.63586	0.63665
615542.88	4202491.51	0.65625	0.6614	0.20907	0.2054	2.44458	1.38193	2.32919	0.21205	3.84786	3.84283	1.26798	1.27403	2.7239	2.71349	0.65175	0.6512
615562.88	4202491.51	0.67594	0.68137	0.20741	0.20381	2.13356	1.3969	3.00575	0.22101	3.64746	3.64354	1.32693	1.33243	3.52816	3.51507	0.66409	0.66132
615582.88	4202491.51	0.69321	0.69633	0.2058	0.20223	1.87577	1.39217	4.32408	0.23278	3.40977	3.40389	1.37734	1.38021	4.99231	4.98249	0.67248	0.6672
615582.88	4202511.51	0.62571	0.62724	0.19931	0.19597	1.62829	1.23096	4.55626	0.22581	2.87962	2.87902	1.24484	1.2462	5.02262	5.02351	0.61425	0.60891
615602.88	4202511.51	0.63158	0.62931	0.19773	0.19443	1.45018	1.20976	8.63129	0.23809	2.69349	2.69031	1.27228	1.26882	9.43742	9.49645	0.61658	0.60912
615602.88	4202531.51	0.57283	0.56892	0.19189	0.18872	1.29387	1.0737	8.91502	0.23119	2.33821	2.33644	1.14841	1.14364	8.13073	8.21215	0.5658	0.55851
615602.88	4202551.51	0.52462	0.51937	0.18643	0.18334	1.16565	0.96117	6.64475	0.22461	2.05142	2.04928	1.04245	1.03647	5.61542	5.69633	0.52253	0.5154
615622.88	4202551.51	0.52176	0.51475	0.18481	0.18181	1.05071	0.95982	7.96867	0.23336	1.93518	1.93208	1.04833	1.03847	7.47718	7.60897	0.52157	0.51434
615622.88	4202571.51	0.4809	0.4737	0.17973	0.17679	0.96183	0.87118	5.08577	0.2266	1.72634	1.72361	0.9542	0.94393	4.6146	4.66657	0.48422	0.47754
615622.88	4202591.51	0.44613	0.43902	0.17486	0.17199	0.88419	0.79663	3.66695	0.22009	1.54932	1.54681	0.87301	0.86259	3.32169	3.34795	0.45162	0.44547
615622.88	4202611.51	0.41614	0.40926	0.17021	0.1674	0.8155	0.73324	2.81593	0.21374	1.3981	1.39574	0.8025	0.79211	2.57672	2.58803	0.42293	0.41728
615622.88	4202631.51	0.38996	0.3834	0.16576	0.16302	0.75422	0.67877	2.24821	0.20775	1.26796	1.26569	0.74086	0.73065	2.08985	2.09211	0.39747	0.39228
615602.88	4202651.51	0.36967	0.36327	0.16271	0.15999	0.7443	0.61641	1.88961	0.19634	1.18742	1.18322	0.68739	0.67893	1.70734	1.71193	0.37519	0.36975

615622.88	4202651.51	0.36689	0.36067	0.16149	0.15882	0.69927	0.63153	1.84598	0.20202	1.1552	1.15291	0.68665	0.67673	1.74692	1.74404	0.37474	0.36995
615602.88	4202671.51	0.34897	0.34285	0.15856	0.15591	0.6879	0.57404	1.59126	0.1914	1.08213	1.07739	0.63962	0.63111	1.47006	1.46967	0.35466	0.34959
615622.88	4202671.51	0.34638	0.34052	0.1574	0.15479	0.64986	0.59016	1.55006	0.19651	1.05686	1.05439	0.6387	0.62916	1.49299	1.48727	0.35431	0.34989
615602.88	4202691.51	0.33042	0.3246	0.15458	0.15199	0.63785	0.53702	1.36026	0.18654	0.99052	0.98521	0.59704	0.58859	1.28443	1.28113	0.33611	0.3314
615582.88	4202711.51	0.31568	0.31016	0.15177	0.1492	0.62305	0.49282	1.20317	0.17523	0.92275	0.91467	0.55956	0.55258	1.11907	1.11803	0.3196	0.31475
615602.88	4202711.51	0.31369	0.30818	0.15076	0.14824	0.5933	0.50441	1.17846	0.18189	0.91035	0.90451	0.55891	0.55061	1.13586	1.13093	0.31928	0.31489
615582.88	4202731.51	0.30011	0.29489	0.14796	0.14549	0.57918	0.46245	1.05524	0.17131	0.84902	0.84117	0.52513	0.51814	1.00307	1.00058	0.30401	0.29949
615602.88	4202731.51	0.29822	0.29315	0.14699	0.14457	0.55279	0.47518	1.03502	0.17755	0.83893	0.83291	0.52434	0.51637	1.01375	1.00828	0.30375	0.29971
615582.88	4202751.51	0.28583	0.28093	0.14428	0.1419	0.53997	0.43553	0.93381	0.16749	0.78396	0.77648	0.49389	0.48699	0.90554	0.90229	0.28969	0.28549
615602.88	4202751.51	0.28398	0.27935	0.14333	0.141	0.5163	0.44895	0.91855	0.17327	0.77541	0.76935	0.49297	0.4854	0.912	0.9064	0.28943	0.28573
615602.88	4202771.51	0.27081	0.26661	0.13977	0.13754	0.48324	0.42525	0.82172	0.16898	0.71855	0.7126	0.46433	0.45722	0.82589	0.82032	0.27616	0.27278
615602.88	4202791.51	0.25955	0.25545	0.13663	0.13443	0.45519	0.40476	0.74314	0.16508	0.67055	0.66431	0.43936	0.43248	0.75555	0.74936	0.26453	0.26133

TAC Emission Rates Calculation

Construction PM2.5 Emissions

Onsite heavy-duty Equipment Emissions

Source type	Phase	DPM (lb)	PM2.5 Exhaust (lb)	PM2.5 Fugitive (lb)
Offroad Equipment	Site Prep	23.15	23.15	1.56
Offroad Equipment	Trenching	8.79	8.79	0.14
Offroad Equipment	Concrete	24.69	24.69	0.17
Offroad Equipment	Equipment I	124.02	124.02	0.05
Offroad Equipment	Paving	4.07	4.07	2.00
Offroad Equipment	Cleanup	1.91	1.91	0.64
Stockpiling	All phases			0.06
Bulldozing	Site Prep			0.11
	Onsite total	186.63	186.63	4.72

Mobile Source Emissions

Trip Purpose	VMT per trip within impacted area	One-way Trip Length (mi)	DPM (lb)	PM2.5 Exhaust (lb)	PM2.5 Fugitive (lb)	On-road BW and TW PM2.5 (lb)	PM2.5 fugitive total (lb)
Export (soil/waste)	1.5	20	0.002	0.002	0.002	0.002	0.00
Export (trees/veg.)	1.5	5	0.003	0.003	0.007	0.001	0.01
Import (soil/fill)	1.5	20	0.006	0.006	0.002	0.008	0.01
Import (concrete)	1.5	25	0.011	0.011	0.001	0.013	0.01
Import (material/supplies	1.5	25	0.005	0.005	0.001	0.006	0.01
Worker Commute	1.5	25	0.000	6.251	0.001	0.286	0.29
		Mobile total	0.027	6.278			0.33

Notes:
DPM is modeled as diesel PM2.5 exhaust.
PM2.5 exhaust emissions from Stockpiling and Bulldozing have been included for in Offroad Equipment.
PM emission is calculated as the summation of emissions from the following roads, distance conservatively measured in Google Earth.

PM Emission Rates

Onsite	DPM (lb)	PM2.5 Exhaust (lb)	PM2.5 Fugitive (lb)	Avg DPM (g/s)	Avg PM2.5 Exhaust (g/s)	Avg PM2.5 Fugitive (g/s)
Offroad total	**186.63**	**186.63**	**4.72**			
Onsite 1	42.43	42.43	1.07	1.07E-03	1.07E-03	2.71E-05
Onsite 2	61.69	61.69	1.56	1.56E-03	1.56E-03	3.93E-05
Onsite 3	33.40	33.40	0.84	8.42E-04	8.42E-04	2.13E-05
Trenching	49.11	49.11	1.24	1.24E-03	1.24E-03	3.13E-05

Mobile	DPM (lb)	PM2.5 Exhaust (lb)	PM2.5 Fugitive (lb)	Avg DPM (g/s)	Avg PM2.5 Exhaust (g/s)	Avg PM2.5 Fugitive (g/s)
Mobile total	**0.03**	**6.28**	**0.33**			
Haul 1	0.01	1.43	0.08	1.54E-07	3.60E-05	1.90E-06
Haul 2	0.01	2.08	0.11	2.24E-07	5.23E-05	2.76E-06
Haul 3	0.00	1.12	0.06	1.21E-07	2.83E-05	1.49E-06
Haul_Trenching	0.01	1.65	0.09	1.78E-07	4.17E-05	2.20E-06

Note: Emissions from worker commute is combined into hauling emissions.

Idling	DPM (grams)	Avg DPM (g/s)
Total	**0.915**	
Idling 1	0.208	1.158E-08
Idling 2	0.303	1.683E-08
Idling 3	0.164	9.11E-09
Idling Trenching	0.241	1.34E-08

Total grams of DPM = Total truck trips x Idling duration x Idling emission / 60 min per hour

Total truck trips	246	one-way trip
Idling duration	5	min/trip
Idling emission	0.045	gram/vehicle-idle hour
Total workdays	555	days
Hours per day	9	(7am-4pm)

Notes:
Onsite 1: Construction area for building Transfer building and Tipping pad
Onsite 2: Expansion construction area for anaerobic digester, biosolids drying pyrolysis system, and ancillary facilities
Onsite 3: Construction area of connector path realignment
Trenching: Construction area of natural gas pipeline work
Idle emission rate is the max rate for HHDT in Bay Area Air Management District based on Project-Level Analysis using CARB E
Mass emssions are distributed according to the following calculated percent of disturbed construction areas. Sizes were estin

Constructio n Area	# Vol Sources	Percent of Total
Onsite 1	108	23%
Onsite 2	157	33%
Onsite 3	85	18%
Trenching	125	26%
Total	475	100%

# of volume sources were obtained in AERMOD.

Exposure Parameters used in HRA

Residential

Parameter	Abbr.	3rd Tri	0<2	2<16	16<30
Daily Breathing Rate (L/kg/day)	DBR	361	1,090	572	261
Inhalation Absorption Factor (unitless)	A	1.0	1.0	1.0	1.0
Exposure Frequency (unitless)	EF	0.96	0.96	0.96	0.96
Conversion Factor (ug to mg, L to m^3)	CF	1.00E-06	1.00E-06	1.00E-06	1.00E-06
Age Sensitivity Factor (unitless)	ASF	10	10	3	1
Exposure Duration (years)	ED	~~0.25~~	~~2.00~~	~~14.00~~	~~14~~
Averaging Time for Lifetime (years)	AT	70	70	70	70
Fraction of Time at Home (unitless)	FAH	0.85	0.72	0.73	0.73
Worker Adjustment Factor (unitless)	WAF	n/a	n/a	n/a	n/a
Cancer Conversion Factor (unitless)	CCF	1.00E+06	1.00E+06	1.00E+06	1.00E+06
Cancer Potency Factor $(mg/kg/day)^{-1}$	CPF	1.1	1.1	1.1	1.1

1. OEHHA Table 5.7, 95th percentile for 3rd Tri and 0<2, 80th percentile all other age groups
2. Based on 350 days per year
3. ASF based on OEHHA Table 8.3
4. Averaging Time always 70 years
5. Values based on OEHHA Table 8.4.
6. Conversion factor to convert cancer risk to chances per million
7. DPM CPF from OEHHA Table 7.1
8. ED is defined in the following table
9. FAH from OEHHA Table 8.4

RESIDENT DOSE: CONC x DBR x A x EF x CF OEHHA Eq 5.4.1.1

RESIDENT CANCER RISK: DOSE x CPF x ASF x [ED/AT] x FAH x CCF Eq 8.2.4

Worker

Parameter	Abbr.	16<30
Daily Breathing Rate (L/kg/day)	DBR	240
Inhalation Absorption Factor (unitless)	A	1.0
Exposure Frequency (unitless)	EF	0.68
Conversion Factor (ug to mg, L to m^3)	CF	1.00E-06
Age Sensitivity Factor (unitless)	ASF	1
Exposure Duration (years)	ED	~~14~~
Averaging Time for Lifetime (years)	AT	25
Fraction of Time at Home (unitless)	FAH	n/a
Worker Adjustment Factor (unitless)	WAF	3
Cancer Conversion Factor (unitless)	CCF	1.00E+06
Cancer Potency Factor $(mg/kg/day)^{-1}$	CPF	1.1

1. OEHHA Table 5.8, 95th percentile, moderate activity for 16<30.
2. EF Based on 250 days per year
3. ASF based on OEHHA Table 8.3
4. Averaging Time always 25 years
5. Adjustment factor based on an 8 hours per day work schedule and assumption that the worker's schedule overlaps the source's emission schedule
6. Conversion factor to convert cancer risk to chances per million
7. DPM CPF from Table 7.1

Worker DOSE: CONC x WAF x DBR x A x EF x CF

Worker CANCER RISK: DOSE x CPF x ASF x [ED/AT] x CCF

Park

Parameter		Abbr.	0<2	2<16
Daily Breathing Rate (mg/kg/day)[1]		DBR	1,200	520
Inhalation Absorption Factor (unitless)		A	1.0	1.0
Exposure Frequency (unitless)[2]		EF	0.02	0.02
Conversion Factor (ug to mg, L to m^3)		CF	1.00E-06	1.00E-06
Age Sensitivity Factor (unitless)[3]		ASF	10	3
Exposure Duration (years)		ED	~~2~~	~~10~~
Averaging Time for Lifetime (years)[4]		AT	70	70
Fraction of Time at Home (unitless)[5]		FAH	1.0	1.0
Worker Adjustment Factor (unitless)		WAF	n/a	n/a
Cancer Conversion Factor (unitless)[6]		CCF	1.00E+06	1.00E+06
Cancer Potency Factor (mg/kg/day)$^{-1}$		CPF[7]	1.1	1.1

2.13 years of construction, exposure starts at age 0

1. OEHHA Table 5.8, 95th percentile, moderate activity for 0<2 and 2<16.
2. Based on attending park 2 hours per day, twice per week
3. ASF based on OEHHA Table 8.3
4. Averaging Time always 70 years
5. Conservatively assumed 1.0 for all age bins
6. Conversion factor to convert cancer risk to chances per million
7. DPM CPF from Table 7.1

PARK DOSE: CONC x DBR x A x EF x CF

PARK CANCER RISK: Dose x CPF x ASF x ED/AT x FAH x CCF

Exposure Frequency:

Annual Park Days (days/yr):	104
Daily Duration at Park (hours/day):	2
Days/year:	365
Hours/day:	24

Age Bins

Construction

Total Calendar Years	Year in each bin			
	3rd tri	0>2	2>16	16>30
2.13		2.13		

Control Pathway

Dispersion Options

Titles

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

Dispersion Options

- [x] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

- [x] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM2.5

Averaging Time Options

Hours

- [x] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 6
- [ ] 8
- [ ] 12
- [ ] 24

- [ ] Month
- [x] Period
- [ ] Annual

Exponential Decay

Default half-life of 4 hours will be used

Terrain Height Options

- [ ] Flat
- [x] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [x] Yes
- [ ] No

Default Height = 1.50 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: Brentwood_WWTP.err

Source Pathway - Source Inputs

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	IDLE_1	615452.14	4202253.60	17.01	3.40	0.00010	100.00	100.00	0.00	1.86
		Truck Idling								
AREA	IDLE_2	615682.80	4201986.92	15.01	3.40	0.00004	74.05	310.09	0.00	1.86
		Truck Idling								

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: IDLE_3 (Truck Idling)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
12.50	3.40	0.00018	1.86	8	615620.66	4202527.32
		0.00018			615615.99	4202517.01
		0.00018			615751.44	4202426.88
		0.00018			615759.50	4201964.08
		0.00018			615735.08	4201920.77
		0.00018			615739.84	4201915.44
		0.00018			615766.78	4201962.80
		0.00018			615759.53	4202431.89

Source Type: AREA POLY

Source: IDLE_TE (Truck idling exhaust at trenching PGE pipeline work)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
16.00	3.40	0.00101	1.86	10	615753.79	4201597.05
		0.00101			615756.79	4201600.05
		0.00101			615755.13	4201626.71
		0.00101			615750.46	4201635.04
		0.00101			615738.47	4201640.70
		0.00101			615731.47	4201638.37
		0.00101			615727.47	4201633.70
		0.00101			615727.80	4201614.04
		0.00101			615731.47	4201607.05
		0.00101			615748.13	4201596.38

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: HAUL_E (Haul truck exhaust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614724.24	4201561.04	15.91	3.40
			615211.94	4201568.84	16.00	3.40
			615201.57	4201940.37	16.00	3.40
			615221.44	4201963.70	16.00	3.40
			615242.18	4201973.20	16.00	3.40
			615448.68	4201977.52	18.54	3.40
			615682.48	4201977.69	15.17	3.40
			615691.31	4201981.22	15.00	3.40
			615690.43	4202032.43	15.00	3.40
			615672.77	4202051.85	15.00	3.40
			615681.60	4202072.16	15.00	3.40
			615672.33	4202358.44	15.00	3.40

Source Type: LINE VOLUME

Source: HAUL_F (Haul truck fugitive)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614724.24	4201561.04	15.91	0.00
			615211.94	4201568.84	16.00	0.00
			615201.57	4201940.37	16.00	0.00
			615221.44	4201963.70	16.00	0.00
			615242.18	4201973.20	16.00	0.00
			615448.68	4201977.52	18.54	0.00
			615682.48	4201977.69	15.17	0.00
			615691.31	4201981.22	15.00	0.00
			615690.43	4202032.43	15.00	0.00
			615672.77	4202051.85	15.00	0.00
			615681.60	4202072.16	15.00	0.00
			615672.33	4202358.44	15.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: HAUL_TE (Trenching truck haul exhaust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614726.55	4201558.82	15.79	3.40
			615753.82	4201583.49	16.00	3.40

Source Type: LINE VOLUME

Source: HAUL_TF (Trenching truck haul fugitive)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614726.55	4201558.82	15.79	0.00
			615753.82	4201583.49	16.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_1E (Onsite offroad equip exhaust for solid waste receiving)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615543.13	4202349.92	15.00	1.30
			615454.00	4202351.06	15.00	1.30
			615455.05	4202345.17	15.00	1.30
			615542.17	4202341.38	15.00	1.30
			615540.28	4202335.28	15.00	1.30
			615455.42	4202333.90	15.58	1.30
			615455.48	4202324.22	15.62	1.30
			615542.29	4202321.43	15.00	1.30
			615543.03	4202313.67	15.00	1.30
			615455.88	4202316.65	15.50	1.30
			615456.14	4202305.42	15.61	1.30
			615542.65	4202302.12	15.00	1.30
			615542.72	4202288.98	15.00	1.30
			615457.34	4202292.33	15.60	1.30
			615458.21	4202276.69	16.38	1.30
			615545.14	4202275.59	15.00	1.30
			615543.91	4202264.76	15.00	1.30
			615457.62	4202261.24	16.42	1.30

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_1F (Onsite offroad equip fugitive for solid waste receiving)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615543.13	4202349.92	15.00	0.00
			615454.00	4202351.06	15.00	0.00
			615455.05	4202345.17	15.00	0.00
			615542.17	4202341.38	15.00	0.00
			615540.28	4202335.28	15.00	0.00
			615455.42	4202333.90	15.58	0.00
			615455.48	4202324.22	15.62	0.00
			615542.29	4202321.43	15.00	0.00
			615543.03	4202313.67	15.00	0.00
			615455.88	4202316.65	15.50	0.00
			615456.14	4202305.42	15.61	0.00
			615542.65	4202302.12	15.00	0.00
			615542.72	4202288.98	15.00	0.00
			615457.34	4202292.33	15.60	0.00
			615458.21	4202276.69	16.38	0.00
			615545.14	4202275.59	15.00	0.00
			615543.91	4202264.76	15.00	0.00
			615457.62	4202261.24	16.42	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_2E (Onsite offroad equip exhaust for biosolid treatment facilities)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615694.69	4202285.45	14.80	1.30
			615746.48	4202287.47	14.05	1.30
			615746.48	4202272.00	14.00	1.30
			615696.04	4202272.00	14.00	1.30
			615695.37	4202251.15	14.00	1.30
			615746.48	4202252.50	14.00	1.30
			615748.49	4202235.15	14.00	1.30
			615696.71	4202235.92	14.00	1.30
			615696.71	4202218.61	14.49	1.30
			615749.73	4202220.30	14.00	1.30
			615750.28	4202207.11	14.00	1.30
			615695.89	4202205.32	14.60	1.30
			615694.54	4202188.43	14.63	1.30
			615751.10	4202188.02	14.00	1.30
			615750.32	4202173.76	14.00	1.30
			615693.32	4202171.17	14.78	1.30
			615695.82	4202155.27	14.94	1.30
			615750.50	4202157.77	14.00	1.30
			615750.29	4202138.60	14.00	1.30
			615695.96	4202141.74	14.96	1.30
			615698.59	4202119.56	15.00	1.30
			615748.76	4202122.51	14.91	1.30
			615747.89	4202097.38	15.00	1.30
			615695.61	4202102.56	15.00	1.30
			615698.21	4202085.43	15.00	1.30
			615749.53	4202082.92	15.00	1.30
			615750.04	4202063.58	15.00	1.30
			615697.34	4202063.87	15.00	1.30
			615697.46	4202056.08	15.00	1.30
			615698.28	4202039.11	15.00	1.30
			615750.21	4202045.20	15.00	1.30

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_2E (Onsite offroad equip exhaust for biosolid treatment facilities)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615748.04	4202024.31	15.00	1.30
			615700.30	4202025.20	15.00	1.30
			615700.01	4202008.24	15.00	1.30
			615751.06	4202007.97	15.00	1.30
			615751.89	4201995.92	15.00	1.30
			615700.83	4201997.02	15.00	1.30

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_2F (Onsite offroad equip fugitive for biosolid treatment facilities)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615694.69	4202285.45	14.80	0.00
			615746.48	4202287.47	14.05	0.00
			615746.48	4202272.00	14.00	0.00
			615696.04	4202272.00	14.00	0.00
			615695.37	4202251.15	14.00	0.00
			615746.48	4202252.50	14.00	0.00
			615748.49	4202235.15	14.00	0.00
			615696.71	4202235.92	14.00	0.00
			615696.71	4202218.61	14.49	0.00
			615749.73	4202220.30	14.00	0.00
			615750.28	4202207.11	14.00	0.00
			615695.89	4202205.32	14.60	0.00
			615694.54	4202188.43	14.63	0.00
			615751.10	4202188.02	14.00	0.00
			615750.32	4202173.76	14.00	0.00
			615693.32	4202171.17	14.78	0.00
			615695.82	4202155.27	14.94	0.00
			615750.50	4202157.77	14.00	0.00
			615750.29	4202138.60	14.00	0.00
			615695.96	4202141.74	14.96	0.00
			615698.59	4202119.56	15.00	0.00
			615748.76	4202122.51	14.91	0.00
			615747.89	4202097.38	15.00	0.00
			615695.61	4202102.56	15.00	0.00
			615698.21	4202085.43	15.00	0.00
			615749.53	4202082.92	15.00	0.00
			615750.04	4202063.58	15.00	0.00
			615697.34	4202063.87	15.00	0.00
			615697.46	4202056.08	15.00	0.00
			615698.28	4202039.11	15.00	0.00
			615750.21	4202045.20	15.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: ON_2F (Onsite offroad equip fugitive for biosolid treatment facilities)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615748.04	4202024.31	15.00	0.00
			615700.30	4202025.20	15.00	0.00
			615700.01	4202008.24	15.00	0.00
			615751.06	4202007.97	15.00	0.00
			615751.89	4201995.92	15.00	0.00
			615700.83	4201997.02	15.00	0.00

Source Type: LINE VOLUME

Source: ON_3E (Onsite exhaust at trail realignment)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615621.73	4202522.76	12.64	1.30
			615753.84	4202429.65	15.51	1.30
			615763.61	4201966.68	15.00	1.30
			615738.44	4201920.34	15.00	1.30

Source Type: LINE VOLUME

Source: ON_3F (Onsite fugitive at trail realignment)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615621.73	4202522.76	12.64	0.00
			615753.84	4202429.65	15.51	0.00
			615763.61	4201966.68	15.00	0.00
			615738.44	4201920.34	15.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME
Source: TRENCH_E (Onsite exahust at trenching for pipeline)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615481.98	4201588.78	16.00	1.30
			615759.15	4201593.54	16.00	1.30
			615758.36	4201698.86	15.13	1.30
			615765.16	4201728.95	15.04	1.30
			615761.76	4201746.94	15.06	1.30
			615753.49	4201782.93	15.03	1.30
			615742.79	4201826.70	15.00	1.30
			615733.55	4201862.69	15.00	1.30
			615738.41	4201902.57	15.00	1.30
			615705.33	4201987.41	15.00	1.30
			615690.61	4201989.19	15.00	1.30
			615682.98	4202291.32	14.98	1.30

Source Type: LINE VOLUME
Source: TRENCH_F (Onsite fugitive for trenching pipeline)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	615481.98	4201588.78	16.00	0.00
			615759.15	4201593.54	16.00	0.00
			615758.36	4201698.86	15.13	0.00
			615765.16	4201728.95	15.04	0.00
			615761.76	4201746.94	15.06	0.00
			615753.49	4201782.93	15.03	0.00
			615742.79	4201826.70	15.00	0.00
			615733.55	4201862.69	15.00	0.00
			615738.41	4201902.57	15.00	0.00
			615705.33	4201987.41	15.00	0.00
			615690.61	4201989.19	15.00	0.00
			615682.98	4202291.32	14.98	0.00

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004129	614728.24	4201561.10	15.85	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004130	614736.24	4201561.23	15.58	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004131	614744.24	4201561.36	15.32	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004132	614752.24	4201561.49	15.05	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004133	614760.24	4201561.61	15.10	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004134	614768.23	4201561.74	15.22	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004135	614776.23	4201561.87	15.35	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004136	614784.23	4201562.00	15.47	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004137	614792.23	4201562.13	15.61	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004138	614800.23	4201562.25	15.75	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004139	614808.23	4201562.38	15.90	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004140	614816.23	4201562.51	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004141	614824.23	4201562.64	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004142	614832.23	4201562.77	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004143	614840.23	4201562.89	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004144	614848.22	4201563.02	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004145	614856.22	4201563.15	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004146	614864.22	4201563.28	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004147	614872.22	4201563.41	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004148	614880.22	4201563.53	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004149	614888.22	4201563.66	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004150	614896.22	4201563.79	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004151	614904.22	4201563.92	16.02	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004152	614912.22	4201564.05	16.28	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004153	614920.22	4201564.17	16.55	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004154	614928.21	4201564.30	16.82	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004155	614936.21	4201564.43	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004156	614944.21	4201564.56	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004157	614952.21	4201564.69	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004158	614960.21	4201564.81	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004159	614968.21	4201564.94	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004160	614976.21	4201565.07	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004161	614984.21	4201565.20	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004162	614992.21	4201565.33	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004163	615000.20	4201565.45	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004164	615008.20	4201565.58	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004165	615016.20	4201565.71	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004166	615024.20	4201565.84	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004167	615032.20	4201565.97	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004168	615040.20	4201566.09	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004169	615048.20	4201566.22	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004170	615056.20	4201566.35	16.94	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004171	615064.20	4201566.48	16.76	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004172	615072.20	4201566.61	16.57	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004173	615080.19	4201566.73	16.38	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004174	615088.19	4201566.86	16.25	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004175	615096.19	4201566.99	16.17	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004176	615104.19	4201567.12	16.09	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004177	615112.19	4201567.25	16.01	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004178	615120.19	4201567.37	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004179	615128.19	4201567.50	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004180	615136.19	4201567.63	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004181	615144.19	4201567.76	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004182	615152.19	4201567.89	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004183	615160.18	4201568.01	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004184	615168.18	4201568.14	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004185	615176.18	4201568.27	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004186	615184.18	4201568.40	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004187	615192.18	4201568.53	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004188	615200.18	4201568.65	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004189	615208.18	4201568.78	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004190	615211.82	4201573.08	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004191	615211.60	4201581.08	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004192	615211.38	4201589.07	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004193	615211.15	4201597.07	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004194	615210.93	4201605.07	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004195	615210.71	4201613.06	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004196	615210.48	4201621.06	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004197	615210.26	4201629.06	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004198	615210.04	4201637.05	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004199	615209.81	4201645.05	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004200	615209.59	4201653.05	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004201	615209.37	4201661.04	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004202	615209.14	4201669.04	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004203	615208.92	4201677.04	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004204	615208.70	4201685.04	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004205	615208.47	4201693.03	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004206	615208.25	4201701.03	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004207	615208.03	4201709.03	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004208	615207.80	4201717.02	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004209	615207.58	4201725.02	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004210	615207.36	4201733.02	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004211	615207.14	4201741.01	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004212	615206.91	4201749.01	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004213	615206.69	4201757.01	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004214	615206.47	4201765.00	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004215	615206.24	4201773.00	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004216	615206.02	4201781.00	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004217	615205.80	4201788.99	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004218	615205.57	4201796.99	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004219	615205.35	4201804.99	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004220	615205.13	4201812.99	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004221	615204.90	4201820.98	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004222	615204.68	4201828.98	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004223	615204.46	4201836.98	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004224	615204.23	4201844.97	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004225	615204.01	4201852.97	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004226	615203.79	4201860.97	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004227	615203.56	4201868.96	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004228	615203.34	4201876.96	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004229	615203.12	4201884.96	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004230	615202.89	4201892.95	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004231	615202.67	4201900.95	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004232	615202.45	4201908.95	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004233	615202.23	4201916.94	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004234	615202.00	4201924.94	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004235	615201.78	4201932.94	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004236	615201.94	4201940.80	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004237	615207.13	4201946.89	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004238	615212.31	4201952.98	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004239	615217.50	4201959.07	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004240	615223.19	4201964.50	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004241	615230.46	4201967.83	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004242	615237.73	4201971.17	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004243	615245.29	4201973.27	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004244	615253.29	4201973.44	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004245	615261.28	4201973.60	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004246	615269.28	4201973.77	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004247	615277.28	4201973.94	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004248	615285.28	4201974.11	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004249	615293.28	4201974.27	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004250	615301.28	4201974.44	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004251	615309.27	4201974.61	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004252	615317.27	4201974.77	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004253	615325.27	4201974.94	16.03	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004254	615333.27	4201975.11	16.22	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004255	615341.27	4201975.28	16.40	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004256	615349.27	4201975.44	16.57	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004257	615357.26	4201975.61	16.71	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004258	615365.26	4201975.78	16.79	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004259	615373.26	4201975.95	16.88	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004260	615381.26	4201976.11	16.97	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004261	615389.26	4201976.28	17.18	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004262	615397.25	4201976.45	17.45	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004263	615405.25	4201976.62	17.72	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004264	615413.25	4201976.78	17.98	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004265	615421.25	4201976.95	18.16	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004266	615429.25	4201977.12	18.32	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004267	615437.25	4201977.28	18.48	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004268	615445.24	4201977.45	18.53	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004269	615453.24	4201977.53	18.10	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004270	615461.24	4201977.53	17.67	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004271	615469.24	4201977.54	17.24	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004272	615477.24	4201977.54	16.88	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004273	615485.24	4201977.55	16.62	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004274	615493.24	4201977.56	16.35	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004275	615501.24	4201977.56	16.08	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004276	615509.24	4201977.57	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004277	615517.24	4201977.57	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004278	615525.24	4201977.58	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004279	615533.24	4201977.58	16.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004280	615541.24	4201977.59	16.25	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004281	615549.24	4201977.60	16.52	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004282	615557.24	4201977.60	16.78	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004283	615565.24	4201977.61	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004284	615573.24	4201977.61	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004285	615581.24	4201977.62	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004286	615589.24	4201977.62	17.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004287	615597.24	4201977.63	16.95	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004288	615605.24	4201977.64	16.85	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004289	615613.24	4201977.64	16.74	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004290	615621.24	4201977.65	16.64	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004291	615629.24	4201977.65	16.42	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004292	615637.24	4201977.66	16.15	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004293	615645.24	4201977.66	15.89	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004294	615653.24	4201977.67	15.62	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004295	615661.24	4201977.68	15.45	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004296	615669.24	4201977.68	15.29	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004297	615677.24	4201977.69	15.13	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004298	615685.05	4201978.72	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004299	615691.29	4201982.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004300	615691.15	4201990.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004301	615691.01	4201998.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004302	615690.88	4202006.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004303	615690.74	4202014.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004304	615690.60	4202022.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004305	615690.46	4202030.47	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004306	615686.37	4202036.90	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004307	615680.98	4202042.82	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004308	615675.60	4202048.74	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004309	615674.28	4202055.33	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004310	615677.47	4202062.66	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004311	615680.66	4202070.00	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004312	615681.42	4202077.80	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004313	615681.16	4202085.80	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004314	615680.90	4202093.79	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004315	615680.64	4202101.79	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004316	615680.38	4202109.78	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004317	615680.12	4202117.78	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004318	615679.86	4202125.78	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004319	615679.60	4202133.77	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004320	615679.34	4202141.77	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004321	615679.09	4202149.76	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004322	615678.83	4202157.76	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004323	615678.57	4202165.76	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004324	615678.31	4202173.75	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004325	615678.05	4202181.75	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004326	615677.79	4202189.74	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004327	615677.53	4202197.74	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0004328	615677.27	4202205.73	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004329	615677.01	4202213.73	14.79	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004330	615676.75	4202221.73	14.59	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004331	615676.50	4202229.72	14.39	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004332	615676.24	4202237.72	14.25	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004333	615675.98	4202245.71	14.26	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004334	615675.72	4202253.71	14.27	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004335	615675.46	4202261.70	14.28	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004336	615675.20	4202269.70	14.38	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004337	615674.94	4202277.70	14.58	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004338	615674.68	4202285.69	14.77	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004339	615674.42	4202293.69	14.95	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004340	615674.16	4202301.68	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004341	615673.91	4202309.68	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004342	615673.65	4202317.68	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004343	615673.39	4202325.67	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004344	615673.13	4202333.67	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004345	615672.87	4202341.66	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004346	615672.61	4202349.66	15.00	3.40	0.00457	8.00	Surface-Based	3.72	3.16
	L0004347	615672.35	4202357.65	15.06	3.40	0.00457	8.00	Surface-Based	3.72	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004348	615539.13	4202349.97	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004349	615531.14	4202350.07	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004350	615523.14	4202350.17	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004351	615515.14	4202350.28	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004352	615507.14	4202350.38	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004353	615499.14	4202350.48	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004354	615491.14	4202350.58	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004355	615483.14	4202350.69	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004356	615475.14	4202350.79	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004357	615467.14	4202350.89	15.04	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004358	615459.14	4202350.99	15.08	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004359	615454.51	4202348.24	15.16	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004360	615459.93	4202344.96	15.17	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004361	615467.93	4202344.61	15.07	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004362	615475.92	4202344.27	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004363	615483.91	4202343.92	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004364	615491.90	4202343.57	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004365	615499.90	4202343.22	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004366	615507.89	4202342.87	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004367	615515.88	4202342.52	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004368	615523.87	4202342.17	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004369	615531.87	4202341.83	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004370	615539.86	4202341.48	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004371	615540.49	4202335.95	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004372	615532.99	4202335.16	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004373	615524.99	4202335.03	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004374	615516.99	4202334.90	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004375	615508.99	4202334.77	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004376	615500.99	4202334.64	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004377	615492.99	4202334.51	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004378	615484.99	4202334.38	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004379	615476.99	4202334.25	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004380	615468.99	4202334.12	15.11	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004381	615461.00	4202333.99	15.31	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004382	615455.43	4202331.48	15.49	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004383	615456.22	4202324.19	15.58	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004384	615464.22	4202323.94	15.32	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004385	615472.21	4202323.68	15.05	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004386	615480.21	4202323.42	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004387	615488.21	4202323.17	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004388	615496.20	4202322.91	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004389	615504.20	4202322.65	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004390	615512.19	4202322.40	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004391	615520.19	4202322.14	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004392	615528.19	4202321.88	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004393	615536.18	4202321.63	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004394	615542.47	4202319.55	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004395	615540.94	4202313.74	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004396	615532.95	4202314.01	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004397	615524.95	4202314.29	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004398	615516.96	4202314.56	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004399	615508.96	4202314.83	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004400	615500.97	4202315.11	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004401	615492.97	4202315.38	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004402	615484.98	4202315.66	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004403	615476.98	4202315.93	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004404	615468.98	4202316.20	15.16	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004405	615460.99	4202316.48	15.43	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004406	615455.95	4202313.77	15.59	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004407	615456.14	4202305.77	15.59	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004408	615463.79	4202305.13	15.33	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004409	615471.78	4202304.82	15.07	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004410	615479.77	4202304.52	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004411	615487.77	4202304.21	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004412	615495.76	4202303.91	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004413	615503.76	4202303.60	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004414	615511.75	4202303.30	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004415	615519.75	4202303.00	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004416	615527.74	4202302.69	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004417	615535.73	4202302.39	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004418	615542.66	4202301.04	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004419	615542.70	4202293.04	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004420	615538.79	4202289.14	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004421	615530.79	4202289.45	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004422	615522.80	4202289.76	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004423	615514.81	4202290.08	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004424	615506.81	4202290.39	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004425	615498.82	4202290.70	15.03	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004426	615490.82	4202291.02	15.07	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004427	615482.83	4202291.33	15.10	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004428	615474.84	4202291.64	15.13	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004429	615466.84	4202291.96	15.36	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004430	615458.85	4202292.27	15.61	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004431	615457.70	4202285.85	15.86	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004432	615458.14	4202277.86	16.12	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004433	615465.04	4202276.60	15.93	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004434	615473.04	4202276.50	15.66	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004435	615481.04	4202276.40	15.49	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004436	615489.03	4202276.30	15.32	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004437	615497.03	4202276.20	15.15	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004438	615505.03	4202276.10	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004439	615513.03	4202276.00	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004440	615521.03	4202275.90	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004441	615529.03	4202275.80	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004442	615537.03	4202275.70	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004443	615545.03	4202275.60	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004444	615544.25	4202267.76	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004445	615538.93	4202264.55	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004446	615530.94	4202264.23	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004447	615522.94	4202263.90	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004448	615514.95	4202263.58	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004449	615506.96	4202263.25	15.00	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004450	615498.96	4202262.93	15.16	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1E	L0004451	615490.97	4202262.60	15.43	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004452	615482.98	4202262.27	15.69	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004453	615474.98	4202261.95	15.96	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004454	615466.99	4202261.62	16.26	1.30	0.00926	8.00	Surface-Based	3.72	1.21
	L0004455	615459.00	4202261.30	16.56	1.30	0.00926	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004456	615698.69	4202285.61	14.66	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004457	615706.68	4202285.92	14.67	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004458	615714.68	4202286.23	14.66	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004459	615722.67	4202286.54	14.49	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004460	615730.67	4202286.85	14.31	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004461	615738.66	4202287.16	14.12	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004462	615746.48	4202287.29	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004463	615746.48	4202279.29	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004464	615745.77	4202272.00	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004465	615737.77	4202272.00	14.04	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004466	615729.77	4202272.00	14.10	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004467	615721.77	4202272.00	14.15	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004468	615713.77	4202272.00	14.21	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004469	615705.77	4202272.00	14.21	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004470	615697.77	4202272.00	14.21	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004471	615695.84	4202265.73	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004472	615695.58	4202257.73	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004473	615696.78	4202251.19	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004474	615704.78	4202251.40	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004475	615712.77	4202251.61	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004476	615720.77	4202251.82	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004477	615728.77	4202252.03	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004478	615736.77	4202252.24	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004479	615744.76	4202252.45	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004480	615747.20	4202246.25	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004481	615748.13	4202238.31	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004482	615743.67	4202235.22	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004483	615735.68	4202235.34	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004484	615727.68	4202235.46	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004485	615719.68	4202235.58	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004486	615711.68	4202235.70	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004487	615703.68	4202235.82	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004488	615696.71	4202234.89	14.02	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004489	615696.71	4202226.89	14.17	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004490	615696.71	4202218.89	14.32	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004491	615704.42	4202218.85	14.17	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004492	615712.42	4202219.11	14.02	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004493	615720.41	4202219.36	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004494	615728.41	4202219.62	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004495	615736.41	4202219.87	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004496	615744.40	4202220.13	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004497	615749.84	4202217.63	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004498	615750.17	4202209.64	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004499	615744.81	4202206.93	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004500	615736.82	4202206.67	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004501	615728.82	4202206.40	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004502	615720.83	4202206.14	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004503	615712.83	4202205.88	14.03	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004504	615704.83	4202205.62	14.30	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004505	615696.84	4202205.36	14.56	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004506	615695.33	4202198.30	14.61	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004507	615694.70	4202190.32	14.64	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004508	615700.64	4202188.38	14.44	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004509	615708.64	4202188.33	14.17	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004510	615716.64	4202188.27	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004511	615724.64	4202188.21	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004512	615732.64	4202188.16	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004513	615740.64	4202188.10	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004514	615748.64	4202188.04	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004515	615750.80	4202182.50	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004516	615750.37	4202174.51	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004517	615743.08	4202173.43	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004518	615735.09	4202173.07	14.03	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004519	615727.10	4202172.70	14.06	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004520	615719.11	4202172.34	14.09	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004521	615711.11	4202171.98	14.20	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004522	615703.12	4202171.62	14.44	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004523	615695.13	4202171.25	14.68	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004524	615694.29	4202165.06	14.77	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004525	615695.53	4202157.15	14.85	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004526	615701.91	4202155.55	14.80	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004527	615709.90	4202155.91	14.70	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004528	615717.89	4202156.28	14.56	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004529	615725.89	4202156.64	14.38	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004530	615733.88	4202157.01	14.21	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004531	615741.87	4202157.37	14.04	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004532	615749.86	4202157.74	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004533	615750.42	4202150.41	14.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004534	615750.33	4202142.42	14.09	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004535	615746.11	4202138.84	14.21	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004536	615738.12	4202139.30	14.36	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004537	615730.14	4202139.76	14.56	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004538	615722.15	4202140.22	14.77	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004539	615714.16	4202140.68	14.99	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004540	615706.18	4202141.15	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004541	615698.19	4202141.61	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004542	615696.64	4202136.01	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004543	615697.58	4202128.07	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004544	615698.53	4202120.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004545	615706.02	4202120.00	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004546	615714.01	4202120.47	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004547	615721.99	4202120.94	14.95	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004548	615729.98	4202121.41	14.90	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004549	615737.97	4202121.87	14.83	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004550	615745.95	4202122.34	14.72	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004551	615748.58	4202117.32	14.79	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004552	615748.30	4202109.33	14.88	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004553	615748.02	4202101.33	14.93	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004554	615743.86	4202097.78	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004555	615735.90	4202098.57	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004556	615727.94	4202099.36	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004557	615719.98	4202100.15	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004558	615712.01	4202100.94	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004559	615704.05	4202101.72	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004560	615696.09	4202102.51	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004561	615696.74	4202095.13	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004562	615697.94	4202087.22	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004563	615704.39	4202085.13	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004564	615712.38	4202084.74	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004565	615720.37	4202084.35	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004566	615728.36	4202083.95	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004567	615736.35	4202083.56	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004568	615744.34	4202083.17	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004569	615749.61	4202080.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004570	615749.81	4202072.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004571	615750.02	4202064.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004572	615742.58	4202063.62	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004573	615734.58	4202063.66	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004574	615726.58	4202063.71	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004575	615718.58	4202063.75	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004576	615710.58	4202063.80	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004577	615702.58	4202063.84	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004578	615697.38	4202061.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004579	615697.61	4202053.12	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004580	615697.99	4202045.13	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004581	615700.24	4202039.34	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004582	615708.18	4202040.27	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004583	615716.13	4202041.20	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004584	615724.07	4202042.13	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004585	615732.02	4202043.06	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004586	615739.96	4202044.00	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004587	615747.91	4202044.93	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004588	615749.62	4202039.54	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004589	615748.80	4202031.59	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004590	615747.36	4202024.32	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004591	615739.36	4202024.47	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004592	615731.36	4202024.62	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004593	615723.36	4202024.77	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004594	615715.37	4202024.92	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004595	615707.37	4202025.07	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004596	615700.29	4202024.27	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004597	615700.15	4202016.27	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004598	615700.01	4202008.27	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2E	L0004599	615707.98	4202008.20	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004600	615715.98	4202008.16	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004601	615723.98	4202008.11	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004602	615731.98	4202008.07	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004603	615739.98	4202008.03	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004604	615747.98	4202007.99	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004605	615751.40	4202003.07	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004606	615751.07	4201995.93	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004607	615743.07	4201996.11	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004608	615735.07	4201996.28	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004609	615727.07	4201996.45	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004610	615719.08	4201996.63	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004611	615711.08	4201996.80	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21
	L0004612	615703.08	4201996.97	15.00	1.30	0.00637	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3E	L0004613	615625.00	4202520.46	13.04	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004614	615631.54	4202515.85	13.41	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004615	615638.08	4202511.24	13.72	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004616	615644.62	4202506.63	13.96	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004617	615651.16	4202502.02	14.13	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004618	615657.70	4202497.41	14.24	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004619	615664.24	4202492.80	14.28	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004620	615670.78	4202488.20	14.25	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004621	615677.32	4202483.59	14.16	1.30	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3E	L0004622	615683.85	4202478.98	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004623	615690.39	4202474.37	14.08	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004624	615696.93	4202469.76	14.31	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004625	615703.47	4202465.15	14.47	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004626	615710.01	4202460.54	14.57	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004627	615716.55	4202455.93	14.66	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004628	615723.09	4202451.33	14.81	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004629	615729.63	4202446.72	14.97	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004630	615736.17	4202442.11	15.12	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004631	615742.71	4202437.50	15.27	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004632	615749.25	4202432.89	15.24	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004633	615753.89	4202427.27	15.28	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004634	615754.06	4202419.28	15.54	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004635	615754.23	4202411.28	15.55	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004636	615754.40	4202403.28	15.38	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004637	615754.56	4202395.28	15.20	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004638	615754.73	4202387.28	15.03	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004639	615754.90	4202379.28	14.92	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004640	615755.07	4202371.29	14.82	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004641	615755.24	4202363.29	14.71	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004642	615755.41	4202355.29	14.61	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004643	615755.58	4202347.29	14.61	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004644	615755.75	4202339.29	14.60	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004645	615755.92	4202331.30	14.59	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004646	615756.08	4202323.30	14.54	1.30	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3E	L0004647	615756.25	4202315.30	14.38	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004648	615756.42	4202307.30	14.22	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004649	615756.59	4202299.30	14.07	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004650	615756.76	4202291.30	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004651	615756.93	4202283.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004652	615757.10	4202275.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004653	615757.27	4202267.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004654	615757.43	4202259.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004655	615757.60	4202251.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004656	615757.77	4202243.31	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004657	615757.94	4202235.32	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004658	615758.11	4202227.32	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004659	615758.28	4202219.32	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004660	615758.45	4202211.32	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004661	615758.62	4202203.32	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004662	615758.79	4202195.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004663	615758.95	4202187.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004664	615759.12	4202179.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004665	615759.29	4202171.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004666	615759.46	4202163.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004667	615759.63	4202155.33	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004668	615759.80	4202147.34	14.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004669	615759.97	4202139.34	14.10	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004670	615760.14	4202131.34	14.22	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004671	615760.30	4202123.34	14.33	1.30	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3E	L0004672	615760.47	4202115.34	14.45	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004673	615760.64	4202107.34	14.59	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004674	615760.81	4202099.35	14.74	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004675	615760.98	4202091.35	14.89	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004676	615761.15	4202083.35	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004677	615761.32	4202075.35	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004678	615761.49	4202067.35	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004679	615761.66	4202059.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004680	615761.82	4202051.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004681	615761.99	4202043.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004682	615762.16	4202035.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004683	615762.33	4202027.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004684	615762.50	4202019.36	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004685	615762.67	4202011.37	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004686	615762.84	4202003.37	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004687	615763.01	4201995.37	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004688	615763.18	4201987.37	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004689	615763.34	4201979.37	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004690	615763.51	4201971.38	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004691	615762.03	4201963.78	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004692	615758.22	4201956.75	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004693	615754.40	4201949.72	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004694	615750.58	4201942.69	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004695	615746.76	4201935.66	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21
	L0004696	615742.94	4201928.63	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3E	L0004697	615739.12	4201921.60	15.00	1.30	0.01176	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004698	615485.98	4201588.85	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004699	615493.98	4201588.99	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004700	615501.98	4201589.13	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004701	615509.98	4201589.26	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004702	615517.98	4201589.40	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004703	615525.97	4201589.54	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004704	615533.97	4201589.67	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004705	615541.97	4201589.81	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004706	615549.97	4201589.95	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004707	615557.97	4201590.09	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004708	615565.97	4201590.22	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004709	615573.97	4201590.36	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004710	615581.97	4201590.50	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004711	615589.97	4201590.63	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004712	615597.96	4201590.77	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004713	615605.96	4201590.91	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004714	615613.96	4201591.05	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004715	615621.96	4201591.18	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004716	615629.96	4201591.32	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004717	615637.96	4201591.46	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004718	615645.96	4201591.59	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004719	615653.96	4201591.73	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004720	615661.96	4201591.87	15.85	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004721	615669.95	4201592.01	15.71	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004722	615677.95	4201592.14	15.56	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004723	615685.95	4201592.28	15.45	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004724	615693.95	4201592.42	15.44	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004725	615701.95	4201592.55	15.44	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004726	615709.95	4201592.69	15.43	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004727	615717.95	4201592.83	15.51	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004728	615725.95	4201592.97	15.66	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004729	615733.94	4201593.10	15.81	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004730	615741.94	4201593.24	15.96	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004731	615749.94	4201593.38	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004732	615757.94	4201593.51	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004733	615759.10	4201600.33	16.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004734	615759.04	4201608.33	15.96	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004735	615758.98	4201616.33	15.83	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004736	615758.92	4201624.33	15.69	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004737	615758.86	4201632.33	15.56	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004738	615758.80	4201640.33	15.50	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004739	615758.74	4201648.32	15.50	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004740	615758.68	4201656.32	15.50	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004741	615758.62	4201664.32	15.50	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004742	615758.56	4201672.32	15.38	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004743	615758.50	4201680.32	15.25	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004744	615758.44	4201688.32	15.12	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004745	615758.38	4201696.32	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004746	615759.56	4201704.19	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004747	615761.33	4201711.99	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004748	615763.09	4201719.79	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004749	615764.86	4201727.60	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004750	615763.93	4201735.45	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004751	615762.44	4201743.31	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004752	615760.79	4201751.14	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004753	615759.00	4201758.93	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004754	615757.21	4201766.73	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004755	615755.42	4201774.53	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004756	615753.63	4201782.32	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004757	615751.74	4201790.10	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004758	615749.84	4201797.87	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004759	615747.94	4201805.64	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004760	615746.04	4201813.41	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004761	615744.14	4201821.18	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004762	615742.21	4201828.95	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004763	615740.22	4201836.69	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004764	615738.23	4201844.44	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004765	615736.24	4201852.19	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004766	615734.25	4201859.94	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004767	615734.17	4201867.81	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004768	615735.14	4201875.75	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004769	615736.11	4201883.70	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004770	615737.08	4201891.64	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004771	615738.05	4201899.58	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004772	615736.60	4201907.22	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004773	615733.69	4201914.67	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004774	615730.79	4201922.12	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004775	615727.88	4201929.58	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004776	615724.98	4201937.03	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004777	615722.07	4201944.48	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004778	615719.17	4201951.94	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004779	615716.26	4201959.39	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004780	615713.35	4201966.84	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004781	615710.45	4201974.30	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004782	615707.54	4201981.75	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004783	615703.42	4201987.64	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004784	615695.48	4201988.60	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004785	615690.53	4201992.28	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004786	615690.33	4202000.28	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004787	615690.13	4202008.27	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004788	615689.93	4202016.27	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004789	615689.72	4202024.27	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004790	615689.52	4202032.27	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004791	615689.32	4202040.26	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004792	615689.12	4202048.26	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004793	615688.92	4202056.26	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004794	615688.71	4202064.26	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004795	615688.51	4202072.25	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004796	615688.31	4202080.25	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004797	615688.11	4202088.25	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004798	615687.91	4202096.25	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004799	615687.71	4202104.24	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004800	615687.50	4202112.24	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004801	615687.30	4202120.24	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004802	615687.10	4202128.24	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004803	615686.90	4202136.23	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004804	615686.70	4202144.23	15.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004805	615686.49	4202152.23	14.98	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004806	615686.29	4202160.23	14.96	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004807	615686.09	4202168.22	14.94	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004808	615685.89	4202176.22	14.93	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004809	615685.69	4202184.22	14.94	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004810	615685.49	4202192.22	14.94	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004811	615685.28	4202200.21	14.95	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004812	615685.08	4202208.21	14.88	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004813	615684.88	4202216.21	14.63	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004814	615684.68	4202224.21	14.37	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004815	615684.48	4202232.20	14.11	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004816	615684.27	4202240.20	14.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004817	615684.07	4202248.20	14.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004818	615683.87	4202256.20	14.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004819	615683.67	4202264.19	14.00	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_E	L0004820	615683.47	4202272.19	14.22	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004821	615683.27	4202280.19	14.49	1.30	0.00800	8.00	Surface-Based	3.72	1.21
	L0004822	615683.06	4202288.19	14.75	1.30	0.00800	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004823	614728.24	4201561.10	15.85	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004824	614736.24	4201561.23	15.58	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004825	614744.24	4201561.36	15.32	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004826	614752.24	4201561.49	15.05	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004827	614760.24	4201561.61	15.10	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004828	614768.23	4201561.74	15.22	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004829	614776.23	4201561.87	15.35	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004830	614784.23	4201562.00	15.47	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004831	614792.23	4201562.13	15.61	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004832	614800.23	4201562.25	15.75	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004833	614808.23	4201562.38	15.90	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004834	614816.23	4201562.51	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004835	614824.23	4201562.64	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004836	614832.23	4201562.77	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004837	614840.23	4201562.89	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004838	614848.22	4201563.02	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004839	614856.22	4201563.15	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004840	614864.22	4201563.28	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004841	614872.22	4201563.41	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004842	614880.22	4201563.53	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004843	614888.22	4201563.66	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004844	614896.22	4201563.79	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004845	614904.22	4201563.92	16.02	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004846	614912.22	4201564.05	16.28	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004847	614920.22	4201564.17	16.55	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004848	614928.21	4201564.30	16.82	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004849	614936.21	4201564.43	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004850	614944.21	4201564.56	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004851	614952.21	4201564.69	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004852	614960.21	4201564.81	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004853	614968.21	4201564.94	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004854	614976.21	4201565.07	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004855	614984.21	4201565.20	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004856	614992.21	4201565.33	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004857	615000.20	4201565.45	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004858	615008.20	4201565.58	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004859	615016.20	4201565.71	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004860	615024.20	4201565.84	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004861	615032.20	4201565.97	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004862	615040.20	4201566.09	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004863	615048.20	4201566.22	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004864	615056.20	4201566.35	16.94	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004865	615064.20	4201566.48	16.76	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004866	615072.20	4201566.61	16.57	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004867	615080.19	4201566.73	16.38	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004868	615088.19	4201566.86	16.25	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004869	615096.19	4201566.99	16.17	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004870	615104.19	4201567.12	16.09	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004871	615112.19	4201567.25	16.01	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004872	615120.19	4201567.37	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004873	615128.19	4201567.50	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004874	615136.19	4201567.63	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004875	615144.19	4201567.76	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004876	615152.19	4201567.89	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004877	615160.18	4201568.01	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004878	615168.18	4201568.14	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004879	615176.18	4201568.27	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004880	615184.18	4201568.40	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004881	615192.18	4201568.53	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004882	615200.18	4201568.65	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004883	615208.18	4201568.78	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004884	615211.82	4201573.08	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004885	615211.60	4201581.08	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004886	615211.38	4201589.07	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004887	615211.15	4201597.07	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004888	615210.93	4201605.07	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004889	615210.71	4201613.06	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004890	615210.48	4201621.06	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004891	615210.26	4201629.06	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004892	615210.04	4201637.05	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004893	615209.81	4201645.05	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004894	615209.59	4201653.05	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004895	615209.37	4201661.04	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004896	615209.14	4201669.04	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004897	615208.92	4201677.04	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004898	615208.70	4201685.04	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004899	615208.47	4201693.03	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004900	615208.25	4201701.03	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004901	615208.03	4201709.03	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004902	615207.80	4201717.02	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004903	615207.58	4201725.02	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004904	615207.36	4201733.02	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004905	615207.14	4201741.01	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004906	615206.91	4201749.01	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004907	615206.69	4201757.01	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004908	615206.47	4201765.00	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004909	615206.24	4201773.00	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004910	615206.02	4201781.00	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004911	615205.80	4201788.99	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004912	615205.57	4201796.99	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004913	615205.35	4201804.99	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004914	615205.13	4201812.99	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004915	615204.90	4201820.98	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004916	615204.68	4201828.98	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004917	615204.46	4201836.98	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004918	615204.23	4201844.97	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004919	615204.01	4201852.97	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004920	615203.79	4201860.97	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004921	615203.56	4201868.96	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004922	615203.34	4201876.96	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004923	615203.12	4201884.96	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004924	615202.89	4201892.95	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004925	615202.67	4201900.95	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004926	615202.45	4201908.95	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004927	615202.23	4201916.94	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004928	615202.00	4201924.94	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004929	615201.78	4201932.94	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004930	615201.94	4201940.80	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004931	615207.13	4201946.89	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004932	615212.31	4201952.98	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004933	615217.50	4201959.07	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004934	615223.19	4201964.50	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004935	615230.46	4201967.83	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004936	615237.73	4201971.17	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004937	615245.29	4201973.27	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004938	615253.29	4201973.44	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004939	615261.28	4201973.60	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004940	615269.28	4201973.77	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004941	615277.28	4201973.94	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004942	615285.28	4201974.11	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004943	615293.28	4201974.27	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004944	615301.28	4201974.44	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004945	615309.27	4201974.61	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004946	615317.27	4201974.77	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004947	615325.27	4201974.94	16.03	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004948	615333.27	4201975.11	16.22	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004949	615341.27	4201975.28	16.40	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004950	615349.27	4201975.44	16.57	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004951	615357.26	4201975.61	16.71	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004952	615365.26	4201975.78	16.79	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004953	615373.26	4201975.95	16.88	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004954	615381.26	4201976.11	16.97	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004955	615389.26	4201976.28	17.18	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004956	615397.25	4201976.45	17.45	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004957	615405.25	4201976.62	17.72	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004958	615413.25	4201976.78	17.98	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004959	615421.25	4201976.95	18.16	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004960	615429.25	4201977.12	18.32	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004961	615437.25	4201977.28	18.48	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004962	615445.24	4201977.45	18.53	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004963	615453.24	4201977.53	18.10	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004964	615461.24	4201977.53	17.67	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004965	615469.24	4201977.54	17.24	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004966	615477.24	4201977.54	16.88	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004967	615485.24	4201977.55	16.62	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004968	615493.24	4201977.56	16.35	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004969	615501.24	4201977.56	16.08	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004970	615509.24	4201977.57	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004971	615517.24	4201977.57	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004972	615525.24	4201977.58	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004973	615533.24	4201977.58	16.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004974	615541.24	4201977.59	16.25	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004975	615549.24	4201977.60	16.52	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004976	615557.24	4201977.60	16.78	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004977	615565.24	4201977.61	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004978	615573.24	4201977.61	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004979	615581.24	4201977.62	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004980	615589.24	4201977.62	17.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004981	615597.24	4201977.63	16.95	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004982	615605.24	4201977.64	16.85	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004983	615613.24	4201977.64	16.74	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004984	615621.24	4201977.65	16.64	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004985	615629.24	4201977.65	16.42	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004986	615637.24	4201977.66	16.15	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004987	615645.24	4201977.66	15.89	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004988	615653.24	4201977.67	15.62	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004989	615661.24	4201977.68	15.45	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004990	615669.24	4201977.68	15.29	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004991	615677.24	4201977.69	15.13	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004992	615685.05	4201978.72	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0004993	615691.29	4201982.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004994	615691.15	4201990.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004995	615691.01	4201998.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004996	615690.88	4202006.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004997	615690.74	4202014.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004998	615690.60	4202022.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0004999	615690.46	4202030.47	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005000	615686.37	4202036.90	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005001	615680.98	4202042.82	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005002	615675.60	4202048.74	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005003	615674.28	4202055.33	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005004	615677.47	4202062.66	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005005	615680.66	4202070.00	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005006	615681.42	4202077.80	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005007	615681.16	4202085.80	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005008	615680.90	4202093.79	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005009	615680.64	4202101.79	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005010	615680.38	4202109.78	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005011	615680.12	4202117.78	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005012	615679.86	4202125.78	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005013	615679.60	4202133.77	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005014	615679.34	4202141.77	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005015	615679.09	4202149.76	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005016	615678.83	4202157.76	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005017	615678.57	4202165.76	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_F	L0005018	615678.31	4202173.75	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005019	615678.05	4202181.75	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005020	615677.79	4202189.74	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005021	615677.53	4202197.74	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005022	615677.27	4202205.73	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005023	615677.01	4202213.73	14.79	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005024	615676.75	4202221.73	14.59	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005025	615676.50	4202229.72	14.39	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005026	615676.24	4202237.72	14.25	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005027	615675.98	4202245.71	14.26	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005028	615675.72	4202253.71	14.27	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005029	615675.46	4202261.70	14.28	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005030	615675.20	4202269.70	14.38	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005031	615674.94	4202277.70	14.58	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005032	615674.68	4202285.69	14.77	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005033	615674.42	4202293.69	14.95	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005034	615674.16	4202301.68	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005035	615673.91	4202309.68	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005036	615673.65	4202317.68	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005037	615673.39	4202325.67	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005038	615673.13	4202333.67	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005039	615672.87	4202341.66	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005040	615672.61	4202349.66	15.00	0.00	0.00457	8.00	Surface-Based	3.72	3.16
	L0005041	615672.35	4202357.65	15.06	0.00	0.00457	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1F	L0005042	615539.13	4202349.97	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005043	615531.14	4202350.07	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005044	615523.14	4202350.17	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005045	615515.14	4202350.28	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005046	615507.14	4202350.38	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005047	615499.14	4202350.48	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005048	615491.14	4202350.58	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005049	615483.14	4202350.69	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005050	615475.14	4202350.79	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005051	615467.14	4202350.89	15.04	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005052	615459.14	4202350.99	15.08	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005053	615454.51	4202348.24	15.16	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005054	615459.93	4202344.96	15.17	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005055	615467.93	4202344.61	15.07	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005056	615475.92	4202344.27	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005057	615483.91	4202343.92	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005058	615491.90	4202343.57	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005059	615499.90	4202343.22	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005060	615507.89	4202342.87	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005061	615515.88	4202342.52	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005062	615523.87	4202342.17	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005063	615531.87	4202341.83	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005064	615539.86	4202341.48	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005065	615540.49	4202335.95	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005066	615532.99	4202335.16	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1F	L0005067	615524.99	4202335.03	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005068	615516.99	4202334.90	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005069	615508.99	4202334.77	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005070	615500.99	4202334.64	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005071	615492.99	4202334.51	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005072	615484.99	4202334.38	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005073	615476.99	4202334.25	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005074	615468.99	4202334.12	15.11	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005075	615461.00	4202333.99	15.31	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005076	615455.43	4202331.48	15.49	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005077	615456.22	4202324.19	15.58	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005078	615464.22	4202323.94	15.32	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005079	615472.21	4202323.68	15.05	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005080	615480.21	4202323.42	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005081	615488.21	4202323.17	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005082	615496.20	4202322.91	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005083	615504.20	4202322.65	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005084	615512.19	4202322.40	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005085	615520.19	4202322.14	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005086	615528.19	4202321.88	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005087	615536.18	4202321.63	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005088	615542.47	4202319.55	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005089	615540.94	4202313.74	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005090	615532.95	4202314.01	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005091	615524.95	4202314.29	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1F	L0005092	615516.96	4202314.56	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005093	615508.96	4202314.83	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005094	615500.97	4202315.11	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005095	615492.97	4202315.38	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005096	615484.98	4202315.66	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005097	615476.98	4202315.93	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005098	615468.98	4202316.20	15.16	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005099	615460.99	4202316.48	15.43	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005100	615455.95	4202313.77	15.59	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005101	615456.14	4202305.77	15.59	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005102	615463.79	4202305.13	15.33	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005103	615471.78	4202304.82	15.07	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005104	615479.77	4202304.52	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005105	615487.77	4202304.21	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005106	615495.76	4202303.91	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005107	615503.76	4202303.60	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005108	615511.75	4202303.30	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005109	615519.75	4202303.00	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005110	615527.74	4202302.69	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005111	615535.73	4202302.39	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005112	615542.66	4202301.04	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005113	615542.70	4202293.04	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005114	615538.79	4202289.14	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005115	615530.79	4202289.45	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005116	615522.80	4202289.76	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1F	L0005117	615514.81	4202290.08	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005118	615506.81	4202290.39	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005119	615498.82	4202290.70	15.03	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005120	615490.82	4202291.02	15.07	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005121	615482.83	4202291.33	15.10	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005122	615474.84	4202291.64	15.13	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005123	615466.84	4202291.96	15.36	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005124	615458.85	4202292.27	15.61	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005125	615457.70	4202285.85	15.86	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005126	615458.14	4202277.86	16.12	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005127	615465.04	4202276.60	15.93	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005128	615473.04	4202276.50	15.66	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005129	615481.04	4202276.40	15.49	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005130	615489.03	4202276.30	15.32	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005131	615497.03	4202276.20	15.15	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005132	615505.03	4202276.10	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005133	615513.03	4202276.00	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005134	615521.03	4202275.90	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005135	615529.03	4202275.80	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005136	615537.03	4202275.70	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005137	615545.03	4202275.60	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005138	615544.25	4202267.76	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005139	615538.93	4202264.55	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005140	615530.94	4202264.23	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005141	615522.94	4202263.90	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_1F	L0005142	615514.95	4202263.58	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005143	615506.96	4202263.25	15.00	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005144	615498.96	4202262.93	15.16	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005145	615490.97	4202262.60	15.43	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005146	615482.98	4202262.27	15.69	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005147	615474.98	4202261.95	15.96	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005148	615466.99	4202261.62	16.26	0.00	0.00926	8.00	Surface-Based	3.72	1.21
	L0005149	615459.00	4202261.30	16.56	0.00	0.00926	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005150	615698.69	4202285.61	14.66	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005151	615706.68	4202285.92	14.67	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005152	615714.68	4202286.23	14.66	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005153	615722.67	4202286.54	14.49	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005154	615730.67	4202286.85	14.31	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005155	615738.66	4202287.16	14.12	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005156	615746.48	4202287.29	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005157	615746.48	4202279.29	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005158	615745.77	4202272.00	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005159	615737.77	4202272.00	14.04	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005160	615729.77	4202272.00	14.10	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005161	615721.77	4202272.00	14.15	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005162	615713.77	4202272.00	14.21	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005163	615705.77	4202272.00	14.21	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005164	615697.77	4202272.00	14.21	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005165	615695.84	4202265.73	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005166	615695.58	4202257.73	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005167	615696.78	4202251.19	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005168	615704.78	4202251.40	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005169	615712.77	4202251.61	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005170	615720.77	4202251.82	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005171	615728.77	4202252.03	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005172	615736.77	4202252.24	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005173	615744.76	4202252.45	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005174	615747.20	4202246.25	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005175	615748.13	4202238.31	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005176	615743.67	4202235.22	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005177	615735.68	4202235.34	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005178	615727.68	4202235.46	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005179	615719.68	4202235.58	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005180	615711.68	4202235.70	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005181	615703.68	4202235.82	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005182	615696.71	4202234.89	14.02	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005183	615696.71	4202226.89	14.17	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005184	615696.71	4202218.89	14.32	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005185	615704.42	4202218.85	14.17	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005186	615712.42	4202219.11	14.02	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005187	615720.41	4202219.36	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005188	615728.41	4202219.62	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005189	615736.41	4202219.87	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005190	615744.40	4202220.13	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005191	615749.84	4202217.63	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005192	615750.17	4202209.64	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005193	615744.81	4202206.93	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005194	615736.82	4202206.67	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005195	615728.82	4202206.40	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005196	615720.83	4202206.14	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005197	615712.83	4202205.88	14.03	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005198	615704.83	4202205.62	14.30	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005199	615696.84	4202205.36	14.56	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005200	615695.33	4202198.30	14.61	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005201	615694.70	4202190.32	14.64	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005202	615700.64	4202188.38	14.44	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005203	615708.64	4202188.33	14.17	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005204	615716.64	4202188.27	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005205	615724.64	4202188.21	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005206	615732.64	4202188.16	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005207	615740.64	4202188.10	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005208	615748.64	4202188.04	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005209	615750.80	4202182.50	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005210	615750.37	4202174.51	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005211	615743.08	4202173.43	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005212	615735.09	4202173.07	14.03	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005213	615727.10	4202172.70	14.06	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005214	615719.11	4202172.34	14.09	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005215	615711.11	4202171.98	14.20	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005216	615703.12	4202171.62	14.44	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005217	615695.13	4202171.25	14.68	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005218	615694.29	4202165.06	14.77	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005219	615695.53	4202157.15	14.85	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005220	615701.91	4202155.55	14.80	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005221	615709.90	4202155.91	14.70	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005222	615717.89	4202156.28	14.56	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005223	615725.89	4202156.64	14.38	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005224	615733.88	4202157.01	14.21	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005225	615741.87	4202157.37	14.04	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005226	615749.86	4202157.74	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005227	615750.42	4202150.41	14.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005228	615750.33	4202142.42	14.09	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005229	615746.11	4202138.84	14.21	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005230	615738.12	4202139.30	14.36	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005231	615730.14	4202139.76	14.56	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005232	615722.15	4202140.22	14.77	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005233	615714.16	4202140.68	14.99	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005234	615706.18	4202141.15	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005235	615698.19	4202141.61	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005236	615696.64	4202136.01	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005237	615697.58	4202128.07	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005238	615698.53	4202120.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005239	615706.02	4202120.00	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005240	615714.01	4202120.47	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005241	615721.99	4202120.94	14.95	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005242	615729.98	4202121.41	14.90	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005243	615737.97	4202121.87	14.83	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005244	615745.95	4202122.34	14.72	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005245	615748.58	4202117.32	14.79	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005246	615748.30	4202109.33	14.88	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005247	615748.02	4202101.33	14.93	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005248	615743.86	4202097.78	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005249	615735.90	4202098.57	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005250	615727.94	4202099.36	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005251	615719.98	4202100.15	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005252	615712.01	4202100.94	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005253	615704.05	4202101.72	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005254	615696.09	4202102.51	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005255	615696.74	4202095.13	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005256	615697.94	4202087.22	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005257	615704.39	4202085.13	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005258	615712.38	4202084.74	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005259	615720.37	4202084.35	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005260	615728.36	4202083.95	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005261	615736.35	4202083.56	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005262	615744.34	4202083.17	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005263	615749.61	4202080.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005264	615749.81	4202072.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005265	615750.02	4202064.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005266	615742.58	4202063.62	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005267	615734.58	4202063.66	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005268	615726.58	4202063.71	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005269	615718.58	4202063.75	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005270	615710.58	4202063.80	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005271	615702.58	4202063.84	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005272	615697.38	4202061.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005273	615697.61	4202053.12	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005274	615697.99	4202045.13	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005275	615700.24	4202039.34	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005276	615708.18	4202040.27	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005277	615716.13	4202041.20	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005278	615724.07	4202042.13	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005279	615732.02	4202043.06	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005280	615739.96	4202044.00	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005281	615747.91	4202044.93	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005282	615749.62	4202039.54	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005283	615748.80	4202031.59	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005284	615747.36	4202024.32	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005285	615739.36	4202024.47	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005286	615731.36	4202024.62	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005287	615723.36	4202024.77	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005288	615715.37	4202024.92	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005289	615707.37	4202025.07	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_2F	L0005290	615700.29	4202024.27	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005291	615700.15	4202016.27	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005292	615700.01	4202008.27	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005293	615707.98	4202008.20	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005294	615715.98	4202008.16	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005295	615723.98	4202008.11	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005296	615731.98	4202008.07	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005297	615739.98	4202008.03	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005298	615747.98	4202007.99	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005299	615751.40	4202003.07	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005300	615751.07	4201995.93	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005301	615743.07	4201996.11	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005302	615735.07	4201996.28	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005303	615727.07	4201996.45	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005304	615719.08	4201996.63	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005305	615711.08	4201996.80	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21
	L0005306	615703.08	4201996.97	15.00	0.00	0.00637	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3F	L0005307	615625.00	4202520.46	13.04	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005308	615631.54	4202515.85	13.41	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005309	615638.08	4202511.24	13.72	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005310	615644.62	4202506.63	13.96	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005311	615651.16	4202502.02	14.13	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005312	615657.70	4202497.41	14.24	0.00	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3F	L0005313	615664.24	4202492.80	14.28	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005314	615670.78	4202488.20	14.25	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005315	615677.32	4202483.59	14.16	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005316	615683.85	4202478.98	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005317	615690.39	4202474.37	14.08	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005318	615696.93	4202469.76	14.31	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005319	615703.47	4202465.15	14.47	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005320	615710.01	4202460.54	14.57	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005321	615716.55	4202455.93	14.66	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005322	615723.09	4202451.33	14.81	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005323	615729.63	4202446.72	14.97	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005324	615736.17	4202442.11	15.12	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005325	615742.71	4202437.50	15.27	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005326	615749.25	4202432.89	15.24	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005327	615753.89	4202427.27	15.28	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005328	615754.06	4202419.28	15.54	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005329	615754.23	4202411.28	15.55	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005330	615754.40	4202403.28	15.38	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005331	615754.56	4202395.28	15.20	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005332	615754.73	4202387.28	15.03	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005333	615754.90	4202379.28	14.92	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005334	615755.07	4202371.29	14.82	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005335	615755.24	4202363.29	14.71	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005336	615755.41	4202355.29	14.61	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005337	615755.58	4202347.29	14.61	0.00	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3F	L0005338	615755.75	4202339.29	14.60	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005339	615755.92	4202331.30	14.59	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005340	615756.08	4202323.30	14.54	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005341	615756.25	4202315.30	14.38	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005342	615756.42	4202307.30	14.22	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005343	615756.59	4202299.30	14.07	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005344	615756.76	4202291.30	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005345	615756.93	4202283.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005346	615757.10	4202275.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005347	615757.27	4202267.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005348	615757.43	4202259.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005349	615757.60	4202251.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005350	615757.77	4202243.31	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005351	615757.94	4202235.32	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005352	615758.11	4202227.32	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005353	615758.28	4202219.32	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005354	615758.45	4202211.32	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005355	615758.62	4202203.32	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005356	615758.79	4202195.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005357	615758.95	4202187.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005358	615759.12	4202179.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005359	615759.29	4202171.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005360	615759.46	4202163.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005361	615759.63	4202155.33	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005362	615759.80	4202147.34	14.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3F	L0005363	615759.97	4202139.34	14.10	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005364	615760.14	4202131.34	14.22	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005365	615760.30	4202123.34	14.33	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005366	615760.47	4202115.34	14.45	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005367	615760.64	4202107.34	14.59	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005368	615760.81	4202099.35	14.74	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005369	615760.98	4202091.35	14.89	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005370	615761.15	4202083.35	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005371	615761.32	4202075.35	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005372	615761.49	4202067.35	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005373	615761.66	4202059.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005374	615761.82	4202051.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005375	615761.99	4202043.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005376	615762.16	4202035.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005377	615762.33	4202027.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005378	615762.50	4202019.36	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005379	615762.67	4202011.37	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005380	615762.84	4202003.37	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005381	615763.01	4201995.37	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005382	615763.18	4201987.37	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005383	615763.34	4201979.37	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005384	615763.51	4201971.38	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005385	615762.03	4201963.78	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005386	615758.22	4201956.75	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005387	615754.40	4201949.72	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ON_3F	L0005388	615750.58	4201942.69	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005389	615746.76	4201935.66	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005390	615742.94	4201928.63	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21
	L0005391	615739.12	4201921.60	15.00	0.00	0.01176	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005392	615485.98	4201588.85	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005393	615493.98	4201588.99	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005394	615501.98	4201589.13	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005395	615509.98	4201589.26	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005396	615517.98	4201589.40	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005397	615525.97	4201589.54	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005398	615533.97	4201589.67	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005399	615541.97	4201589.81	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005400	615549.97	4201589.95	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005401	615557.97	4201590.09	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005402	615565.97	4201590.22	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005403	615573.97	4201590.36	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005404	615581.97	4201590.50	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005405	615589.97	4201590.63	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005406	615597.96	4201590.77	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005407	615605.96	4201590.91	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005408	615613.96	4201591.05	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005409	615621.96	4201591.18	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005410	615629.96	4201591.32	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005411	615637.96	4201591.46	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005412	615645.96	4201591.59	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005413	615653.96	4201591.73	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005414	615661.96	4201591.87	15.85	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005415	615669.95	4201592.01	15.71	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005416	615677.95	4201592.14	15.56	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005417	615685.95	4201592.28	15.45	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005418	615693.95	4201592.42	15.44	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005419	615701.95	4201592.55	15.44	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005420	615709.95	4201592.69	15.43	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005421	615717.95	4201592.83	15.51	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005422	615725.95	4201592.97	15.66	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005423	615733.94	4201593.10	15.81	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005424	615741.94	4201593.24	15.96	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005425	615749.94	4201593.38	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005426	615757.94	4201593.51	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005427	615759.10	4201600.33	16.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005428	615759.04	4201608.33	15.96	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005429	615758.98	4201616.33	15.83	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005430	615758.92	4201624.33	15.69	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005431	615758.86	4201632.33	15.56	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005432	615758.80	4201640.33	15.50	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005433	615758.74	4201648.32	15.50	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005434	615758.68	4201656.32	15.50	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005435	615758.62	4201664.32	15.50	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005436	615758.56	4201672.32	15.38	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005437	615758.50	4201680.32	15.25	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005438	615758.44	4201688.32	15.12	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005439	615758.38	4201696.32	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005440	615759.56	4201704.19	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005441	615761.33	4201711.99	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005442	615763.09	4201719.79	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005443	615764.86	4201727.60	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005444	615763.93	4201735.45	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005445	615762.44	4201743.31	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005446	615760.79	4201751.14	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005447	615759.00	4201758.93	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005448	615757.21	4201766.73	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005449	615755.42	4201774.53	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005450	615753.63	4201782.32	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005451	615751.74	4201790.10	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005452	615749.84	4201797.87	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005453	615747.94	4201805.64	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005454	615746.04	4201813.41	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005455	615744.14	4201821.18	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005456	615742.21	4201828.95	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005457	615740.22	4201836.69	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005458	615738.23	4201844.44	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005459	615736.24	4201852.19	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005460	615734.25	4201859.94	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005461	615734.17	4201867.81	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005462	615735.14	4201875.75	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005463	615736.11	4201883.70	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005464	615737.08	4201891.64	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005465	615738.05	4201899.58	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005466	615736.60	4201907.22	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005467	615733.69	4201914.67	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005468	615730.79	4201922.12	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005469	615727.88	4201929.58	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005470	615724.98	4201937.03	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005471	615722.07	4201944.48	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005472	615719.17	4201951.94	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005473	615716.26	4201959.39	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005474	615713.35	4201966.84	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005475	615710.45	4201974.30	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005476	615707.54	4201981.75	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005477	615703.42	4201987.64	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005478	615695.48	4201988.60	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005479	615690.53	4201992.28	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005480	615690.33	4202000.28	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005481	615690.13	4202008.27	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005482	615689.93	4202016.27	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005483	615689.72	4202024.27	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005484	615689.52	4202032.27	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005485	615689.32	4202040.26	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005486	615689.12	4202048.26	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005487	615688.92	4202056.26	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005488	615688.71	4202064.26	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005489	615688.51	4202072.25	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005490	615688.31	4202080.25	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005491	615688.11	4202088.25	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005492	615687.91	4202096.25	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005493	615687.71	4202104.24	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005494	615687.50	4202112.24	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005495	615687.30	4202120.24	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005496	615687.10	4202128.24	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005497	615686.90	4202136.23	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005498	615686.70	4202144.23	15.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005499	615686.49	4202152.23	14.98	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005500	615686.29	4202160.23	14.96	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005501	615686.09	4202168.22	14.94	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005502	615685.89	4202176.22	14.93	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005503	615685.69	4202184.22	14.94	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005504	615685.49	4202192.22	14.94	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005505	615685.28	4202200.21	14.95	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005506	615685.08	4202208.21	14.88	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005507	615684.88	4202216.21	14.63	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005508	615684.68	4202224.21	14.37	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005509	615684.48	4202232.20	14.11	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005510	615684.27	4202240.20	14.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
TRENCH_F	L0005511	615684.07	4202248.20	14.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005512	615683.87	4202256.20	14.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005513	615683.67	4202264.19	14.00	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005514	615683.47	4202272.19	14.22	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005515	615683.27	4202280.19	14.49	0.00	0.00800	8.00	Surface-Based	3.72	1.21
	L0005516	615683.06	4202288.19	14.75	0.00	0.00800	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005517	614730.55	4201558.92	15.77	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005518	614738.54	4201559.11	15.51	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005519	614746.54	4201559.30	15.24	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005520	614754.54	4201559.50	15.01	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005521	614762.54	4201559.69	15.16	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005522	614770.53	4201559.88	15.30	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005523	614778.53	4201560.07	15.43	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005524	614786.53	4201560.26	15.56	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005525	614794.53	4201560.46	15.69	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005526	614802.53	4201560.65	15.81	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005527	614810.52	4201560.84	15.95	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005528	614818.52	4201561.03	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005529	614826.52	4201561.22	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005530	614834.52	4201561.42	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005531	614842.51	4201561.61	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005532	614850.51	4201561.80	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005533	614858.51	4201561.99	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005534	614866.51	4201562.18	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005535	614874.50	4201562.38	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005536	614882.50	4201562.57	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005537	614890.50	4201562.76	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005538	614898.50	4201562.95	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005539	614906.50	4201563.14	16.09	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005540	614914.49	4201563.34	16.36	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005541	614922.49	4201563.53	16.62	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005542	614930.49	4201563.72	16.89	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005543	614938.49	4201563.91	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005544	614946.48	4201564.10	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005545	614954.48	4201564.30	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005546	614962.48	4201564.49	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005547	614970.48	4201564.68	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005548	614978.47	4201564.87	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005549	614986.47	4201565.07	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005550	614994.47	4201565.26	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005551	615002.47	4201565.45	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005552	615010.47	4201565.64	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005553	615018.46	4201565.83	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005554	615026.46	4201566.03	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005555	615034.46	4201566.22	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005556	615042.46	4201566.41	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005557	615050.45	4201566.60	17.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005558	615058.45	4201566.79	16.89	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005559	615066.45	4201566.99	16.70	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005560	615074.45	4201567.18	16.51	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005561	615082.44	4201567.37	16.31	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005562	615090.44	4201567.56	16.21	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005563	615098.44	4201567.75	16.14	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005564	615106.44	4201567.95	16.06	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005565	615114.44	4201568.14	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005566	615122.43	4201568.33	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005567	615130.43	4201568.52	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005568	615138.43	4201568.71	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005569	615146.43	4201568.91	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005570	615154.42	4201569.10	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005571	615162.42	4201569.29	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005572	615170.42	4201569.48	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005573	615178.42	4201569.67	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005574	615186.41	4201569.87	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005575	615194.41	4201570.06	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005576	615202.41	4201570.25	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005577	615210.41	4201570.44	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005578	615218.41	4201570.63	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005579	615226.40	4201570.83	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005580	615234.40	4201571.02	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005581	615242.40	4201571.21	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005582	615250.40	4201571.40	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005583	615258.39	4201571.59	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005584	615266.39	4201571.79	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005585	615274.39	4201571.98	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005586	615282.39	4201572.17	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005587	615290.38	4201572.36	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005588	615298.38	4201572.55	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005589	615306.38	4201572.75	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005590	615314.38	4201572.94	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005591	615322.38	4201573.13	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005592	615330.37	4201573.32	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005593	615338.37	4201573.51	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005594	615346.37	4201573.71	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005595	615354.37	4201573.90	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005596	615362.36	4201574.09	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005597	615370.36	4201574.28	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005598	615378.36	4201574.47	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005599	615386.36	4201574.67	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005600	615394.35	4201574.86	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005601	615402.35	4201575.05	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005602	615410.35	4201575.24	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005603	615418.35	4201575.43	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005604	615426.35	4201575.63	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005605	615434.34	4201575.82	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005606	615442.34	4201576.01	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005607	615450.34	4201576.20	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005608	615458.34	4201576.39	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005609	615466.33	4201576.59	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005610	615474.33	4201576.78	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005611	615482.33	4201576.97	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005612	615490.33	4201577.16	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005613	615498.32	4201577.35	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005614	615506.32	4201577.55	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005615	615514.32	4201577.74	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005616	615522.32	4201577.93	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005617	615530.32	4201578.12	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005618	615538.31	4201578.31	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005619	615546.31	4201578.51	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005620	615554.31	4201578.70	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005621	615562.31	4201578.89	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005622	615570.30	4201579.08	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005623	615578.30	4201579.27	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005624	615586.30	4201579.47	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005625	615594.30	4201579.66	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005626	615602.29	4201579.85	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005627	615610.29	4201580.04	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005628	615618.29	4201580.24	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005629	615626.29	4201580.43	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005630	615634.29	4201580.62	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005631	615642.28	4201580.81	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005632	615650.28	4201581.00	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005633	615658.28	4201581.20	15.97	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TE	L0005634	615666.28	4201581.39	15.92	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005635	615674.27	4201581.58	15.87	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005636	615682.27	4201581.77	15.81	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005637	615690.27	4201581.96	15.79	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005638	615698.27	4201582.16	15.79	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005639	615706.26	4201582.35	15.78	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005640	615714.26	4201582.54	15.78	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005641	615722.26	4201582.73	15.83	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005642	615730.26	4201582.92	15.89	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005643	615738.26	4201583.12	15.95	3.40	0.00781	8.00	Surface-Based	3.72	3.16
	L0005644	615746.25	4201583.31	16.00	3.40	0.00781	8.00	Surface-Based	3.72	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005645	614730.55	4201558.92	15.77	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005646	614738.54	4201559.11	15.51	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005647	614746.54	4201559.30	15.24	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005648	614754.54	4201559.50	15.01	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005649	614762.54	4201559.69	15.16	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005650	614770.53	4201559.88	15.30	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005651	614778.53	4201560.07	15.43	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005652	614786.53	4201560.26	15.56	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005653	614794.53	4201560.46	15.69	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005654	614802.53	4201560.65	15.81	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005655	614810.52	4201560.84	15.95	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005656	614818.52	4201561.03	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005657	614826.52	4201561.22	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005658	614834.52	4201561.42	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005659	614842.51	4201561.61	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005660	614850.51	4201561.80	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005661	614858.51	4201561.99	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005662	614866.51	4201562.18	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005663	614874.50	4201562.38	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005664	614882.50	4201562.57	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005665	614890.50	4201562.76	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005666	614898.50	4201562.95	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005667	614906.50	4201563.14	16.09	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005668	614914.49	4201563.34	16.36	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005669	614922.49	4201563.53	16.62	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005670	614930.49	4201563.72	16.89	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005671	614938.49	4201563.91	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005672	614946.48	4201564.10	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005673	614954.48	4201564.30	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005674	614962.48	4201564.49	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005675	614970.48	4201564.68	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005676	614978.47	4201564.87	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005677	614986.47	4201565.07	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005678	614994.47	4201565.26	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005679	615002.47	4201565.45	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005680	615010.47	4201565.64	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005681	615018.46	4201565.83	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005682	615026.46	4201566.03	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005683	615034.46	4201566.22	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005684	615042.46	4201566.41	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005685	615050.45	4201566.60	17.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005686	615058.45	4201566.79	16.89	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005687	615066.45	4201566.99	16.70	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005688	615074.45	4201567.18	16.51	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005689	615082.44	4201567.37	16.31	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005690	615090.44	4201567.56	16.21	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005691	615098.44	4201567.75	16.14	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005692	615106.44	4201567.95	16.06	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005693	615114.44	4201568.14	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005694	615122.43	4201568.33	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005695	615130.43	4201568.52	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005696	615138.43	4201568.71	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005697	615146.43	4201568.91	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005698	615154.42	4201569.10	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005699	615162.42	4201569.29	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005700	615170.42	4201569.48	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005701	615178.42	4201569.67	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005702	615186.41	4201569.87	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005703	615194.41	4201570.06	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005704	615202.41	4201570.25	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005705	615210.41	4201570.44	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005706	615218.41	4201570.63	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005707	615226.40	4201570.83	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005708	615234.40	4201571.02	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005709	615242.40	4201571.21	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005710	615250.40	4201571.40	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005711	615258.39	4201571.59	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005712	615266.39	4201571.79	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005713	615274.39	4201571.98	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005714	615282.39	4201572.17	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005715	615290.38	4201572.36	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005716	615298.38	4201572.55	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005717	615306.38	4201572.75	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005718	615314.38	4201572.94	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005719	615322.38	4201573.13	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005720	615330.37	4201573.32	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005721	615338.37	4201573.51	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005722	615346.37	4201573.71	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005723	615354.37	4201573.90	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005724	615362.36	4201574.09	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005725	615370.36	4201574.28	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005726	615378.36	4201574.47	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005727	615386.36	4201574.67	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005728	615394.35	4201574.86	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005729	615402.35	4201575.05	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005730	615410.35	4201575.24	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005731	615418.35	4201575.43	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005732	615426.35	4201575.63	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005733	615434.34	4201575.82	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005734	615442.34	4201576.01	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005735	615450.34	4201576.20	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005736	615458.34	4201576.39	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005737	615466.33	4201576.59	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005738	615474.33	4201576.78	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005739	615482.33	4201576.97	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005740	615490.33	4201577.16	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005741	615498.32	4201577.35	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005742	615506.32	4201577.55	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005743	615514.32	4201577.74	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005744	615522.32	4201577.93	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005745	615530.32	4201578.12	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005746	615538.31	4201578.31	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005747	615546.31	4201578.51	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005748	615554.31	4201578.70	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005749	615562.31	4201578.89	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005750	615570.30	4201579.08	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005751	615578.30	4201579.27	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005752	615586.30	4201579.47	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005753	615594.30	4201579.66	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005754	615602.29	4201579.85	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005755	615610.29	4201580.04	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005756	615618.29	4201580.24	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_TF	L0005757	615626.29	4201580.43	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005758	615634.29	4201580.62	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005759	615642.28	4201580.81	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005760	615650.28	4201581.00	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005761	615658.28	4201581.20	15.97	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005762	615666.28	4201581.39	15.92	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005763	615674.27	4201581.58	15.87	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005764	615682.27	4201581.77	15.81	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005765	615690.27	4201581.96	15.79	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005766	615698.27	4201582.16	15.79	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005767	615706.26	4201582.35	15.78	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005768	615714.26	4201582.54	15.78	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005769	615722.26	4201582.73	15.83	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005770	615730.26	4201582.92	15.89	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005771	615738.26	4201583.12	15.95	0.00	0.00781	8.00	Surface-Based	3.72	3.16
	L0005772	615746.25	4201583.31	16.00	0.00	0.00781	8.00	Surface-Based	3.72	3.16

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
TRENCH_F	TRENCH_F
TRENCH_E	TRENCH_E
ON_3F	ON_3F
ON_3E	ON_3E
ON_2F	ON_2F
ON_2E	ON_2E
ON_1F	ON_1F
ON_1E	ON_1E
IDLE_TE	IDLE_TE
IDLE_3	IDLE_3
IDLE_2	IDLE_2
IDLE_1	IDLE_1
HAUL_TF	HAUL_TF
HAUL_TE	HAUL_TE
HAUL_F	HAUL_F

Source Pathway

Source Group ID: HAUL_E	List of Sources in Group (Source Range or Single Sources)
	HAUL_E

Variable Emissions

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: M-F7-4

Source ID:	**IDLE_1**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**IDLE_2**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**IDLE_3**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**HAUL_E**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00

Scenario: M-F7-4

Source ID:	**HAUL_E**							
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ON_1E**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ON_2E**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ON_3E**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Scenario: M-F7-4

Source ID: ON_3E

Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: TRENCH_E

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: HAUL_F

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: ON_1F

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Scenario: M-F7-4

Source ID:	**ON_2F**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ON_3F**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**TRENCH_F**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**HAUL_TE**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								

Source Pathway

Scenario: M-F7-4

Source ID:	**HAUL_TE**							
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**HAUL_TF**							
Weekdays								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
		7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
		13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**IDLE_TE**							
Weekdays								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	1.00
		7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
		13 - 18	1.00	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
		7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
		13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: Brentwood_WWTP.AD

Averaging Period	Source Group ID	High Value	File Name
1	HAUL_E	1st	01H1G001.PLT
1	HAUL_F	1st	01H1G002.PLT
1	HAUL_TE	1st	01H1G003.PLT
1	HAUL_TF	1st	01H1G004.PLT
1	IDLE_1	1st	01H1G005.PLT
1	IDLE_2	1st	01H1G006.PLT
1	IDLE_3	1st	01H1G007.PLT
1	IDLE_TE	1st	01H1G008.PLT
1	ON_1E	1st	01H1G009.PLT
1	ON_1F	1st	01H1G010.PLT
1	ON_2E	1st	01H1G011.PLT
1	ON_2F	1st	01H1G012.PLT
1	ON_3E	1st	01H1G013.PLT
1	ON_3F	1st	01H1G014.PLT
1	TRENCH_E	1st	01H1G015.PLT
1	TRENCH_F	1st	01H1G016.PLT
Period	HAUL_E	N/A	PE00G001.PLT
Period	HAUL_F	N/A	PE00G002.PLT
Period	HAUL_TE	N/A	PE00G003.PLT
Period	HAUL_TF	N/A	PE00G004.PLT
Period	IDLE_1	N/A	PE00G005.PLT
Period	IDLE_2	N/A	PE00G006.PLT
Period	IDLE_3	N/A	PE00G007.PLT
Period	IDLE_TE	N/A	PE00G008.PLT
Period	ON_1E	N/A	PE00G009.PLT
Period	ON_1F	N/A	PE00G010.PLT
Period	ON_2E	N/A	PE00G011.PLT
Period	ON_2F	N/A	PE00G012.PLT
Period	ON_3E	N/A	PE00G013.PLT
Period	ON_3F	N/A	PE00G014.PLT
Period	TRENCH_E	N/A	PE00G015.PLT
Period	TRENCH_F	N/A	PE00G016.PLT

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: HAUL_E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	489.84275	ug/m^3	615606.32	4201978.16	16.83	1.50	16.83	2/12/2015, 7
PERIOD		16.91902	ug/m^3	615681.22	4201979.46	15.05	1.50	15.05	

PM2.5 - Concentration - Source Group: HAUL_F

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	695.01366	ug/m^3	615606.32	4201978.16	16.83	1.50	16.83	2/12/2015, 7
PERIOD		20.47595	ug/m^3	615222.88	4201691.51	16.00	1.50	16.00	

PM2.5 - Concentration - Source Group: HAUL_TE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	376.23884	ug/m^3	615422.88	4201591.51	16.00	1.50	16.00	12/2/2015, 8
PERIOD		16.06889	ug/m^3	615422.88	4201591.51	16.00	1.50	16.00	

PM2.5 - Concentration - Source Group: HAUL_TF

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	443.39042	ug/m^3	614762.88	4201571.51	15.04	1.50	15.04	12/2/2015, 8
PERIOD		18.31099	ug/m^3	614762.88	4201571.51	15.04	1.50	15.04	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: IDLE_1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1551.13353	ug/m^3	615485.22	4202454.66	12.70	1.50	12.70	12/3/2015, 7
PERIOD		11.02707	ug/m^3	615767.33	4202208.50	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: IDLE_2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	2797.62904	ug/m^3	615720.13	4201984.54	15.00	1.50	15.00	12/3/2015, 6
PERIOD		53.35108	ug/m^3	615768.05	4202134.49	14.07	1.50	14.07	

PM2.5 - Concentration - Source Group: IDLE_3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	2851.51062	ug/m^3	615616.11	4202527.96	12.39	1.50	12.39	1/21/2015, 8
PERIOD		63.95525	ug/m^3	615764.18	4202430.52	14.83	1.50	14.83	

PM2.5 - Concentration - Source Group: IDLE_TE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	14447.02659	ug/m^3	615742.88	4201631.51	15.14	1.50	15.14	12/3/2015, 7
PERIOD		407.92313	ug/m^3	615742.88	4201631.51	15.14	1.50	15.14	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: ON_1E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	535.65346	ug/m^3	615767.57	4202183.83	14.00	1.50	14.00	3/4/2015, 6
PERIOD		8.09801	ug/m^3	615767.33	4202208.50	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: ON_1F

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	573.96017	ug/m^3	615767.57	4202183.83	14.00	1.50	14.00	3/4/2015, 6
PERIOD		8.32984	ug/m^3	615767.33	4202208.50	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: ON_2E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1300.16035	ug/m^3	615744.32	4201985.00	15.00	1.50	15.00	1/19/2015, 8
PERIOD		64.06104	ug/m^3	615768.05	4202134.49	14.07	1.50	14.07	

PM2.5 - Concentration - Source Group: ON_2F

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1347.85983	ug/m^3	615744.32	4201985.00	15.00	1.50	15.00	1/19/2015, 8
PERIOD		65.72659	ug/m^3	615767.33	4202208.50	14.00	1.50	14.00	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: ON_3E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1626.67450	ug/m^3	615764.18	4202430.52	14.83	1.50	14.83	1/30/2015, 6
PERIOD		82.48956	ug/m^3	615767.81	4202159.16	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: ON_3F

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1866.05631	ug/m^3	615764.18	4202430.52	14.83	1.50	14.83	1/30/2015, 6
PERIOD		86.59805	ug/m^3	615767.81	4202159.16	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: TRENCH_E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	974.89052	ug/m^3	615695.92	4201985.08	15.00	1.50	15.00	1/19/2015, 8
PERIOD		46.22635	ug/m^3	615720.13	4201984.54	15.00	1.50	15.00	

PM2.5 - Concentration - Source Group: TRENCH_F

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1058.98548	ug/m^3	615695.92	4201985.08	15.00	1.50	15.00	1/19/2015, 8
PERIOD		48.43995	ug/m^3	615720.13	4201984.54	15.00	1.50	15.00	

OPERATIONAL TOXIC AIR CONTAMINANT EMISSION RATES AND RISK CALCULATIONS

Cumulative Risk Summary

Roadway Risks

TAC Emission Rates - Mobile Sources

TAC Emission Rates - Stationary Sources

HARP Output of Cancer Risks, Chronic Health Index, and Acute Health Index

HARP Project Summary Report

AERMOD Dispersion Modeling Report

Cumulative Risks Summary

Source	Cancer (1/million)		Chronic HI		PM2.5 Concentration (ug/m3)
	MEIR	MEIW	MEIR	MEIW	
Project Construction	7.38	5.89	0.005	0.024	0.125
Project Operation	0.45	0.03	0.102	0.700	0.204
Permitted Stationary	0.28	0.42	0.00	0.00	0.33
Roadways	1.17	1.17	0.00	0.00	0.03
Cumulative	9.28	7.51	0.10	0.70	0.57
Threshold	100	100	10	10	0.8
Exceed threshold?	No	No	No	No	No

Permitted Stationary Sources within 1,000 feet from Project Site

FID	Facility Name	Latitude	Longitude	Details	NAICS Industry	Cancer Risk (1/million)	Chronic Hazard Index	PM 2.5 (ug/m3)
14752	City of Brentwood	37.95746	-121.688654	Generator	Other General Government Support	3.638	0.002	0.005
15789	City of Brentwood	37.960083	-121.686349	No Data	Fossil Fuel Electric Power Generation	3.301	0.01	1.056
18249	Antioch Building Materials	37.957405	-121.688673	No Data	Ready-Mix Concrete Manufacturing	0	0	3.617

Permitted Stationary Source Risks at MEIR

FID	Distance to MEIR (m)	Multiplier	Adjusted based on Distance		
			Cancer Risk (1/million)	Chronic Hazard Index	PM 2.5 (ug/m3)
14752	353	0.04	0.15	0.00	0.00
15789	706	0.04	0.13	0.00	0.04
18249	347	0.04	0.00	0.00	0.14

Permitted Stationary Source Risks at MEIW

FID	Distance to MEIR (m)	Multiplier	Adjusted based on Distance		
			Cancer Risk (1/million)	Chronic Hazard Index	PM 2.5 (ug/m3)
14752	216	0.08	0.29	0.00	0.00
15789	539	0.04	0.13	0.00	0.04
18249	210	0.08	0.00	0.00	0.29

Data Source: BAAQMD Stationary Source Screening Map

Location for calculate distances

	x	y	latitude	longitude
MEIR	615922.88	4202171.51	37.95464559	-121.6905109
MEIW	615782.88	4202111.51	37.95552383	-121.6884465

Note: Construction MEIR and MEIW location is used because of higher risk due to construction compared to operation.

Roadway and Rail

Cancer Risk (1/million)	Chronic Hazard Index	PM 2.5 (ug/m3)
1.16802	0.00429	0.03068

Note:

Risk data read from TIF images downloaded at BAAQMD Mobile Source Screening Map website. See tab Roardway for detail. The risks from Rail are zeros queried for project site.

https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429

Diesel Internal Combustion Engine Distance Multiplier

Distance (meters)	Distance (feet)	Distance Adjustment Multiplier
25	82	0.85
30	98.4	0.73
35	115	0.64
40	131	0.58
50	164	0.5
60	197	0.41
70	230	0.31
80	262	0.28
90	295	0.25
100	328	0.22
110	361	0.18
120	394	0.16
130	426	0.15
140	459	0.14
150	492	0.12
160	525	0.1
180	590	0.09
200	656	0.08
220	722	0.07
240	787	0.06
260	853	0.05
280	918	0.04

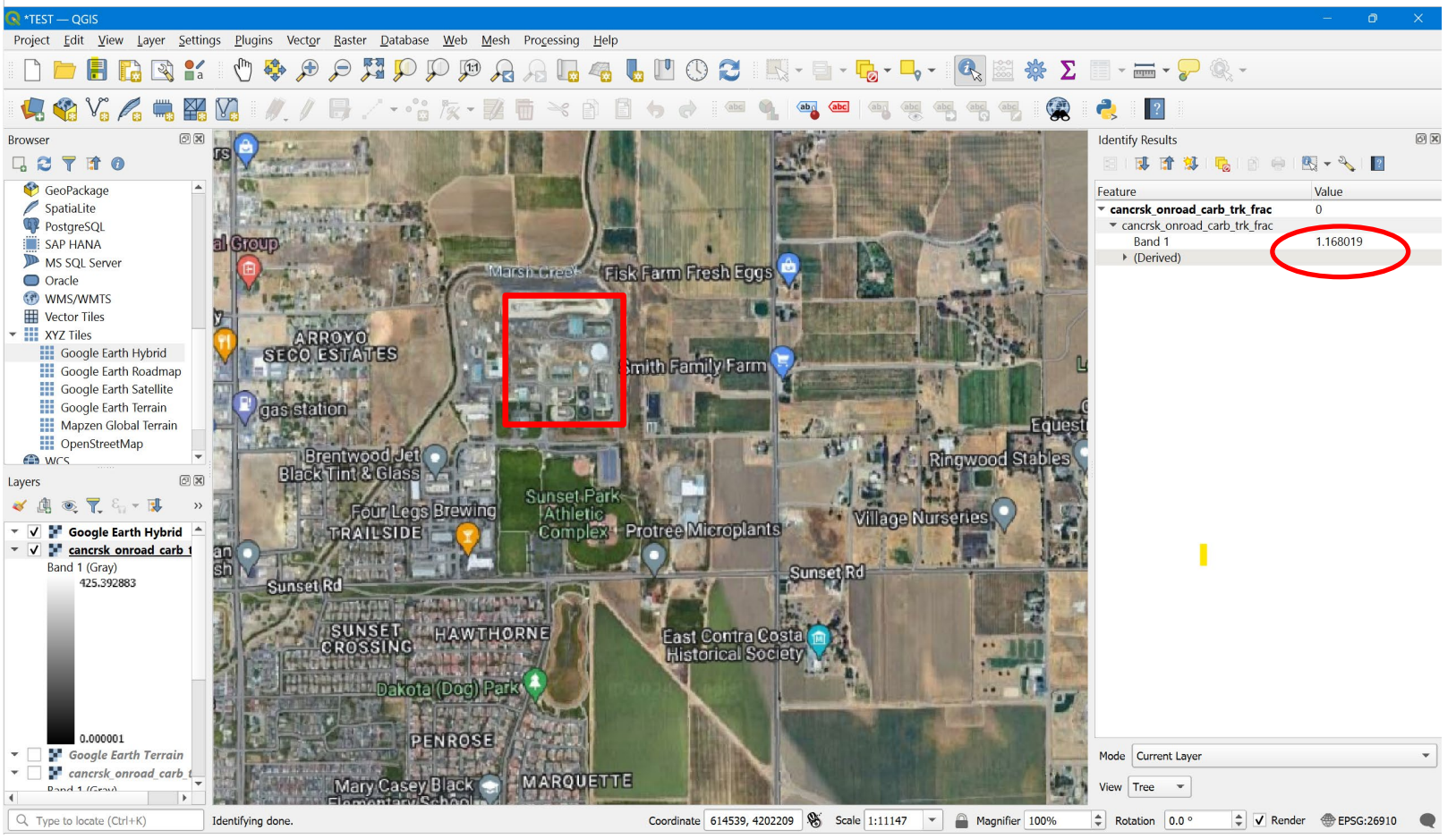
Roadway Risk

Project Site

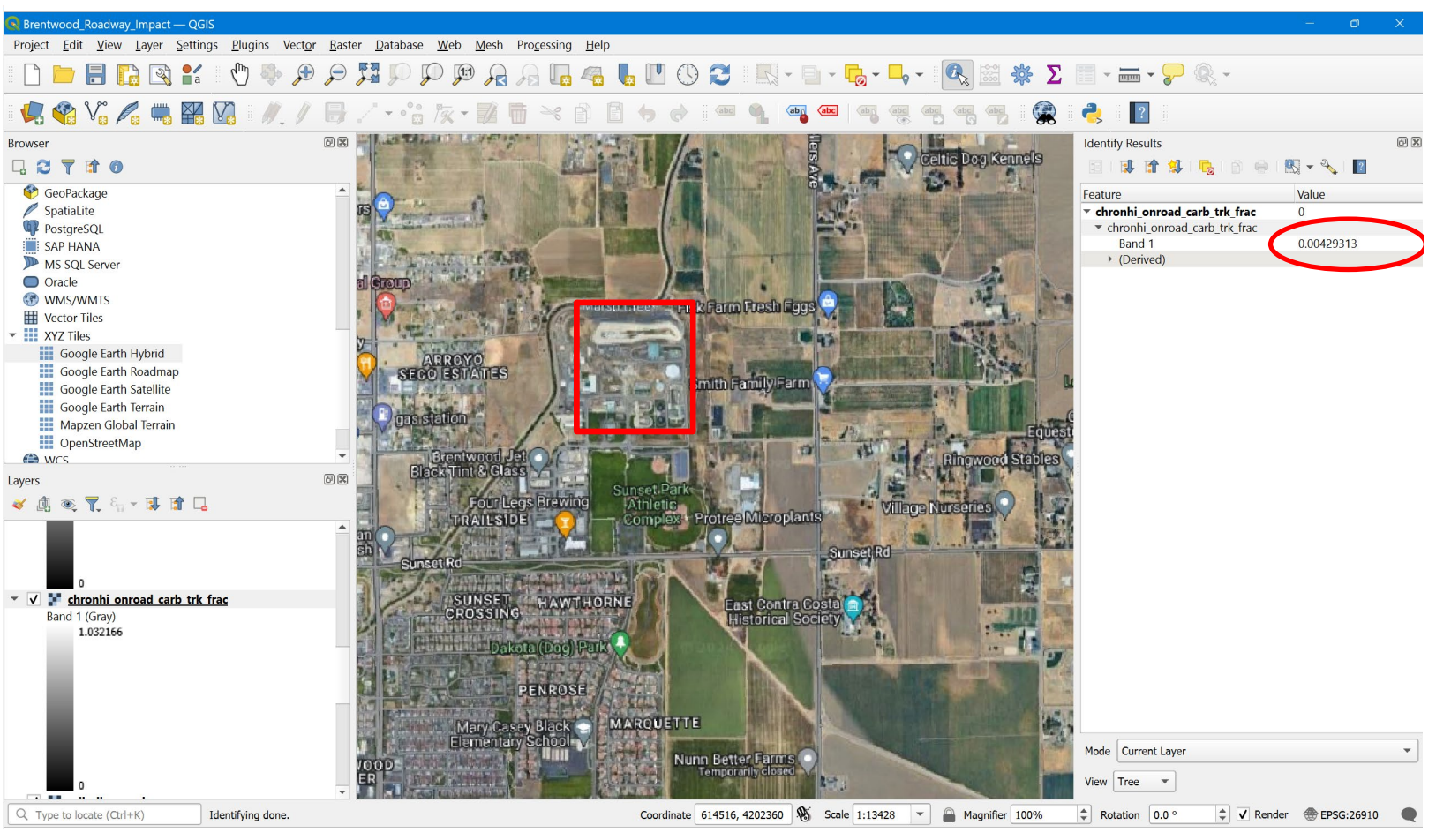
Risk Value

Roadway Risk Data Source: https://data.bayareametro.gov/Environment/CEQA-Roadway-Screening-Tool-Cancer-Risk/kz4a-ueki/

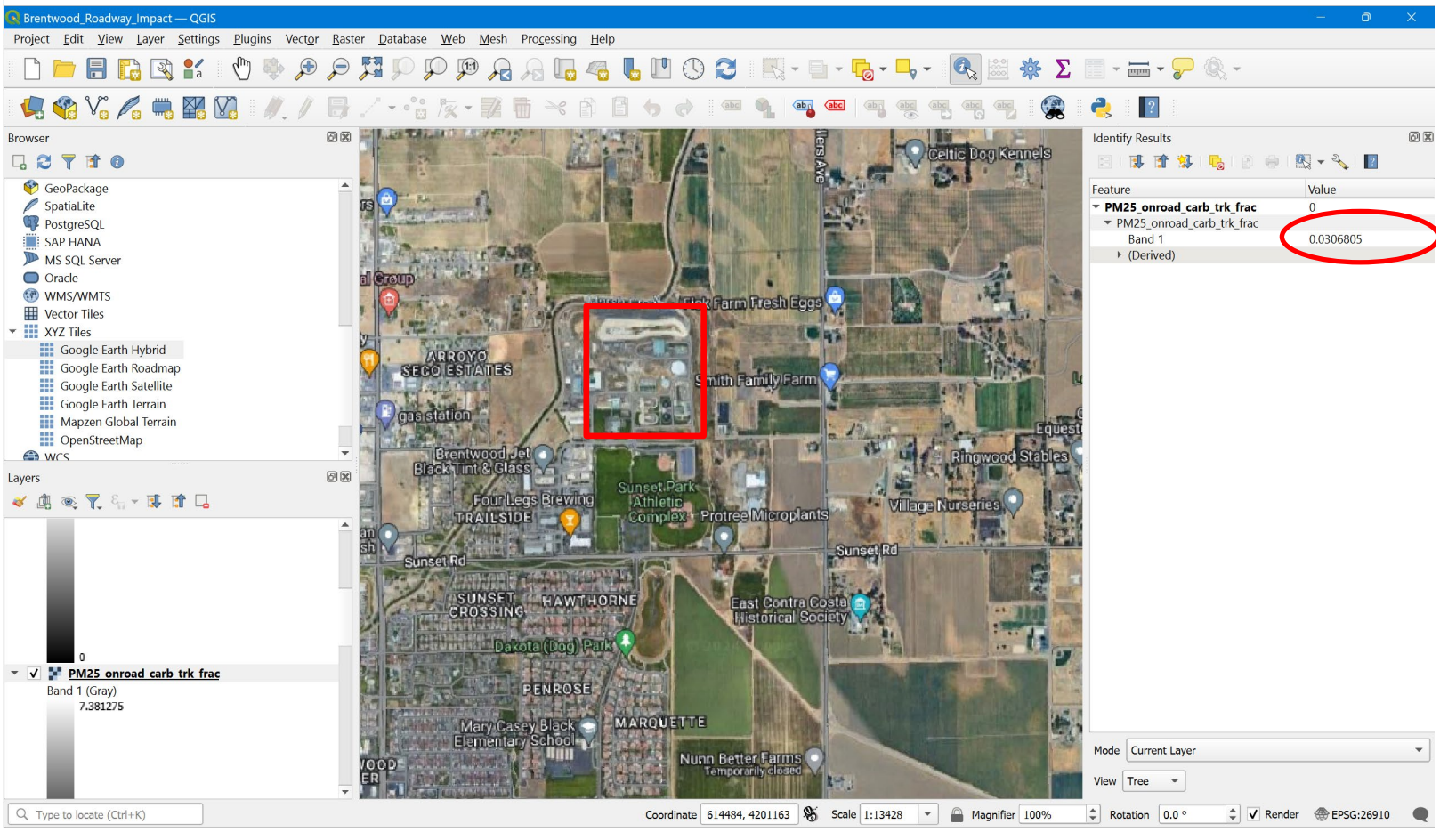
Cancer



Chronic



PM2.5


Brentwood_Roadway_Impact — QGIS
Project Edit View Layer Settings Plugins Vector Raster Database Web Mesh Processing Help
Browser
GeoPackage
SpatiaLite
PostgreSQL
SAP HANA
MS SQL Server
Oracle
WMS/WMTS
Vector Tiles
XYZ Tiles
Google Earth Hybrid
Google Earth Roadmap
Google Earth Satellite
Google Earth Terrain
Mapzen Global Terrain
OpenStreetMap
Layers
PM25_onroad_carb_trk_frac
Band 1 (Gray)
7.381275
Identify Results
Feature
Value
PM25_onroad_carb_trk_frac
0
PM25_onroad_carb_trk_frac
Band 1
0.0306805
(Derived)
Celtic Dog Kennels
Farm Fresh Eggs
ARROYO SECO ESTATES
Smith Family Farm
gas station
Brentwood Jet Black Tint & Glass
Four Legs Brewing TRAILSIDE
Sunset Park Athletic Complex
Protree Microplants
Ringwood Stables
Village Nurseries
Sunset Rd
SUNSET CROSSING
HAWTHORNE
East Contra Costa Historical Society
Dakota (Dog) Park
PENROSE
Mary Casey Black Elementary School
MARQUETTE
Nunn Better Farms
Temporarily closed
Mode Current Layer
View Tree
Type to locate (Ctrl+K)
Coordinate 614484, 4201163
Scale 1:13428
Magnifier 100%
Rotation 0.0 °
Render
EPSG:26910

TAC Emission Rates - Mobile Sources

Mobile Source Emissions

Trip Purpose	VMT per trip within impacted area	DPM (lb)	PM2.5 Exhaust (lb)	BW and TW PM2.5 (lb)	PM2.5 Fugitive (lb)	PM2.5 Dust (lb)	Avg DPM (g/s)	Avg PM2.5 Exhaust (g/s)	Avg PM2.5 Dust (g/s)
Workforce—one way	1.5	0	0.13	0.18	17.52	17.70	0	1.86983E-06	0.000254542
Trucks Bringing High Strength Waste	1.5	0.63	0.63	29.50	87.6	117.10	9.06149E-06	9.06149E-06	0.001684264
Chemical Deliveries	1.5	0.02	0.02	1.05	3.12	4.17	2.87666E-07	2.87666E-07	5.99875E-05
Trucks Hauling Biosolids to Landfill	**1.5**	**0.05**	**0.05**	**4.42**	**6.57**	**10.99**	**7.19166E-07**	**7.19166E-07**	**0.000158141**
Trucks Hauling Biochar	1.5	0	0	0.06	0.62	0.68	0	0	9.73587E-06
Trucks Hauling Ammonia Sulfate Fertilizer	1.5	0	0	0.17	1.87	2.04	0	0	2.93514E-05
Notes:	Hauling tota	0.6	0.6	26.351856	86.64	112.99186	8.62999E-06	8.62999E-06	0.001625198

DPM is modeled as diesel PM2.5 exhaust.

PM emission is calculated as the summation of emissions from the following roads, distance conservatively measured in Google Earth.

Assume
- 0 VMT on unpaved road for all trucks and commute vehicles.
- 1.5 mile on industrial road for trucks and worker commute vehicle within impact area (1,000 feet from project boundaries)

Bold font entry indicates an reduction in emissions.

TAC Emission Rates - Stationary Sources

Emission Source	Pollutant Type	Pollutant	Max lbs/hour	Annual (tons/year)
Flare	Pollutant	NOx	0.48	0.42
	Pollutant	CO	0.20	0.18
	Pollutant	VOC/ROG	0.00	0.00
	Pollutant	PM10	0.40	0.35
	Pollutant	SOx	0.07	0.06
	GHG	CO2e	3886.08	3404
	TAC	Acetone	2.31E-05	2.02E-05
	TAC	Benzene	9.14E-04	8.01E-04
	TAC	Chlorobenzene	6.60E-06	5.78E-06
	TAC	Ethylbenzene	3.30E-05	2.89E-05
	TAC	Ethly Dichloride	4.62E-05	4.05E-05
	TAC	Formaldehyde	4.46E-03	3.90E-03
	TAC	Hexane	3.33E-04	2.92E-04
	TAC	Hydrogen Chloride	2.13E-02	1.87E-02
	TAC	Methylene Chloride	3.30E-06	2.89E-06
	TAC	Methyl Ethyl Ketone	3.30E-06	2.89E-06
	TAC	Perchloroethlylene	1.65E-05	1.45E-05
	TAC	Toluene	3.33E-04	2.92E-04
	TAC	Trichloroethane	3.30E-06	2.89E-06
	TAC	Trichloroethylene	9.90E-06	8.67E-06
	TAC	Xylene	2.20E-03	1.93E-03
Boiler	Pollutant	NOx	0.13	0.37
	Pollutant	CO	2.17	6.02
	Pollutant	VOC/ROG	0.05	0.13
	Pollutant	PM10	0.06	0.17
	Pollutant	SOx	0.00	0.01
	GHG	CO2e	968	2688
	TAC	Acetaldehyde	3.56E-05	9.88E-05
	TAC	Acrolein	2.23E-05	6.21E-05
	TAC	Arsenic	1.65E-06	4.59E-06
	TAC	Benzene	6.61E-05	1.84E-04
	TAC	Berylium	4.96E-08	1.38E-07
	TAC	Cadmium	9.11E-06	2.53E-05
	TAC	Copper	7.03E-06	1.95E-05
	TAC	Ethylbenzene	7.85E-05	2.18E-04
	TAC	Formaldehyde	1.80E-03	5.01E-03
	TAC	Hexane	5.21E-05	1.45E-04
	TAC	Lead	4.13E-06	1.15E-05
	TAC	Manganese	3.15E-06	8.74E-06
	TAC	Mercury	2.15E-06	5.97E-06
	TAC	Naphthalene	5.04E-06	1.40E-05
	TAC	Nickel	1.74E-05	4.82E-05
	TAC	PAH (excl. naphthalene)	5.57E-08	1.55E-07
	TAC	Propylene	6.05E-03	1.68E-02
	TAC	Selenium	9.95E-08	2.76E-07
	TAC	Toluene	3.03E-04	8.41E-04
	TAC	Vanadium	1.90E-05	5.27E-05
	TAC	Xylene	2.25E-04	6.25E-04
Tail Gass from AC Vessel	Pollutant	NOx	0.00	0.00
	Pollutant	CO	0.00	0.00
	Pollutant	VOC/ROG	2.39E-06	8.38E-06
	Pollutant	PM10	0.00	0.00
	Pollutant	SOx	0.00	0.00
	GHG	CO2e	1179	4130

Future AMR	Pollutant	NOx	0.00	0.00
	Pollutant	CO	0.00	0.00
	Pollutant	VOC/ROG	1.50E-03	6.56E-03
	Pollutant	PM10	0.00	0.00
	Pollutant	SOx	0.00	0.00
	GHG	CO2e	0	0
Emergency Generator	Pollutant	NOx	15.43	1.16
	Pollutant	CO	15.43	1.16
	Pollutant	VOC/ROG	0.84	0.062830688
	Pollutant	PM10	0.18	0.01
	Pollutant	SOx	0.00	0.00
	GHG	CO2e	3111	233
	TAC	Acetaldehyde	0.060843008	0.004563226
	TAC	Acrolein	0.009933552	0.000745016
	TAC	Benzene	0.05835962	0.004376971
	TAC	1,3-Butadiene	0.016555921	0.001241694
	TAC	Formaldehyde	0.121768796	0.00913266
	TAC	PAH	0.005297895	0.000397342
	TAC	Propylene	0.021522697	0.001614202
	TAC	Toluene	0.012168602	0.000912645
	TAC	Xylene	0.001490033	0.000111752
BDPS BioDryers emissions from Biofilter (Emission point 1)	Pollutant	VOC	0	0.48
	TAC	H2S	0	0
	GHG	CO2e	0	50
	TAC	NH3	0	3.5405
BDPS BioDryers emissions from Biofilter (Emission point 2)	Pollutant	VOC	0	0.48
	TAC	H2S	0	0
	GHG	CO2e	0	50
	TAC	NH3	0	3.5405
BDPS Pyrolysis 1 emissions from stack (Emission point 3)	Pollutant	NOx	0	0.748
	Pollutant	CO	0	0.3335
	Pollutant	ROG	0	0.024
	Pollutant	PM10	0	0.019
	Pollutant	PM2.5	0	0.019
	Pollutant	SOx	0	0.1665
	GHG	CO2e	0	700
BDPS Pyrolysis 2 emissions from stack (Emission point 4)	Pollutant	NOx	0	0.748
	Pollutant	CO	0	0.3335
	Pollutant	SOx	0	0.1665
	Pollutant	ROG	0	0.024
	Pollutant	PM10	0	0.019
	Pollutant	PM2.5	0	0.019
	GHG	CO2e	0	700
BDPS Pyrolysis 3 emissions from stack (Emission point 5)	Pollutant	NOx	0	0.748
	Pollutant	ROG	0	0.024
	Pollutant	PM10	0	0.019
	Pollutant	PM2.5	0	0.019
	Pollutant	CO	0	0.3335
	Pollutant	SOx	0	0.1665
	GHG	CO2e	0	700
BDPS Pyrolysis 4 emissions from stack (Emission point 6)	Pollutant	NOx	0	0.748
	Pollutant	CO	0	0.3335
	Pollutant	SOx	0	0.1665
	Pollutant	ROG	0	0.024
	Pollutant	PM10	0	0.019
	Pollutant	PM2.5	0	0.019
	GHG	CO2e	0	700
BDPS Pyrolysis 5 emissions from stack (Emission point 7)	Pollutant	NOx	0	0.748
	Pollutant	CO	0	0.3335
	Pollutant	SOx	0	0.1665
	Crtieria Air	ROG	0	0.024
	Pollutant	PM10	0	0.019
	Pollutant	PM2.5	0	0.019
	GHG	CO2e	0	700

Note: Emission rate calculations for particulate matter were adjusted as follows:
1) Generator emissions:PM10 emissions were used as a surrogate for Diesel Particulate Matter (DPM) emissions;
2) Other stationary sources other than pyrolysis stacks: PM10 emissions were used as a surrogate for PM2.5 emissions.

Emission source	Pollutant Type	Pollutant	Annual (lbs/yr)	Max (lbs/hour)
Flare	Crtieria Air Pollutar	NOx	842.26349	0.48
Flare	Crtieria Air Pollutar	CO	350.94312	0.20031
Flare	Crtieria Air Pollutar	VOC/ROG	1.3608267	0.00077673
Flare	Crtieria Air Pollutar	PM2.5	693.792	0.396
Flare	Crtieria Air Pollutar	SOx	115.632	0.066
Flare	GHG	CO2e	6808412.2	3886.08
Flare	TAC	Acetone	0.0404712	0.0000231
Flare	TAC	Benzene	1.6015032	0.0009141
Flare	TAC	Chlorobenzene	0.0115632	0.0000066
Flare	TAC	Ethylbenzene	0.057816	0.000033
Flare	TAC	Ethly Dichloride	0.0809424	0.0000462
Flare	TAC	Formaldehyde	7.80516	0.004455
Flare	TAC	Hexane	0.5839416	0.0003333
Flare	TAC	Hydrogen Chloride	37.320228	0.0213015
Flare	TAC	Methylene Chloride	0.0057816	0.0000033
Flare	TAC	Methyl Ethyl Ketone	0.0057816	0.0000033
Flare	TAC	Perchloroethlylene	0.028908	0.0000165
Flare	TAC	Toluene	0.5839416	0.0003333
Flare	TAC	Trichloroethane	0.0057816	0.0000033
Flare	TAC	Trichloroethylene	0.0173448	0.0000099
Flare	TAC	Xylene	3.8563272	0.0022011
Boiler	Crtieria Air Pollutar	NOx	741.84824	0.13356321
Boiler	Crtieria Air Pollutar	CO	12041.595	2.16798258
Boiler	Crtieria Air Pollutar	VOC/ROG	252.58682	0.04547602
Boiler	Crtieria Air Pollutar	PM2.5	349.02906	0.06283959
Boiler	Crtieria Air Pollutar	SOx	27.554926	0.00496102
Boiler	GHG	CO2e	5375277.1	967.771085
Boiler	TAC	Acetaldehyde	0.197679	3.559E-05
Boiler	TAC	Acrolein	0.1241349	2.2349E-05
Boiler	TAC	Arsenic	0.0091813	1.653E-06
Boiler	TAC	Benzene	0.367252	6.612E-05
Boiler	TAC	Berylium	0.0002754	4.959E-08
Boiler	TAC	Cadmium	0.0505908	9.1084E-06
Boiler	TAC	Copper	0.0390205	7.0253E-06
Boiler	TAC	Ethylbenzene	0.4361118	7.8518E-05
Boiler	TAC	Formaldehyde	10.024482	0.00180482
Boiler	TAC	Hexane	0.289492	5.212E-05
Boiler	TAC	Lead	0.0229533	4.1325E-06
Boiler	TAC	Manganese	0.0174726	3.1458E-06
Boiler	TAC	Mercury	0.0119451	2.1506E-06
Boiler	TAC	Naphthalene	0.0280123	5.0434E-06
Boiler	TAC	Nickel	0.0964973	1.7373E-05
Boiler	TAC	PAH (excl. naphthale	0.0003092	5.5663E-08
Boiler	TAC	Propylene	33.586699	0.00604699
Boiler	TAC	Selenium	0.0005528	9.9518E-08
Boiler	TAC	Toluene	1.6816771	0.00030277
Boiler	TAC	Vanadium	0.1053976	1.8976E-05
Boiler	TAC	Xylene	1.2507181	0.00022518
Tail Gas	Crtieria Air Pollutar	NOx	0	0
Tail Gas	Crtieria Air Pollutar	CO	0	0
Tail Gas	Crtieria Air Pollutar	VOC/ROG	0.0167631	2.392E-06
Tail Gas	Crtieria Air Pollutar	PM2.5	0	0
Tail Gas	Crtieria Air Pollutar	SOx	0	0
Tail Gas	GHG	CO2e	8259890.3	1178.63731

AMR	Crtieria Air Pollutar	NOx	0	0
AMR	Crtieria Air Pollutar	CO	0	0
AMR	Crtieria Air Pollutar	VOC/ROG	13.121594	0.0014979
AMR	Crtieria Air Pollutar	PM2.5	0	0
AMR	Crtieria Air Pollutar	SOx	0	0
AMR	GHG	CO2e	0	0
Generator	Crtieria Air Pollutar	NOx	2314.8148	15.4320988
Generator	Crtieria Air Pollutar	CO	2314.8148	15.4320988
Generator	Crtieria Air Pollutar	VOC/ROG	125.66138	0.8377425
Generator	Crtieria Air Pollutar	PM2.5	26.455026	0.17636684
Generator	Crtieria Air Pollutar	SOx	0	0
Generator	GHG	CO2e	466668	3111.12
Generator	TAC	Acetaldehyde	9.1264512	0.06084301
Generator	TAC	Acrolein	1.4900328	0.00993355
Generator	TAC	Benzene	8.753943	0.05835962
Generator	TAC	1,3-Butadiene	2.4833881	0.01655592
Generator	TAC	Formaldehyde	18.265319	0.1217688
Generator	TAC	PAH	0.7946842	0.00529789
Generator	TAC	Propylene	3.2284045	0.0215227
Generator	TAC	Toluene	1.8252902	0.0121686
Generator	TAC	Xylene	0.2235049	0.00149003
Emission point 1	Crtieria Air Pollutar	VOC	960	0
Emission point 1	TAC	H2S	0	0
Emission point 1	GHG	CO2e	100000	0
Emission point 1	TAC	NH3	7081	0
Emission point 2	Crtieria Air Pollutar	VOC	960	0
Emission point 2	TAC	H2S	0	0
Emission point 2	GHG	CO2e	100000	0
Emission point 2	TAC	NH3	7081	0
Emission point 3	Crtieria Air Pollutar	NOx	1496	0
Emission point 3	Crtieria Air Pollutar	CO	667	0
Emission point 3	Crtieria Air Pollutar	ROG	48	0
Emission point 3	Crtieria Air Pollutar	PM10	38	0
Emission point 3	Crtieria Air Pollutar	PM2.5	38	0
Emission point 3	Crtieria Air Pollutar	SOx	333	0
Emission point 3	GHG	CO2e	1400000	0
Emission point 4	Crtieria Air Pollutar	NOx	1496	0
Emission point 4	Crtieria Air Pollutar	CO	667	0
Emission point 4	Crtieria Air Pollutar	SOx	333	0
Emission point 4	Crtieria Air Pollutar	ROG	48	0
Emission point 4	Crtieria Air Pollutar	PM10	38	0
Emission point 4	Crtieria Air Pollutar	PM2.5	38	0
Emission point 4	GHG	CO2e	1400000	0
Emission point 5	Crtieria Air Pollutar	NOx	1496	0
Emission point 5	Crtieria Air Pollutar	ROG	48	0
Emission point 5	Crtieria Air Pollutar	PM10	38	0
Emission point 5	Crtieria Air Pollutar	PM2.5	38	0
Emission point 5	Crtieria Air Pollutar	CO	667	0
Emission point 5	Crtieria Air Pollutar	SOx	333	0
Emission point 5	GHG	CO2e	1400000	0
Emission point 6	Crtieria Air Pollutar	NOx	1496	0
Emission point 6	Crtieria Air Pollutar	CO	667	0
Emission point 6	Crtieria Air Pollutar	SOx	333	0
Emission point 6	Crtieria Air Pollutar	ROG	48	0
Emission point 6	Crtieria Air Pollutar	PM10	38	0
Emission point 6	Crtieria Air Pollutar	PM2.5	38	0
Emission point 6	GHG	CO2e	1400000	0
Emission point 7	Crtieria Air Pollutar	NOx	1496	0
Emission point 7	Crtieria Air Pollutar	CO	667	0
Emission point 7	Crtieria Air Pollutar	SOx	333	0
Emission point 7	Crtieria Air Pollutar	ROG	48	0
Emission point 7	Crtieria Air Pollutar	PM10	38	0
Emission point 7	Crtieria Air Pollutar	PM2.5	38	0
Emission point 7	GHG	CO2e	1400000	0

HARP Output of Cancer Risks, Chronic Health Index, and Acute Health Index

Risk Name	Pollutant	Risk Value	X	Y
PMI Conc.	[D] Acetone	2.89E-06	615922.9	4202212
PMI Conc.	Benzene	0.000216	615922.9	4202212
Cancer Risk Resident	Benzene	1.16E-08	615922.9	4202212
Cancer Risk Worker	Benzene	7.19E-10	615802.9	4202112
PMI Conc.	Chlorobenzns	8.26E-07	615922.9	4202212
PMI Conc.	Ethyl Benzene	0.000119	615922.9	4202212
Cancer Risk Resident	Ethyl Benzene	5.57E-10	615922.9	4202212
Cancer Risk Worker	Ethyl Benzene	3.21E-11	615802.9	4202112
PMI Conc.	EDC	5.78E-06	615922.9	4202212
Cancer Risk Resident	EDC	2.24E-10	615922.9	4202212
Cancer Risk Worker	EDC	1.42E-11	615802.9	4202112
PMI Conc.	Formaldehyde	0.003208	615922.9	4202212
Cancer Risk Resident	Formaldehyde	3.62E-08	615922.9	4202212
Chronic HI Resident	Formaldehyde	0.000356	615922.9	4202212
Cancer Risk Worker	Formaldehyde	2.13E-09	615802.9	4202112
Chronic HI Worker	Formaldehyde	9.13E-05	615802.9	4202112
PMI Conc.	Hexane	0.000118	615922.9	4202212
PMI Conc.	HCl	0.002665	615922.9	4202212
Acute HI Resident	HCl	4.68E-05	615922.9	4202192
Chronic HI Resident	HCl	0.000296	615922.9	4202212
Acute HI Worker	HCl	4.69E-05	615802.9	4202112
Chronic HI Worker	HCl	8.18E-05	615802.9	4202112
PMI Conc.	Methylene Chlc	4.13E-07	615922.9	4202212
Cancer Risk Resident	Methylene Chlc	7.77E-13	615922.9	4202212
Cancer Risk Worker	Methylene Chlc	4.92E-14	615802.9	4202112
PMI Conc.	MEK	4.13E-07	615922.9	4202212
Acute HI Resident	MEK	1.17E-09	615922.9	4202192
Acute HI Worker	MEK	1.17E-09	615802.9	4202112
PMI Conc.	Perc	2.06E-06	615922.9	4202212
Cancer Risk Resident	Perc	2.33E-11	615922.9	4202212
Acute HI Resident	Perc	3.8E-09	615922.9	4202192
Cancer Risk Worker	Perc	1.48E-12	615802.9	4202112
Acute HI Worker	Perc	3.82E-09	615802.9	4202112
PMI Conc.	Toluene	0.000486	615922.9	4202212
Acute HI Resident	Toluene	4.36E-06	615922.9	4202212
Acute HI Worker	Toluene	3.45E-06	615802.9	4202112
PMI Conc.	1,1,2TriClEthan	4.13E-07	615922.9	4202212
Cancer Risk Resident	1,1,2TriClEthan	1.27E-11	615922.9	4202212
Cancer Risk Worker	1,1,2TriClEthan	8.01E-13	615802.9	4202112
PMI Conc.	TCE	1.24E-06	615922.9	4202212
Cancer Risk Resident	TCE	4.66E-12	615922.9	4202212
Cancer Risk Worker	TCE	2.95E-13	615802.9	4202112
PMI Conc.	Xylenes	0.000605	615922.9	4202212
Acute HI Resident	Xylenes	7.12E-07	615922.9	4202212
Chronic HI Resident	Xylenes	8.64E-07	615922.9	4202212
Acute HI Worker	Xylenes	6.41E-07	615802.9	4202112
Chronic HI Worker	Xylenes	2.27E-07	615802.9	4202112
PMI Conc.	Acetaldehyde	5.75E-05	615922.9	4202212
Cancer Risk Resident	Acetaldehyde	3.09E-10	615922.9	4202212
Acute HI Resident	Acetaldehyde	0.000172	615922.9	4202172
Chronic HI Resident	Acetaldehyde	4.11E-07	615922.9	4202212

Cancer Risk Worker	Acetaldehyde	1.93E-11	615802.9	4202112
Acute HI Worker	Acetaldehyde	0.000134	615802.9	4202112
Chronic HI Worker	Acetaldehyde	1.12E-07	615802.9	4202112
PMI Conc.	Acrolein	3.36E-05	615922.9	4202212
Acute HI Resident	Acrolein	0.005363	615922.9	4202172
Chronic HI Resident	Acrolein	9.6E-05	615922.9	4202212
Acute HI Worker	Acrolein	0.004181	615802.9	4202112
Chronic HI Worker	Acrolein	2.47E-05	615802.9	4202112
PMI Conc.	Arsenic	2.42E-06	615922.9	4202212
Cancer Risk Resident	Arsenic	2.15E-07	615922.9	4202212
Chronic HI Resident	Arsenic	0.015669	615922.9	4202212
Cancer Risk Worker	Arsenic	2.23E-09	615802.9	4202112
Chronic HI Worker	Arsenic	0.001148	615802.9	4202112
PMI Conc.	Beryllium	7.25E-08	615922.9	4202212
Cancer Risk Resident	Beryllium	3.28E-10	615922.9	4202212
Chronic HI Resident	Beryllium	1.04E-05	615922.9	4202212
Cancer Risk Worker	Beryllium	1.89E-11	615802.9	4202112
Chronic HI Worker	Beryllium	2.6E-06	615802.9	4202112
PMI Conc.	Cadmium	1.33E-05	615922.9	4202212
Cancer Risk Resident	Cadmium	1.07E-07	615922.9	4202212
Chronic HI Resident	Cadmium	0.000666	615922.9	4202212
Cancer Risk Worker	Cadmium	6.18E-09	615802.9	4202112
Chronic HI Worker	Cadmium	0.000167	615802.9	4202112
PMI Conc.	Copper	1.03E-05	615922.9	4202212
Acute HI Resident	Copper	1.23E-06	615922.9	4202212
Acute HI Worker	Copper	1.04E-06	615902.9	4201872
PMI Conc.	Lead	6.04E-06	615922.9	4202212
Cancer Risk Resident	Lead	2.08E-09	615922.9	4202212
Cancer Risk Worker	Lead	2.52E-11	615802.9	4202112
PMI Conc.	Manganese	4.6E-06	615922.9	4202212
PMI Conc.	Mercury	3.15E-06	615922.9	4202212
PMI Conc.	Naphthalene	7.38E-06	615922.9	4202212
Cancer Risk Resident	Naphthalene	4.76E-10	615922.9	4202212
Chronic HI Resident	Naphthalene	8.2E-07	615922.9	4202212
Cancer Risk Worker	Naphthalene	2.74E-11	615802.9	4202112
Chronic HI Worker	Naphthalene	2.06E-07	615802.9	4202112
PMI Conc.	Nickel	2.54E-05	615922.9	4202212
Cancer Risk Resident	Nickel	1.24E-08	615922.9	4202212
Chronic HI Resident	Nickel	0.001815	615922.9	4202212
Cancer Risk Worker	Nickel	7.15E-10	615802.9	4202112
Chronic HI Worker	Nickel	0.000456	615802.9	4202112
PMI Conc.	PAHs-w/o	6.01E-07	615922.9	4202172
Cancer Risk Resident	PAHs-w/o	4.44E-08	615922.9	4202172
Cancer Risk Worker	PAHs-w/o	4.06E-10	615802.9	4202112
PMI Conc.	Propylene	0.008846	615922.9	4202212
Chronic HI Resident	Propylene	2.95E-06	615922.9	4202212
Chronic HI Worker	Propylene	7.41E-07	615802.9	4202112
PMI Conc.	Selenium	1.46E-07	615922.9	4202212
PMI Conc.	Vanadium	2.78E-05	615922.9	4202212
Acute HI Resident	Vanadium	1.11E-05	615922.9	4202212
Acute HI Worker	Vanadium	9.33E-06	615902.9	4201872
PMI Conc.	1,3-Butadiene	1.67E-06	615922.9	4202172
Cancer Risk Resident	1,3-Butadiene	5.39E-10	615922.9	4202172
Cancer Risk Worker	1,3-Butadiene	5.22E-11	615802.9	4202112
PMI Conc.	NH3	139.644	615782.9	4202032
Chronic HI Resident	NH3	0.086028	615922.9	4202172
Chronic HI Worker	NH3	0.69822	615782.9	4202032
PMI Conc.	PM25	0.203531	615922.9	4202192
PMI Conc.	DieselExhPM	0.000147	614742.9	4201552
Cancer Risk Resident	DieselExhPM	3.65E-08	615042.9	4201592
Chronic HI Resident	DieselExhPM	1.24E-05	615042.9	4201592
Cancer Risk Worker	DieselExhPM	1.71E-08	615222.9	4201692
Chronic HI Worker	DieselExhPM	2.53E-05	615222.9	4201692

Risk Summary

Cancer Risk Resident

Pollutant	Risk Value	X	Y
Arsenic	2.15E-07	615922.88	4202211.51
Cadmium	1.07E-07	615922.88	4202211.51
PAHs-w/o	4.44E-08	615922.88	4202171.51
DieselExhPM	3.65E-08	615042.88	4201591.51
Formaldehyde	3.62E-08	615922.88	4202211.51
Nickel	1.24E-08	615922.88	4202211.51
Benzene	1.16E-08	615922.88	4202211.51
Lead	2.08E-09	615922.88	4202211.51
Ethyl Benzene	5.57E-10	615922.88	4202211.51
1,3-Butadiene	5.39E-10	615922.88	4202171.51
Naphthalene	4.76E-10	615922.88	4202211.51
Beryllium	3.28E-10	615922.88	4202211.51
Acetaldehyde	3.09E-10	615922.88	4202211.51
EDC	2.24E-10	615922.88	4202211.51
Perc	2.33E-11	615922.88	4202211.51
1,1,2TriClEthan	1.27E-11	615922.88	4202211.51
TCE	4.66E-12	615922.88	4202211.51
Methylene Chlor	7.77E-13	615922.88	4202211.51

Chronic HI Resident

Pollutant	Risk Value	X	Y
NH3	0.086028	615922.88	4202171.51
Arsenic	0.015669	615922.88	4202211.51
Nickel	0.001815	615922.88	4202211.51
Cadmium	0.0006661	615922.88	4202211.51
Formaldehyde	0.00035645	615922.88	4202211.51
HCl	0.0002961	615922.88	4202211.51
Acrolein	9.5954E-05	615922.88	4202211.51
DieselExhPM	1.2351E-05	615042.88	4201591.51
Beryllium	1.0362E-05	615922.88	4202211.51
Propylene	2.9488E-06	615922.88	4202211.51
Xylenes	8.6407E-07	615922.88	4202211.51
Naphthalene	8.1961E-07	615922.88	4202211.51
Acetaldehyde	4.11E-07	615922.88	4202211.51

Acute HI Resident

Pollutant	Risk Value	X	Y
Acrolein	0.0053626	615922.88	4202171.51
Acetaldehyde	0.00017186	615922.88	4202171.51
HCl	4.6754E-05	615922.88	4202191.51
Vanadium	1.1087E-05	615922.88	4202211.51
Toluene	4.3628E-06	615922.88	4202211.51
Copper	1.2314E-06	615922.88	4202211.51
Xylenes	7.1242E-07	615922.88	4202211.51
Perc	3.8026E-09	615922.88	4202191.51
MEK	1.17E-09	615922.88	4202191.51

Cancer Risk Worker

Pollutant	Risk Value	X	Y
DieselExhPM	1.7149E-08	615222.88	4201691.51
Cadmium	6.1829E-09	615802.88	4202111.51
Arsenic	2.2345E-09	615802.88	4202111.51
Formaldehyde	2.1271E-09	615802.88	4202111.51
Benzene	7.192E-10	615802.88	4202111.51
Nickel	7.1546E-10	615802.88	4202111.51
PAHs-w/o	4.0562E-10	615802.88	4202111.51
1,3-Butadiene	5.2232E-11	615802.88	4202111.51
Ethyl Benzene	3.2136E-11	615802.88	4202111.51
Naphthalene	2.7388E-11	615802.88	4202111.51
Lead	2.5163E-11	615802.88	4202111.51
Acetaldehyde	1.9305E-11	615802.88	4202111.51
Beryllium	1.8851E-11	615802.88	4202111.51
EDC	1.4166E-11	615802.88	4202111.51
Perc	1.4756E-12	615802.88	4202111.51
1,1,2TriClEthan	8.0106E-13	615802.88	4202111.51
TCE	2.9513E-13	615802.88	4202111.51
Methylene Chlor	4.9188E-14	615802.88	4202111.51

Chronic HI Worker

Pollutant	Risk Value	X	Y
NH3	0.69822	615782.88	4202031.51
Arsenic	0.0011484	615802.88	4202111.51
Nickel	0.00045578	615802.88	4202111.51
Cadmium	0.00016727	615802.88	4202111.51
Formaldehyde	9.1339E-05	615802.88	4202111.51
HCl	8.1806E-05	615802.88	4202111.51
DieselExhPM	2.5306E-05	615222.88	4201691.51
Acrolein	2.4664E-05	615802.88	4202111.51
Beryllium	2.6019E-06	615802.88	4202111.51
Propylene	7.4062E-07	615802.88	4202111.51
Xylenes	2.2692E-07	615802.88	4202111.51
Naphthalene	2.0581E-07	615802.88	4202111.51
Acetaldehyde	1.1191E-07	615802.88	4202111.51

Acute HI Worker

Pollutant	Risk Value	X	Y
Acrolein	0.0041807	615802.88	4202111.51
Acetaldehyde	0.00013392	615802.88	4202111.51
HCl	0.00004693	615802.88	4202111.51
Vanadium	9.3322E-06	615902.88	4201871.51
Toluene	3.4528E-06	615802.88	4202111.51
Copper	1.0365E-06	615902.88	4201871.51
Xylenes	6.4102E-07	615802.88	4202111.51
Perc	3.817E-09	615802.88	4202111.51
MEK	1.1744E-09	615802.88	4202111.51

Risk from all TACs

Risk Name	Risk Value	X	Y
Cancer Risk Resider	4.5432E-07	615922.88	4202211.51
Acute HI Resident	0.00559503	615922.88	4202171.51
Chronic HI Resident	0.10161935	615922.88	4202171.51
Cancer Risk Worker	2.777E-08	615782.88	4202111.51
Acute HI Worker	0.0043731	615802.88	4202111.51
Chronic HI Worker	0.69953093	615782.88	4202031.51
Cancer Risk PMI	4.5432E-07	615922.88	4202211.51
Acute HI PMI	0.00559503	615922.88	4202171.51
Chronic HI PMI	0.70135431	615782.88	4202031.51

HARP Project Summary Report 7/24/2024 4:28:34 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: BRENTWOOD_WWTP
Project Output Directory: C:\HRA\BRENTWOOD_WWTP
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:65
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	
Multi	Annual Ems	MaxHr Ems	MWAF		
	(lbs/yr)	(lbs/hr)			
FLARE	0	0	67641	[D] Acetone	1
	0.0404712	2.31E-05	1		
FLARE	0	0	71432	Benzene	1
	1.6015032	0.0009141	1		
FLARE	0	0	1058	Chlorobenzns	1
	0.0115632	6.6E-06	1		
FLARE	0	0	100414	Ethyl Benzene	1
	0.057816	3.3E-05	1		
FLARE	0	0	107062	EDC	1
	0.0809424	4.62E-05	1		
FLARE	0	0	50000	Formaldehyde	1
	7.80516	0.004455	1		
FLARE	0	0	110543	Hexane	1
	0.5839416	0.0003333	1		
FLARE	0	0	7647010	HCl	1
	37.320228	0.0213015	1		
FLARE	0	0	75092	Methylene Chlor	1
	0.0057816	3.3E-06	1		
FLARE	0	0	78933	MEK	1
	0.0057816	3.3E-06	1		
FLARE	0	0	127184	Perc	1
	0.028908	1.65E-05	1		
FLARE	0	0	108883	Toluene	1

	0.5839416	0.0003333	1			
FLARE	0	0		79005	1,1,2TriClEthan	1
	0.0057816	3.3E-06	1			
FLARE	0	0		79016	TCE	1
	0.0173448	9.9E-06	1			
FLARE	0	0		1330207	Xylenes	1
	3.8563272	0.0022011	1			
BOILER	0	0		75070	Acetaldehyde	1
	0.197679036	3.55904E-05	1			
BOILER	0	0		107028	Acrolein	1
	0.12413494	2.23494E-05	1			
BOILER	0	0		7440382	Arsenic	1
	0.009181301	1.65301E-06	1			
BOILER	0	0		71432	Benzene	1
	0.367252048	6.61205E-05	1			
BOILER	0	0		7440417	Beryllium	1
	0.000275439	4.95904E-08	1			
BOILER	0	0		7440439	Cadmium	1
	0.050590843	9.10843E-06	1			
BOILER	0	0		7440508	Copper	1
	0.03902053	7.0253E-06	1			
BOILER	0	0		100414	Ethyl Benzene	1
	0.436111807	7.85181E-05	1			
BOILER	0	0		50000	Formaldehyde	1
	10.02448193	0.001804819	1			
BOILER	0	0		110543	Hexane	1
	0.289492048	5.21205E-05	1			
BOILER	0	0		7439921	Lead	1
	0.022953253	4.13253E-06	1			
BOILER	0	0		7439965	Manganese	1
	0.017472578	3.14578E-06	1			
BOILER	0	0		7439976	Mercury	1
	0.01194506	2.1506E-06	1			
BOILER	0	0		91203	Naphthalene	1
	0.028012337	5.04337E-06	1			
BOILER	0	0		7440020	Nickel	1
	0.096497349	1.73735E-05	1			
BOILER	0	0		1151	PAHs-w/o	1
	0.000309166	5.56627E-08	1			
BOILER	0	0		115071	Propylene	1
	33.5866988	0.006046988	1			
BOILER	0	0		7782492	Selenium	1
	0.000552752	9.95181E-08	1			
BOILER	0	0		108883	Toluene	1
	1.681677108	0.000302771	1			
BOILER	0	0		7440622	Vanadium	1
	0.10539759	1.89759E-05	1			
BOILER	0	0		1330207	Xylenes	1
	1.250718072	0.000225181	1			
GENSET	0	0		75070	Acetaldehyde	1

	9.1264512	0.060843008	1			
GENSET	0	0		107028	Acrolein	1
	1.490032849	0.009933552	1			
GENSET	0	0		71432	Benzene	1
	8.753942988	0.05835962	1			
GENSET	0	0		106990	1,3-Butadiene	1
	2.483388082	0.016555921	1			
GENSET	0	0		50000	Formaldehyde	1
	18.26531934	0.121768796	1			
GENSET	0	0		1151	PAHs-w/o	1
	0.794684186	0.005297895	1			
GENSET	0	0		115071	Propylene	1
	3.228404506	0.021522697	1			
GENSET	0	0		108883	Toluene	1
	1.82529024	0.012168602	1			
GENSET	0	0		1330207	Xylenes	1
	0.223504927	0.001490033	1			
BIOFTR1	0	0		7783064	H2S	1
	0	0	1			
BIOFTR1	0	0		7664417	NH3	1
	7081	0	1			
BIOFTR1	0	0		7783064	H2S	1
	0	0	1			
BIOFTR2	0	0		7664417	NH3	1
	7081	0	1			
FLARE	0	0		88101	PM25	1
	693.792	0.396	1			
BOILER	0	0		88101	PM25	1
	349.0290574	0.062839594	1			
TAILGAS	0	0		88101	PM25	1
	0	0	1			
AMR	0	0		88101	PM25	1
	0	0	1			
GENSET	0	0		88101	PM25	1
	26.45502646	0.176366843	1			
PYRO1	0	0		88101	PM25	1
	38	0	1			
PYRO2	0	0		88101	PM25	1
	38	0	1			
PYRO3	0	0		88101	PM25	1
	38	0	1			
PYRO4	0	0		88101	PM25	1
	38	0	1			
PYRO5	0	0		88101	PM25	1
	38	0	1			
GENSET	0	0		9901	DieselExhPM	1
	26.45502646	0.176366843	1			
HAUL_E	0	0		9901	DieselExhPM	1
	0.6	0	1			
HAUL_E	0	0		88101	PM25	1

```
            0.6             0               1
HAUL_D          0               0               88101           PM25            1
            112.991856      0               1
WORKER_E        0               0               88101           PM25            1
            0.13            0               1
WORKER_D        0               0               88101           PM25            1
            17.7            0               1

Background
PolID           PolAbbrev       Conc (ug/m^3)   MWAF
_____________________________________________________________________

Ground level concentration files (\glc\)
_____________________________________
100414MAXHR.txt
100414PER.txt
1058MAXHR.txt
1058PER.txt
106990MAXHR.txt
106990PER.txt
107028MAXHR.txt
107028PER.txt
107062MAXHR.txt
107062PER.txt
108883MAXHR.txt
108883PER.txt
110543MAXHR.txt
110543PER.txt
115071MAXHR.txt
115071PER.txt
1151MAXHR.txt
1151PER.txt
127184MAXHR.txt
127184PER.txt
1330207MAXHR.txt
1330207PER.txt
50000MAXHR.txt
50000PER.txt
67641MAXHR.txt
67641PER.txt
71432MAXHR.txt
71432PER.txt
7439921MAXHR.txt
7439921PER.txt
7439965MAXHR.txt
7439965PER.txt
7439976MAXHR.txt
7439976PER.txt
7440020MAXHR.txt
7440020PER.txt
```

7440382MAXHR.txt
7440382PER.txt
7440417MAXHR.txt
7440417PER.txt
7440439MAXHR.txt
7440439PER.txt
7440508MAXHR.txt
7440508PER.txt
7440622MAXHR.txt
7440622PER.txt
75070MAXHR.txt
75070PER.txt
75092MAXHR.txt
75092PER.txt
7647010MAXHR.txt
7647010PER.txt
7664417MAXHR.txt
7664417PER.txt
7782492MAXHR.txt
7782492PER.txt
7783064MAXHR.txt
7783064PER.txt
78933MAXHR.txt
78933PER.txt
79005MAXHR.txt
79005PER.txt
79016MAXHR.txt
79016PER.txt
88101MAXHR.txt
88101PER.txt
91203MAXHR.txt
91203PER.txt
9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH23279
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
67641	[D] Acetone						
71432	Benzene	0.1		27	3	3	
1058	Chlorobenzns						

100414	Ethyl Benzene	0.0087			
2000					
107062	EDC	0.072			400
50000	Formaldehyde	0.021		55	9
	9				
110543	Hexane				
7000					
7647010	HCl			2100	9
75092	Methylene Chlor	0.0035		14000	400
78933	MEK			13000	
127184	Perc	0.021		20000	35
108883	Toluene			5000	420
	830				
79005	1,1,2TriClEthan	0.057			
79016	TCE	0.007			600
1330207	Xylenes			22000	700
75070	Acetaldehyde	0.01		470	140
	300				
107028	Acrolein			2.5	
0.35		0.7			
7440382	Arsenic	12	1.5	0.2	
0.015	3.5E-06	0.015			
7440417	Beryllium	8.4			
0.007	0.002				
7440439	Cadmium	15			
0.02	0.0005				
7440508	Copper			100	
7439921	Lead	0.042	0.0085		
7439965	Manganese				
0.09		0.17			
7439976	Mercury			0.6	
0.03	0.00016	0.06			
91203	Naphthalene	0.12			9
7440020	Nickel	0.91		0.2	
0.014	0.011	0.06			
1151	PAHs-w/o	3.9	12		
115071	Propylene				
3000					

```
7782492         Selenium                                                    20
           0.005
7440622         Vanadium                                    30

106990          1,3-Butadiene   0.6                         660             2
                            9
7783064         H2S                                         42              10

7664417         NH3                                         3200            200

88101           PM25

9901            DieselExhPM     1.1                                         5


***AIR DISPERSION MODELING INFORMATION***
Versions used in HARP.  All executables were obtained from USEPA's Support Center
for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

***METEOROLOGICAL INFORMATION***
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

***LIST OF AIR DISPERSION FILES***
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list
_____________

***LIST OF RISK ASSESSMENT FILES***
Health risk analysis files (\hra\)

_________
Resident_CancerRisk.csv
Resident_CancerRiskSumByRec.csv
Resident_GLCList.csv
Resident_HRAInput.hra
Resident_NCAcuteRisk.csv
Resident_NCAcuteRiskSumByRec.csv
Resident_NCChronicRisk.csv
Resident_NCChronicRiskSumByRec.csv
Resident_Output.txt
```

Resident_PathwayRec.csv
Resident_PolDB.csv
Worker_CancerRisk.csv
Worker_CancerRiskSumByRec.csv
Worker_GLCList.csv
Worker_HRAInput.hra
Worker_NCAcuteRisk.csv
Worker_NCAcuteRiskSumByRec.csv
Worker_NCChronicRisk.csv
Worker_NCChronicRiskSumByRec.csv
Worker_Output.txt
Worker_PathwayRec.csv
Worker_PolDB.csv

Spatial averaging files (\sa\)
_____

Control Pathway

AERMOD

Dispersion Options

Titles

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

Dispersion Options

- [x] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

- [x] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM2.5

Averaging Time Options

Hours

1	2	3	4	6	8	12	24
■	☐	☐	☐	☐	☐	☐	☐

- [ ] Month
- [x] Period
- [ ] Annual

Exponential Decay

Default half-life of 4 hrs will be used

Terrain Height Options

- [ ] Flat
- [x] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [x] Yes
- [ ] No

Default Height = 1.50 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: Brentwood_WWTP_OP.err

Source Pathway - Source Inputs

Point Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Gas Exit Temp. [K]	Gas Exit Velocity [m/s]	Stack Inside Diameter [m]
POINT	FLARE	615705.93 Flare stack emission	4202340.03	15.00	9.14	1.00000	1644.00	2.35	1.02
POINT	TAILGAS	615725.23 Tail Gas Stack	4202307.09	14.76	4.57	1.00000	297.00	5.17	0.15
POINT	GENSET	615715.50 Diesel Generator	4202288.31	14.71	9.14	1.00000	766.00	24.24	1.22
POINT	AMR	615727.67 AMR stack	4202288.06	14.40	9.14	1.00000	305.00	4.85	0.61
POINT	BOILER	615739.37 Boiler stack	4202288.06	14.11	9.14	1.00000	478.00	5.44	0.36
POINT	PYRO1	615721.39 Pyrolysis 1	4202080.35	15.00	8.53	1.00000	339.00	6.67	0.20
POINT	PYRO2	615747.72 Pyrolysis 2	4202080.11	15.00	8.53	1.00000	339.00	6.67	0.20
POINT	PYRO3	615722.53 Pyrolysis 3	4202170.15	14.13	8.53	1.00000	339.00	6.67	0.20
POINT	PYRO4	615721.90 Pyrolysis 4	4202195.57	14.00	8.53	1.00000	339.00	6.67	0.20
POINT	PYRO5	615745.66 Pyrolysis 5	4202195.63	14.00	8.53	1.00000	339.00	6.67	0.20

Source Pathway - Source Inputs

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	BIOFTR1	615725.77 Biofilter 2	4202044.47	15.00	0.00	0.00260	19.94	19.30	0.00	
AREA	BIOFTR2	615720.99 Biofilter 2	4202223.28	14.00	0.00	0.00260	19.94	19.30	0.00	

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: HAUL_D (Haul dust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614603.97	4201558.11	18.00	0.00
			615215.89	4201573.14	16.00	0.00
			615200.60	4201935.54	16.00	0.00
			615213.39	4201964.32	16.00	0.00
			615242.18	4201976.05	16.00	0.00
			615440.08	4201978.43	18.59	0.00
			615477.04	4201973.24	17.06	0.00
			615739.14	4201982.44	15.00	0.00
			615757.19	4201994.43	15.00	0.00
			615762.77	4202006.39	15.00	0.00
			615746.94	4202370.74	15.00	0.00
			615745.84	4202379.42	15.00	0.00
			615741.16	4202388.25	15.00	0.00
			615685.60	4202385.47	15.99	0.00
			615676.59	4202384.45	15.92	0.00
			615673.68	4202371.78	15.62	0.00
			615685.57	4202036.29	15.00	0.00
			615693.76	4201990.53	15.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: HAUL_E (Haul exhaust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614603.97	4201558.11	18.00	3.40
			615215.89	4201573.14	16.00	3.40
			615200.60	4201935.54	16.00	3.40
			615213.39	4201964.32	16.00	3.40
			615242.18	4201976.05	16.00	3.40
			615440.08	4201978.43	18.59	3.40
			615477.04	4201973.24	17.06	3.40
			615739.14	4201982.44	15.00	3.40
			615757.19	4201994.43	15.00	3.40
			615762.77	4202006.39	15.00	3.40
			615746.94	4202370.74	15.00	3.40
			615745.84	4202379.42	15.00	3.40
			615741.16	4202388.25	15.00	3.40
			615685.60	4202385.47	15.99	3.40
			615676.59	4202384.45	15.92	3.40
			615673.68	4202371.78	15.62	3.40
			615685.57	4202036.29	15.00	3.40
			615693.76	4201990.53	15.00	3.40

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: WORKER_D (Worker commute dust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614603.97	4201558.11	18.00	0.00
			615215.89	4201573.14	16.00	0.00
			615200.60	4201935.54	16.00	0.00
			615213.39	4201964.32	16.00	0.00
			615242.18	4201976.05	16.00	0.00
			615440.08	4201978.43	18.59	0.00
			615477.04	4201973.24	17.06	0.00
			615739.14	4201982.44	15.00	0.00
			615757.19	4201994.43	15.00	0.00
			615762.77	4202006.39	15.00	0.00
			615746.94	4202370.74	15.00	0.00
			615745.84	4202379.42	15.00	0.00
			615741.16	4202388.25	15.00	0.00
			615685.60	4202385.47	15.99	0.00
			615676.59	4202384.45	15.92	0.00
			615673.68	4202371.78	15.62	0.00
			615685.57	4202036.29	15.00	0.00
			615693.76	4201990.53	15.00	0.00

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: WORKER_E (Worker commute exhaust)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000	Surface-Based	614603.97	4201558.11	18.00	1.30
			615215.89	4201573.14	16.00	1.30
			615200.60	4201935.54	16.00	1.30
			615213.39	4201964.32	16.00	1.30
			615242.18	4201976.05	16.00	1.30
			615440.08	4201978.43	18.59	1.30
			615477.04	4201973.24	17.06	1.30
			615739.14	4201982.44	15.00	1.30
			615757.19	4201994.43	15.00	1.30
			615762.77	4202006.39	15.00	1.30
			615746.94	4202370.74	15.00	1.30
			615745.84	4202379.42	15.00	1.30
			615741.16	4202388.25	15.00	1.30
			615685.60	4202385.47	15.99	1.30
			615676.59	4202384.45	15.92	1.30
			615673.68	4202371.78	15.62	1.30
			615685.57	4202036.29	15.00	1.30
			615693.76	4201990.53	15.00	1.30

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000001	614607.97	4201558.21	17.92	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000002	614615.96	4201558.40	17.77	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000003	614623.96	4201558.60	17.62	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000004	614631.96	4201558.79	17.47	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000005	614639.96	4201558.99	17.24	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000006	614647.96	4201559.19	16.98	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000007	614655.95	4201559.38	16.72	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000008	614663.95	4201559.58	16.46	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000009	614671.95	4201559.78	16.34	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000010	614679.95	4201559.97	16.22	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000011	614687.94	4201560.17	16.09	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000012	614695.94	4201560.37	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000013	614703.94	4201560.56	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000014	614711.94	4201560.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000015	614719.93	4201560.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000016	614727.93	4201561.15	15.86	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000017	614735.93	4201561.35	15.59	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000018	614743.93	4201561.55	15.33	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000019	614751.92	4201561.74	15.06	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000020	614759.92	4201561.94	15.09	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000021	614767.92	4201562.14	15.21	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000022	614775.92	4201562.33	15.33	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000023	614783.91	4201562.53	15.44	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000024	614791.91	4201562.72	15.59	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000025	614799.91	4201562.92	15.74	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000026	614807.91	4201563.12	15.89	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000027	614815.90	4201563.31	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000028	614823.90	4201563.51	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000029	614831.90	4201563.71	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000030	614839.90	4201563.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000031	614847.89	4201564.10	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000032	614855.89	4201564.30	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000033	614863.89	4201564.49	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000034	614871.89	4201564.69	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000035	614879.89	4201564.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000036	614887.88	4201565.08	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000037	614895.88	4201565.28	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000038	614903.88	4201565.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000039	614911.88	4201565.67	16.27	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000040	614919.87	4201565.87	16.54	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000041	614927.87	4201566.07	16.80	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000042	614935.87	4201566.26	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000043	614943.87	4201566.46	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000044	614951.86	4201566.65	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000045	614959.86	4201566.85	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000046	614967.86	4201567.05	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000047	614975.86	4201567.24	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000048	614983.85	4201567.44	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000049	614991.85	4201567.64	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000050	614999.85	4201567.83	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000051	615007.85	4201568.03	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000052	615015.84	4201568.23	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000053	615023.84	4201568.42	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000054	615031.84	4201568.62	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000055	615039.84	4201568.82	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000056	615047.83	4201569.01	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000057	615055.83	4201569.21	16.95	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000058	615063.83	4201569.41	16.73	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000059	615071.83	4201569.60	16.52	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000060	615079.82	4201569.80	16.30	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000061	615087.82	4201570.00	16.17	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000062	615095.82	4201570.19	16.11	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000063	615103.82	4201570.39	16.06	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000064	615111.82	4201570.58	16.01	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000065	615119.81	4201570.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000066	615127.81	4201570.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000067	615135.81	4201571.17	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000068	615143.81	4201571.37	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000069	615151.80	4201571.57	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000070	615159.80	4201571.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000071	615167.80	4201571.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000072	615175.80	4201572.16	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000073	615183.79	4201572.35	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000074	615191.79	4201572.55	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000075	615199.79	4201572.75	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000076	615207.79	4201572.94	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000077	615215.78	4201573.14	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000078	615215.55	4201581.03	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000079	615215.22	4201589.03	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000080	615214.88	4201597.02	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000081	615214.54	4201605.01	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000082	615214.20	4201613.00	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000083	615213.87	4201621.00	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000084	615213.53	4201628.99	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000085	615213.19	4201636.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000086	615212.85	4201644.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000087	615212.52	4201652.97	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000088	615212.18	4201660.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000089	615211.84	4201668.95	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000090	615211.51	4201676.95	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000091	615211.17	4201684.94	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000092	615210.83	4201692.93	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000093	615210.49	4201700.93	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000094	615210.16	4201708.92	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000095	615209.82	4201716.91	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000096	615209.48	4201724.91	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000097	615209.15	4201732.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000098	615208.81	4201740.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000099	615208.47	4201748.88	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000100	615208.13	4201756.88	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000101	615207.80	4201764.87	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000102	615207.46	4201772.86	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000103	615207.12	4201780.86	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000104	615206.79	4201788.85	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000105	615206.45	4201796.84	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000106	615206.11	4201804.83	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000107	615205.77	4201812.83	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000108	615205.44	4201820.82	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000109	615205.10	4201828.81	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000110	615204.76	4201836.81	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000111	615204.43	4201844.80	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000112	615204.09	4201852.79	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000113	615203.75	4201860.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000114	615203.41	4201868.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000115	615203.08	4201876.77	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000116	615202.74	4201884.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000117	615202.40	4201892.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000118	615202.07	4201900.75	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000119	615201.73	4201908.74	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000120	615201.39	4201916.73	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000121	615201.05	4201924.73	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000122	615200.72	4201932.72	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000123	615202.70	4201940.27	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000124	615205.95	4201947.58	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000125	615209.20	4201954.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000126	615212.45	4201962.20	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000127	615218.65	4201966.46	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000128	615226.06	4201969.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000129	615233.47	4201972.50	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000130	615240.88	4201975.52	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000131	615248.78	4201976.13	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000132	615256.78	4201976.22	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000133	615264.78	4201976.32	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000134	615272.78	4201976.42	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000135	615280.77	4201976.51	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000136	615288.77	4201976.61	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000137	615296.77	4201976.70	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000138	615304.77	4201976.80	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000139	615312.77	4201976.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000140	615320.77	4201976.99	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000141	615328.77	4201977.09	16.10	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000142	615336.77	4201977.19	16.27	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000143	615344.77	4201977.28	16.43	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000144	615352.77	4201977.38	16.59	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000145	615360.77	4201977.48	16.70	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000146	615368.77	4201977.57	16.80	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000147	615376.77	4201977.67	16.91	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000148	615384.77	4201977.76	17.03	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000149	615392.77	4201977.86	17.30	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000150	615400.77	4201977.96	17.57	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000151	615408.77	4201978.05	17.83	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000152	615416.76	4201978.15	18.06	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000153	615424.76	4201978.25	18.21	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000154	615432.76	4201978.34	18.37	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000155	615440.76	4201978.34	18.52	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000156	615448.68	4201977.22	18.35	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000157	615456.60	4201976.11	17.95	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000158	615464.52	4201975.00	17.52	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000159	615472.45	4201973.89	17.08	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000160	615480.40	4201973.36	16.78	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000161	615488.39	4201973.64	16.51	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000162	615496.39	4201973.92	16.25	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000163	615504.38	4201974.20	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000164	615512.38	4201974.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000165	615520.37	4201974.77	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000166	615528.37	4201975.05	16.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000167	615536.36	4201975.33	16.09	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000168	615544.36	4201975.61	16.35	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000169	615552.35	4201975.89	16.62	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000170	615560.35	4201976.17	16.89	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000171	615568.34	4201976.45	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000172	615576.34	4201976.73	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000173	615584.34	4201977.01	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000174	615592.33	4201977.29	17.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000175	615600.33	4201977.57	16.91	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000176	615608.32	4201977.85	16.80	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000177	615616.32	4201978.13	16.69	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000178	615624.31	4201978.41	16.56	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000179	615632.31	4201978.69	16.28	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000180	615640.30	4201978.97	16.01	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000181	615648.30	4201979.25	15.73	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000182	615656.29	4201979.53	15.49	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000183	615664.29	4201979.81	15.34	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000184	615672.28	4201980.09	15.20	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000185	615680.28	4201980.37	15.06	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000186	615688.27	4201980.66	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000187	615696.27	4201980.94	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000188	615704.26	4201981.22	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000189	615712.26	4201981.50	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000190	615720.25	4201981.78	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000191	615728.25	4201982.06	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000192	615736.24	4201982.34	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000193	615743.39	4201985.26	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000194	615750.05	4201989.69	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000195	615756.71	4201994.12	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000196	615760.33	4202001.16	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000197	615762.68	4202008.62	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000198	615762.33	4202016.61	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000199	615761.98	4202024.61	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000200	615761.63	4202032.60	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000201	615761.29	4202040.59	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000202	615760.94	4202048.58	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000203	615760.59	4202056.57	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000204	615760.24	4202064.57	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000205	615759.90	4202072.56	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000206	615759.55	4202080.55	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000207	615759.20	4202088.54	14.95	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000208	615758.85	4202096.54	14.82	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000209	615758.51	4202104.53	14.69	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000210	615758.16	4202112.52	14.57	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000211	615757.81	4202120.51	14.45	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000212	615757.46	4202128.51	14.31	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000213	615757.12	4202136.50	14.17	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000214	615756.77	4202144.49	14.02	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000215	615756.42	4202152.48	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000216	615756.08	4202160.48	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000217	615755.73	4202168.47	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000218	615755.38	4202176.46	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000219	615755.03	4202184.45	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000220	615754.69	4202192.45	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000221	615754.34	4202200.44	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000222	615753.99	4202208.43	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000223	615753.64	4202216.42	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000224	615753.30	4202224.42	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000225	615752.95	4202232.41	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000226	615752.60	4202240.40	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000227	615752.25	4202248.39	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000228	615751.91	4202256.39	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000229	615751.56	4202264.38	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000230	615751.21	4202272.37	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000231	615750.86	4202280.36	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000232	615750.52	4202288.36	14.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000233	615750.17	4202296.35	14.02	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000234	615749.82	4202304.34	14.23	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000235	615749.47	4202312.33	14.45	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000236	615749.13	4202320.33	14.67	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000237	615748.78	4202328.32	14.83	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000238	615748.43	4202336.31	14.84	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000239	615748.08	4202344.30	14.86	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000240	615747.74	4202352.30	14.87	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000241	615747.39	4202360.29	14.90	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000242	615747.04	4202368.28	14.94	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000243	615746.24	4202376.23	14.97	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000244	615743.60	4202383.65	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000245	615738.37	4202388.11	15.08	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000246	615730.38	4202387.71	15.07	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000247	615722.39	4202387.31	15.05	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000248	615714.40	4202386.91	15.04	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000249	615706.41	4202386.51	15.26	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000250	615698.42	4202386.11	15.52	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000251	615690.43	4202385.71	15.78	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000252	615682.45	4202385.11	15.98	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000253	615676.12	4202382.40	15.89	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000254	615674.33	4202374.61	15.63	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000255	615673.86	4202366.68	15.37	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000256	615674.15	4202358.69	15.10	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000257	615674.43	4202350.69	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000258	615674.71	4202342.70	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000259	615675.00	4202334.70	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000260	615675.28	4202326.71	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000261	615675.56	4202318.71	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000262	615675.85	4202310.72	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000263	615676.13	4202302.72	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000264	615676.41	4202294.73	14.98	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000265	615676.70	4202286.73	14.77	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000266	615676.98	4202278.74	14.56	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000267	615677.26	4202270.74	14.35	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000268	615677.55	4202262.75	14.21	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000269	615677.83	4202254.75	14.20	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000270	615678.11	4202246.76	14.19	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000271	615678.40	4202238.76	14.18	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000272	615678.68	4202230.77	14.31	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000273	615678.96	4202222.77	14.52	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000274	615679.25	4202214.78	14.74	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000275	615679.53	4202206.78	14.97	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000276	615679.81	4202198.79	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000277	615680.10	4202190.79	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000278	615680.38	4202182.80	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000279	615680.66	4202174.80	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000280	615680.95	4202166.81	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000281	615681.23	4202158.81	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000282	615681.51	4202150.82	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000283	615681.80	4202142.82	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000284	615682.08	4202134.83	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000285	615682.36	4202126.83	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000286	615682.65	4202118.84	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000287	615682.93	4202110.84	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000288	615683.22	4202102.85	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000289	615683.50	4202094.85	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000290	615683.78	4202086.86	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000291	615684.07	4202078.86	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000292	615684.35	4202070.87	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000293	615684.63	4202062.87	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000294	615684.92	4202054.88	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000295	615685.20	4202046.88	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000296	615685.48	4202038.89	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000297	615686.52	4202030.98	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000298	615687.93	4202023.10	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000299	615689.34	4202015.23	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_D	L0000300	615690.75	4202007.35	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000301	615692.16	4201999.48	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16
	L0000302	615693.57	4201991.60	15.00	0.00	0.00331	8.00	Surface-Based	3.72	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000303	614607.97	4201558.21	17.92	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000304	614615.96	4201558.40	17.77	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000305	614623.96	4201558.60	17.62	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000306	614631.96	4201558.79	17.47	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000307	614639.96	4201558.99	17.24	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000308	614647.96	4201559.19	16.98	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000309	614655.95	4201559.38	16.72	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000310	614663.95	4201559.58	16.46	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000311	614671.95	4201559.78	16.34	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000312	614679.95	4201559.97	16.22	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000313	614687.94	4201560.17	16.09	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000314	614695.94	4201560.37	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000315	614703.94	4201560.56	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000316	614711.94	4201560.76	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000317	614719.93	4201560.96	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000318	614727.93	4201561.15	15.86	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000319	614735.93	4201561.35	15.59	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000320	614743.93	4201561.55	15.33	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000321	614751.92	4201561.74	15.06	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000322	614759.92	4201561.94	15.09	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000323	614767.92	4201562.14	15.21	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000324	614775.92	4201562.33	15.33	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000325	614783.91	4201562.53	15.44	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000326	614791.91	4201562.72	15.59	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000327	614799.91	4201562.92	15.74	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000328	614807.91	4201563.12	15.89	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000329	614815.90	4201563.31	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000330	614823.90	4201563.51	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000331	614831.90	4201563.71	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000332	614839.90	4201563.90	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000333	614847.89	4201564.10	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000334	614855.89	4201564.30	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000335	614863.89	4201564.49	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000336	614871.89	4201564.69	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000337	614879.89	4201564.89	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000338	614887.88	4201565.08	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000339	614895.88	4201565.28	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000340	614903.88	4201565.48	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000341	614911.88	4201565.67	16.27	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000342	614919.87	4201565.87	16.54	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000343	614927.87	4201566.07	16.80	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000344	614935.87	4201566.26	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000345	614943.87	4201566.46	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000346	614951.86	4201566.65	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000347	614959.86	4201566.85	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000348	614967.86	4201567.05	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000349	614975.86	4201567.24	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000350	614983.85	4201567.44	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000351	614991.85	4201567.64	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000352	614999.85	4201567.83	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000353	615007.85	4201568.03	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000354	615015.84	4201568.23	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000355	615023.84	4201568.42	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000356	615031.84	4201568.62	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000357	615039.84	4201568.82	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000358	615047.83	4201569.01	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000359	615055.83	4201569.21	16.95	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000360	615063.83	4201569.41	16.73	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000361	615071.83	4201569.60	16.52	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000362	615079.82	4201569.80	16.30	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000363	615087.82	4201570.00	16.17	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000364	615095.82	4201570.19	16.11	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000365	615103.82	4201570.39	16.06	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000366	615111.82	4201570.58	16.01	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000367	615119.81	4201570.78	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000368	615127.81	4201570.98	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000369	615135.81	4201571.17	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000370	615143.81	4201571.37	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000371	615151.80	4201571.57	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000372	615159.80	4201571.76	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000373	615167.80	4201571.96	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000374	615175.80	4201572.16	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000375	615183.79	4201572.35	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000376	615191.79	4201572.55	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000377	615199.79	4201572.75	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000378	615207.79	4201572.94	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000379	615215.78	4201573.14	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000380	615215.55	4201581.03	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000381	615215.22	4201589.03	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000382	615214.88	4201597.02	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000383	615214.54	4201605.01	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000384	615214.20	4201613.00	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000385	615213.87	4201621.00	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000386	615213.53	4201628.99	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000387	615213.19	4201636.98	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000388	615212.85	4201644.98	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000389	615212.52	4201652.97	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000390	615212.18	4201660.96	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000391	615211.84	4201668.95	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000392	615211.51	4201676.95	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000393	615211.17	4201684.94	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000394	615210.83	4201692.93	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000395	615210.49	4201700.93	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000396	615210.16	4201708.92	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000397	615209.82	4201716.91	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000398	615209.48	4201724.91	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000399	615209.15	4201732.90	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000400	615208.81	4201740.89	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000401	615208.47	4201748.88	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000402	615208.13	4201756.88	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000403	615207.80	4201764.87	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000404	615207.46	4201772.86	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000405	615207.12	4201780.86	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000406	615206.79	4201788.85	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000407	615206.45	4201796.84	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000408	615206.11	4201804.83	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000409	615205.77	4201812.83	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000410	615205.44	4201820.82	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000411	615205.10	4201828.81	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000412	615204.76	4201836.81	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000413	615204.43	4201844.80	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000414	615204.09	4201852.79	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000415	615203.75	4201860.78	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000416	615203.41	4201868.78	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000417	615203.08	4201876.77	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000418	615202.74	4201884.76	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000419	615202.40	4201892.76	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000420	615202.07	4201900.75	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000421	615201.73	4201908.74	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000422	615201.39	4201916.73	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000423	615201.05	4201924.73	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000424	615200.72	4201932.72	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000425	615202.70	4201940.27	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000426	615205.95	4201947.58	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000427	615209.20	4201954.89	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000428	615212.45	4201962.20	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000429	615218.65	4201966.46	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000430	615226.06	4201969.48	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000431	615233.47	4201972.50	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000432	615240.88	4201975.52	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000433	615248.78	4201976.13	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000434	615256.78	4201976.22	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000435	615264.78	4201976.32	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000436	615272.78	4201976.42	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000437	615280.77	4201976.51	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000438	615288.77	4201976.61	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000439	615296.77	4201976.70	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000440	615304.77	4201976.80	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000441	615312.77	4201976.90	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000442	615320.77	4201976.99	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000443	615328.77	4201977.09	16.10	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000444	615336.77	4201977.19	16.27	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000445	615344.77	4201977.28	16.43	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000446	615352.77	4201977.38	16.59	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000447	615360.77	4201977.48	16.70	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000448	615368.77	4201977.57	16.80	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000449	615376.77	4201977.67	16.91	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000450	615384.77	4201977.76	17.03	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000451	615392.77	4201977.86	17.30	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000452	615400.77	4201977.96	17.57	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000453	615408.77	4201978.05	17.83	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000454	615416.76	4201978.15	18.06	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000455	615424.76	4201978.25	18.21	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000456	615432.76	4201978.34	18.37	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000457	615440.76	4201978.34	18.52	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000458	615448.68	4201977.22	18.35	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000459	615456.60	4201976.11	17.95	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000460	615464.52	4201975.00	17.52	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000461	615472.45	4201973.89	17.08	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000462	615480.40	4201973.36	16.78	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000463	615488.39	4201973.64	16.51	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000464	615496.39	4201973.92	16.25	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000465	615504.38	4201974.20	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000466	615512.38	4201974.48	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000467	615520.37	4201974.77	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000468	615528.37	4201975.05	16.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000469	615536.36	4201975.33	16.09	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000470	615544.36	4201975.61	16.35	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000471	615552.35	4201975.89	16.62	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000472	615560.35	4201976.17	16.89	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000473	615568.34	4201976.45	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000474	615576.34	4201976.73	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000475	615584.34	4201977.01	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000476	615592.33	4201977.29	17.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000477	615600.33	4201977.57	16.91	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000478	615608.32	4201977.85	16.80	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000479	615616.32	4201978.13	16.69	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000480	615624.31	4201978.41	16.56	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000481	615632.31	4201978.69	16.28	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000482	615640.30	4201978.97	16.01	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000483	615648.30	4201979.25	15.73	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000484	615656.29	4201979.53	15.49	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000485	615664.29	4201979.81	15.34	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000486	615672.28	4201980.09	15.20	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000487	615680.28	4201980.37	15.06	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000488	615688.27	4201980.66	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000489	615696.27	4201980.94	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000490	615704.26	4201981.22	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000491	615712.26	4201981.50	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000492	615720.25	4201981.78	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000493	615728.25	4201982.06	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000494	615736.24	4201982.34	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000495	615743.39	4201985.26	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000496	615750.05	4201989.69	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000497	615756.71	4201994.12	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000498	615760.33	4202001.16	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000499	615762.68	4202008.62	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000500	615762.33	4202016.61	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000501	615761.98	4202024.61	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000502	615761.63	4202032.60	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000503	615761.29	4202040.59	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000504	615760.94	4202048.58	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000505	615760.59	4202056.57	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000506	615760.24	4202064.57	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000507	615759.90	4202072.56	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000508	615759.55	4202080.55	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000509	615759.20	4202088.54	14.95	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000510	615758.85	4202096.54	14.82	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000511	615758.51	4202104.53	14.69	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000512	615758.16	4202112.52	14.57	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000513	615757.81	4202120.51	14.45	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000514	615757.46	4202128.51	14.31	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000515	615757.12	4202136.50	14.17	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000516	615756.77	4202144.49	14.02	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000517	615756.42	4202152.48	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000518	615756.08	4202160.48	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000519	615755.73	4202168.47	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000520	615755.38	4202176.46	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000521	615755.03	4202184.45	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000522	615754.69	4202192.45	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000523	615754.34	4202200.44	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000524	615753.99	4202208.43	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000525	615753.64	4202216.42	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000526	615753.30	4202224.42	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000527	615752.95	4202232.41	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000528	615752.60	4202240.40	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000529	615752.25	4202248.39	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000530	615751.91	4202256.39	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000531	615751.56	4202264.38	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000532	615751.21	4202272.37	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000533	615750.86	4202280.36	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000534	615750.52	4202288.36	14.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000535	615750.17	4202296.35	14.02	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000536	615749.82	4202304.34	14.23	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000537	615749.47	4202312.33	14.45	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000538	615749.13	4202320.33	14.67	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000539	615748.78	4202328.32	14.83	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000540	615748.43	4202336.31	14.84	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000541	615748.08	4202344.30	14.86	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000542	615747.74	4202352.30	14.87	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000543	615747.39	4202360.29	14.90	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000544	615747.04	4202368.28	14.94	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000545	615746.24	4202376.23	14.97	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000546	615743.60	4202383.65	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000547	615738.37	4202388.11	15.08	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000548	615730.38	4202387.71	15.07	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000549	615722.39	4202387.31	15.05	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000550	615714.40	4202386.91	15.04	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000551	615706.41	4202386.51	15.26	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000552	615698.42	4202386.11	15.52	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000553	615690.43	4202385.71	15.78	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000554	615682.45	4202385.11	15.98	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000555	615676.12	4202382.40	15.89	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000556	615674.33	4202374.61	15.63	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000557	615673.86	4202366.68	15.37	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000558	615674.15	4202358.69	15.10	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000559	615674.43	4202350.69	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000560	615674.71	4202342.70	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000561	615675.00	4202334.70	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000562	615675.28	4202326.71	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000563	615675.56	4202318.71	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000564	615675.85	4202310.72	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000565	615676.13	4202302.72	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000566	615676.41	4202294.73	14.98	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000567	615676.70	4202286.73	14.77	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000568	615676.98	4202278.74	14.56	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000569	615677.26	4202270.74	14.35	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000570	615677.55	4202262.75	14.21	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000571	615677.83	4202254.75	14.20	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000572	615678.11	4202246.76	14.19	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000573	615678.40	4202238.76	14.18	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000574	615678.68	4202230.77	14.31	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000575	615678.96	4202222.77	14.52	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000576	615679.25	4202214.78	14.74	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000577	615679.53	4202206.78	14.97	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000578	615679.81	4202198.79	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000579	615680.10	4202190.79	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000580	615680.38	4202182.80	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000581	615680.66	4202174.80	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000582	615680.95	4202166.81	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000583	615681.23	4202158.81	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000584	615681.51	4202150.82	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000585	615681.80	4202142.82	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000586	615682.08	4202134.83	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000587	615682.36	4202126.83	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000588	615682.65	4202118.84	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000589	615682.93	4202110.84	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000590	615683.22	4202102.85	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000591	615683.50	4202094.85	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000592	615683.78	4202086.86	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000593	615684.07	4202078.86	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000594	615684.35	4202070.87	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000595	615684.63	4202062.87	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000596	615684.92	4202054.88	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000597	615685.20	4202046.88	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
HAUL_E	L0000598	615685.48	4202038.89	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000599	615686.52	4202030.98	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000600	615687.93	4202023.10	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000601	615689.34	4202015.23	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000602	615690.75	4202007.35	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000603	615692.16	4201999.48	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16
	L0000604	615693.57	4201991.60	15.00	3.40	0.00331	8.00	Surface-Based	3.72	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000605	614607.97	4201558.21	17.92	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000606	614615.96	4201558.40	17.77	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000607	614623.96	4201558.60	17.62	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000608	614631.96	4201558.79	17.47	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000609	614639.96	4201558.99	17.24	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000610	614647.96	4201559.19	16.98	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000611	614655.95	4201559.38	16.72	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000612	614663.95	4201559.58	16.46	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000613	614671.95	4201559.78	16.34	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000614	614679.95	4201559.97	16.22	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000615	614687.94	4201560.17	16.09	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000616	614695.94	4201560.37	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000617	614703.94	4201560.56	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000618	614711.94	4201560.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000619	614719.93	4201560.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000620	614727.93	4201561.15	15.86	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000621	614735.93	4201561.35	15.59	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000622	614743.93	4201561.55	15.33	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000623	614751.92	4201561.74	15.06	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000624	614759.92	4201561.94	15.09	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000625	614767.92	4201562.14	15.21	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000626	614775.92	4201562.33	15.33	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000627	614783.91	4201562.53	15.44	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000628	614791.91	4201562.72	15.59	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000629	614799.91	4201562.92	15.74	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000630	614807.91	4201563.12	15.89	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000631	614815.90	4201563.31	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000632	614823.90	4201563.51	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000633	614831.90	4201563.71	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000634	614839.90	4201563.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000635	614847.89	4201564.10	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000636	614855.89	4201564.30	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000637	614863.89	4201564.49	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000638	614871.89	4201564.69	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000639	614879.89	4201564.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000640	614887.88	4201565.08	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000641	614895.88	4201565.28	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000642	614903.88	4201565.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000643	614911.88	4201565.67	16.27	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000644	614919.87	4201565.87	16.54	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000645	614927.87	4201566.07	16.80	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000646	614935.87	4201566.26	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000647	614943.87	4201566.46	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000648	614951.86	4201566.65	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000649	614959.86	4201566.85	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000650	614967.86	4201567.05	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000651	614975.86	4201567.24	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000652	614983.85	4201567.44	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000653	614991.85	4201567.64	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000654	614999.85	4201567.83	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000655	615007.85	4201568.03	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000656	615015.84	4201568.23	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000657	615023.84	4201568.42	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000658	615031.84	4201568.62	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000659	615039.84	4201568.82	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000660	615047.83	4201569.01	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000661	615055.83	4201569.21	16.95	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000662	615063.83	4201569.41	16.73	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000663	615071.83	4201569.60	16.52	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000664	615079.82	4201569.80	16.30	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000665	615087.82	4201570.00	16.17	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000666	615095.82	4201570.19	16.11	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000667	615103.82	4201570.39	16.06	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000668	615111.82	4201570.58	16.01	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000669	615119.81	4201570.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000670	615127.81	4201570.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000671	615135.81	4201571.17	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000672	615143.81	4201571.37	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000673	615151.80	4201571.57	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000674	615159.80	4201571.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000675	615167.80	4201571.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000676	615175.80	4201572.16	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000677	615183.79	4201572.35	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000678	615191.79	4201572.55	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000679	615199.79	4201572.75	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000680	615207.79	4201572.94	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000681	615215.78	4201573.14	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000682	615215.55	4201581.03	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000683	615215.22	4201589.03	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000684	615214.88	4201597.02	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000685	615214.54	4201605.01	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000686	615214.20	4201613.00	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000687	615213.87	4201621.00	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000688	615213.53	4201628.99	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000689	615213.19	4201636.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000690	615212.85	4201644.98	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000691	615212.52	4201652.97	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000692	615212.18	4201660.96	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000693	615211.84	4201668.95	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000694	615211.51	4201676.95	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000695	615211.17	4201684.94	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000696	615210.83	4201692.93	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000697	615210.49	4201700.93	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000698	615210.16	4201708.92	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000699	615209.82	4201716.91	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000700	615209.48	4201724.91	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000701	615209.15	4201732.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000702	615208.81	4201740.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000703	615208.47	4201748.88	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000704	615208.13	4201756.88	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000705	615207.80	4201764.87	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000706	615207.46	4201772.86	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000707	615207.12	4201780.86	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000708	615206.79	4201788.85	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000709	615206.45	4201796.84	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000710	615206.11	4201804.83	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000711	615205.77	4201812.83	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000712	615205.44	4201820.82	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000713	615205.10	4201828.81	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000714	615204.76	4201836.81	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000715	615204.43	4201844.80	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000716	615204.09	4201852.79	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000717	615203.75	4201860.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000718	615203.41	4201868.78	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000719	615203.08	4201876.77	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000720	615202.74	4201884.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000721	615202.40	4201892.76	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000722	615202.07	4201900.75	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000723	615201.73	4201908.74	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000724	615201.39	4201916.73	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000725	615201.05	4201924.73	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000726	615200.72	4201932.72	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000727	615202.70	4201940.27	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000728	615205.95	4201947.58	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000729	615209.20	4201954.89	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000730	615212.45	4201962.20	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000731	615218.65	4201966.46	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000732	615226.06	4201969.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000733	615233.47	4201972.50	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000734	615240.88	4201975.52	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000735	615248.78	4201976.13	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000736	615256.78	4201976.22	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000737	615264.78	4201976.32	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000738	615272.78	4201976.42	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000739	615280.77	4201976.51	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000740	615288.77	4201976.61	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000741	615296.77	4201976.70	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000742	615304.77	4201976.80	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000743	615312.77	4201976.90	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000744	615320.77	4201976.99	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000745	615328.77	4201977.09	16.10	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000746	615336.77	4201977.19	16.27	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000747	615344.77	4201977.28	16.43	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000748	615352.77	4201977.38	16.59	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000749	615360.77	4201977.48	16.70	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000750	615368.77	4201977.57	16.80	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000751	615376.77	4201977.67	16.91	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000752	615384.77	4201977.76	17.03	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000753	615392.77	4201977.86	17.30	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000754	615400.77	4201977.96	17.57	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000755	615408.77	4201978.05	17.83	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000756	615416.76	4201978.15	18.06	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000757	615424.76	4201978.25	18.21	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000758	615432.76	4201978.34	18.37	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000759	615440.76	4201978.34	18.52	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000760	615448.68	4201977.22	18.35	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000761	615456.60	4201976.11	17.95	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000762	615464.52	4201975.00	17.52	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000763	615472.45	4201973.89	17.08	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000764	615480.40	4201973.36	16.78	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000765	615488.39	4201973.64	16.51	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000766	615496.39	4201973.92	16.25	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000767	615504.38	4201974.20	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000768	615512.38	4201974.48	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000769	615520.37	4201974.77	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000770	615528.37	4201975.05	16.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000771	615536.36	4201975.33	16.09	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000772	615544.36	4201975.61	16.35	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000773	615552.35	4201975.89	16.62	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000774	615560.35	4201976.17	16.89	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000775	615568.34	4201976.45	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000776	615576.34	4201976.73	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000777	615584.34	4201977.01	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000778	615592.33	4201977.29	17.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000779	615600.33	4201977.57	16.91	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000780	615608.32	4201977.85	16.80	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000781	615616.32	4201978.13	16.69	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000782	615624.31	4201978.41	16.56	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000783	615632.31	4201978.69	16.28	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000784	615640.30	4201978.97	16.01	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000785	615648.30	4201979.25	15.73	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000786	615656.29	4201979.53	15.49	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000787	615664.29	4201979.81	15.34	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000788	615672.28	4201980.09	15.20	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000789	615680.28	4201980.37	15.06	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000790	615688.27	4201980.66	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000791	615696.27	4201980.94	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000792	615704.26	4201981.22	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000793	615712.26	4201981.50	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000794	615720.25	4201981.78	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000795	615728.25	4201982.06	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000796	615736.24	4201982.34	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000797	615743.39	4201985.26	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000798	615750.05	4201989.69	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000799	615756.71	4201994.12	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000800	615760.33	4202001.16	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000801	615762.68	4202008.62	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000802	615762.33	4202016.61	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000803	615761.98	4202024.61	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000804	615761.63	4202032.60	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000805	615761.29	4202040.59	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000806	615760.94	4202048.58	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000807	615760.59	4202056.57	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000808	615760.24	4202064.57	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000809	615759.90	4202072.56	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000810	615759.55	4202080.55	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000811	615759.20	4202088.54	14.95	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000812	615758.85	4202096.54	14.82	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000813	615758.51	4202104.53	14.69	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000814	615758.16	4202112.52	14.57	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000815	615757.81	4202120.51	14.45	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000816	615757.46	4202128.51	14.31	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000817	615757.12	4202136.50	14.17	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000818	615756.77	4202144.49	14.02	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000819	615756.42	4202152.48	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000820	615756.08	4202160.48	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000821	615755.73	4202168.47	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000822	615755.38	4202176.46	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000823	615755.03	4202184.45	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000824	615754.69	4202192.45	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000825	615754.34	4202200.44	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000826	615753.99	4202208.43	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000827	615753.64	4202216.42	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000828	615753.30	4202224.42	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000829	615752.95	4202232.41	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000830	615752.60	4202240.40	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000831	615752.25	4202248.39	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000832	615751.91	4202256.39	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000833	615751.56	4202264.38	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000834	615751.21	4202272.37	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000835	615750.86	4202280.36	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000836	615750.52	4202288.36	14.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000837	615750.17	4202296.35	14.02	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000838	615749.82	4202304.34	14.23	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000839	615749.47	4202312.33	14.45	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000840	615749.13	4202320.33	14.67	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000841	615748.78	4202328.32	14.83	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000842	615748.43	4202336.31	14.84	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000843	615748.08	4202344.30	14.86	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000844	615747.74	4202352.30	14.87	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000845	615747.39	4202360.29	14.90	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000846	615747.04	4202368.28	14.94	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000847	615746.24	4202376.23	14.97	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000848	615743.60	4202383.65	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000849	615738.37	4202388.11	15.08	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000850	615730.38	4202387.71	15.07	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000851	615722.39	4202387.31	15.05	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000852	615714.40	4202386.91	15.04	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000853	615706.41	4202386.51	15.26	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000854	615698.42	4202386.11	15.52	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000855	615690.43	4202385.71	15.78	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000856	615682.45	4202385.11	15.98	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000857	615676.12	4202382.40	15.89	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000858	615674.33	4202374.61	15.63	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000859	615673.86	4202366.68	15.37	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000860	615674.15	4202358.69	15.10	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000861	615674.43	4202350.69	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000862	615674.71	4202342.70	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000863	615675.00	4202334.70	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000864	615675.28	4202326.71	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000865	615675.56	4202318.71	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000866	615675.85	4202310.72	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000867	615676.13	4202302.72	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000868	615676.41	4202294.73	14.98	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000869	615676.70	4202286.73	14.77	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000870	615676.98	4202278.74	14.56	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000871	615677.26	4202270.74	14.35	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000872	615677.55	4202262.75	14.21	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000873	615677.83	4202254.75	14.20	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000874	615678.11	4202246.76	14.19	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000875	615678.40	4202238.76	14.18	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000876	615678.68	4202230.77	14.31	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000877	615678.96	4202222.77	14.52	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000878	615679.25	4202214.78	14.74	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000879	615679.53	4202206.78	14.97	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000880	615679.81	4202198.79	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000881	615680.10	4202190.79	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000882	615680.38	4202182.80	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000883	615680.66	4202174.80	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000884	615680.95	4202166.81	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000885	615681.23	4202158.81	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000886	615681.51	4202150.82	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000887	615681.80	4202142.82	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000888	615682.08	4202134.83	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000889	615682.36	4202126.83	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000890	615682.65	4202118.84	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000891	615682.93	4202110.84	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000892	615683.22	4202102.85	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000893	615683.50	4202094.85	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000894	615683.78	4202086.86	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000895	615684.07	4202078.86	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_D	L0000896	615684.35	4202070.87	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000897	615684.63	4202062.87	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000898	615684.92	4202054.88	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000899	615685.20	4202046.88	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000900	615685.48	4202038.89	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000901	615686.52	4202030.98	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000902	615687.93	4202023.10	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000903	615689.34	4202015.23	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000904	615690.75	4202007.35	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000905	615692.16	4201999.48	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21
	L0000906	615693.57	4201991.60	15.00	0.00	0.00331	8.00	Surface-Based	3.72	1.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0000907	614607.97	4201558.21	17.92	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000908	614615.96	4201558.40	17.77	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000909	614623.96	4201558.60	17.62	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000910	614631.96	4201558.79	17.47	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000911	614639.96	4201558.99	17.24	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000912	614647.96	4201559.19	16.98	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000913	614655.95	4201559.38	16.72	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000914	614663.95	4201559.58	16.46	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000915	614671.95	4201559.78	16.34	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000916	614679.95	4201559.97	16.22	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000917	614687.94	4201560.17	16.09	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000918	614695.94	4201560.37	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0000919	614703.94	4201560.56	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000920	614711.94	4201560.76	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000921	614719.93	4201560.96	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000922	614727.93	4201561.15	15.86	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000923	614735.93	4201561.35	15.59	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000924	614743.93	4201561.55	15.33	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000925	614751.92	4201561.74	15.06	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000926	614759.92	4201561.94	15.09	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000927	614767.92	4201562.14	15.21	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000928	614775.92	4201562.33	15.33	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000929	614783.91	4201562.53	15.44	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000930	614791.91	4201562.72	15.59	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000931	614799.91	4201562.92	15.74	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000932	614807.91	4201563.12	15.89	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000933	614815.90	4201563.31	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000934	614823.90	4201563.51	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000935	614831.90	4201563.71	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000936	614839.90	4201563.90	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000937	614847.89	4201564.10	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000938	614855.89	4201564.30	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000939	614863.89	4201564.49	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000940	614871.89	4201564.69	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000941	614879.89	4201564.89	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000942	614887.88	4201565.08	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000943	614895.88	4201565.28	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0000944	614903.88	4201565.48	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000945	614911.88	4201565.67	16.27	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000946	614919.87	4201565.87	16.54	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000947	614927.87	4201566.07	16.80	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000948	614935.87	4201566.26	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000949	614943.87	4201566.46	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000950	614951.86	4201566.65	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000951	614959.86	4201566.85	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000952	614967.86	4201567.05	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000953	614975.86	4201567.24	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000954	614983.85	4201567.44	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000955	614991.85	4201567.64	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000956	614999.85	4201567.83	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000957	615007.85	4201568.03	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000958	615015.84	4201568.23	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000959	615023.84	4201568.42	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000960	615031.84	4201568.62	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000961	615039.84	4201568.82	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000962	615047.83	4201569.01	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000963	615055.83	4201569.21	16.95	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000964	615063.83	4201569.41	16.73	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000965	615071.83	4201569.60	16.52	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000966	615079.82	4201569.80	16.30	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000967	615087.82	4201570.00	16.17	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000968	615095.82	4201570.19	16.11	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0000969	615103.82	4201570.39	16.06	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000970	615111.82	4201570.58	16.01	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000971	615119.81	4201570.78	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000972	615127.81	4201570.98	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000973	615135.81	4201571.17	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000974	615143.81	4201571.37	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000975	615151.80	4201571.57	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000976	615159.80	4201571.76	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000977	615167.80	4201571.96	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000978	615175.80	4201572.16	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000979	615183.79	4201572.35	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000980	615191.79	4201572.55	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000981	615199.79	4201572.75	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000982	615207.79	4201572.94	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000983	615215.78	4201573.14	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000984	615215.55	4201581.03	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000985	615215.22	4201589.03	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000986	615214.88	4201597.02	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000987	615214.54	4201605.01	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000988	615214.20	4201613.00	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000989	615213.87	4201621.00	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000990	615213.53	4201628.99	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000991	615213.19	4201636.98	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000992	615212.85	4201644.98	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000993	615212.52	4201652.97	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0000994	615212.18	4201660.96	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000995	615211.84	4201668.95	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000996	615211.51	4201676.95	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000997	615211.17	4201684.94	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000998	615210.83	4201692.93	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0000999	615210.49	4201700.93	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001000	615210.16	4201708.92	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001001	615209.82	4201716.91	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001002	615209.48	4201724.91	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001003	615209.15	4201732.90	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001004	615208.81	4201740.89	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001005	615208.47	4201748.88	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001006	615208.13	4201756.88	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001007	615207.80	4201764.87	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001008	615207.46	4201772.86	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001009	615207.12	4201780.86	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001010	615206.79	4201788.85	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001011	615206.45	4201796.84	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001012	615206.11	4201804.83	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001013	615205.77	4201812.83	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001014	615205.44	4201820.82	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001015	615205.10	4201828.81	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001016	615204.76	4201836.81	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001017	615204.43	4201844.80	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001018	615204.09	4201852.79	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001019	615203.75	4201860.78	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001020	615203.41	4201868.78	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001021	615203.08	4201876.77	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001022	615202.74	4201884.76	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001023	615202.40	4201892.76	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001024	615202.07	4201900.75	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001025	615201.73	4201908.74	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001026	615201.39	4201916.73	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001027	615201.05	4201924.73	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001028	615200.72	4201932.72	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001029	615202.70	4201940.27	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001030	615205.95	4201947.58	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001031	615209.20	4201954.89	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001032	615212.45	4201962.20	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001033	615218.65	4201966.46	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001034	615226.06	4201969.48	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001035	615233.47	4201972.50	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001036	615240.88	4201975.52	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001037	615248.78	4201976.13	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001038	615256.78	4201976.22	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001039	615264.78	4201976.32	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001040	615272.78	4201976.42	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001041	615280.77	4201976.51	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001042	615288.77	4201976.61	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001043	615296.77	4201976.70	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001044	615304.77	4201976.80	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001045	615312.77	4201976.90	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001046	615320.77	4201976.99	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001047	615328.77	4201977.09	16.10	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001048	615336.77	4201977.19	16.27	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001049	615344.77	4201977.28	16.43	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001050	615352.77	4201977.38	16.59	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001051	615360.77	4201977.48	16.70	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001052	615368.77	4201977.57	16.80	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001053	615376.77	4201977.67	16.91	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001054	615384.77	4201977.76	17.03	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001055	615392.77	4201977.86	17.30	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001056	615400.77	4201977.96	17.57	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001057	615408.77	4201978.05	17.83	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001058	615416.76	4201978.15	18.06	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001059	615424.76	4201978.25	18.21	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001060	615432.76	4201978.34	18.37	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001061	615440.76	4201978.34	18.52	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001062	615448.68	4201977.22	18.35	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001063	615456.60	4201976.11	17.95	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001064	615464.52	4201975.00	17.52	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001065	615472.45	4201973.89	17.08	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001066	615480.40	4201973.36	16.78	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001067	615488.39	4201973.64	16.51	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001068	615496.39	4201973.92	16.25	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001069	615504.38	4201974.20	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001070	615512.38	4201974.48	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001071	615520.37	4201974.77	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001072	615528.37	4201975.05	16.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001073	615536.36	4201975.33	16.09	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001074	615544.36	4201975.61	16.35	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001075	615552.35	4201975.89	16.62	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001076	615560.35	4201976.17	16.89	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001077	615568.34	4201976.45	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001078	615576.34	4201976.73	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001079	615584.34	4201977.01	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001080	615592.33	4201977.29	17.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001081	615600.33	4201977.57	16.91	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001082	615608.32	4201977.85	16.80	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001083	615616.32	4201978.13	16.69	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001084	615624.31	4201978.41	16.56	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001085	615632.31	4201978.69	16.28	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001086	615640.30	4201978.97	16.01	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001087	615648.30	4201979.25	15.73	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001088	615656.29	4201979.53	15.49	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001089	615664.29	4201979.81	15.34	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001090	615672.28	4201980.09	15.20	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001091	615680.28	4201980.37	15.06	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001092	615688.27	4201980.66	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001093	615696.27	4201980.94	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001094	615704.26	4201981.22	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001095	615712.26	4201981.50	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001096	615720.25	4201981.78	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001097	615728.25	4201982.06	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001098	615736.24	4201982.34	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001099	615743.39	4201985.26	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001100	615750.05	4201989.69	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001101	615756.71	4201994.12	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001102	615760.33	4202001.16	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001103	615762.68	4202008.62	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001104	615762.33	4202016.61	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001105	615761.98	4202024.61	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001106	615761.63	4202032.60	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001107	615761.29	4202040.59	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001108	615760.94	4202048.58	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001109	615760.59	4202056.57	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001110	615760.24	4202064.57	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001111	615759.90	4202072.56	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001112	615759.55	4202080.55	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001113	615759.20	4202088.54	14.95	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001114	615758.85	4202096.54	14.82	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001115	615758.51	4202104.53	14.69	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001116	615758.16	4202112.52	14.57	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001117	615757.81	4202120.51	14.45	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001118	615757.46	4202128.51	14.31	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001119	615757.12	4202136.50	14.17	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001120	615756.77	4202144.49	14.02	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001121	615756.42	4202152.48	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001122	615756.08	4202160.48	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001123	615755.73	4202168.47	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001124	615755.38	4202176.46	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001125	615755.03	4202184.45	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001126	615754.69	4202192.45	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001127	615754.34	4202200.44	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001128	615753.99	4202208.43	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001129	615753.64	4202216.42	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001130	615753.30	4202224.42	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001131	615752.95	4202232.41	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001132	615752.60	4202240.40	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001133	615752.25	4202248.39	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001134	615751.91	4202256.39	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001135	615751.56	4202264.38	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001136	615751.21	4202272.37	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001137	615750.86	4202280.36	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001138	615750.52	4202288.36	14.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001139	615750.17	4202296.35	14.02	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001140	615749.82	4202304.34	14.23	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001141	615749.47	4202312.33	14.45	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001142	615749.13	4202320.33	14.67	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001143	615748.78	4202328.32	14.83	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001144	615748.43	4202336.31	14.84	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001145	615748.08	4202344.30	14.86	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001146	615747.74	4202352.30	14.87	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001147	615747.39	4202360.29	14.90	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001148	615747.04	4202368.28	14.94	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001149	615746.24	4202376.23	14.97	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001150	615743.60	4202383.65	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001151	615738.37	4202388.11	15.08	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001152	615730.38	4202387.71	15.07	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001153	615722.39	4202387.31	15.05	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001154	615714.40	4202386.91	15.04	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001155	615706.41	4202386.51	15.26	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001156	615698.42	4202386.11	15.52	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001157	615690.43	4202385.71	15.78	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001158	615682.45	4202385.11	15.98	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001159	615676.12	4202382.40	15.89	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001160	615674.33	4202374.61	15.63	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001161	615673.86	4202366.68	15.37	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001162	615674.15	4202358.69	15.10	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001163	615674.43	4202350.69	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001164	615674.71	4202342.70	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001165	615675.00	4202334.70	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001166	615675.28	4202326.71	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001167	615675.56	4202318.71	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001168	615675.85	4202310.72	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001169	615676.13	4202302.72	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001170	615676.41	4202294.73	14.98	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001171	615676.70	4202286.73	14.77	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001172	615676.98	4202278.74	14.56	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001173	615677.26	4202270.74	14.35	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001174	615677.55	4202262.75	14.21	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001175	615677.83	4202254.75	14.20	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001176	615678.11	4202246.76	14.19	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001177	615678.40	4202238.76	14.18	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001178	615678.68	4202230.77	14.31	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001179	615678.96	4202222.77	14.52	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001180	615679.25	4202214.78	14.74	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001181	615679.53	4202206.78	14.97	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001182	615679.81	4202198.79	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001183	615680.10	4202190.79	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001184	615680.38	4202182.80	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001185	615680.66	4202174.80	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001186	615680.95	4202166.81	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001187	615681.23	4202158.81	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001188	615681.51	4202150.82	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001189	615681.80	4202142.82	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001190	615682.08	4202134.83	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001191	615682.36	4202126.83	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001192	615682.65	4202118.84	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001193	615682.93	4202110.84	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
WORKER_E	L0001194	615683.22	4202102.85	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001195	615683.50	4202094.85	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001196	615683.78	4202086.86	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001197	615684.07	4202078.86	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001198	615684.35	4202070.87	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001199	615684.63	4202062.87	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001200	615684.92	4202054.88	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001201	615685.20	4202046.88	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001202	615685.48	4202038.89	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001203	615686.52	4202030.98	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001204	615687.93	4202023.10	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001205	615689.34	4202015.23	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001206	615690.75	4202007.35	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001207	615692.16	4201999.48	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21
	L0001208	615693.57	4201991.60	15.00	1.30	0.00331	8.00	Surface-Based	3.72	1.21

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
WORKER_E	WORKER_E
WORKER_D	WORKER_D
TAILGAS	TAILGAS
PYRO5	PYRO5
PYRO4	PYRO4
PYRO3	PYRO3
PYRO2	PYRO2
PYRO1	PYRO1
HAUL_E	HAUL_E
HAUL_D	HAUL_D
GENSET	GENSET
FLARE	FLARE
BOILER	BOILER
BIOFTR2	BIOFTR2
BIOFTR1	BIOFTR1

Source Group ID: **AMR**	List of Sources in Group (Source Range or Single Sources)
	AMR

Variable Emissions

Hour / Day-of-Week Emission Rate Variation

Scenario: gen

Source ID: **GENSET**

Hour	Mon	Tues	Wed	Thr	Fri	Sat	Sun
1:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10:00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
11:00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
12:00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
13:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: stationary247

Source ID: FLARE

Weekdays							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Source ID: TAILGAS

Weekdays							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Source ID: AMR

Weekdays							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Source ID: BOILER

Weekdays							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00

Scenario: stationary247

Source ID:	**BOILER**							
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**PYRO1**							
Weekdays								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**PYRO2**							
Weekdays								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**PYRO3**							
Weekdays								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
	Hour	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
		19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Scenario: stationary247

Source ID:	**PYRO3**							
Sunday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**PYRO4**							
Weekdays								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**PYRO5**							
Weekdays								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Source ID:	**BIOFTR1**							
Weekdays								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday								
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Scenario: stationary247

Source ID:	BIOFTR2						
Weekdays							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Saturday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00
Sunday							
Hour of Day	1 - 6	1.00	1.00	1.00	1.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	1.00
	19 - 24	1.00	1.00	1.00	1.00	1.00	1.00

Scenario: truck

Source ID:	HAUL_D						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**HAUL_E**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**WORKER_D**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	1.00	1.00
	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	0.00	0.00	0.00

Scenario: truck

Source ID:	**WORKER_D**							
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**WORKER_E**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	1.00	1.00
	of	7 - 12	1.00	1.00	1.00	1.00	1.00	1.00
	Day	13 - 18	1.00	1.00	1.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	614702.88	4201251.51	RESIDENT	18.00	1.50
2	614722.88	4201251.51	RESIDENT	18.00	1.50
3	614742.88	4201251.51	RESIDENT	18.00	1.50
4	614762.88	4201251.51	RESIDENT	18.00	1.50
5	614782.88	4201251.51	RESIDENT	18.00	1.50
6	614802.88	4201251.51	RESIDENT	18.00	1.50
7	614822.88	4201251.51	RESIDENT	18.00	1.50
8	614842.88	4201251.51	RESIDENT	18.00	1.50
9	614862.88	4201251.51	RESIDENT	18.00	1.50
10	614882.88	4201251.51	RESIDENT	18.00	1.50
11	614902.88	4201251.51	RESIDENT	18.00	1.50
12	614922.88	4201251.51	RESIDENT	18.00	1.50
13	614942.88	4201251.51	RESIDENT	18.00	1.50
14	614962.88	4201251.51	RESIDENT	18.00	1.50
15	614982.88	4201251.51	RESIDENT	17.36	1.50
16	615002.88	4201251.51	RESIDENT	17.00	1.50
17	615022.88	4201251.51	RESIDENT	17.00	1.50
18	615042.88	4201251.51	RESIDENT	17.00	1.50
19	615162.88	4201251.51	RESIDENT	17.00	1.50
20	615182.88	4201251.51	RESIDENT	17.00	1.50
21	615202.88	4201251.51	RESIDENT	17.00	1.50
22	615222.88	4201251.51	RESIDENT	17.00	1.50
23	615242.88	4201251.51	RESIDENT	17.00	1.50
24	615262.88	4201251.51	RESIDENT	17.00	1.50
25	615282.88	4201251.51	RESIDENT	17.00	1.50
26	615302.88	4201251.51	RESIDENT	17.00	1.50
27	615322.88	4201251.51	RESIDENT	17.00	1.50
28	615342.88	4201251.51	RESIDENT	17.00	1.50
29	615362.88	4201251.51	RESIDENT	17.00	1.50
30	615382.88	4201251.51	RESIDENT	17.00	1.50

31	615402.88	4201251.51	RESIDENT	17.00	1.50
32	614702.88	4201271.51	RESIDENT	18.00	1.50
33	614722.88	4201271.51	RESIDENT	18.00	1.50
34	614742.88	4201271.51	RESIDENT	18.00	1.50
35	614762.88	4201271.51	RESIDENT	18.00	1.50
36	614782.88	4201271.51	RESIDENT	18.00	1.50
37	614802.88	4201271.51	RESIDENT	18.00	1.50
38	614822.88	4201271.51	RESIDENT	18.00	1.50
39	614842.88	4201271.51	RESIDENT	18.00	1.50
40	614862.88	4201271.51	RESIDENT	18.00	1.50
41	614882.88	4201271.51	RESIDENT	18.00	1.50
42	614902.88	4201271.51	RESIDENT	18.00	1.50
43	614922.88	4201271.51	RESIDENT	18.00	1.50
44	614942.88	4201271.51	RESIDENT	18.00	1.50
45	614962.88	4201271.51	RESIDENT	18.00	1.50
46	614982.88	4201271.51	RESIDENT	17.36	1.50
47	615002.88	4201271.51	RESIDENT	17.00	1.50
48	615022.88	4201271.51	RESIDENT	17.00	1.50
49	615042.88	4201271.51	RESIDENT	17.00	1.50
50	615162.88	4201271.51	RESIDENT	17.00	1.50
51	615182.88	4201271.51	RESIDENT	17.00	1.50
52	615202.88	4201271.51	RESIDENT	17.00	1.50
53	615222.88	4201271.51	RESIDENT	17.00	1.50
54	615242.88	4201271.51	RESIDENT	17.00	1.50
55	615262.88	4201271.51	RESIDENT	17.00	1.50
56	615282.88	4201271.51	RESIDENT	17.00	1.50
57	615302.88	4201271.51	RESIDENT	17.00	1.50
58	615322.88	4201271.51	RESIDENT	17.00	1.50
59	615342.88	4201271.51	RESIDENT	17.00	1.50
60	615362.88	4201271.51	RESIDENT	17.00	1.50
61	615382.88	4201271.51	RESIDENT	17.00	1.50
62	614702.88	4201291.51	RESIDENT	18.00	1.50
63	614722.88	4201291.51	RESIDENT	18.00	1.50
64	614742.88	4201291.51	RESIDENT	18.00	1.50
65	614762.88	4201291.51	RESIDENT	18.00	1.50
66	614782.88	4201291.51	RESIDENT	18.00	1.50
67	614802.88	4201291.51	RESIDENT	18.00	1.50
68	614822.88	4201291.51	RESIDENT	18.00	1.50

69	614842.88	4201291.51	RESIDENT	18.00	1.50
70	614862.88	4201291.51	RESIDENT	18.00	1.50
71	614882.88	4201291.51	RESIDENT	18.00	1.50
72	614902.88	4201291.51	RESIDENT	18.00	1.50
73	614922.88	4201291.51	RESIDENT	18.00	1.50
74	614942.88	4201291.51	RESIDENT	17.84	1.50
75	614962.88	4201291.51	RESIDENT	17.49	1.50
76	614982.88	4201291.51	RESIDENT	17.17	1.50
77	615002.88	4201291.51	RESIDENT	17.00	1.50
78	615022.88	4201291.51	RESIDENT	17.00	1.50
79	615042.88	4201291.51	RESIDENT	17.00	1.50
80	615062.88	4201291.51	RESIDENT	17.00	1.50
81	615082.88	4201291.51	RESIDENT	17.00	1.50
82	615102.88	4201291.51	RESIDENT	17.00	1.50
83	615122.88	4201291.51	RESIDENT	17.00	1.50
84	615142.88	4201291.51	RESIDENT	17.00	1.50
85	615162.88	4201291.51	RESIDENT	17.00	1.50
86	615182.88	4201291.51	RESIDENT	17.00	1.50
87	615202.88	4201291.51	RESIDENT	17.00	1.50
88	615222.88	4201291.51	RESIDENT	17.00	1.50
89	615242.88	4201291.51	RESIDENT	17.00	1.50
90	615262.88	4201291.51	RESIDENT	17.00	1.50
91	615282.88	4201291.51	RESIDENT	17.00	1.50
92	615302.88	4201291.51	RESIDENT	17.00	1.50
93	615322.88	4201291.51	RESIDENT	17.00	1.50
94	615342.88	4201291.51	RESIDENT	17.00	1.50
95	615362.88	4201291.51	RESIDENT	16.84	1.50
96	615382.88	4201291.51	RESIDENT	16.49	1.50
97	614702.88	4201311.51	RESIDENT	18.00	1.50
98	614722.88	4201311.51	RESIDENT	18.00	1.50
99	614742.88	4201311.51	RESIDENT	18.00	1.50
100	614762.88	4201311.51	RESIDENT	18.00	1.50
101	614782.88	4201311.51	RESIDENT	18.00	1.50
102	614802.88	4201311.51	RESIDENT	18.00	1.50
103	614822.88	4201311.51	RESIDENT	18.00	1.50
104	614842.88	4201311.51	RESIDENT	18.00	1.50
105	614862.88	4201311.51	RESIDENT	18.00	1.50
106	614882.88	4201311.51	RESIDENT	18.00	1.50

107	614902.88	4201311.51	RESIDENT	18.00	1.50
108	614922.88	4201311.51	RESIDENT	17.88	1.50
109	614942.88	4201311.51	RESIDENT	17.56	1.50
110	614962.88	4201311.51	RESIDENT	17.02	1.50
111	614982.88	4201311.51	RESIDENT	17.00	1.50
112	615002.88	4201311.51	RESIDENT	17.00	1.50
113	615022.88	4201311.51	RESIDENT	17.00	1.50
114	615042.88	4201311.51	RESIDENT	17.00	1.50
115	615062.88	4201311.51	RESIDENT	17.00	1.50
116	615082.88	4201311.51	RESIDENT	17.00	1.50
117	615102.88	4201311.51	RESIDENT	17.00	1.50
118	615122.88	4201311.51	RESIDENT	17.00	1.50
119	615142.88	4201311.51	RESIDENT	17.00	1.50
120	615162.88	4201311.51	RESIDENT	17.00	1.50
121	615182.88	4201311.51	RESIDENT	17.00	1.50
122	615202.88	4201311.51	RESIDENT	17.00	1.50
123	615222.88	4201311.51	RESIDENT	17.00	1.50
124	615242.88	4201311.51	RESIDENT	17.00	1.50
125	615262.88	4201311.51	RESIDENT	17.00	1.50
126	615282.88	4201311.51	RESIDENT	17.00	1.50
127	615302.88	4201311.51	RESIDENT	16.94	1.50
128	615322.88	4201311.51	RESIDENT	16.81	1.50
129	615342.88	4201311.51	RESIDENT	16.81	1.50
130	615362.88	4201311.51	RESIDENT	16.56	1.50
131	615382.88	4201311.51	RESIDENT	16.02	1.50
132	615402.88	4201311.51	RESIDENT	16.00	1.50
133	614702.88	4201331.51	RESIDENT	18.00	1.50
134	614722.88	4201331.51	RESIDENT	18.00	1.50
135	614742.88	4201331.51	RESIDENT	18.00	1.50
136	614762.88	4201331.51	RESIDENT	18.00	1.50
137	614782.88	4201331.51	RESIDENT	18.00	1.50
138	614802.88	4201331.51	RESIDENT	18.00	1.50
139	614822.88	4201331.51	RESIDENT	18.00	1.50
140	614842.88	4201331.51	RESIDENT	18.00	1.50
141	614862.88	4201331.51	RESIDENT	18.00	1.50
142	614882.88	4201331.51	RESIDENT	18.00	1.50
143	614902.88	4201331.51	RESIDENT	18.00	1.50
144	614922.88	4201331.51	RESIDENT	17.45	1.50

145	614942.88	4201331.51	RESIDENT	17.10	1.50
146	614962.88	4201331.51	RESIDENT	17.00	1.50
147	614982.88	4201331.51	RESIDENT	17.00	1.50
148	615002.88	4201331.51	RESIDENT	17.00	1.50
149	615022.88	4201331.51	RESIDENT	17.00	1.50
150	615042.88	4201331.51	RESIDENT	17.00	1.50
151	615062.88	4201331.51	RESIDENT	17.00	1.50
152	615082.88	4201331.51	RESIDENT	17.00	1.50
153	615102.88	4201331.51	RESIDENT	17.00	1.50
154	615122.88	4201331.51	RESIDENT	17.00	1.50
155	615142.88	4201331.51	RESIDENT	17.00	1.50
156	615162.88	4201331.51	RESIDENT	17.00	1.50
157	615182.88	4201331.51	RESIDENT	17.00	1.50
158	615202.88	4201331.51	RESIDENT	17.00	1.50
159	615222.88	4201331.51	RESIDENT	17.00	1.50
160	615242.88	4201331.51	RESIDENT	17.00	1.50
161	615262.88	4201331.51	RESIDENT	17.00	1.50
162	615282.88	4201331.51	RESIDENT	17.00	1.50
163	615302.88	4201331.51	RESIDENT	16.74	1.50
164	615322.88	4201331.51	RESIDENT	16.17	1.50
165	615342.88	4201331.51	RESIDENT	16.14	1.50
166	615362.88	4201331.51	RESIDENT	16.10	1.50
167	615382.88	4201331.51	RESIDENT	16.00	1.50
168	615402.88	4201331.51	RESIDENT	16.00	1.50
169	615422.88	4201331.51	RESIDENT	16.00	1.50
170	614702.88	4201351.51	RESIDENT	18.00	1.50
171	614722.88	4201351.51	RESIDENT	18.00	1.50
172	614742.88	4201351.51	RESIDENT	18.00	1.50
173	614762.88	4201351.51	RESIDENT	18.00	1.50
174	614782.88	4201351.51	RESIDENT	18.00	1.50
175	614802.88	4201351.51	RESIDENT	18.00	1.50
176	614822.88	4201351.51	RESIDENT	18.00	1.50
177	614842.88	4201351.51	RESIDENT	18.00	1.50
178	614862.88	4201351.51	RESIDENT	18.00	1.50
179	614882.88	4201351.51	RESIDENT	17.84	1.50
180	614902.88	4201351.51	RESIDENT	17.49	1.50
181	614922.88	4201351.51	RESIDENT	17.17	1.50
182	614942.88	4201351.51	RESIDENT	17.00	1.50

183	614962.88	4201351.51	RESIDENT	17.00	1.50
184	614982.88	4201351.51	RESIDENT	17.00	1.50
185	615002.88	4201351.51	RESIDENT	17.00	1.50
186	615022.88	4201351.51	RESIDENT	17.00	1.50
187	615042.88	4201351.51	RESIDENT	17.00	1.50
188	615062.88	4201351.51	RESIDENT	17.00	1.50
189	615082.88	4201351.51	RESIDENT	17.00	1.50
190	615102.88	4201351.51	RESIDENT	17.00	1.50
191	615122.88	4201351.51	RESIDENT	17.00	1.50
192	615142.88	4201351.51	RESIDENT	17.00	1.50
193	615162.88	4201351.51	RESIDENT	17.00	1.50
194	615182.88	4201351.51	RESIDENT	17.00	1.50
195	615202.88	4201351.51	RESIDENT	17.00	1.50
196	615222.88	4201351.51	RESIDENT	17.00	1.50
197	615242.88	4201351.51	RESIDENT	17.00	1.50
198	615262.88	4201351.51	RESIDENT	17.00	1.50
199	615282.88	4201351.51	RESIDENT	17.00	1.50
200	615302.88	4201351.51	RESIDENT	16.70	1.50
201	615322.88	4201351.51	RESIDENT	16.03	1.50
202	615342.88	4201351.51	RESIDENT	16.00	1.50
203	615362.88	4201351.51	RESIDENT	16.00	1.50
204	615382.88	4201351.51	RESIDENT	16.00	1.50
205	615402.88	4201351.51	RESIDENT	16.00	1.50
206	615422.88	4201351.51	RESIDENT	16.00	1.50
207	614762.88	4201371.51	RESIDENT	18.00	1.50
208	614782.88	4201371.51	RESIDENT	18.00	1.50
209	614802.88	4201371.51	RESIDENT	18.00	1.50
210	614822.88	4201371.51	RESIDENT	18.00	1.50
211	614842.88	4201371.51	RESIDENT	18.00	1.50
212	614862.88	4201371.51	RESIDENT	17.88	1.50
213	614882.88	4201371.51	RESIDENT	17.56	1.50
214	614902.88	4201371.51	RESIDENT	17.02	1.50
215	614922.88	4201371.51	RESIDENT	17.00	1.50
216	614942.88	4201371.51	RESIDENT	17.00	1.50
217	614962.88	4201371.51	RESIDENT	17.00	1.50
218	614982.88	4201371.51	RESIDENT	17.00	1.50
219	615002.88	4201371.51	RESIDENT	17.00	1.50
220	615022.88	4201371.51	RESIDENT	17.00	1.50

221	615042.88	4201371.51	RESIDENT	17.00	1.50
222	615062.88	4201371.51	RESIDENT	17.00	1.50
223	615082.88	4201371.51	RESIDENT	17.00	1.50
224	615102.88	4201371.51	RESIDENT	17.00	1.50
225	615122.88	4201371.51	RESIDENT	17.00	1.50
226	615142.88	4201371.51	RESIDENT	17.00	1.50
227	615162.88	4201371.51	RESIDENT	17.00	1.50
228	615182.88	4201371.51	RESIDENT	17.00	1.50
229	615202.88	4201371.51	RESIDENT	17.00	1.50
230	615222.88	4201371.51	RESIDENT	17.00	1.50
231	615242.88	4201371.51	RESIDENT	16.94	1.50
232	615262.88	4201371.51	RESIDENT	16.81	1.50
233	615282.88	4201371.51	RESIDENT	16.81	1.50
234	615302.88	4201371.51	RESIDENT	16.56	1.50
235	615322.88	4201371.51	RESIDENT	16.02	1.50
236	615342.88	4201371.51	RESIDENT	16.00	1.50
237	615362.88	4201371.51	RESIDENT	16.00	1.50
238	615382.88	4201371.51	RESIDENT	16.00	1.50
239	615402.88	4201371.51	RESIDENT	16.00	1.50
240	615422.88	4201371.51	RESIDENT	16.00	1.50
241	615442.88	4201371.51	RESIDENT	16.00	1.50
242	614602.88	4201391.51	park	15.17	1.50
243	614802.88	4201391.51	RESIDENT	18.00	1.50
244	614822.88	4201391.51	RESIDENT	18.00	1.50
245	614842.88	4201391.51	RESIDENT	18.00	1.50
246	614862.88	4201391.51	RESIDENT	17.45	1.50
247	614882.88	4201391.51	RESIDENT	17.10	1.50
248	614902.88	4201391.51	RESIDENT	17.00	1.50
249	614922.88	4201391.51	RESIDENT	17.00	1.50
250	614942.88	4201391.51	RESIDENT	17.00	1.50
251	614962.88	4201391.51	RESIDENT	17.00	1.50
252	614982.88	4201391.51	RESIDENT	17.00	1.50
253	615002.88	4201391.51	RESIDENT	17.00	1.50
254	615022.88	4201391.51	RESIDENT	17.00	1.50
255	615042.88	4201391.51	RESIDENT	17.00	1.50
256	615062.88	4201391.51	RESIDENT	17.00	1.50
257	615082.88	4201391.51	RESIDENT	17.00	1.50
258	615102.88	4201391.51	RESIDENT	17.00	1.50

259	615122.88	4201391.51	RESIDENT	17.00	1.50
260	615142.88	4201391.51	RESIDENT	17.00	1.50
261	615162.88	4201391.51	RESIDENT	17.00	1.50
262	615182.88	4201391.51	RESIDENT	17.00	1.50
263	615202.88	4201391.51	RESIDENT	17.00	1.50
264	615222.88	4201391.51	RESIDENT	17.00	1.50
265	615242.88	4201391.51	RESIDENT	16.74	1.50
266	615262.88	4201391.51	RESIDENT	16.17	1.50
267	615282.88	4201391.51	RESIDENT	16.14	1.50
268	615302.88	4201391.51	RESIDENT	16.10	1.50
269	615322.88	4201391.51	RESIDENT	16.00	1.50
270	615342.88	4201391.51	RESIDENT	16.00	1.50
271	615362.88	4201391.51	RESIDENT	16.00	1.50
272	615382.88	4201391.51	RESIDENT	16.00	1.50
273	615402.88	4201391.51	RESIDENT	16.00	1.50
274	615422.88	4201391.51	RESIDENT	16.00	1.50
275	615442.88	4201391.51	RESIDENT	16.00	1.50
276	614602.88	4201411.51	park	15.54	1.50
277	614622.88	4201411.51	park	15.49	1.50
278	614802.88	4201411.51	RESIDENT	18.00	1.50
279	614822.88	4201411.51	RESIDENT	17.84	1.50
280	614842.88	4201411.51	RESIDENT	17.49	1.50
281	614862.88	4201411.51	RESIDENT	17.17	1.50
282	614882.88	4201411.51	RESIDENT	17.00	1.50
283	614902.88	4201411.51	RESIDENT	17.00	1.50
284	614922.88	4201411.51	RESIDENT	17.00	1.50
285	614942.88	4201411.51	RESIDENT	17.00	1.50
286	614962.88	4201411.51	RESIDENT	17.00	1.50
287	614982.88	4201411.51	RESIDENT	17.00	1.50
288	615002.88	4201411.51	RESIDENT	17.00	1.50
289	615022.88	4201411.51	RESIDENT	17.00	1.50
290	615042.88	4201411.51	RESIDENT	17.00	1.50
291	615062.88	4201411.51	RESIDENT	17.00	1.50
292	615082.88	4201411.51	RESIDENT	17.00	1.50
293	615102.88	4201411.51	RESIDENT	17.00	1.50
294	615122.88	4201411.51	RESIDENT	17.00	1.50
295	615142.88	4201411.51	RESIDENT	17.00	1.50
296	615162.88	4201411.51	RESIDENT	17.00	1.50

297	615182.88	4201411.51	RESIDENT	17.00	1.50
298	615202.88	4201411.51	RESIDENT	17.00	1.50
299	615222.88	4201411.51	RESIDENT	16.66	1.50
300	615242.88	4201411.51	RESIDENT	16.33	1.50
301	615262.88	4201411.51	RESIDENT	16.01	1.50
302	615282.88	4201411.51	RESIDENT	16.00	1.50
303	615302.88	4201411.51	RESIDENT	16.00	1.50
304	615322.88	4201411.51	RESIDENT	16.00	1.50
305	615342.88	4201411.51	RESIDENT	16.00	1.50
306	615362.88	4201411.51	RESIDENT	16.00	1.50
307	615382.88	4201411.51	RESIDENT	16.00	1.50
308	615402.88	4201411.51	RESIDENT	16.00	1.50
309	615422.88	4201411.51	RESIDENT	16.00	1.50
310	615442.88	4201411.51	RESIDENT	16.00	1.50
311	615462.88	4201411.51	RESIDENT	16.00	1.50
312	614622.88	4201431.51	park	15.63	1.50
313	614642.88	4201431.51	park	15.38	1.50
314	614662.88	4201431.51	park	15.79	1.50
315	614802.88	4201431.51	RESIDENT	17.81	1.50
316	614822.88	4201431.51	RESIDENT	17.56	1.50
317	614842.88	4201431.51	RESIDENT	17.02	1.50
318	614862.88	4201431.51	RESIDENT	17.00	1.50
319	614882.88	4201431.51	RESIDENT	17.00	1.50
320	614902.88	4201431.51	RESIDENT	17.00	1.50
321	614922.88	4201431.51	RESIDENT	17.00	1.50
322	614942.88	4201431.51	RESIDENT	17.00	1.50
323	614962.88	4201431.51	RESIDENT	17.00	1.50
324	614982.88	4201431.51	RESIDENT	17.00	1.50
325	615002.88	4201431.51	RESIDENT	17.00	1.50
326	615022.88	4201431.51	RESIDENT	17.00	1.50
327	615042.88	4201431.51	RESIDENT	17.00	1.50
328	615062.88	4201431.51	RESIDENT	17.00	1.50
329	615082.88	4201431.51	RESIDENT	17.00	1.50
330	615102.88	4201431.51	RESIDENT	17.00	1.50
331	615122.88	4201431.51	RESIDENT	17.00	1.50
332	615142.88	4201431.51	RESIDENT	17.00	1.50
333	615162.88	4201431.51	RESIDENT	17.00	1.50
334	615182.88	4201431.51	RESIDENT	17.00	1.50

335	615202.88	4201431.51	RESIDENT	17.00	1.50
336	615222.88	4201431.51	RESIDENT	16.36	1.50
337	615242.88	4201431.51	RESIDENT	16.00	1.50
338	615262.88	4201431.51	RESIDENT	16.00	1.50
339	615282.88	4201431.51	RESIDENT	16.00	1.50
340	615302.88	4201431.51	RESIDENT	16.00	1.50
341	615322.88	4201431.51	RESIDENT	16.00	1.50
342	615342.88	4201431.51	RESIDENT	16.00	1.50
343	615362.88	4201431.51	RESIDENT	16.00	1.50
344	615382.88	4201431.51	RESIDENT	16.00	1.50
345	615402.88	4201431.51	RESIDENT	16.00	1.50
346	615422.88	4201431.51	RESIDENT	16.00	1.50
347	615442.88	4201431.51	RESIDENT	16.00	1.50
348	615462.88	4201431.51	RESIDENT	16.00	1.50
349	614662.88	4201451.51	park	15.16	1.50
350	614682.88	4201451.51	park	15.69	1.50
351	614822.88	4201451.51	RESIDENT	17.10	1.50
352	614842.88	4201451.51	RESIDENT	17.00	1.50
353	614862.88	4201451.51	RESIDENT	17.00	1.50
354	614882.88	4201451.51	RESIDENT	17.00	1.50
355	614902.88	4201451.51	RESIDENT	17.00	1.50
356	614922.88	4201451.51	RESIDENT	17.00	1.50
357	614942.88	4201451.51	RESIDENT	17.00	1.50
358	614962.88	4201451.51	RESIDENT	17.00	1.50
359	614982.88	4201451.51	RESIDENT	17.00	1.50
360	615002.88	4201451.51	RESIDENT	17.00	1.50
361	615022.88	4201451.51	RESIDENT	17.00	1.50
362	615042.88	4201451.51	RESIDENT	17.00	1.50
363	615062.88	4201451.51	RESIDENT	17.00	1.50
364	615082.88	4201451.51	RESIDENT	17.00	1.50
365	615102.88	4201451.51	RESIDENT	17.00	1.50
366	615122.88	4201451.51	RESIDENT	17.00	1.50
367	615142.88	4201451.51	RESIDENT	17.00	1.50
368	615162.88	4201451.51	RESIDENT	17.00	1.50
369	615182.88	4201451.51	RESIDENT	17.00	1.50
370	615202.88	4201451.51	RESIDENT	17.00	1.50
371	615222.88	4201451.51	RESIDENT	16.36	1.50
372	615242.88	4201451.51	RESIDENT	16.00	1.50

373	615262.88	4201451.51	RESIDENT	16.00	1.50
374	615282.88	4201451.51	RESIDENT	16.00	1.50
375	615302.88	4201451.51	RESIDENT	16.00	1.50
376	615322.88	4201451.51	RESIDENT	16.00	1.50
377	615342.88	4201451.51	RESIDENT	16.00	1.50
378	615362.88	4201451.51	RESIDENT	16.00	1.50
379	615382.88	4201451.51	RESIDENT	16.00	1.50
380	615402.88	4201451.51	RESIDENT	16.00	1.50
381	615422.88	4201451.51	RESIDENT	16.00	1.50
382	615442.88	4201451.51	RESIDENT	16.00	1.50
383	615462.88	4201451.51	RESIDENT	16.00	1.50
384	614682.88	4201471.51	park	15.49	1.50
385	614702.88	4201471.51	park	16.08	1.50
386	614822.88	4201471.51	RESIDENT	16.47	1.50
387	614842.88	4201471.51	RESIDENT	16.47	1.50
388	614862.88	4201471.51	RESIDENT	16.81	1.50
389	614882.88	4201471.51	RESIDENT	17.00	1.50
390	614902.88	4201471.51	RESIDENT	17.00	1.50
391	614922.88	4201471.51	RESIDENT	17.00	1.50
392	614942.88	4201471.51	RESIDENT	17.00	1.50
393	614962.88	4201471.51	RESIDENT	17.00	1.50
394	614982.88	4201471.51	RESIDENT	17.00	1.50
395	615002.88	4201471.51	RESIDENT	17.00	1.50
396	615022.88	4201471.51	RESIDENT	17.00	1.50
397	615042.88	4201471.51	RESIDENT	17.00	1.50
398	615062.88	4201471.51	RESIDENT	17.00	1.50
399	615082.88	4201471.51	RESIDENT	17.00	1.50
400	615102.88	4201471.51	RESIDENT	17.00	1.50
401	615122.88	4201471.51	RESIDENT	17.00	1.50
402	615142.88	4201471.51	RESIDENT	17.00	1.50
403	615162.88	4201471.51	RESIDENT	17.00	1.50
404	615182.88	4201471.51	RESIDENT	16.84	1.50
405	615202.88	4201471.51	RESIDENT	16.49	1.50
406	615222.88	4201471.51	RESIDENT	16.17	1.50
407	615242.88	4201471.51	RESIDENT	16.00	1.50
408	615262.88	4201471.51	RESIDENT	16.00	1.50
409	615282.88	4201471.51	RESIDENT	16.00	1.50
410	615302.88	4201471.51	RESIDENT	16.00	1.50

411	615322.88	4201471.51	RESIDENT	16.00	1.50
412	615342.88	4201471.51	RESIDENT	16.00	1.50
413	615362.88	4201471.51	RESIDENT	16.00	1.50
414	615382.88	4201471.51	RESIDENT	16.00	1.50
415	615402.88	4201471.51	RESIDENT	16.00	1.50
416	615422.88	4201471.51	RESIDENT	16.00	1.50
417	615442.88	4201471.51	RESIDENT	16.00	1.50
418	615462.88	4201471.51	RESIDENT	16.00	1.50
419	614702.88	4201491.51	park	15.62	1.50
420	614822.88	4201491.51	RESIDENT	16.00	1.50
421	614842.88	4201491.51	RESIDENT	16.00	1.50
422	614862.88	4201491.51	RESIDENT	16.51	1.50
423	614882.88	4201491.51	RESIDENT	16.81	1.50
424	614902.88	4201491.51	RESIDENT	16.81	1.50
425	614922.88	4201491.51	RESIDENT	16.93	1.50
426	614942.88	4201491.51	RESIDENT	17.00	1.50
427	614962.88	4201491.51	RESIDENT	17.00	1.50
428	614982.88	4201491.51	RESIDENT	17.00	1.50
429	615002.88	4201491.51	RESIDENT	17.00	1.50
430	615022.88	4201491.51	RESIDENT	17.00	1.50
431	615042.88	4201491.51	RESIDENT	17.00	1.50
432	615062.88	4201491.51	RESIDENT	17.00	1.50
433	615082.88	4201491.51	RESIDENT	17.00	1.50
434	615102.88	4201491.51	RESIDENT	17.00	1.50
435	615122.88	4201491.51	RESIDENT	17.00	1.50
436	615142.88	4201491.51	RESIDENT	17.00	1.50
437	615162.88	4201491.51	RESIDENT	16.88	1.50
438	615182.88	4201491.51	RESIDENT	16.56	1.50
439	615202.88	4201491.51	RESIDENT	16.02	1.50
440	615222.88	4201491.51	RESIDENT	16.00	1.50
441	615242.88	4201491.51	RESIDENT	16.00	1.50
442	615262.88	4201491.51	RESIDENT	16.00	1.50
443	615282.88	4201491.51	RESIDENT	16.00	1.50
444	615302.88	4201491.51	RESIDENT	16.00	1.50
445	615322.88	4201491.51	RESIDENT	16.00	1.50
446	615342.88	4201491.51	RESIDENT	16.00	1.50
447	615362.88	4201491.51	RESIDENT	16.00	1.50
448	615382.88	4201491.51	RESIDENT	16.00	1.50

449	615402.88	4201491.51	RESIDENT	16.00	1.50
450	615422.88	4201491.51	RESIDENT	16.00	1.50
451	615442.88	4201491.51	RESIDENT	16.00	1.50
452	615462.88	4201491.51	RESIDENT	16.00	1.50
453	614722.88	4201511.51	park	15.30	1.50
454	614902.88	4201511.51	RESIDENT	16.14	1.50
455	614922.88	4201511.51	RESIDENT	16.69	1.50
456	614942.88	4201511.51	RESIDENT	17.00	1.50
457	614962.88	4201511.51	RESIDENT	17.00	1.50
458	614982.88	4201511.51	RESIDENT	17.00	1.50
459	615002.88	4201511.51	RESIDENT	17.00	1.50
460	615022.88	4201511.51	RESIDENT	17.00	1.50
461	615042.88	4201511.51	RESIDENT	17.00	1.50
462	615062.88	4201511.51	RESIDENT	17.00	1.50
463	615082.88	4201511.51	RESIDENT	17.00	1.50
464	615102.88	4201511.51	RESIDENT	17.00	1.50
465	615122.88	4201511.51	RESIDENT	17.00	1.50
466	615142.88	4201511.51	RESIDENT	17.00	1.50
467	615162.88	4201511.51	RESIDENT	16.45	1.50
468	615182.88	4201511.51	RESIDENT	16.10	1.50
469	615202.88	4201511.51	RESIDENT	16.00	1.50
470	615222.88	4201511.51	RESIDENT	16.00	1.50
471	615242.88	4201511.51	RESIDENT	16.00	1.50
472	615262.88	4201511.51	RESIDENT	16.00	1.50
473	615282.88	4201511.51	RESIDENT	16.00	1.50
474	615302.88	4201511.51	RESIDENT	16.00	1.50
475	615322.88	4201511.51	RESIDENT	16.00	1.50
476	615342.88	4201511.51	RESIDENT	16.00	1.50
477	615362.88	4201511.51	RESIDENT	16.00	1.50
478	615382.88	4201511.51	RESIDENT	16.00	1.50
479	615402.88	4201511.51	RESIDENT	16.00	1.50
480	615422.88	4201511.51	RESIDENT	16.00	1.50
481	615442.88	4201511.51	RESIDENT	16.00	1.50
482	615462.88	4201511.51	RESIDENT	16.00	1.50
483	614722.88	4201531.51	park	15.54	1.50
484	614742.88	4201531.51	park	15.49	1.50
485	614742.88	4201551.51	park	15.36	1.50
486	614762.88	4201571.51	park	15.04	1.50

487	614762.88	4201591.51	park	15.37	1.50
488	614782.88	4201591.51	park	15.02	1.50
489	614802.88	4201591.51	RESIDENT	15.30	1.50
490	614822.88	4201591.51	RESIDENT	15.63	1.50
491	614842.88	4201591.51	RESIDENT	15.98	1.50
492	614862.88	4201591.51	RESIDENT	16.00	1.50
493	614882.88	4201591.51	RESIDENT	16.00	1.50
494	614902.88	4201591.51	RESIDENT	16.00	1.50
495	614922.88	4201591.51	RESIDENT	16.64	1.50
496	614942.88	4201591.51	RESIDENT	17.00	1.50
497	614962.88	4201591.51	RESIDENT	17.00	1.50
498	614982.88	4201591.51	RESIDENT	17.00	1.50
499	615002.88	4201591.51	RESIDENT	16.84	1.50
500	615022.88	4201591.51	RESIDENT	16.49	1.50
501	615042.88	4201591.51	RESIDENT	16.47	1.50
502	615082.88	4201591.51	worker	16.01	1.50
503	615102.88	4201591.51	worker	16.00	1.50
504	615122.88	4201591.51	worker	16.00	1.50
505	615142.88	4201591.51	worker	16.00	1.50
506	615162.88	4201591.51	worker	16.00	1.50
507	615342.88	4201591.51	park	16.00	1.50
508	615382.88	4201591.51	park	16.00	1.50
509	615422.88	4201591.51	park	16.00	1.50
510	614782.88	4201611.51	park	15.22	1.50
511	614802.88	4201611.51	park	15.07	1.50
512	614822.88	4201611.51	RESIDENT	15.25	1.50
513	614842.88	4201611.51	RESIDENT	15.78	1.50
514	614862.88	4201611.51	RESIDENT	15.93	1.50
515	614882.88	4201611.51	RESIDENT	16.00	1.50
516	614902.88	4201611.51	RESIDENT	16.00	1.50
517	614922.88	4201611.51	RESIDENT	16.51	1.50
518	614942.88	4201611.51	RESIDENT	16.87	1.50
519	614962.88	4201611.51	RESIDENT	16.99	1.50
520	614982.88	4201611.51	RESIDENT	16.88	1.50
521	615002.88	4201611.51	RESIDENT	16.56	1.50
522	615022.88	4201611.51	RESIDENT	16.02	1.50
523	615042.88	4201611.51	RESIDENT	16.00	1.50
524	615162.88	4201611.51	worker	16.00	1.50

525	614802.88	4201631.51	park	15.31	1.50
526	614822.88	4201631.51	park	15.04	1.50
527	614842.88	4201631.51	RESIDENT	15.14	1.50
528	614862.88	4201631.51	RESIDENT	15.69	1.50
529	614882.88	4201631.51	RESIDENT	16.00	1.50
530	614902.88	4201631.51	RESIDENT	16.00	1.50
531	614922.88	4201631.51	RESIDENT	16.09	1.50
532	614942.88	4201631.51	RESIDENT	16.40	1.50
533	614962.88	4201631.51	RESIDENT	16.97	1.50
534	614982.88	4201631.51	RESIDENT	16.45	1.50
535	615002.88	4201631.51	RESIDENT	16.10	1.50
536	615022.88	4201631.51	RESIDENT	16.00	1.50
537	615042.88	4201631.51	RESIDENT	16.00	1.50
538	615162.88	4201631.51	worker	16.00	1.50
539	615342.88	4201631.51	park	16.00	1.50
540	615382.88	4201631.51	park	16.00	1.50
541	615422.88	4201631.51	park	16.00	1.50
542	615462.88	4201631.51	park	16.00	1.50
543	615502.88	4201631.51	park	16.00	1.50
544	615542.88	4201631.51	park	16.00	1.50
545	615582.88	4201631.51	park	16.00	1.50
546	615622.88	4201631.51	park	16.00	1.50
547	615662.88	4201631.51	park	15.10	1.50
548	615702.88	4201631.51	park	15.00	1.50
549	615742.88	4201631.51	park	15.14	1.50
550	614822.88	4201651.51	park	15.00	1.50
551	614842.88	4201651.51	park	15.00	1.50
552	614862.88	4201651.51	RESIDENT	15.64	1.50
553	614882.88	4201651.51	RESIDENT	16.00	1.50
554	614902.88	4201651.51	RESIDENT	16.00	1.50
555	614922.88	4201651.51	RESIDENT	16.00	1.50
556	614942.88	4201651.51	RESIDENT	16.30	1.50
557	614962.88	4201651.51	RESIDENT	16.97	1.50
558	614982.88	4201651.51	RESIDENT	16.70	1.50
559	615002.88	4201651.51	RESIDENT	16.37	1.50
560	615022.88	4201651.51	RESIDENT	16.02	1.50
561	615042.88	4201651.51	RESIDENT	16.00	1.50
562	614822.88	4201671.51	park	15.13	1.50

563	614842.88	4201671.51	park	15.01	1.50
564	614862.88	4201671.51	RESIDENT	15.51	1.50
565	614882.88	4201671.51	RESIDENT	15.87	1.50
566	614902.88	4201671.51	RESIDENT	15.99	1.50
567	614922.88	4201671.51	RESIDENT	16.00	1.50
568	614942.88	4201671.51	RESIDENT	16.30	1.50
569	614962.88	4201671.51	RESIDENT	16.97	1.50
570	614982.88	4201671.51	RESIDENT	17.00	1.50
571	615002.88	4201671.51	RESIDENT	16.70	1.50
572	615022.88	4201671.51	RESIDENT	16.03	1.50
573	615042.88	4201671.51	RESIDENT	16.00	1.50
574	615102.88	4201671.51	worker	16.00	1.50
575	615282.88	4201671.51	worker	16.00	1.50
576	615302.88	4201671.51	worker	16.00	1.50
577	615342.88	4201671.51	park	16.00	1.50
578	615382.88	4201671.51	park	16.00	1.50
579	615422.88	4201671.51	park	16.00	1.50
580	615462.88	4201671.51	park	16.00	1.50
581	615502.88	4201671.51	park	16.00	1.50
582	615542.88	4201671.51	park	16.00	1.50
583	615582.88	4201671.51	park	16.00	1.50
584	615622.88	4201671.51	park	15.22	1.50
585	615662.88	4201671.51	park	15.00	1.50
586	615702.88	4201671.51	park	15.00	1.50
587	615742.88	4201671.51	park	15.00	1.50
588	614842.88	4201691.51	park	15.03	1.50
589	614862.88	4201691.51	park	15.09	1.50
590	614882.88	4201691.51	RESIDENT	15.40	1.50
591	614902.88	4201691.51	RESIDENT	15.97	1.50
592	614922.88	4201691.51	RESIDENT	16.00	1.50
593	614942.88	4201691.51	RESIDENT	16.30	1.50
594	614962.88	4201691.51	RESIDENT	16.97	1.50
595	614982.88	4201691.51	RESIDENT	17.00	1.50
596	615002.88	4201691.51	RESIDENT	16.70	1.50
597	615022.88	4201691.51	RESIDENT	16.03	1.50
598	615042.88	4201691.51	RESIDENT	16.00	1.50
599	615102.88	4201691.51	worker	16.00	1.50
600	615142.88	4201691.51	worker	16.00	1.50

601	615162.88	4201691.51	worker	16.00	1.50
602	615182.88	4201691.51	worker	16.00	1.50
603	615222.88	4201691.51	worker	16.00	1.50
604	615242.88	4201691.51	worker	16.00	1.50
605	615262.88	4201691.51	worker	16.00	1.50
606	615282.88	4201691.51	worker	16.00	1.50
607	615302.88	4201691.51	worker	16.00	1.50
608	614862.88	4201711.51	park	15.19	1.50
609	614882.88	4201711.51	park	15.30	1.50
610	614902.88	4201711.51	RESIDENT	15.97	1.50
611	614922.88	4201711.51	RESIDENT	16.34	1.50
612	614942.88	4201711.51	RESIDENT	16.51	1.50
613	614962.88	4201711.51	RESIDENT	16.48	1.50
614	614982.88	4201711.51	RESIDENT	16.47	1.50
615	615002.88	4201711.51	RESIDENT	16.33	1.50
616	615022.88	4201711.51	RESIDENT	16.01	1.50
617	615042.88	4201711.51	RESIDENT	16.00	1.50
618	615102.88	4201711.51	worker	16.00	1.50
619	615282.88	4201711.51	worker	16.00	1.50
620	615302.88	4201711.51	worker	16.00	1.50
621	615342.88	4201711.51	park	16.00	1.50
622	615382.88	4201711.51	park	16.00	1.50
623	615422.88	4201711.51	park	16.00	1.50
624	615462.88	4201711.51	park	16.00	1.50
625	615502.88	4201711.51	park	16.00	1.50
626	615542.88	4201711.51	park	16.00	1.50
627	615582.88	4201711.51	park	16.00	1.50
628	615622.88	4201711.51	park	16.00	1.50
629	615662.88	4201711.51	park	15.53	1.50
630	615702.88	4201711.51	park	15.19	1.50
631	615742.88	4201711.51	park	15.00	1.50
632	614882.88	4201731.51	park	15.38	1.50
633	614922.88	4201731.51	RESIDENT	16.44	1.50
634	614942.88	4201731.51	RESIDENT	16.56	1.50
635	614962.88	4201731.51	RESIDENT	16.02	1.50
636	614982.88	4201731.51	RESIDENT	16.00	1.50
637	615002.88	4201731.51	RESIDENT	16.00	1.50
638	615022.88	4201731.51	RESIDENT	16.00	1.50

639	615042.88	4201731.51	RESIDENT	16.00	1.50
640	615902.88	4201731.51	worker	17.87	1.50
641	615922.88	4201731.51	worker	17.99	1.50
642	614882.88	4201751.51	park	15.64	1.50
643	614902.88	4201751.51	park	15.16	1.50
644	614922.88	4201751.51	RESIDENT	15.78	1.50
645	614942.88	4201751.51	RESIDENT	16.10	1.50
646	614962.88	4201751.51	RESIDENT	16.00	1.50
647	614982.88	4201751.51	RESIDENT	16.00	1.50
648	615002.88	4201751.51	RESIDENT	16.00	1.50
649	615022.88	4201751.51	RESIDENT	16.00	1.50
650	615042.88	4201751.51	RESIDENT	16.00	1.50
651	615162.88	4201751.51	worker	16.00	1.50
652	615342.88	4201751.51	park	16.00	1.50
653	615382.88	4201751.51	park	16.00	1.50
654	615422.88	4201751.51	park	16.00	1.50
655	615462.88	4201751.51	park	16.00	1.50
656	615502.88	4201751.51	park	16.00	1.50
657	615542.88	4201751.51	park	16.00	1.50
658	615582.88	4201751.51	park	16.00	1.50
659	615622.88	4201751.51	park	16.00	1.50
660	615662.88	4201751.51	park	16.00	1.50
661	615702.88	4201751.51	park	15.36	1.50
662	615742.88	4201751.51	park	15.00	1.50
663	615902.88	4201751.51	worker	17.40	1.50
664	615922.88	4201751.51	worker	17.98	1.50
665	614902.88	4201771.51	park	15.54	1.50
666	614922.88	4201771.51	park	15.49	1.50
667	614942.88	4201771.51	RESIDENT	15.47	1.50
668	614962.88	4201771.51	RESIDENT	15.47	1.50
669	614982.88	4201771.51	RESIDENT	15.81	1.50
670	615002.88	4201771.51	RESIDENT	16.00	1.50
671	615022.88	4201771.51	RESIDENT	16.00	1.50
672	615042.88	4201771.51	RESIDENT	16.00	1.50
673	615162.88	4201771.51	worker	16.00	1.50
674	615222.88	4201771.51	worker	16.00	1.50
675	615242.88	4201771.51	worker	16.00	1.50
676	615262.88	4201771.51	worker	16.00	1.50

677	615282.88	4201771.51	worker	16.00	1.50
678	615302.88	4201771.51	worker	16.00	1.50
679	615902.88	4201771.51	worker	17.14	1.50
680	615922.88	4201771.51	worker	17.46	1.50
681	614922.88	4201791.51	park	15.43	1.50
682	614942.88	4201791.51	park	15.00	1.50
683	614962.88	4201791.51	RESIDENT	15.00	1.50
684	614982.88	4201791.51	RESIDENT	15.64	1.50
685	615002.88	4201791.51	RESIDENT	16.00	1.50
686	615022.88	4201791.51	RESIDENT	16.00	1.50
687	615042.88	4201791.51	RESIDENT	16.00	1.50
688	615162.88	4201791.51	worker	16.00	1.50
689	615222.88	4201791.51	worker	16.00	1.50
690	615242.88	4201791.51	worker	16.00	1.50
691	615262.88	4201791.51	worker	16.00	1.50
692	615282.88	4201791.51	worker	16.00	1.50
693	615302.88	4201791.51	worker	16.00	1.50
694	615342.88	4201791.51	park	16.00	1.50
695	615382.88	4201791.51	park	16.00	1.50
696	615422.88	4201791.51	park	16.00	1.50
697	615462.88	4201791.51	park	16.12	1.50
698	615502.88	4201791.51	park	16.19	1.50
699	615542.88	4201791.51	park	16.19	1.50
700	615582.88	4201791.51	park	16.19	1.50
701	615622.88	4201791.51	park	16.19	1.50
702	615662.88	4201791.51	park	16.00	1.50
703	615702.88	4201791.51	park	15.36	1.50
704	615742.88	4201791.51	park	15.00	1.50
705	615882.88	4201791.51	worker	16.51	1.50
706	615902.88	4201791.51	worker	16.81	1.50
707	615922.88	4201791.51	worker	16.81	1.50
708	614942.88	4201811.51	park	15.00	1.50
709	614962.88	4201811.51	park	15.00	1.50
710	614982.88	4201811.51	RESIDENT	15.64	1.50
711	615002.88	4201811.51	RESIDENT	16.00	1.50
712	615022.88	4201811.51	RESIDENT	16.00	1.50
713	615042.88	4201811.51	RESIDENT	16.00	1.50
714	615082.88	4201811.51	worker	16.00	1.50

715	615282.88	4201811.51	worker	16.00	1.50
716	615302.88	4201811.51	worker	16.00	1.50
717	615862.88	4201811.51	worker	16.00	1.50
718	615882.88	4201811.51	worker	16.09	1.50
719	615902.88	4201811.51	worker	16.14	1.50
720	615922.88	4201811.51	worker	16.14	1.50
721	614942.88	4201831.51	park	15.37	1.50
722	614962.88	4201831.51	park	15.02	1.50
723	615002.88	4201831.51	RESIDENT	15.63	1.50
724	615022.88	4201831.51	RESIDENT	15.98	1.50
725	615042.88	4201831.51	RESIDENT	16.00	1.50
726	615082.88	4201831.51	worker	16.00	1.50
727	615122.88	4201831.51	worker	16.00	1.50
728	615142.88	4201831.51	worker	16.00	1.50
729	615162.88	4201831.51	worker	16.00	1.50
730	615182.88	4201831.51	worker	16.00	1.50
731	615342.88	4201831.51	park	16.00	1.50
732	615382.88	4201831.51	park	16.00	1.50
733	615422.88	4201831.51	park	16.00	1.50
734	615462.88	4201831.51	park	16.64	1.50
735	615502.88	4201831.51	park	17.00	1.50
736	615542.88	4201831.51	park	17.00	1.50
737	615582.88	4201831.51	park	17.00	1.50
738	615622.88	4201831.51	park	17.00	1.50
739	615662.88	4201831.51	park	16.00	1.50
740	615702.88	4201831.51	park	15.36	1.50
741	615862.88	4201831.51	worker	16.00	1.50
742	615882.88	4201831.51	worker	15.66	1.50
743	615902.88	4201831.51	worker	15.63	1.50
744	615922.88	4201831.51	worker	15.98	1.50
745	615942.88	4201831.51	worker	16.00	1.50
746	614962.88	4201851.51	park	15.22	1.50
747	614982.88	4201851.51	park	14.95	1.50
748	615002.88	4201851.51	RESIDENT	15.11	1.50
749	615022.88	4201851.51	RESIDENT	15.78	1.50
750	615042.88	4201851.51	RESIDENT	15.93	1.50
751	615082.88	4201851.51	worker	16.00	1.50
752	615122.88	4201851.51	worker	16.00	1.50

753	615142.88	4201851.51	worker	16.00	1.50
754	615162.88	4201851.51	worker	16.00	1.50
755	615182.88	4201851.51	worker	16.00	1.50
756	615242.88	4201851.51	worker	16.00	1.50
757	615262.88	4201851.51	worker	16.00	1.50
758	615282.88	4201851.51	worker	16.00	1.50
759	615302.88	4201851.51	worker	16.00	1.50
760	615842.88	4201851.51	worker	15.81	1.50
761	615862.88	4201851.51	worker	15.81	1.50
762	615882.88	4201851.51	worker	15.29	1.50
763	615902.88	4201851.51	worker	15.25	1.50
764	615922.88	4201851.51	worker	15.78	1.50
765	615942.88	4201851.51	worker	15.81	1.50
766	614982.88	4201871.51	park	14.76	1.50
767	615002.88	4201871.51	park	14.44	1.50
768	615022.88	4201871.51	RESIDENT	15.11	1.50
769	615042.88	4201871.51	RESIDENT	15.69	1.50
770	615082.88	4201871.51	worker	16.00	1.50
771	615122.88	4201871.51	worker	16.00	1.50
772	615142.88	4201871.51	worker	16.00	1.50
773	615162.88	4201871.51	worker	16.00	1.50
774	615182.88	4201871.51	worker	16.00	1.50
775	615342.88	4201871.51	park	16.00	1.50
776	615382.88	4201871.51	park	16.00	1.50
777	615422.88	4201871.51	park	16.86	1.50
778	615462.88	4201871.51	park	16.95	1.50
779	615502.88	4201871.51	park	17.00	1.50
780	615542.88	4201871.51	park	17.00	1.50
781	615582.88	4201871.51	park	17.00	1.50
782	615622.88	4201871.51	park	17.00	1.50
783	615842.88	4201871.51	worker	15.14	1.50
784	615862.88	4201871.51	worker	15.14	1.50
785	615882.88	4201871.51	worker	15.05	1.50
786	615902.88	4201871.51	worker	15.04	1.50
787	615922.88	4201871.51	worker	15.14	1.50
788	615942.88	4201871.51	worker	15.14	1.50
789	615002.88	4201891.51	park	15.04	1.50
790	615022.88	4201891.51	park	15.00	1.50

791	615862.88	4201891.51	worker	15.00	1.50
792	615882.88	4201891.51	worker	15.00	1.50
793	615002.88	4201911.51	park	15.70	1.50
794	615022.88	4201911.51	park	15.03	1.50
795	615342.88	4201911.51	park	16.12	1.50
796	615382.88	4201911.51	park	16.98	1.50
797	615422.88	4201911.51	park	17.06	1.50
798	615462.88	4201911.51	park	17.19	1.50
799	615502.88	4201911.51	park	16.82	1.50
800	615542.88	4201911.51	park	16.87	1.50
801	615582.88	4201911.51	park	17.00	1.50
802	615622.88	4201911.51	park	17.00	1.50
803	615022.88	4201931.51	park	15.03	1.50
804	615042.88	4201931.51	park	15.00	1.50
805	615042.88	4201951.51	park	15.19	1.50
806	615062.88	4201951.51	park	15.14	1.50
807	615342.88	4201951.51	park	16.64	1.50
808	615382.88	4201951.51	park	17.00	1.50
809	615422.88	4201951.51	park	17.83	1.50
810	615462.88	4201951.51	park	17.86	1.50
811	616102.88	4201951.51	RESIDENT	13.47	1.50
812	615062.88	4201971.51	park	15.13	1.50
813	615082.88	4201971.51	park	15.01	1.50
814	615062.88	4201991.51	park	15.60	1.50
815	615082.88	4201991.51	park	15.03	1.50
816	615102.88	4201991.51	park	15.64	1.50
817	615082.88	4202011.51	park	14.50	1.50
818	615102.88	4202011.51	park	15.11	1.50
819	615782.88	4202011.51	worker	15.00	1.50
820	615802.88	4202011.51	worker	15.00	1.50
821	615822.88	4202011.51	worker	14.66	1.50
822	615102.88	4202031.51	park	14.51	1.50
823	615122.88	4202031.51	park	15.11	1.50
824	615782.88	4202031.51	worker	15.00	1.50
825	615802.88	4202031.51	worker	15.00	1.50
826	615822.88	4202031.51	worker	14.36	1.50
827	615122.88	4202051.51	park	14.44	1.50
828	615142.88	4202051.51	park	15.11	1.50

829	615242.88	4202051.51	worker	16.00	1.50
830	615262.88	4202051.51	worker	16.00	1.50
831	615282.88	4202051.51	worker	16.55	1.50
832	615302.88	4202051.51	worker	16.86	1.50
833	615782.88	4202051.51	worker	15.00	1.50
834	615802.88	4202051.51	worker	15.00	1.50
835	615122.88	4202071.51	park	14.14	1.50
836	615142.88	4202071.51	park	14.46	1.50
837	615782.88	4202071.51	worker	14.84	1.50
838	615802.88	4202071.51	worker	14.49	1.50
839	615142.88	4202091.51	park	14.00	1.50
840	615162.88	4202091.51	park	14.51	1.50
841	615782.88	4202091.51	worker	14.56	1.50
842	615802.88	4202091.51	worker	14.02	1.50
843	615162.88	4202111.51	park	14.09	1.50
844	615182.88	4202111.51	park	14.44	1.50
845	615782.88	4202111.51	worker	14.10	1.50
846	615802.88	4202111.51	worker	14.00	1.50
847	615182.88	4202131.51	park	14.30	1.50
848	615202.88	4202131.51	park	14.97	1.50
849	615182.88	4202151.51	park	14.30	1.50
850	615202.88	4202151.51	park	14.97	1.50
851	614922.88	4202171.51	RESIDENT	16.45	1.50
852	614942.88	4202171.51	RESIDENT	15.88	1.50
853	615202.88	4202171.51	park	14.97	1.50
854	615922.88	4202171.51	RESIDENT	14.00	1.50
855	615942.88	4202171.51	RESIDENT	14.00	1.50
856	615962.88	4202171.51	RESIDENT	14.00	1.50
857	614922.88	4202191.51	RESIDENT	15.84	1.50
858	614942.88	4202191.51	RESIDENT	15.33	1.50
859	615202.88	4202191.51	park	14.97	1.50
860	615922.88	4202191.51	RESIDENT	14.00	1.50
861	615942.88	4202191.51	RESIDENT	14.00	1.50
862	615962.88	4202191.51	RESIDENT	14.00	1.50
863	614922.88	4202211.51	RESIDENT	15.49	1.50
864	614942.88	4202211.51	RESIDENT	15.13	1.50
865	615202.88	4202211.51	park	14.78	1.50
866	615922.88	4202211.51	RESIDENT	14.00	1.50

867	615942.88	4202211.51	RESIDENT	14.00	1.50
868	615962.88	4202211.51	RESIDENT	14.00	1.50
869	614922.88	4202231.51	RESIDENT	15.91	1.50
870	614942.88	4202231.51	RESIDENT	15.60	1.50
871	615202.88	4202231.51	park	14.14	1.50
872	614922.88	4202251.51	RESIDENT	16.53	1.50
873	614942.88	4202251.51	RESIDENT	16.22	1.50
874	615202.88	4202251.51	park	12.98	1.50
875	614922.88	4202271.51	RESIDENT	17.32	1.50
876	614942.88	4202271.51	RESIDENT	16.96	1.50
877	615182.88	4202271.51	park	13.39	1.50
878	615202.88	4202271.51	park	12.06	1.50
879	614922.88	4202291.51	RESIDENT	18.41	1.50
880	614942.88	4202291.51	RESIDENT	17.89	1.50
881	615182.88	4202291.51	park	13.39	1.50
882	615202.88	4202291.51	park	12.06	1.50
883	614922.88	4202311.51	RESIDENT	18.83	1.50
884	614942.88	4202311.51	RESIDENT	18.41	1.50
885	615182.88	4202311.51	park	13.55	1.50
886	614922.88	4202331.51	RESIDENT	19.00	1.50
887	614942.88	4202331.51	RESIDENT	18.75	1.50
888	615182.88	4202331.51	park	13.81	1.50
889	615182.88	4202351.51	park	14.22	1.50
890	615182.88	4202371.51	park	14.46	1.50
891	615182.88	4202391.51	park	14.55	1.50
892	615182.88	4202411.51	park	14.35	1.50
893	615182.88	4202431.51	park	13.98	1.50
894	615182.88	4202451.51	park	13.75	1.50
895	615202.88	4202451.51	park	13.22	1.50
896	615202.88	4202471.51	park	13.86	1.50
897	615222.88	4202471.51	park	13.67	1.50
898	615242.88	4202471.51	park	13.30	1.50
899	615262.88	4202471.51	park	12.73	1.50
900	615282.88	4202471.51	park	12.70	1.50
901	615302.88	4202471.51	park	12.62	1.50
902	615322.88	4202471.51	park	12.43	1.50
903	615342.88	4202471.51	park	12.42	1.50
904	615362.88	4202471.51	park	12.42	1.50

905	615382.88	4202471.51	park	12.42	1.50
906	615402.88	4202471.51	park	12.42	1.50
907	615422.88	4202471.51	park	12.38	1.50
908	615442.88	4202471.51	park	12.28	1.50
909	615462.88	4202471.51	park	12.19	1.50
910	615482.88	4202471.51	park	12.14	1.50
911	615502.88	4202471.51	park	12.14	1.50
912	615522.88	4202471.51	park	12.41	1.50
913	615542.88	4202471.51	park	12.82	1.50
914	615562.88	4202471.51	park	13.40	1.50
915	615242.88	4202491.51	park	13.38	1.50
916	615262.88	4202491.51	park	13.07	1.50
917	615282.88	4202491.51	park	13.05	1.50
918	615302.88	4202491.51	park	13.05	1.50
919	615322.88	4202491.51	park	13.05	1.50
920	615342.88	4202491.51	park	13.05	1.50
921	615362.88	4202491.51	park	13.05	1.50
922	615382.88	4202491.51	park	13.05	1.50
923	615402.88	4202491.51	park	12.72	1.50
924	615422.88	4202491.51	park	12.37	1.50
925	615442.88	4202491.51	park	12.02	1.50
926	615462.88	4202491.51	park	12.00	1.50
927	615482.88	4202491.51	park	12.00	1.50
928	615502.88	4202491.51	park	12.00	1.50
929	615522.88	4202491.51	park	12.00	1.50
930	615542.88	4202491.51	park	12.14	1.50
931	615562.88	4202491.51	park	12.46	1.50
932	615582.88	4202491.51	park	13.08	1.50
933	615582.88	4202511.51	park	12.00	1.50
934	615602.88	4202511.51	park	12.49	1.50
935	615602.88	4202531.51	park	12.09	1.50
936	615602.88	4202551.51	park	12.00	1.50
937	615622.88	4202551.51	park	12.00	1.50
938	615622.88	4202571.51	park	12.00	1.50
939	615622.88	4202591.51	park	12.00	1.50
940	615622.88	4202611.51	park	12.00	1.50
941	615622.88	4202631.51	park	12.00	1.50
942	615602.88	4202651.51	park	12.00	1.50

943	615622.88	4202651.51	park	12.00	1.50
944	615602.88	4202671.51	park	12.00	1.50
945	615622.88	4202671.51	park	12.00	1.50
946	615602.88	4202691.51	park	12.00	1.50
947	615582.88	4202711.51	park	12.00	1.50
948	615602.88	4202711.51	park	12.00	1.50
949	615582.88	4202731.51	park	11.66	1.50
950	615602.88	4202731.51	park	11.63	1.50
951	615582.88	4202751.51	park	11.24	1.50
952	615602.88	4202751.51	park	11.11	1.50
953	615602.88	4202771.51	park	10.44	1.50
954	615602.88	4202791.51	park	10.83	1.50

Plant Boundary Receptors

Receptor Pathway

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	615190.45	4202102.31	FENCEPRI	15.00	
2	615213.05	4202141.97	FENCEPRI	15.31	
3	615221.35	4202176.10	FENCEPRI	15.00	
4	615221.35	4202197.31	FENCEPRI	15.00	
5	615200.91	4202357.28	FENCEPRI	14.95	
6	615196.35	4202396.81	FENCEPRI	15.23	
7	615196.80	4202413.85	FENCEPRI	14.82	
8	615203.08	4202430.36	FENCEPRI	14.02	
9	615215.08	4202446.03	FENCEPRI	14.50	
10	615231.08	4202459.16	FENCEPRI	15.05	
11	615258.29	4202465.61	FENCEPRI	13.80	
12	615389.18	4202462.17	FENCEPRI	13.35	
13	615446.97	4202458.20	FENCEPRI	13.10	
14	615485.49	4202455.94	FENCEPRI	12.66	
15	615514.67	4202450.27	FENCEPRI	13.77	
16	615550.07	4202453.67	FENCEPRI	15.08	
17	615580.95	4202468.96	FENCEPRI	14.69	
18	615618.05	4202502.91	FENCEPRI	13.82	
19	615621.71	4202512.91	FENCEPRI	13.42	
20	615615.38	4202518.24	FENCEPRI	12.84	
21	615616.38	4202529.24	FENCEPRI	12.33	
22	615626.38	4202533.91	FENCEPRI	12.20	
23	615762.14	4202436.87	FENCEPRI	14.68	
24	615764.45	4202431.80	FENCEPRI	14.77	
25	615768.76	4201987.74	FENCEPRI	15.00	
26	615696.19	4201986.36	FENCEPRI	15.00	
27	615681.19	4201981.69	FENCEPRI	15.04	
28	615482.21	4201978.36	FENCEPRI	16.72	
29	615464.88	4201987.69	FENCEPRI	17.37	
30	615329.23	4201983.36	FENCEPRI	16.08	
31	615322.23	4201992.36	FENCEPRI	16.00	
32	615318.89	4202098.02	FENCEPRI	16.84	
33	615287.00	4202097.15	FENCEPRI	16.00	
34	615228.92	4202094.88	FENCEPRI	15.95	
35	615202.85	4202094.03	FENCEPRI	15.69	
36	615195.77	4202094.60	FENCEPRI	15.44	

Receptor Pathway

Fenceline Grid

Grid Settings

Fenceline Spacing [m]:	25.00
Number of Tired Segments:	1

Segment Number	Distance from Fenceline [m]	Spacing [m]
1	1.00	1.00

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	UCART1	Receptors generated from Uniform Cartesian Grid
3	RESIDENT	
4	COMMER	
5	GROUP	
6	FENCEGRD	Receptors generated from Fenceline Grid
7	Industry	
8	park	
9	worker	

Receptor Pathway

Multi-Tier Grid (Risk)

Fenceline Grid

Grid Settings

Fenceline Spacing [m]:	25.00
Number of Tired Segments:	1

Segment Number	Distance from Fenceline [m]	Spacing [m]
1	1.00	1.00

Generated Receptor Locations

Record Number	Location: X-Coord. [m]	Location: Y-Coord. [m]	Group Name (Optional)	Terrain Elevations (Optional)	Flagpole Heights [m] (Optional)
1	615212.08	4202142.21	FENCEGRD	15.28	
2	615216.23	4202159.27	FENCEGRD	15.23	
3	615220.38	4202176.34	FENCEGRD	15.00	
4	615220.35	4202197.31	FENCEGRD	15.00	
5	615217.44	4202220.04	FENCEGRD	14.52	
6	615214.52	4202242.89	FENCEGRD	13.69	
7	615211.60	4202265.74	FENCEGRD	12.52	
8	615208.68	4202288.59	FENCEGRD	12.33	
9	615205.76	4202311.45	FENCEGRD	12.66	
10	615202.84	4202334.30	FENCEGRD	13.59	
11	615199.92	4202357.15	FENCEGRD	14.91	
12	615197.64	4202376.93	FENCEGRD	15.36	
13	615195.36	4202396.70	FENCEGRD	15.18	
14	615195.80	4202413.88	FENCEGRD	14.78	
15	615202.15	4202430.72	FENCEGRD	14.00	
16	615214.29	4202446.64	FENCEGRD	14.38	
17	615230.45	4202459.93	FENCEGRD	14.92	
18	615244.45	4202463.36	FENCEGRD	14.44	
19	615258.06	4202466.58	FENCEGRD	13.65	
20	615280.13	4202466.04	FENCEGRD	13.61	
21	615301.95	4202465.46	FENCEGRD	13.52	
22	615323.76	4202464.89	FENCEGRD	13.08	
23	615345.58	4202464.32	FENCEGRD	13.14	
24	615367.39	4202463.74	FENCEGRD	13.20	
25	615389.21	4202463.17	FENCEGRD	13.25	
26	615408.51	4202461.84	FENCEGRD	13.39	
27	615427.78	4202460.52	FENCEGRD	13.28	
28	615447.04	4202459.20	FENCEGRD	13.04	

Receptor Pathway

Record Number	Location: X-Coord. [m]	Location: Y-Coord. [m]	Group Name (Optional)	Terrain Elevations (Optional)	Flagpole Heights [m] (Optional)
29	615466.29	4202458.07	FENCEGRD	12.73	
30	615485.55	4202456.94	FENCEGRD	12.63	
31	615500.27	4202454.09	FENCEGRD	12.72	
32	615514.86	4202451.25	FENCEGRD	13.72	
33	615532.27	4202452.97	FENCEGRD	14.92	
34	615549.97	4202454.67	FENCEGRD	14.97	
35	615565.07	4202462.21	FENCEGRD	14.42	
36	615580.51	4202469.86	FENCEGRD	14.59	
37	615592.64	4202481.01	FENCEGRD	14.41	
38	615605.01	4202492.33	FENCEGRD	13.92	
39	615617.37	4202503.65	FENCEGRD	13.73	
40	615620.77	4202513.25	FENCEGRD	13.35	
41	615621.07	4202512.15	FENCEGRD	13.43	
42	615614.74	4202517.48	FENCEGRD	12.85	
43	615614.38	4202518.33	FENCEGRD	12.80	
44	615615.38	4202529.33	FENCEGRD	12.31	
45	615625.96	4202534.82	FENCEGRD	12.13	
46	615626.96	4202534.72	FENCEGRD	12.17	
47	615646.36	4202520.86	FENCEGRD	13.37	
48	615665.75	4202507.00	FENCEGRD	13.96	
49	615685.14	4202493.13	FENCEGRD	13.97	
50	615704.54	4202479.27	FENCEGRD	13.92	
51	615723.93	4202465.41	FENCEGRD	14.34	
52	615743.33	4202451.55	FENCEGRD	14.81	
53	615762.72	4202437.68	FENCEGRD	14.64	
54	615765.36	4202432.21	FENCEGRD	14.73	
55	615765.69	4202407.14	FENCEGRD	15.19	
56	615765.93	4202382.47	FENCEGRD	14.92	
57	615766.17	4202357.80	FENCEGRD	14.30	
58	615766.41	4202333.13	FENCEGRD	14.24	
59	615766.65	4202308.46	FENCEGRD	14.10	
60	615766.89	4202283.79	FENCEGRD	14.00	
61	615767.13	4202259.12	FENCEGRD	14.00	
62	615767.37	4202234.45	FENCEGRD	14.00	
63	615767.60	4202209.78	FENCEGRD	14.00	
64	615767.84	4202185.11	FENCEGRD	14.00	
65	615768.08	4202160.44	FENCEGRD	14.00	
66	615768.32	4202135.77	FENCEGRD	14.06	
67	615768.56	4202111.10	FENCEGRD	14.30	

Receptor Pathway

Record Number	Location: X-Coord. [m]	Location: Y-Coord. [m]	Group Name (Optional)	Terrain Elevations (Optional)	Flagpole Heights [m] (Optional)
68	615768.80	4202086.43	FENCEGRD	14.98	
69	615769.04	4202061.76	FENCEGRD	15.00	
70	615769.28	4202037.09	FENCEGRD	15.00	
71	615769.52	4202012.42	FENCEGRD	15.00	
72	615769.76	4201987.75	FENCEGRD	15.00	
73	615768.78	4201986.74	FENCEGRD	15.00	
74	615744.59	4201986.28	FENCEGRD	15.00	
75	615720.40	4201985.82	FENCEGRD	15.00	
76	615696.21	4201985.36	FENCEGRD	15.00	
77	615681.49	4201980.74	FENCEGRD	15.04	
78	615656.33	4201980.27	FENCEGRD	15.47	
79	615631.46	4201979.86	FENCEGRD	16.27	
80	615606.59	4201979.44	FENCEGRD	16.80	
81	615581.72	4201979.03	FENCEGRD	17.00	
82	615556.84	4201978.61	FENCEGRD	16.77	
83	615531.97	4201978.19	FENCEGRD	16.00	
84	615507.10	4201977.78	FENCEGRD	16.00	
85	615482.23	4201977.36	FENCEGRD	16.72	
86	615464.41	4201986.81	FENCEGRD	17.40	
87	615442.30	4201985.97	FENCEGRD	18.31	
88	615419.70	4201985.25	FENCEGRD	18.07	
89	615397.09	4201984.53	FENCEGRD	17.44	
90	615374.48	4201983.80	FENCEGRD	16.81	
91	615351.87	4201983.08	FENCEGRD	16.39	
92	615329.26	4201982.36	FENCEGRD	16.08	
93	615321.44	4201991.75	FENCEGRD	16.00	
94	615321.23	4201992.33	FENCEGRD	16.00	
95	615320.56	4202013.46	FENCEGRD	16.00	
96	615319.89	4202034.59	FENCEGRD	16.30	
97	615319.23	4202055.72	FENCEGRD	17.00	
98	615318.56	4202076.86	FENCEGRD	16.88	
99	615317.89	4202097.99	FENCEGRD	16.80	
100	615318.92	4202097.02	FENCEGRD	16.84	
101	615302.97	4202096.59	FENCEGRD	16.31	
102	615287.03	4202096.15	FENCEGRD	16.00	
103	615267.68	4202095.39	FENCEGRD	16.00	
104	615248.32	4202094.64	FENCEGRD	16.00	
105	615228.96	4202093.88	FENCEGRD	15.96	
106	615215.92	4202093.46	FENCEGRD	15.85	

Receptor Pathway

Record Number	Location: X-Coord. [m]	Location: Y-Coord. [m]	Group Name (Optional)	Terrain Elevations (Optional)	Flagpole Heights [m] (Optional)
107	615202.88	4202093.03	FENCEGRD	15.73	
108	615195.69	4202093.60	FENCEGRD	15.47	
109	615194.95	4202094.03	FENCEGRD	15.43	
110	615189.63	4202101.74	FENCEGRD	15.00	
111	615189.58	4202102.81	FENCEGRD	14.96	
112	615200.88	4202122.64	FENCEGRD	14.90	

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: MET\Brentwood_WWTP.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: MET\Brentwood_WWTP.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 3.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2015	38.02	-121.76	Contra Costa Power
Upper Air		2015			OAKLAND/WSO AP
On-Site		2015			

Data Period

Data Period to Process

Start Date: 1/1/2015 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: BRENTWOOD_WWTP_OP.AD

Averaging Period	Source Group ID	High Value	File Name
1	AMR	1st	01H1G001.PLT
1	BIOFTR1	1st	01H1G002.PLT
1	BIOFTR2	1st	01H1G003.PLT
1	BOILER	1st	01H1G004.PLT
1	FLARE	1st	01H1G005.PLT
1	GENSET	1st	01H1G006.PLT
1	HAUL_D	1st	01H1G007.PLT
1	HAUL_E	1st	01H1G008.PLT
1	PYRO1	1st	01H1G009.PLT
1	PYRO2	1st	01H1G010.PLT
1	PYRO3	1st	01H1G011.PLT
1	PYRO4	1st	01H1G012.PLT
1	PYRO5	1st	01H1G013.PLT
1	TAILGAS	1st	01H1G014.PLT
1	WORKER_D	1st	01H1G015.PLT
1	WORKER_E	1st	01H1G016.PLT
Period	AMR	N/A	PE00G001.PLT
Period	BIOFTR1	N/A	PE00G002.PLT
Period	BIOFTR2	N/A	PE00G003.PLT
Period	BOILER	N/A	PE00G004.PLT
Period	FLARE	N/A	PE00G005.PLT
Period	GENSET	N/A	PE00G006.PLT
Period	HAUL_D	N/A	PE00G007.PLT
Period	HAUL_E	N/A	PE00G008.PLT
Period	PYRO1	N/A	PE00G009.PLT
Period	PYRO2	N/A	PE00G010.PLT
Period	PYRO3	N/A	PE00G011.PLT
Period	PYRO4	N/A	PE00G012.PLT
Period	PYRO5	N/A	PE00G013.PLT
Period	TAILGAS	N/A	PE00G014.PLT
Period	WORKER_D	N/A	PE00G015.PLT
Period	WORKER_E	N/A	PE00G016.PLT

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: AMR

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	741.06351	ug/m^3	615766.89	4202283.79	14.00	1.50	14.00	9/19/2015, 18
PERIOD		29.05975	ug/m^3	615922.88	4202211.51	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: BIOFTR1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	26727.84071	ug/m^3	615769.28	4202037.09	15.00	1.50	15.00	12/6/2015, 23
PERIOD		2233.02631	ug/m^3	615769.28	4202037.09	15.00	1.50	15.00	

PM2.5 - Concentration - Source Group: BIOFTR2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	26079.61870	ug/m^3	615767.37	4202234.45	14.00	1.50	14.00	2/13/2015, 1
PERIOD		1589.11477	ug/m^3	615767.60	4202209.78	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: BOILER

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	424.45377	ug/m^3	615767.13	4202259.12	14.00	1.50	14.00	9/19/2015, 11
PERIOD		18.30808	ug/m^3	615922.88	4202211.51	14.00	1.50	14.00	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: FLARE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	260.86780	ug/m^3	615766.17	4202357.80	14.30	1.50	14.30	3/20/2015, 24
PERIOD		12.85594	ug/m^3	615766.41	4202333.13	14.24	1.50	14.24	

PM2.5 - Concentration - Source Group: GENSET

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	11.83607	ug/m^3	615767.60	4202209.78	14.00	1.50	14.00	9/21/2015, 12
PERIOD		0.04673	ug/m^3	615922.88	4202171.51	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: HAUL_D

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	488.01216	ug/m^3	615681.49	4201980.74	15.04	1.50	15.04	4/9/2015, 5
PERIOD		24.28981	ug/m^3	615769.04	4202061.76	15.00	1.50	15.00	

PM2.5 - Concentration - Source Group: HAUL_E

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	372.37491	ug/m^3	615681.49	4201980.74	15.04	1.50	15.04	2/12/2015, 7
PERIOD		19.52307	ug/m^3	615769.04	4202061.76	15.00	1.50	15.00	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: PYRO1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	930.49593	ug/m^3	615768.80	4202086.43	14.98	1.50	14.98	3/16/2015, 9
PERIOD		62.21546	ug/m^3	615802.88	4202051.51	15.00	1.50	15.00	

PM2.5 - Concentration - Source Group: PYRO2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1163.18269	ug/m^3	615769.04	4202061.76	15.00	1.50	15.00	9/19/2015, 11
PERIOD		54.67082	ug/m^3	615822.88	4202031.51	14.36	1.50	14.36	

PM2.5 - Concentration - Source Group: PYRO3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	864.68937	ug/m^3	615768.08	4202160.44	14.00	1.50	14.00	1/29/2015, 10
PERIOD		51.29432	ug/m^3	615802.88	4202111.51	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: PYRO4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	855.83071	ug/m^3	615767.84	4202185.11	14.00	1.50	14.00	1/29/2015, 10
PERIOD		44.32791	ug/m^3	615767.84	4202185.11	14.00	1.50	14.00	

Results Summary

C:\AERMOD\Brentwood_WWTP\Brentwood_WWTP.isc

PM2.5 - Concentration - Source Group: PYRO5

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1018.11720	ug/m^3	615768.08	4202160.44	14.00	1.50	14.00	1/10/2015, 14
PERIOD		46.80852	ug/m^3	615922.88	4202171.51	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: TAILGAS

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	3670.45326	ug/m^3	615766.89	4202283.79	14.00	1.50	14.00	9/19/2015, 22
PERIOD		406.83660	ug/m^3	615766.89	4202283.79	14.00	1.50	14.00	

PM2.5 - Concentration - Source Group: WORKER_D

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	595.22199	ug/m^3	615681.49	4201980.74	15.04	1.50	15.04	2/12/2015, 7
PERIOD		30.62978	ug/m^3	615769.04	4202061.76	15.00	1.50	15.00	

PM2.5 - Concentration - Source Group: WORKER_E

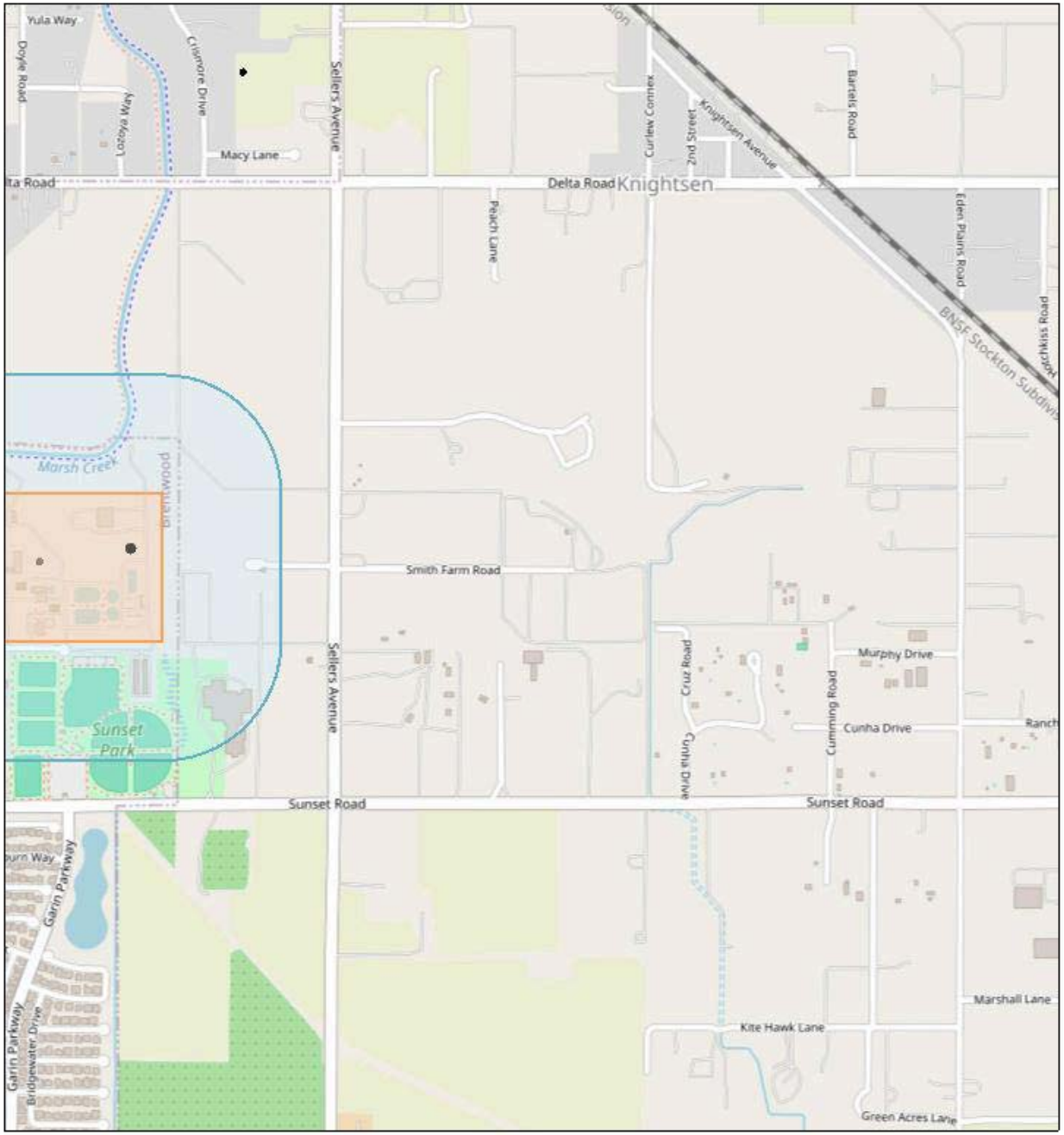
Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	556.77299	ug/m^3	615681.49	4201980.74	15.04	1.50	15.04	2/12/2015, 7
PERIOD		29.36260	ug/m^3	615769.04	4202061.76	15.00	1.50	15.00	

Screening Report

Area of Interest (AOI) Information

Area : 10,900,517.52 ft²

Jul 29 2024 16:16:09 Pacific Daylight Time


Yula Way
Clairmore Drive
Macy Lane
Sellers Avenue
Curlew Connex
2nd Street
Knightsen Avenue
Bartels Road
Delta Road
Knightsen
Peach Lane
Eden Plains Road
BNSF Stockton Subdivis
Marsh Creek
Brentwood
Smith Farm Road
Sellers Avenue
Cruz Road
Murphy Drive
Cumming Road
Cunha Drive
Sunset Park
Sunset Road
Sunset Road
Garin Parkway
Bridgewater Drive
Marshall Lane
Kite Hawk Lane
Green Acres Lane

A-353 1:18,056

Permitted Stationary Sources
0 0.1 0.2 0.4 mi
0 0.17 0.35 0.7 km
Map data © OpenStreetMap contributors, CC-BY-SA

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	3	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	14752	City of Brentwood	2201 Elkins Way	Brentwood	CA
2	15789	City of Brentwood	2251 Elkins Way	Brentwood	CA
3	18249	Antioch Building Materials	2170 Elkins Way	Brentwood	CA

#	Zip	County	Latitude	Longitude	Details
1	94513	Contra Costa	37.957460	-121.688654	Generator
2	94513	Contra Costa	37.960083	-121.686349	*No Data*
3	94513	Contra Costa	37.957405	-121.688673	*No Data*

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	921190	Public Administration	Executive, Legislative, and Other General Government Support	Other General Government Support	3.638000
2	221112	Utilities	Utilities	Fossil Fuel Electric Power Generation	3.301000
3	327320	Manufacturing	Nonmetallic Mineral Product Manufacturing	Ready-Mix Concrete Manufacturing	0.000000

#	Chronic_Ha	PM25	Count
1	0.002000	0.005000	1
2	0.010000	1.056000	1
3	0.000000	3.617000	1

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.

APPENDIX B

Biological Resources Data

Table B-1. Vegetation Communities and Wildlife Habitats.

California Native Plant Society Vegetation Community/Alliance	California Wildlife Habitat Relationship	Characteristic Species	Locations Affected by project		
			Solid Waste Transfer Station and WWTP Site	Anaerobic Digester, Biosolids Dryers and Pyrolysis Systems, and City Pedestrian Path	Pipeline
Various Semi-Natural Herbaceous Alliances	Annual Grassland	Yellow starthistle (*Centaurea solstitialis*), wild oats (*Avena* sp.), Bermuda grass (*Cynodon dactylon*), bindweed (*Convolvulus arvensis*), tarweed (*Holocarpha heermannii*),		X	X
Not applicable	Urban	*Not applicable*	X	X	X

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Plants				
Large-flowered fiddleneck *Amsinckia grandiflora*	FE/SE/1B, HCP/NCCP-no take	Grassy slopes below 1,000 feet in the San Joaquin Valley.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Slender silver moss *Anomobryum julaceum*	--/--/4	Broad-leafed upland forest, lower montane coniferous forest, North Coast coniferous forest /damp rock and soil on outcrops, usually on roadcuts.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Mt. Diablo manzanita *Arctostaphylos auriculata*	--/--/1B, HCP/NCCP-covered	Chaparral (sandstone), cismontane woodland.	No suitable chaparral/scrub present. T	**NA:** Unlikely to occur.
Contra Costa manzanita *Arctostaphylos manzanita ssp. laevigata*	--/--/1B	Chaparral (rocky).	No suitable chaparral present.	**NA**: Unlikely to occur**.**
Alkali milkvetch *Astragalus tener* ssp. *tener*	--/--/1B	Alkaline flats and vernally moist meadows below 200 feet.	Potential for occurrence in areas with spring moisture within annual grassland habitats in the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Heartscale *Atriplex cordulata var. cordulata*	--/--/1B	Saline or alkaline soils in chenopod scrub, meadows, and seeps. Sandy soils in valley and foothill grassland.	Potential for occurrence within the grasslands or wetlands at the site.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Crownscale *Atriplex coronata var. coronata*	--/--/4	Alkaline, often clay soils in chenopod scrub, valley and foothill grassland, and vernal pools.	Potential for occurrence within the grasslands at the site.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Brittlescale *Atriplex depressa*	--/--/1B, HCP/NCCP-covered	Wet, alkaline grassland, chenopod scrub, alkali scalded areas, and/or vernal pools.	Potential for occurrence within the grasslands at the site.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Lesser saltscale *Atriplex minuscula*	--/--/1B	Alkaline, sandy in chenopod scrub, playas, and valley and foothill grassland	Potential for occurrence within the grasslands at the site.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Big tarplant *Blepharizonia plumosa*	--/--/1B, HCP/NCCP-covered	Dry slopes in grassland below 1,600 feet.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Round-leaved filaree *California (Erodium) macrophylla*	--/--/1B, HCP/NCCP-covered	Clay soils in cismontane woodland and valley/foothill grassland <4,000 feet.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Mount Diablo fairy lantern *Calochortus pulchellus*	--/--/1B, HCP/NCCP-covered	Wooded slopes, generally northern aspect; 600–2,700 feet.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Chaparral harebell *Campanula exigua*	--/--/1B	Chaparral (rocky, usually serpentine).	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Congdon's tarplant *Centromadia parryi subsp. congdonii*	--/--/1B	Grazed and un-grazed annual grassland. Alkaline or saline soils sometimes described as heavy white clay (saline clay soil).	Potential for occurrence in annual grasslands within the project area.	**NA**: Not found during reconnaissance surveys conducted in appropriate period of blooming.
Mt. Diablo bird's-beak *Cordylanthus nidularius*	--/--/1B	Chaparral (serpentine).	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Hoover's cryptantha *Cryptantha hooveri*	--/--/1A	Inland dunes, sandy soils in valley and foothill grassland	Potential for occurrence in annual grasslands within the project area.	**NA**: Not found during reconnaissance surveys conducted in appropriate period of blooming.
Hospital Canyon larkspur *Delphinium californicum ssp. interius*	--/--/1B	Within and beside chaparral, grassy openings of cismontane woodland, sometimes mesic areas in above habitats.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Recurved larkspur *Delphinium recurvatum*	--/--/1B, HCP/NCCP-covered	Wet, alkaline areas, chenopod scrub	Potential for occurrence in annual grasslands within the project area.	**NA**: Not found during reconnaissance surveys conducted in appropriate period of blooming.
Norris' beard moss *Didymodon norrisii*	--/--/2B	Cismontane woodland, lower montane coniferous forest/intermittently mesic, rock.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Western leatherwood *Dirca occidentalis*	--/--/1B	Broadleaved upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland.	Unlikely to occur. No appropriate habitat is present.	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Mount Diablo buckwheat *Eriogonum truncatum*	--/--/1B, HCP/NCCP – no take	Sand; 600–1300 feet	Unlikely to occur. project area is outside of this species elevational range.	**NA:** Unlikely to occur.
Diamond-petaled poppy *Eschscholzia rhombipetala*	--/--/1B	Open areas and grasslands below 1,000 feet.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Hogwallow starfish *Hesperevax caulescens*	--/--/4	Sometimes alkaline in valley and foothill grassland (mesic, clay) and vernal pools (shallow).	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Brewer's western flax *Hesperolinon breweri*	--/--/1B, HCP/NCCP-covered	Serpentine soils in woodland, grassland, and chaparral habitats.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Woolly rose mallow *Hibiscus lasiocarpos var. occidentalis*	--/--/1B	Freshwater marshes and swamps, riprap on sides of levees	Unlikely to occur. No appropriate habitat is present.	**NA:** Unlikely to occur.
Contra Costa goldfields *Lasthenia conjugens*	FE/--/1B, HCP/NCCP-no take	Vernal pools and wet meadows in valley grasslands.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Showy madia *Madia radiata*	--/--/1B, HCP/NCCP-covered	Grassy or open slopes, generally clayey soils or shale.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Hall's bushmallow *Malacothamnus hallii*	--/--/1B	Chaparral, coastal scrub	Unlikely to occur. No appropriate habitat is present.	**NA:** Unlikely to occur.
Woodland woolythreads *Monolopia gracilens*	--/--/1B	Openings in broadleaf upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland/serpentine.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Lime Ridge navarretia *Navarretia gowenii*	--/--/1B	Chaparral, clay and serpentine soils.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Shining navarretia *Navarretia nigelliformis* subsp. *radians*	--/--/1B, HCP/NCCP-covered	Valley and foothill grassland.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Antioch Dunes evening primrose *Oenothera deltoides ssp. howellii*	FE/--/1B	Sandy bluffs, dunes below 100 meters in the Deltaic Great Central Valley (Antioch and Contra Costa Counties).	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.
Mt. Diablo phacelia *Phacelia phacelioides*	--/--/1B	Chaparral and cismontane woodland/ rocky; strong indicator of serpentine soils.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
California alkali grass *Puccinellia simplex*	--/--/1B	Alkaline, vernally mesic; sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Rock sanicle *Sanicula saxatilis*	--/--/1B	Rocky ridges or tallus, broadleaved upland forest, chaparral, valley and foothill grassland.	Unlikely to occur. Project is outside of species elevational range.	**NA:** Unlikely to occur.
Chaparral ragwort *Senecio aphanactis*	--/--/2B	Drying alkaline flats in cismontane woodland and coastal scrub.	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.
Long-styled sand-spurrey *Spergularia macrotheca var. Longistyla*	--/--/1B	Alkaline in meadows and seeps and marshes and swamps.	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Most beautiful jewel-flower *Streptanthus albidus ssp. Peramoenus*	--/--/1B	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Mt. Diablo jewel-flower *Streptanthus hispidus*	--/--/1B	Chaparral, valley and foothill grassland/ rocky.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Coastal triquetrella *Triquetrella californica*	--/--/1B	Coastal bluff scrub, coastal scrub/soil.	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/1B HCP/NCCP-no take	Alkaline clay soils in grassland and oak woodland (valley and foothill grassland).	Potential for occurrence in annual grasslands within the project area.	**NA:** Not found during reconnaissance surveys conducted in appropriate period of blooming.
Oval-leaved viburnum *Viburnum ellipticum*	--/--/2B	Chaparral, cismontane woodland, and lower montane coniferous forest.	Unlikely to occur. Project is outside of species elevational range and no appropriate habitat is present.	**NA:** Unlikely to occur.
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	FE/--/--	Vernal pools.	Unlikely to occur. No appropriate habitat (vernal pools) is present in the project area.	**NA:** Unlikely to occur.
Longhorn fairy shrimp *Branchinecta longiantenna*	FE/--/--, HCP/NCCP covered	Vernal pools.	Unlikely to occur. No appropriate habitat (vernal pools) is present in the project area.	**NA:** Unlikely to occur.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--/--, HCP/NCCP-covered	Vernal pools.	Unlikely to occur. No appropriate habitat (vernal pools) is present in the project area.	**NA:** Unlikely to occur.
Midvalley fairy shrimp *Brachinecta mesovallensis*	--/--/--, HCP/NCCP-covered	Vernal pools and a variety of constructed features. Often ponding is of shallow duration but can occur in long-duration ponds.	Unlikely to occur. No appropriate habitat (vernal pools) is present in the project area.	**NA:** Unlikely to occur.
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE/--/--	Coastal mountainous areas with grassy ground cover within fog belt. Associated with host plant *Sedum spathulifolium*.	Unlikely to occur. The project site is not located within the fog belt and is not known for supporting the host plant of this species.	**NA:** Unlikely to occur.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *Caerulea*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	Unlikely to occur as there are no elderberry shrubs in the project area. The closest known occurrence is approximately 19 miles east of the project.	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--/--, HCP/NCCP-covered	Vernal pools.	Unlikely to occur. No appropriate habitat (vernal pools) is present in the project area.	**NA:** Unlikely to occur.
Amphibians				
California tiger salamander *Ambystoma californiense*	FT/ST/--, HCP/NCCP-covered	Occurs primarily in annual grassland habitat but is also found in the grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats below 3,200 feet. Require vernal pools or ponds for breeding. Can disperse up to one mile from their breeding ponds.	Potential for occurrence. According to the ECCCHCP, no modeled habitat is present in the project area (Jones and Stokes 2006). However, there are CNDDB occurrences in the project area vicinity and species could potentially be present in grassy areas where appropriate habitat is present.	**NLAA:** Construction activities would occur in areas that may provide foraging habitat for California tiger salamander; however, no breeding habitat is present onsite. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Foothill yellow-legged frog *Rana boylii*	--/SE/--, HCP/NCCP-covered	Streams with rocky or cobbly substrate that flow at least to May.	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.
California red-legged frog *Rana aurora draytonii*	FT/SSC/--, HCP/NCCP-covered	Breeds in aquatic areas with dense, shrubby, or emergent riparian vegetation and a permanent source of deep (greater than 2 1/3 feet deep) still or slow-moving water below 4,000 feet elevation. Upland dispersal within 1 mile of aquatic breeding habitat with no impassable dispersal barriers (suburban areas, suburban developments, wide or fast flowing rivers or streams, lakes greater than 50 acres, and heavily traveled roads without underpasses or culverts).	Unlikely to occur. No appropriate habitat is present.	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Reptiles				
Western pond turtle *Emys marmorata*	--/SSC/--, HCP/NCCP-covered	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation.	Unlikely to occur. No appropriate habitat is present.	**NA:** Unlikely to occur.
Silvery legless lizard *Anniella pulchra pulchra*	--/SSC/--, HCP/NCCP-covered	Sandy or loose loamy soils with sparse vegetation and high moisture content.	Potential for occurrence.	**NLAA:** Construction activities would occur in areas that may provide foraging habitat for Silvery legless lizard. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/ST/--, HCP/NCCP covered	Typically found in chaparral, such as northern coastal sage scrub and coastal sage. Mating and egg-laying occur in grassland habitats adjacent to chaparral habitats in the spring.	Unlikely to occur. project area does not contain suitable habitat.	**NA:** Unlikely to occur.
Coast horned lizard *Phrynosoma blainvillii*	--/SSC/--	Chaparral, oak savannah, and grassland habitat types with loose soils. Also in lowlands, along sandy washes with scattered low bushes.	Potential for occurrence in the project area	**NLAA:** Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Giant garter snake *Thamnophis gigas*	FT/ST/--, HCP/NCCP-covered	Uses a wide variety of habitats including forests, mixed woodlands, grasslands, chaparral, and agricultural lands. Often occurs near aquatic habitat including ponds, marshes, and streams where it freely enters and retreats to when alarmed.	Potential for occurrence in the project area in and around lower Marsh Creek.	**NLAA** Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Birds				
Tricolored blackbird (nesting colony) *Agelaius tricolor*	--/SSC/--, HCP/NCCP-covered (nesting colonies)	Highly colonial species, most numerous in the Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and a foraging area with insect prey within a few miles of the colony. Nests in emergent wetlands with dense vegetation. Forages on ground in grassland or cropland habitats.	Potential for foraging in the project area at the WWTP where appropriate habitat is present, and in the vicinity of lower Marsh Creek.	**NLAA:** Construction activities would occur in areas that may provide foraging habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Golden eagle (nesting and wintering) *Aquila chrysaetos*	--/FP/,-- HCP/NCCP-covered	Grasslands and early successional stages of forest and shrub habitats for foraging at elevations up to 11,500 feet. Secluded cliffs with overhanging ledges or large trees in open areas with unobstructed view for nesting.	Potential for foraging in project area in annual grassland habitats.	**NLAA:** Construction activities would occur in areas that may provide foraging habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Western burrowing owl *Athene cunicularia*	--/SSC/--, HCP/NCCP-covered	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Potential for foraging and nesting in the project area. Several CNDDB records in the direct vicinity of the WWTP and lower Marsh Creek.	**NLAA:** Construction activities would occur in areas that may provide foraging habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Swainson's hawk *Buteo swainsoni*	--/ST/--, HCP/NCCP-covered	Open grasslands and agricultural fields. Nests in large trees such as valley oak, cottonwood, or eucalyptus.	Potential for foraging and nesting in the project area. Several CNDDB records in the direct vicinity of the WWTP and lower Marsh Creek.	**NLAA:** Construction activities would occur in areas that may provide foraging and nesting habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
White-tailed kite *Elanus leucurus*	--/FP/--, HCP/NCCP no take	Grassland and savannah for foraging. Large trees for roosting and nesting.	Project site provides suitable nesting and foraging habitat.	**NLAA:** Construction activities would occur in areas that may provide foraging and nesting habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
American peregrine falcon (nesting) *Falco peregrinus*	--/FP/--, HCP/NCCP-no take	Breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Migrants occur along the coast and the western Sierra Nevada in spring and fall.	Potential forager or migrant in project area. Unlikely to nest in the project area as no appropriate habitat is present.	**NA:** Areas affected by project construction unlikely to provide foraging habitat. There would be no measurable operations effects to the species.
California clapper rail *Rallus longirostris obsoletus*	FE/SE&FP/--	Forages in saline emergent wetlands and along tidal creeks. Nests in saline emergent wetlands near tidal sloughs.	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.
California least tern (nesting colony) *Sternula antillarum browni*	FE/SE&FP/--	Breeding areas include abandoned salt ponds and estuarine shores along the southern San Francisco Bay. Feeds primarily in shallow estuaries or lagoons.	Unlikely to occur as no appropriate habitat is present.	**NA:** Unlikely to occur.
Grasshopper sparrow *Ammodramus savannarum*	--/SSC/--	Grasslands with coyote brush and other shrubs.	Suitable habitat present.	**NLAA:** Construction activities would occur in areas that may provide foraging and nesting habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Mammals				
Pallid bat *Antrozous pallidus*	--/SSC/--	Usually, maternity roosts occur in enclosed areas of buildings, caves, and mines. Forages in a wide variety of open habitats.	Buildings in the project vicinity may provide suitable roosting habitat. . Suitable foraging habitat present.	**NLAA**: Construction activities would occur in areas that may provide foraging habitat. There would be no operations effects to the species.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Ringtail *Brassariscus astutus*	--/FP/-- HCP/NCCP-no take	Mixture of forest and scrub in close association with rocky or riparian areas. Nests in rocky areas and hollow trees and logs.	Project site supports suitable foraging areas.	**NLAA**: Construction activities would occur in areas that may provide foraging habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
Townsend's big-eared bat *Corynorhinus townsendii*	--/FP/--, HCP/NCCP-covered	Usually, maternity roosts occur in enclosed areas of buildings, caves, and mines. Forages along habitat edges, often gleaning insects from trees or shrubs.	Buildings in the project vicinity may provide suitable roosting habitat. Suitable foraging habitat present.	**NLAA**: Construction activities would occur in areas that may provide foraging habitat. There would be no operations effects to the species.
American badger *Taxidea taxus*	--/SSC/--	Open grassland areas with plentiful prey such as pocket gophers and ground squirrels. Suitable denning, foraging, and movement habitat present.	Suitable habitat present. No dens were observed during reconnaissance survey.	**NLAA**: Construction activities would occur in areas that may provide foraging and den habitat. Pre-construction surveys and conservation measures (if needed) would minimize potential adverse effects. There would be no operations effects to the species.
San Joaquin kit fox *Vulpes macrotus mutica*	FE/ST/--, HCP/NCCP-covered	Grasslands and shrubland areas in the San Joaquin Valley with friable soils for building underground dens. Denning begins around September, mating occurs from December to March, and pups are born February through April.	Unlikely to occur. project area does not contain suitable habitat and is not within the modeled habitat distribution for the species (Jones and Stokes 2006).	**NA:** Unlikely to occur.

Table B-2. Potentially Occurring Special-Status Plant and Wildlife Species.

Scientific and Common Name	Status (F/S/CRPR, HCP/NCCP)	Habitat	Potential for Occurrence in project area	Potential for Project to Affect
Status -- = not applicable CRPR = California Rare Plant Ranking 1A = California Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere. 1B = California Rare Plant Rank 1B: Plants are threatened or endangered in California and elsewhere. 2B = California Rare Plant Rank 2B: Plants are rare, threatened or endangered in California but more common elsewhere. 4 = Plants of Limited Distribution - A Watch List.			F = Federal FE = Federal endangered FP = California fully protected FT = Federal threatened HCP/NCCP-covered = species is covered by the HCP/NCCP HCP/NCCP-no take = no take species under the HCP/NCCP NA = no effect NLAA = not likely to adversely affect S = State of California SSC = California state species of special concern SE = California state endangered ST = California state threatened	

APPENDIX C

Noise Data and Calculations

NOISE MEASUREMENT DATA

LT1- CNEL / Ldn Calculation

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site:	LT 1
Measurement Date:	5/30/2024
Project Name:	Brentwood WWTP

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA/10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	50.7	117,490	0	0	1	0	0	117,490
1:00	50.8	120,226	0	0	1	0	0	120,226
2:00	49.7	93,325	0	0	1	0	0	93,325
3:00	48.5	70,795	0	0	1	0	0	70,795
4:00	50.1	102,329	0	0	1	0	0	102,329
5:00	51.0	125,893	0	0	1	0	0	125,893
6:00	54.3	269,153	0	0	1	0	0	269,153
7:00	51.8	151,356	1	0	0	151,356	0	0
8:00	51.4	138,038	1	0	0	138,038	0	0
9:00	51.4	138,038	1	0	0	138,038	0	0
10:00	53.8	239,883	1	0	0	239,883	0	0
11:00	53.0	199,526	1	0	0	199,526	0	0
12:00	51.7	147,911	1	0	0	147,911	0	0
13:00	58.8	758,578	1	0	0	758,578	0	0
14:00	45.5	35,481	1	0	0	35,481	0	0
15:00	44.0	25,119	1	0	0	25,119	0	0
16:00	43.4	21,878	1	0	0	21,878	0	0
17:00	43.0	19,953	1	0	0	19,953	0	0
18:00	52.2	165,959	1	0	0	165,959	0	0
19:00	46.2	41,687	0	1	0	0	41,687	0
20:00	50.6	114,815	0	1	0	0	114,815	0
21:00	54.3	269,153	0	1	0	0	269,153	0
22:00	52.9	194,984	0	0	1	0	0	194,984
23:00	51.8	151,356	0	0	1	0	0	151,356
		1						
		Sum of Sound Power during Period wo/penalty				2,041,720	425,656	1,245,552
		Log Factor for CNEL Penalty (i.e., 10*log(x))				1	3	10
		Sound Power during Period with penalty				2,041,720	1,276,967	12,455,521

Total Daily Sound Power, with penalties	15,774,209
Hours per Day	24
Average Hourly Sound Power, with penalties	657,259
CNEL	58.2

Computation of Ldn

Period of 24-Hour Day (1=included, 0=not)		Sound Power Breakdown by Period of Day	
Day	Night	Day	Night
0	1	0	117,490
0	1	0	120,226
0	1	0	93,325
0	1	0	70,795
0	1	0	102,329
0	1	0	125,893
0	1	0	269,153
1	0	151,356	0
1	0	138,038	0
1	0	138,038	0
1	0	239,883	0
1	0	199,526	0
1	0	147,911	0
1	0	758,578	0
1	0	35,481	0
1	0	25,119	0
1	0	21,878	0
1	0	19,953	0
1	0	165,959	0
1	0	41,687	0
1	0	114,815	0
1	0	269,153	0
0	1	0	194,984
0	1	0	151,356

Sum of Sound Power during Period wo/penalty	2,467,376	1,245,552
Log Factor for Penalty (i.e., 10*log(x))	1	10
Sound Power during Period with penalty	2,467,376	12,455,521

Total Daily Sound Power, with penalties	14,922,897
Hours per Day	24
Average Hourly Sound Power, with penalties	621,787
Ldn	57.9

Notes:

Computation of the CNEL based on 1-hour Leq measurements for each hour of a day are based on equation 2-27 on pg. 2-57 of Caltrans 2009.

Computation of the Ldn based on 1-hour Leq measurements for each hour of a day are based on equation 2-26 on pg. 2-56 of Caltrans 2009.

Log factors for the Ldn and CNEL penalties are provided in Table 2-12 on pg. 2-52 of Caltrans 2009.

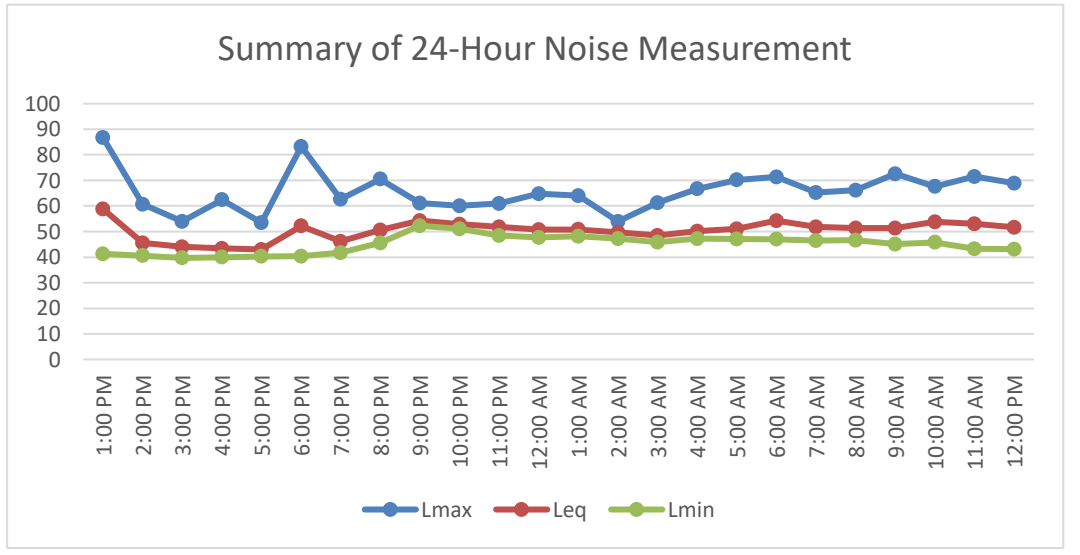
Source:

California Deaprtment of Transportation (Caltrans), Divisiong of Environmental Analysis. 2009 (November). *2009 Technical Noise Supplement* . Sacramento, CA. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed September 24, 2010.

LT 1 Processed

Hour	Lmax	Leq	Lmin
1:00 PM	86.7	58.8	41.3
2:00 PM	60.7	45.5	40.6
3:00 PM	54	44	39.7
4:00 PM	62.4	43.4	40
5:00 PM	53.5	43	40.3
6:00 PM	83.3	52.2	40.4
7:00 PM	62.6	46.2	41.7
8:00 PM	70.5	50.6	45.5
9:00 PM	61.1	54.3	52.3
10:00 PM	60.1	52.9	51
11:00 PM	61	51.8	48.5
12:00 AM	64.8	50.7	47.7
1:00 AM	64	50.8	48.2
2:00 AM	53.9	49.7	47.2
3:00 AM	61.3	48.5	45.9
4:00 AM	66.7	50.1	47.2
5:00 AM	70.2	51	47.1
6:00 AM	71.4	54.3	47
7:00 AM	65.2	51.8	46.5
8:00 AM	66.2	51.4	46.6
9:00 AM	72.6	51.4	45.1
10:00 AM	67.6	53.8	45.8
11:00 AM	71.5	53	43.3
12:00 PM	68.9	51.7	43.1

	Min	Max
Leq	43.0	58.8
Lmax	53.5	86.7
Lmin	39.7	52.3



LT 1 Raw Output

								Leq	Lmax	Lmin
89	5/30/2024	1:00:00 PM	2:00:00 PM	1:00:00	Auto	Slow	dBA	58.8	86.7	41.3
90	5/30/2024	2:00:00 PM	3:00:00 PM	1:00:00	Auto	Slow	dBA	45.5	60.7	40.6
91	5/30/2024	3:00:00 PM	4:00:00 PM	1:00:00	Auto	Slow	dBA	44	54	39.7
92	5/30/2024	4:00:00 PM	5:00:00 PM	1:00:00	Auto	Slow	dBA	43.4	62.4	40
93	5/30/2024	5:00:00 PM	6:00:00 PM	1:00:00	Auto	Slow	dBA	43	53.5	40.3
94	5/30/2024	6:00:00 PM	7:00:00 PM	1:00:00	Auto	Slow	dBA	52.2	83.3	40.4
95	5/30/2024	7:00:00 PM	8:00:00 PM	1:00:00	Auto	Slow	dBA	46.2	62.6	41.7
96	5/30/2024	8:00:00 PM	9:00:00 PM	1:00:00	Auto	Slow	dBA	50.6	70.5	45.5
97	5/30/2024	9:00:00 PM	10:00:00 PM	1:00:00	Auto	Slow	dBA	54.3	61.1	52.3
98	5/30/2024	10:00:00 PM	11:00:00 PM	1:00:00	Auto	Slow	dBA	52.9	60.1	51
99	5/30/2024	11:00:00 PM	12:00:00 AM	1:00:00	Auto	Slow	dBA	51.8	61	48.5
100	5/31/2024	12:00:00 AM	1:00:00 AM	1:00:00	Auto	Slow	dBA	50.7	64.8	47.7
101	5/31/2024	1:00:00 AM	2:00:00 AM	1:00:00	Auto	Slow	dBA	50.8	64	48.2
102	5/31/2024	2:00:00 AM	3:00:00 AM	1:00:00	Auto	Slow	dBA	49.7	53.9	47.2
103	5/31/2024	3:00:00 AM	4:00:00 AM	1:00:00	Auto	Slow	dBA	48.5	61.3	45.9
104	5/31/2024	4:00:00 AM	5:00:00 AM	1:00:00	Auto	Slow	dBA	50.1	66.7	47.2
105	5/31/2024	5:00:00 AM	6:00:00 AM	1:00:00	Auto	Slow	dBA	51	70.2	47.1
106	5/31/2024	6:00:00 AM	7:00:00 AM	1:00:00	Auto	Slow	dBA	54.3	71.4	47
107	5/31/2024	7:00:00 AM	8:00:00 AM	1:00:00	Auto	Slow	dBA	51.8	65.2	46.5
108	5/31/2024	8:00:00 AM	9:00:00 AM	1:00:00	Auto	Slow	dBA	51.4	66.2	46.6
109	5/31/2024	9:00:00 AM	10:00:00 AM	1:00:00	Auto	Slow	dBA	51.4	72.6	45.1
110	5/31/2024	10:00:00 AM	11:00:00 AM	1:00:00	Auto	Slow	dBA	53.8	67.6	45.8
111	5/31/2024	11:00:00 AM	12:00:00 PM	1:00:00	Auto	Slow	dBA	53	71.5	43.3
112	5/31/2024	12:00:00 PM	1:00:00 PM	1:00:00	Auto	Slow	dBA	51.7	68.9	43.1
113	5/31/2024	1:00:00 PM	2:00:00 PM	1:00:00	Auto	Slow	dBA	49.7	60.6	41.6
114	5/31/2024	1:59:59 PM	2:51:20 PM	0:51:21	Auto	Slow	dBA	59.3	88.8	43.3

LT2- CNEL / Ldn Calculation

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site:	LT 2
Measurement Date:	5/30/2024
Project Name:	Brentwood WWTP

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA/10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	55.2	331,131	0	0	1	0	0	331,131
1:00	52.5	177,828	0	0	1	0	0	177,828
2:00	53.2	208,930	0	0	1	0	0	208,930
3:00	54.0	251,189	0	0	1	0	0	251,189
4:00	55.6	363,078	0	0	1	0	0	363,078
5:00	60.7	1,174,898	0	0	1	0	0	1,174,898
6:00	60.7	1,174,898	0	0	1	0	0	1,174,898
7:00	61.6	1,445,440	1	0	0	1,445,440	0	0
8:00	61.8	1,513,561	1	0	0	1,513,561	0	0
9:00	60.9	1,230,269	1	0	0	1,230,269	0	0
10:00	60.0	1,000,000	1	0	0	1,000,000	0	0
11:00	60.7	1,174,898	1	0	0	1,174,898	0	0
12:00	60.2	1,047,129	1	0	0	1,047,129	0	0
13:00	60.7	1,174,898	1	0	0	1,174,898	0	0
14:00	60.9	1,230,269	1	0	0	1,230,269	0	0
15:00	61.7	1,479,108	1	0	0	1,479,108	0	0
16:00	61.6	1,445,440	1	0	0	1,445,440	0	0
17:00	61.2	1,318,257	1	0	0	1,318,257	0	0
18:00	62.1	1,621,810	1	0	0	1,621,810	0	0
19:00	60.8	1,202,264	0	1	0	0	1,202,264	0
20:00	60.2	1,047,129	0	1	0	0	1,047,129	0
21:00	58.1	645,654	0	1	0	0	645,654	0
22:00	56.5	446,684	0	0	1	0	0	446,684
23:00	55.5	354,813	0	0	1	0	0	354,813
		1						
		Sum of Sound Power during Period wo/penalty				15,681,077	2,895,047	4,483,447
		Log Factor for CNEL Penalty (i.e., 10*log(x))				1	3	10
		Sound Power during Period with penalty				15,681,077	8,685,142	44,834,475

Total Daily Sound Power, with penalties	69,200,693
Hours per Day	24
Average Hourly Sound Power, with penalties	2,883,362
CNEL	64.6

Computation of Ldn

Period of 24-Hour Day (1=included, 0=not)		Sound Power Breakdown by Period of Day	
Day	Night	Day	Night
0	1	0	331,131
0	1	0	177,828
0	1	0	208,930
0	1	0	251,189
0	1	0	363,078
0	1	0	1,174,898
0	1	0	1,174,898
1	0	1,445,440	0
1	0	1,513,561	0
1	0	1,230,269	0
1	0	1,000,000	0
1	0	1,174,898	0
1	0	1,047,129	0
1	0	1,174,898	0
1	0	1,230,269	0
1	0	1,479,108	0
1	0	1,445,440	0
1	0	1,318,257	0
1	0	1,621,810	0
1	0	1,202,264	0
1	0	1,047,129	0
1	0	645,654	0
0	1	0	446,684
0	1	0	354,813

Sum of Sound Power during Period wo/penalty	18,576,124	4,483,447
Log Factor for Penalty (i.e., 10*log(x))	1	10
Sound Power during Period with penalty	18,576,124	44,834,475

Total Daily Sound Power, with penalties	63,410,599
Hours per Day	24
Average Hourly Sound Power, with penalties	2,642,108
Ldn	64.2

Notes:

Computation of the CNEL based on 1-hour Leq measurements for each hour of a day are based on equation 2-27 on pg. 2-57 of Caltrans 2009.

Computation of the Ldn based on 1-hour Leq measurements for each hour of a day are based on equation 2-26 on pg. 2-56 of Caltrans 2009.

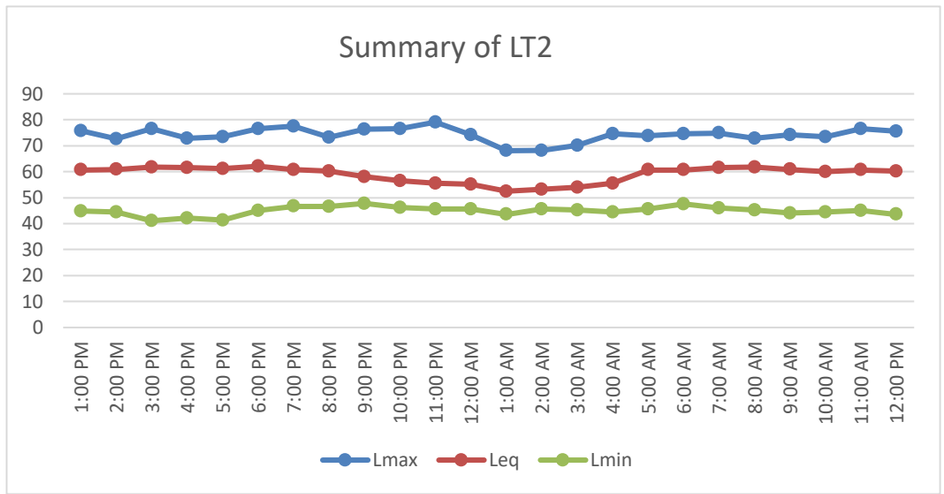
Log factors for the Ldn and CNEL penalties are provided in Table 2-12 on pg. 2-52 of Caltrans 2009.

Source:

California Deaprtment of Transportation (Caltrans), Divisiong of Environmental Analysis. 2009 (November). *2009 Technical Noise Supplement* . Sacramento, CA. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed September 24, 2010.

LT2 Processed

Hour	Lmax	Leq	Lmin
1:00 PM	75.8	60.7	44.9
2:00 PM	72.6	60.9	44.5
3:00 PM	76.5	61.7	41.1
4:00 PM	72.9	61.6	42.2
5:00 PM	73.4	61.2	41.4
6:00 PM	76.5	62.1	45
7:00 PM	77.6	60.8	46.7
8:00 PM	73.2	60.2	46.6
9:00 PM	76.3	58.1	47.8
10:00 PM	76.5	56.5	46.2
11:00 PM	79.1	55.5	45.7
12:00 AM	74.3	55.2	45.7
1:00 AM	68.1	52.5	43.6
2:00 AM	68.2	53.2	45.6
3:00 AM	70.2	54	45.2
4:00 AM	74.6	55.6	44.5
5:00 AM	73.9	60.7	45.6
6:00 AM	74.6	60.7	47.6
7:00 AM	74.9	61.6	46
8:00 AM	72.9	61.8	45.3
9:00 AM	74.2	60.9	44.1
10:00 AM	73.5	60	44.4
11:00 AM	76.6	60.7	45.1
12:00 PM	75.6	60.2	43.6



	Min	Max
Leq	52.5	62.1
Lmax	68.1	79.1
Lmin	41.1	47.8

LT2 Raw Output

C:\LARDAV\SLMUTIL\30MAY_24.bin Interval Data

Date	Time	Duration	Leq	SEL	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(75)	L(90)
30May 24	13:27:38	1941.1	99.9	132.7	114.3	43.2	114.3	66.4	62.5	58.0	51.8	48.2
30May 24	14:00:00	3600.0	60.9	96.4	72.6	44.5	67.7	65.3	62.4	58.3	52.6	49.3
30May 24	15:00:00	3600.0	61.7	97.2	76.5	41.1	67.7	65.6	63.2	60.0	53.8	48.8
30May 24	16:00:00	3600.0	61.6	97.1	72.9	42.2	67.9	65.9	63.2	59.7	53.4	48.4
30May 24	17:00:00	3600.0	61.2	96.8	73.4	41.4	67.9	65.6	62.8	58.8	52.6	47.6
30May 24	18:00:00	3600.0	62.1	97.7	76.5	45.0	69.0	66.5	63.3	59.1	53.9	50.5
30May 24	19:00:00	3600.0	60.8	96.4	77.6	46.7	67.6	65.3	62.2	57.4	53.0	50.5
30May 24	20:00:00	3600.0	60.2	95.8	73.2	46.6	66.8	64.6	61.4	56.8	53.6	51.4
30May 24	21:00:00	3600.0	58.1	93.7	76.3	47.8	65.6	62.7	57.9	53.1	51.1	50.0
30May 24	22:00:00	3600.0	56.5	92.0	76.5	46.2	64.9	61.1	54.4	51.8	51.0	49.6
30May 24	23:00:00	3600.0	55.5	91.1	79.1	45.7	64.1	59.2	52.6	51.2	50.1	49.1
31May 24	00:00:00	3600.0	55.2	90.8	74.3	45.7	63.9	57.9	53.6	51.9	51.2	50.2
31May 24	01:00:00	3600.0	52.5	88.0	68.1	43.6	59.4	53.2	51.7	50.8	49.9	49.0
31May 24	02:00:00	3600.0	53.2	88.8	68.2	45.6	56.8	55.1	53.7	52.4	51.4	50.4
31May 24	03:00:00	3600.0	54.0	89.6	70.2	45.2	63.1	54.8	52.5	51.3	50.2	49.3
31May 24	04:00:00	3600.0	55.6	91.2	74.6	44.5	65.4	59.0	52.4	51.1	50.2	49.1
31May 24	05:00:00	3600.0	60.7	96.3	73.9	45.6	69.0	65.9	61.2	54.5	51.0	49.3
31May 24	06:00:00	3600.0	60.7	96.3	74.6	47.6	68.7	66.1	61.0	55.0	51.6	49.6
31May 24	07:00:00	3600.0	61.6	97.1	74.9	46.0	68.9	66.3	62.9	57.2	51.6	48.7
31May 24	08:00:00	3600.0	61.8	97.4	72.9	45.3	68.3	66.2	63.5	59.4	53.0	49.7
31May 24	09:00:00	3600.0	60.9	96.5	74.2	44.1	68.2	65.4	62.1	57.1	51.7	48.5
31May 24	10:00:00	3600.0	60.0	95.6	73.5	44.4	66.8	64.5	61.4	56.8	52.6	49.8
31May 24	11:00:00	3600.0	60.7	96.2	76.6	45.1	68.2	64.9	61.5	56.5	50.9	48.3
31May 24	12:00:00	3600.0	60.2	95.8	75.6	43.6	67.1	64.5	61.4	57.5	53.1	49.2
31May 24	13:00:00	3600.0	60.7	96.3	75.8	44.9	67.6	64.9	62.0	58.0	52.7	49.6
31May 24	14:00:00	3594.1	60.8	96.4	77.6	43.2	67.6	65.0	62.0	58.0	52.8	49.4

LT3- CNEL / Ldn Calculation

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site:	LT 3
Measurement Date:	5/30/2024
Project Name:	Brentwood WWTP

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA/10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	49.2	83,176	0	0	1	0	0	83,176
1:00	47.2	52,481	0	0	1	0	0	52,481
2:00	49.3	85,114	0	0	1	0	0	85,114
3:00	51.7	147,911	0	0	1	0	0	147,911
4:00	55.7	371,535	0	0	1	0	0	371,535
5:00	57.6	575,440	0	0	1	0	0	575,440
6:00	59.5	891,251	0	0	1	0	0	891,251
7:00	59.2	831,764	1	0	0	831,764	0	0
8:00	60.7	1,174,898	1	0	0	1,174,898	0	0
9:00	58.5	707,946	1	0	0	707,946	0	0
10:00	58.7	741,310	1	0	0	741,310	0	0
11:00	57.9	616,595	1	0	0	616,595	0	0
12:00	58.5	707,946	1	0	0	707,946	0	0
13:00	59.0	794,328	1	0	0	794,328	0	0
14:00	58.4	691,831	1	0	0	691,831	0	0
15:00	60.7	1,174,898	1	0	0	1,174,898	0	0
16:00	58.5	707,946	1	0	0	707,946	0	0
17:00	57.9	616,595	1	0	0	616,595	0	0
18:00	57.8	602,560	1	0	0	602,560	0	0
19:00	58.9	776,247	0	1	0	0	776,247	0
20:00	55.3	338,844	0	1	0	0	338,844	0
21:00	55.0	316,228	0	1	0	0	316,228	0
22:00	54.8	301,995	0	0	1	0	0	301,995
23:00	50.8	120,226	0	0	1	0	0	120,226
		1						
		Sum of Sound Power during Period wo/penalty				9,368,615	1,431,319	2,629,129
		Log Factor for CNEL Penalty (i.e., 10*log(x))				1	3	10
		Sound Power during Period with penalty				9,368,615	4,293,957	26,291,295

Total Daily Sound Power, with penalties	39,953,867
Hours per Day	24
Average Hourly Sound Power, with penalties	1,664,744
CNEL	62.2

Computation of Ldn

Period of 24-Hour Day (1=included, 0=not)		Sound Power Breakdown by Period of Day	
Day	Night	Day	Night
0	1	0	83,176
0	1	0	52,481
0	1	0	85,114
0	1	0	147,911
0	1	0	371,535
0	1	0	575,440
0	1	0	891,251
1	0	831,764	0
1	0	1,174,898	0
1	0	707,946	0
1	0	741,310	0
1	0	616,595	0
1	0	707,946	0
1	0	794,328	0
1	0	691,831	0
1	0	1,174,898	0
1	0	707,946	0
1	0	616,595	0
1	0	602,560	0
1	0	776,247	0
1	0	338,844	0
1	0	316,228	0
0	1	0	301,995
0	1	0	120,226

Sum of Sound Power during Period wo/penalty	10,799,934	2,629,129
Log Factor for Penalty (i.e., 10*log(x))	1	10
Sound Power during Period with penalty	10,799,934	26,291,295

Total Daily Sound Power, with penalties	37,091,229
Hours per Day	24
Average Hourly Sound Power, with penalties	1,545,468
Ldn	61.9

Notes:

Computation of the CNEL based on 1-hour Leq measurements for each hour of a day are based on equation 2-27 on pg. 2-57 of Caltrans 2009.

Computation of the Ldn based on 1-hour Leq measurements for each hour of a day are based on equation 2-26 on pg. 2-56 of Caltrans 2009.

Log factors for the Ldn and CNEL penalties are provided in Table 2-12 on pg. 2-52 of Caltrans 2009.

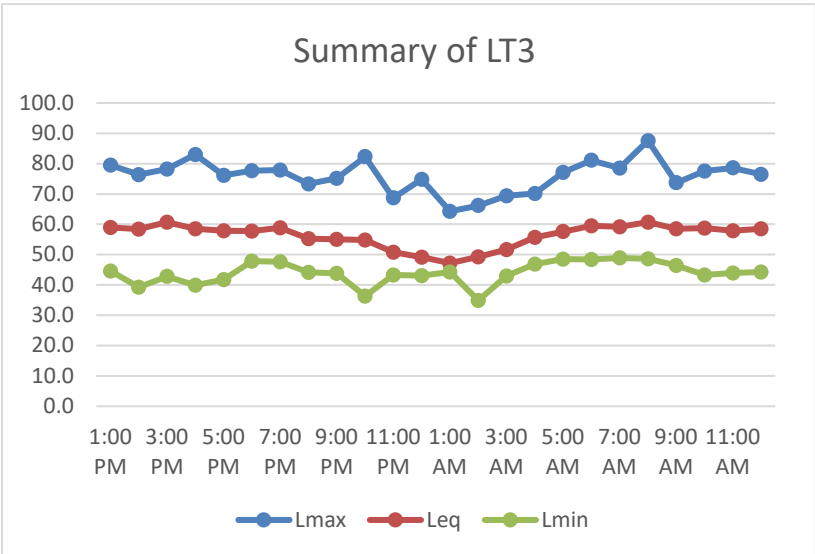
Source:

California Deaprtment of Transportation (Caltrans), Divisiong of Environmental Analysis. 2009 (November). *2009 Technical Noise Supplement* . Sacramento, CA. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed September 24, 2010.

LT3 Processed

Hour	Lmax	Leq	Lmin
1:00 PM	79.5	59.0	44.6
2:00 PM	76.4	58.4	39.3
3:00 PM	78.2	60.7	42.8
4:00 PM	83.0	58.5	39.9
5:00 PM	76.2	57.9	41.8
6:00 PM	77.7	57.8	47.9
7:00 PM	77.9	58.9	47.6
8:00 PM	73.3	55.3	44.2
9:00 PM	75.2	55.0	43.8
10:00 PM	82.3	54.8	36.3
11:00 PM	68.7	50.8	43.3
12:00 AM	74.8	49.2	43.1
1:00 AM	64.3	47.2	44.3
2:00 AM	66.2	49.3	34.9
3:00 AM	69.4	51.7	43.0
4:00 AM	70.2	55.7	46.9
5:00 AM	77.1	57.6	48.5
6:00 AM	81.1	59.5	48.4
7:00 AM	78.5	59.2	48.9
8:00 AM	87.6	60.7	48.6
9:00 AM	73.7	58.5	46.4
10:00 AM	77.6	58.7	43.3
11:00 AM	78.6	57.9	43.9
12:00 PM	76.5	58.5	44.3

	Min	Max
Leq:	47.2	60.7
Lmax	64.3	87.6
Lmin	34.9	48.9



LT 3 Raw Output

Record #	Date	Time	Run Duration	Run Time	LASeq	LASmin	LASmax	LAS1.67
1	2024-05-30	12:51:06	00:08:53.4	00:08:53.4	58.8	43.8	75.3	67.6
2	2024-05-30	13:00:00	01:00:00.0	01:00:00.0	59.0	44.6	79.5	67.7
3	2024-05-30	14:00:00	01:00:00.0	01:00:00.0	58.4	39.3	76.4	66.5
4	2024-05-30	15:00:00	01:00:00.0	01:00:00.0	60.7	42.8	78.2	70.1
5	2024-05-30	16:00:00	01:00:00.0	01:00:00.0	58.5	39.9	83.0	65.7
6	2024-05-30	17:00:00	01:00:00.0	01:00:00.0	57.9	41.8	76.2	66.8
7	2024-05-30	18:00:00	01:00:00.0	01:00:00.0	57.8	47.9	77.7	65.8
8	2024-05-30	19:00:00	01:00:00.0	01:00:00.0	58.9	47.6	77.9	67.1
9	2024-05-30	20:00:00	01:00:00.0	01:00:00.0	55.3	44.2	73.3	62.8
10	2024-05-30	21:00:00	01:00:00.0	01:00:00.0	55.0	43.8	75.2	61.9
11	2024-05-30	22:00:00	01:00:00.0	01:00:00.0	54.8	36.3	82.3	61.2
12	2024-05-30	23:00:00	01:00:00.0	01:00:00.0	50.8	43.3	68.7	60.2
13	2024-05-31	00:00:00	01:00:00.0	01:00:00.0	49.2	43.1	74.8	55.5
14	2024-05-31	01:00:00	01:00:00.0	01:00:00.0	47.2	44.3	64.3	51.8
15	2024-05-31	02:00:00	01:00:00.0	01:00:00.0	49.3	34.9	66.2	58.2
16	2024-05-31	03:00:00	01:00:00.0	01:00:00.0	51.7	43.0	69.4	61.1
17	2024-05-31	04:00:00	01:00:00.0	01:00:00.0	55.7	46.9	70.2	63.8
18	2024-05-31	05:00:00	01:00:00.0	01:00:00.0	57.6	48.5	77.1	65.3
19	2024-05-31	06:00:00	01:00:00.0	01:00:00.0	59.5	48.4	81.1	67.0
20	2024-05-31	07:00:00	01:00:00.0	01:00:00.0	59.2	48.9	78.5	65.8
21	2024-05-31	08:00:00	01:00:00.0	01:00:00.0	60.7	48.6	87.6	67.2
22	2024-05-31	09:00:00	01:00:00.0	01:00:00.0	58.5	46.4	73.7	65.9
23	2024-05-31	10:00:00	01:00:00.0	01:00:00.0	58.7	43.3	77.6	67.2
24	2024-05-31	11:00:00	01:00:00.0	01:00:00.0	57.9	43.9	78.6	64.7
25	2024-05-31	12:00:00	01:00:00.0	01:00:00.0	58.5	44.3	76.5	66.1
26	2024-05-31	13:00:00	01:00:00.0	01:00:00.0	59.8	45.3	78.6	68.3
27	2024-05-31	14:00:00	00:10:10.9	00:10:10.9	61.6	49.2	82.9	67.6

LAS8.33	LAS25.00	LAS50.00	LAS66.60	LAS90.00
61.6	58.8	55.6	53.5	49.7
61.7	58.6	55.6	53.7	49.8
61.6	58.3	55.3	53.4	50.0
64.8	59.7	56.1	54.1	50.0
61.1	57.7	54.3	52.1	48.2
60.9	57.2	53.8	51.9	48.4
60.9	57.6	54.9	53.3	50.9
61.3	57.8	55.1	53.8	51.2
58.8	55.2	52.3	50.6	47.5
58.2	55.2	52.1	50.5	48.8
54.8	50.3	46.6	45.2	43.5
53.9	48.9	46.6	46.0	44.8
48.7	45.8	44.9	44.4	44.0
47.5	47.1	46.8	45.9	44.8
52.3	47.8	46.0	45.3	43.0
54.7	49.8	47.0	46.0	44.5
59.6	55.2	53.2	51.7	49.3
61.2	56.8	53.4	51.8	50.1
62.5	58.9	55.2	53.3	50.9
62.2	59.3	56.3	54.7	52.0
62.4	59.1	55.8	54.0	51.6
61.8	58.7	56.1	54.6	51.8
62.1	58.5	55.2	53.5	50.7
61.2	57.9	55.0	53.4	50.6
61.7	58.3	55.5	53.7	50.6
62.5	59.0	56.3	54.7	51.5
62.0	58.8	56.3	55.0	52.7

ST 1 Measurement Summary	
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
Job Description	Brentwood WWTP
Note	ST 1`

Measurement	
Start	2024-05-30 09:59:18
Stop	2024-05-30 10:19:19
Duration	00:20:01.5
Run Time	00:20:01.5
Pause	00:00:00.0
Pre-Calibration	2024-05-30 09:58:18
Post-Calibration	None
Calibration Deviation	---

Overall Settings	
RMS Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
Overload	122.0 dB

Results

	dBA	Time Stamp
L_{eq}	63.5	
$L_{S(max)}$	83.0	2024/05/30 10:05:07
$L_{S(min)}$	55.9	2024/05/30 10:07:12

Statistics	
LAS 1.67	74.7 dB
LAS 8.33	64.3 dB
LAS 25.00	62.5 dB
LAS 50.00	58.8 dB
LAS 66.60	57.5 dB
LAS 90.00	56.5 dB

ST 2 Measurement Summary	
Model	SoundTrack LxT®
Firmware Version	2.302
Job Description	Brentwood WWTP
Note	ST 2

Measurement	
Start	2024-05-30 10:28:33
Stop	2024-05-30 10:50:35
Duration	00:22:01.8
Run Time	00:22:01.8
Pause	00:00:00.0
Pre-Calibration	2024-05-30 10:28:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
Overload	121.9 dB

Results

	dB A	Time Stamp
L_{eq}	59.8	
$L_{S(max)}$	76.1	2024/05/30 10:37:24
$L_{S(min)}$	45.4	2024/05/30 10:50:24

Statistics	
LAS 1.67	69.8 dB
LAS 8.33	60.8 dB
LAS 25.00	59.8 dB
LAS 50.00	55.6 dB
LAS 66.60	54.3 dB
LAS 90.00	49.2 dB

CONSTRUCTION NOISE AND VIBRATION

Onsite Construction: Site Prep (LEQ)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	19	90.0
Residence	1100	54.8
RC U-Pick Cherries Orchard	500	61.6
Receptor east of southeast project corner	180	70.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	81	0.4
Front End Loader	79	0.4
Dozer	82	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	77.0
Front End Loader	75.0
Dozer	78.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
81.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Onsite Construction: Site Prep (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,500	90.0
Residence	1100	58.8
RC U-Pick Cherries Orchard	500	65.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	81	1
Front End Loader	79	1
Dozer	82	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Front End Loader	79.0
Dozer	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Pipeline Implementation: Trenching (East of Athletic Complex Option) Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	15	90.0
Residence	175	68.8

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	81	0.4
Front End Loader	79	0.4
Flat Bed Truck	74	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	77.0
Front End Loader	75.0
Flat Bed Truck	70.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
79.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Pipeline Implementation: Trenching (East of Athletic Complex Option) Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,500	45.0
Residence	175	72.9

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	81	1
Front End Loader	79	1
Pickup Truck	75	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Front End Loader	79.0
Pickup Truck	75.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
83.7

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Equipment Reference Emissions Levels

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.
— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
vibratory roller	94	@	25	80.0	@	73

80 vdb

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
vibratory roller	0.210	@	25	0.20	@	26

0.2 ppv

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:
Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Washington, D.C. Accessed: December 20, 2020. Page Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

OPERATIONAL NOISE

Operational Stationary Noise

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor			
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)	
biogas Membrane Blower	79.0	@	50	hard	8	5	0.00	54.5	@	835	
Flare Biogas Blower	79.0	@	50	hard	8	5	0.00	54.8	@	812	
Buffer Tank 1	70.0	@	3	hard	8	5	0.00	21.7	@	776	
Buffer Tank 2	70.0	@	3	hard	8	5	0.00	21.9	@	760	
Buffer Tank 3	70.0	@	3	hard	8	5	0.00	22.2	@	737	
HSW Feed Pump 1	80.0	@	3	hard	4	5	0.00	30.9	@	853	
HSW Feed Pump 2	80.0	@	3	hard	4	5	0.00	31.3	@	820	
Digestate Pump + 2 HSW Pumps (3 pumps combined)	84.8	@	3	hard	4	5	0.00	36.7	@	762	
Digester Recirculate Pump	69.0	@	3	hard	4	5	0.00	21.0	@	756	
Digester Feed Pump	80.0	@	3	hard	4	5	0.00	32.4	@	723	
Polymer Pump	64.0	@	3	hard	4	5	0.00	17.2	@	654	
Ferric Chloride Pump	65.0	@	3	hard	4	5	0.00	18.6	@	627	
Digester Feed Pump 2	80.0	@	3	hard	4	5	0.00	32.2	@	734	
Chiller	60.0	@	3	hard	4	5	0.00	14.3	@	580	
Biogas Blowers (2 blowers combined)	82.0	@	3	hard	8	5	0.00	36.1	@	595	
Chiller Pumps	81.0	@	50	hard	4	5	0.00	59.2	@	613	
Condensate Pump	81.0	@	50	hard	4	5	0.00	59.1	@	625	
AMR Pumps (4) (4 pumps combined)	87.0	@	50	hard	4	5	0.00	64.5	@	665	
AMR Blower	87.0	@	3	hard	8	5	0.00	40.1	@	665	
Diesel Gen.	97.0	@	3	hard	4	5	0.00	49.8	@	690	
Sump Pumps (2) (2 sump pumps combined)	84.0	@	50	hard	4	5	0.00	60.7	@	731	
Pump Station (2 pumps)	84.0	@	50	hard	4	5	0.00	61.0	@	703	
SST (2 pumps)	61.0	@	3	hard	4	5	0.00	13.9		676	
								Combined Leq @ Receptor			
								68.8			
								Threshold		**Exceedance**	
								55.0	@	13.8	
								45.0	@	23.8	

Notes:
Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.
Yellow highlights indicate multiple sources combined at one location.
Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:
Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Operational Stationary CNEL Calculation

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site: 24-hr ops of stationary equipment
Measurement Date: NA
Project Name: Brentwood WWTP

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA /10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	68.8	7,628,840	0	0	1	0	0	7,628,840
1:00	68.8	7,628,840	0	0	1	0	0	7,628,840
2:00	68.8	7,628,840	0	0	1	0	0	7,628,840
3:00	68.8	7,628,840	0	0	1	0	0	7,628,840
4:00	68.8	7,628,840	0	0	1	0	0	7,628,840
5:00	68.8	7,628,840	0	0	1	0	0	7,628,840
6:00	68.8	7,628,840	0	0	1	0	0	7,628,840
7:00	68.8	7,628,840	1	0	0	7,628,840	0	0
8:00	68.8	7,628,840	1	0	0	7,628,840	0	0
9:00	68.8	7,628,840	1	0	0	7,628,840	0	0
10:00	68.8	7,628,840	1	0	0	7,628,840	0	0
11:00	68.8	7,628,840	1	0	0	7,628,840	0	0
12:00	68.8	7,628,840	1	0	0	7,628,840	0	0
13:00	68.8	7,628,840	1	0	0	7,628,840	0	0
14:00	68.8	7,628,840	1	0	0	7,628,840	0	0
15:00	68.8	7,628,840	1	0	0	7,628,840	0	0
16:00	68.8	7,628,840	1	0	0	7,628,840	0	0
17:00	68.8	7,628,840	1	0	0	7,628,840	0	0
18:00	68.8	7,628,840	1	0	0	7,628,840	0	0
19:00	68.8	7,628,840	0	1	0	0	7,628,840	0
20:00	68.8	7,628,840	0	1	0	0	7,628,840	0
21:00	68.8	7,628,840	0	1	0	0	7,628,840	0
22:00	68.8	7,628,840	0	0	1	0	0	7,628,840
23:00	68.8	7,628,840	0	0	1	0	0	7,628,840
		1						
Sum of Sound Power during Period wo/penalty						91,546,076	22,886,519	68,659,557
Log Factor for CNEL Penalty (i.e., 10*log(x))						1	3	10
Sound Power during Period with penalty						91,546,076	68,659,557	686,595,572

Total Daily Sound Power, with penalties	846,801,206
Hours per Day	24
Average Hourly Sound Power, with penalties	35,283,384
CNEL	75.5

Ldn computation on next page.

Computation of Ldn

Period of 24-Hour Day (1=included, 0=not)		Sound Power Breakdown by Period of Day	
Day	Night	Day	Night
0	1	0	7,628,840
0	1	0	7,628,840
0	1	0	7,628,840
0	1	0	7,628,840
0	1	0	7,628,840
0	1	0	7,628,840
0	1	0	7,628,840
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
1	0	7,628,840	0
0	1	0	7,628,840
0	1	0	7,628,840

Sum of Sound Power during Period wo/penalty	114,432,595	68,659,557
Log Factor for Penalty (i.e., 10*log(x))	1	10
Sound Power during Period with penalty	114,432,595	686,595,572

Total Daily Sound Power, with penalties	801,028,168
Hours per Day	24
Average Hourly Sound Power, with penalties	33,376,174
Ldn	75.2

Notes:

Computation of the CNEL based on 1-hour Leq measurements for each hour of a day are based on equation 2-27 on pg. 2-57 of Caltrans 2009.

Computation of the Ldn based on 1-hour Leq measurements for each hour of a day are based on equation 2-26 on pg. 2-56 of Caltrans 2009.

Log factors for the Ldn and CNEL penalties are provided in Table 2-12 on pg. 2-52 of Caltrans 2009.

Source:

California Deaprtment of Transportation (Caltrans), Divisiong of Environmental Analysis. 2009 (November). *2009 Technical Noise Supplement* . Sacramento, CA. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed September 24, 2010.

Operational Stationary Equipment Data

Modeled	Stationary Noise	Enclosed	Type of Enclosure	Noise Rating dB(A)	Distance (ft)	tor size if noise rating is not availa	Hours of Operation (/d)	Days of Operation (yr)	Reference
YES	Biogas Membrane Holder Blower #1	No	N/A	79	50	5 HP DOL - Ecomembrane	24	365	FHWA Roadway Construction Noise Model
YES	Biogas Membrane Holder Blower #2	No	N/A	79	50	5 HP DOL - Ecomembrane	24	365	FHWA Roadway Construction Noise Model
YES	Digester Recirculation Pump	No	N/A	69	3		24	365	Anaergia
YES	Flare biogas blower	No	N/A	79	50	40 HP - Aereon CEB	24	365	Anaergia
YES	Digestate Pump #1	No	N/A	80	3		24	365	Anaergia
YES	Digestate Pump #2	No	N/A	80	3		24	365	Anaergia
YES	HSW Feed Pump #1	No	N/A	80	3		12	260	Anaergia
YES	HSW Grinder #1	No	N/A	58	3		12	260	Anaergia
YES	HSW Feed Pump #2	No	N/A	80	3		12	260	Anaergia
YES	HSW Grinder #2	No	N/A	58	3		12	260	Anaergia
YES	SST #1	No	N/A	58	3		8	130	Anaergia
YES	SST #2	No	N/A	58	3		8	130	Anaergia
YES	Polymer Pump #1	No	N/A	64	3		8	130	Anaergia
YES	Polymer Pump #2	No	N/A	64	3		8	130	Anaergia
YES	Ferric Chloride Pump	No	N/A	65	3		24	365	Anaergia
YES	WAS Feed Pump #1	No	N/A	64	3		8	130	Anaergia
YES	WAS Feed Pump #2	No	N/A	64	3		8	130	Anaergia
YES	Digester Feed Pump #1	No	N/A	71	3		24	365	Anaergia
YES	Digester Feed Pump #2	No	N/A	71	3		24	365	Anaergia
YES	Digester Feed Pump #3	No	N/A	71	3		24	365	Anaergia
YES	Overflow Sump Pump #1	No	N/A	81	50	10 HP DOL	1	37	FHWA Roadway Construction Noise Model
YES	Overflow Sump Pump #2	No	N/A	81	50	10 HP DOL	1	37	FHWA Roadway Construction Noise Model
YES	Biogas Blower #1	Yes	Sound Enclosure SPL	73	3		24	365	Anaergia
YES	Biogas Blower #2	Yes	Sound Enclosure SPL	73	3		24	365	Anaergia
YES	Biogas Air Cooler	No	N/A	60	3	Anaeriga Integrated Systems	24	365	Anaergia- Chiller
YES	Condensate Pump	No	N/A	81	50	Anaeriga Integrated Systems	24	365	FHWA Roadway Construction Noise Model
YES	Biogas Feed Compressor	No	N/A	78	50	650 HP - Anaeriga Integrated Sys	24	365	FHWA Roadway Construction Noise Model
YES	Chiller	No	N/A	60	3		24	365	Anaergia
YES	Buffer Tank & AD Mixers	No	N/A	70	3		12	365	Anaergia
YES	AMR Blower (Future)	Yes	noise enclosure zinc steel powder c	87	3		24	365	Anaergia
YES	AMR Dosing Pump #1 (Future)	No		81	50	Anaeriga Integrated Systems - Al	24	365	FHWA Roadway Construction Noise Model
YES	AMR Dosing Pump #2 (Future)	No		81	50	Anaeriga Integrated Systems - Al	24	365	FHWA Roadway Construction Noise Model
YES	AMR Recirculation Pump #1 (Future)	No		81	50	Anaeriga Integrated Systems - Al	24	365	FHWA Roadway Construction Noise Model
YES	AMR Recirculation Pump #2 (Future)	No		81	50	Anaeriga Integrated Systems - Al	24	365	FHWA Roadway Construction Noise Model
YES	Diesel Generator	Yes	Containerized	97	3		1	2	Anaergia

Notes: Red text indicates sources or reference distances supplemented from vender-supplied data where data was not available

MITIGATED NEGATIVE DECLARATION
REGARDING ENVIRONMENTAL IMPACT

CITY OF BRENTWOOD
SOLID WASTE ORGANICS DIVERSION PROJECT

Adoption Date: October 22, 2024 (City Council Meeting)

NOTICE IS HEREBY GIVEN:

That the project described below has been reviewed pursuant to the provisions of the California Environmental Quality Act of 1970 (Public Resources Code 21100, et seq.) and a determination has been made that it will not have a significant impact on the environment.

PROJECT NAME:

SOLID WASTE ORGANICS DIVERSION PROJECT

PROJECT LOCATION:

The project is at the City of Brentwood Wastewater Treatment Plant at 2251 Elkins Way, the City's Solid Waste Transfer Station at 2301 Elkins Way, and on City-owned land adjacent to and east of the WWTP, in Contra Costa County, California.

LEAD AGENCY:

City of Brentwood, 2201 Elkins Way, Brentwood, California, 94513, (925) 516-6000

PROJECT APPLICANT:

City of Brentwood, 2201 Elkins Way, Brentwood, California, 94513, (925) 516-6000

DESCRIPTION OF PROJECT:

The City of Brentwood is proposing to construct, operate, and maintain the Solid Waste Organics Diversion Project, consisting of organic waste recovery facilities capable of beneficially reusing organic waste (including the organic fraction of solid waste and wastewater biosolids as defined by Senate Bill 1383 regulations), receiving liquid organic wastes, and producing renewable natural gas and biochar (project). The purpose of the project is to construct, operate, and maintain solid waste organics diversion facilities, which will facilitate the City achieving California's mandate of diverting 75 percent of organic waste from landfills by 2025. The specific objectives of the project are to (1) divert the City's organic solid waste and biosolids away from landfill disposal, (2) beneficially reuse organic waste by

producing biochar, and (3) produce biogas to serve as a renewable natural gas supply. The project components are listed below.

1. Expansion of the Solid Waste Transfer Station to accommodate new equipment to separate and prepare organic waste for a new anaerobic digester.
2. Installation of an anaerobic digester and associated infrastructure.
3. Installation of centrifuges, biosolids dryers, and pyrolysis units to process material from the anaerobic digester.
4. Installation of pipelines and an interconnector station to convey renewable natural gas generated by the anaerobic digester to a Pacific Gas & Electric main line.
5. Ancillary facilities related to above project components.
6. Realignment of a paved pedestrian path from Sunset Park to the Marsh Creek trail.
7. Tree removal to accommodate new facilities and pedestrian path realignment.

All project components will occur within 12 acres, primarily within City-owned property adjacent to the east boundary of the Wastewater Treatment Plant footprint, within the Solid Waste Transfer Station footprint, along the public pedestrian path between Elkins Way and Sunset Road on the eastern side of the Sunset Park Athletic Complex, within the parking lot at the southeast corner of the Sunset Park Athletic Complex, and within approximately 900 linear feet of Sunset Road.

FINDINGS

An Initial Study was prepared to assess the project's potential effects on the environment, and the significance of those effects. Based on the Initial Study, the project would not have any significant effects on the environment once mitigation measures are implemented. This conclusion is supported by the following findings.

1. The Project would have no impact to Agriculture and Forestry Resources; Hazards and Hazardous Materials; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; and Utilities and Service Systems.
2. The Project would have less-than-significant impacts to Aesthetics; Air Quality; Energy; Greenhouse Gas Emissions; Hydrology and Water Quality; Public Services; Recreation; Transportation; and Wildfire.
3. Impacts of the Project would be less than significant with incorporation of the mitigation measures to Biological Resources; Cultural Resources; Geology and Soils; Noise; and Tribal Cultural Resources.

The mitigation measures that the City will implement to avoid or minimize potential environmental impacts are provided below. Implementation of these mitigation

measures would reduce the environmental impacts of the project to a less than significant level.

DOCUMENTATION:

The attached Initial Study documents the reasons to support the above Findings.

MITIGATION MEASURES:

The City will incorporate the following Mitigation Measures into the Project.

Biological Resources
Mitigation Measure BIO-1: General Construction Measures All contractors and equipment operators will be made aware of the ecological values of the site and will be given instructions to comply with all mitigation measures. Construction activities will be limited to a designated work area (including the work corridor and staging areas). The work area will be clearly identified and will be staked and flagged where necessary prior to initiation of construction activities. This will include flagging of riparian and wetland habitats in the vicinity of work areas to ensure their avoidance and protection.
Mitigation Measure BIO-2: Participation in the ECCCHCP The City will participate in the ECCCHCP for the project to mitigate potential impacts to special-status species or their habitats covered under the ECCCHCP. This coverage will allow the City to minimize and compensate for potential effects resulting from construction- and operation-related activities associated with the project through implementation of all applicable conservation measures and compensation mechanisms of the ECCCHCP. To compensate for unavoidable project-related effects the City will pay either the applicable fee or dedication of land in lieu of the fee as described in Chapter 9, Funding, and in Brentwood Ordinance number 850.
Mitigation Measure BIO-3: Special-Status Amphibians and Reptiles The City will implement pre-construction surveys, as necessary per the ECCCHCP, for California tiger salamander, silvery legless lizard, western pond turtle, California horned lizard, giant garter snake, and San Joaquin whipsnake in the annual, ruderal grassland habitat associated with the project. Surveys will be implemented in accordance with methods described in Section 6.4.3 of the ECCCHCP. If any ECCCHCP-covered species are found (California tiger salamander, silvery legless lizard, western pond turtle, or giant garter snake), all applicable avoidance

and minimization measures, construction monitoring, conservation measures, and/or mitigation fees of the ECCCHCP will be implemented.

If any special-status species not covered by the ECCCHCP (California horned lizard and San Joaquin whipsnake) are discovered, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW. Protection measures developed in consultation with CDFW could include developing appropriate construction buffers, use of exclusion fencing, and biological monitoring of all initial clearing and grubbing activities.

Mitigation Measure BIO-4: Burrowing Owls

The City will implement pre-construction surveys for burrowing owls or burrows at proposed construction sites with potential habitat in accordance with methods described in Section 6.4.3 of the ECCCHCP.

If the burrowing owls nests or burrows are discovered in the work areas, all applicable avoidance and minimization measures, construction monitoring, conservation measures, and/or mitigation fees for this species in the ECCCHCP will be implemented.

Mitigation Measure BIO-5: Other Special-Status Birds

If construction activities are scheduled to occur between February 15 and September 15, preconstruction surveys will be conducted at proposed construction sites within 30 days prior to any such activities to determine whether any nests of special-status birds are present. A qualified biologist will search within 1,000 feet of sites for raptor nests, and within 250 feet of sites for passerine nests. Biologists will conduct a visual and aural search of the survey area on foot, using binoculars to scan tree tops for the presence of nests.

If any nests are identified, measures to reduce impacts to less-than-significant levels, such as species-specific buffers and nest monitoring, would be developed in consultation with appropriate resource agencies (CDFW and/or USFWS).

Mitigation Measure BIO-6: American Badger

The City will implement pre-construction surveys for American badgers or burrows at proposed construction areas with potential habitat in conjunction with burrowing owl surveys.

If any American badgers or burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection measures developed in consultation with CDFW could include developing

appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.

Mitigation Measure BIO-7: Ringtail

The City will implement pre-construction surveys for ringtail and their burrows at proposed construction areas with potential habitat.

If any ringtail or ringtail burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection measures developed in consultation with CDFW would likely be similar to those developed for American badger and could include developing appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.

Cultural Resources

Mitigation Measure CULT-1: Accidental Discovery of Archaeological Resources

In the event that cultural resources are inadvertently discovered during project construction activities, work will be halted within 100 feet of the find and a qualified archaeologist (i.e., an archaeologist that meets the qualifications at 36 CFR Part 61) will be retained to assess its potential significance. In the event that indigenous cultural resources are identified, the consulting Native American Tribes will be notified and both the archaeologist, and a Tribal cultural resource specialist will evaluate the find for potential significance as a cultural resource and Tribal cultural resource. Construction activities may continue in other areas but may not resume in the area of the find until its significance is assessed and it is appropriately treated. If the find is not significant, then no additional cultural resources investigations are necessary and project work may resume in the area of the find. If the find is determined significant then a mitigation plan will be developed in consultation with the City of Brentwood, and the consulting Native American Tribes. The mitigation plan will address the boundaries of the find and will direct efforts to avoid further impacts to the resource. Should the resource not be able to be avoided by project design, additional cultural resources investigations such as data recovery may be warranted and would be determined in consultation with the City of Brentwood, Native American Tribe traditionally and culturally affiliated with the geographic area of the project site, and any other relevant regulatory agencies or interested parties, as appropriate and will be described in the mitigation plan. Best efforts will be taken to protect the cultural character, integrity, and steps will be taken to protect the confidentiality of any identified cultural resources.

Mitigation Measure CULT-2: Accidental Discovery of Human Remains

If human remains are inadvertently uncovered during project activities, then the stipulations of State of California Health and Safety Code Section 7050.5 will be followed to treat the discovery. This code section states that the County Coroner must be notified immediately of the discovery of human remains and no further disturbance may occur in the area of the discovery until the County Coroner has made a determination regarding the origin and disposition of the remains pursuant to PRC Section 5097.98. If the human remains are determined to be of Native American origin, the County Coroner will notify the NAHC, who will determine and notify a Most Likely Descendent. There shall be no pictures taken or testing done on Native American human remains. Treatment of the remains will be determined in consultation with the Most Likely Descendent, the City of Brentwood, and appropriate regulatory agencies.

Geology and Soils

Mitigation Measure GEO-1: Accidental Discovery Of Paleontological Resources

Should construction or grading activities result in the discovery of unique paleontological resources (e.g., teeth, bones, fossils), the finds shall be set aside and all excavation activity shall cease within 100 feet of the specific place of discovery until a qualified archaeologist, paleontologist, or historian has assessed the find and, if deemed significant, salvaged the find in a timely manner. The decision to conduct paleontological salvage operations will be determined by the qualified archaeologist, paleontologist, or historian in consultation with City staff. Work may proceed on other parts of the project while assessment and/or salvage by the qualified archaeologist, paleontologist, or historian is underway. Finds determined significant by the paleontologist shall be conserved and deposited with a recognized repository such as the University of California Museum of Paleontology.

Noise

Mitigation Measure NOISE-1. Reduce Operational (Permanent) Stationary Noise

To ensure that City of Brentwood's daytime (i.e., 55 dBA L_{eq}) and nighttime (45 dBA L_{eq}) and Contra Costa County's residential noise limits (i.e., 60 dBA L_{dn}) are not exceeded, the City shall implement the following measures.

Prior to commencing operation of the proposed anaerobic digester and BDPS, the City of Brentwood shall prepare an operational noise mitigation and monitoring plan, in consultation with a qualified acoustical engineer. Specific measures that

may be recommended include the selection of alternative, quieter equipment options, selection and installation of equipment enclosures, and, or in combination with the aforementioned, construct a solid (i.e., no openings between noise sources and offsite receptors) sound barrier on the eastern boundary of the project site.

Based on the final selection of alternative equipment type, enclosures and barriers, and prior to final installation and operation of equipment, the plan shall be verified by the acoustical professional, using site-specific parameters (equipment sound pressure levels, enclosure transmission loss parameters, individual equipment operational activity hours) to confirm that the daytime and nighttime noise levels adopted by the City of Brentwood and Contra Costa County are not exceeded at any nearby noise-sensitive receptor. Documentation (e.g., noise model inputs, noise reduction recommendations, residual noise levels) shall be prepared and submitted to the City of Brentwood for approval.

FILING LOCATION:

A copy of the Initial Study regarding the environmental effect of the project is on file at City of Brentwood, 2201 Elkins Way, Brentwood, CA 94513.

DETERMINATION:

On the basis of the whole record, including the Initial Study and comments received, the project could have a significant effect on the environment but will not in this case because of incorporation of mitigation measures described above that are by this reference made conditions of project approval. The City Council of the City of Brentwood held a public hearing on October 22, 2024, at 7:00 p.m. and adopted this Mitigated Negative Declaration.

_____ Date

_____
Casey Wichert, Director of Public Works
City of Brentwood

MITIGATION MONITORING AND REPORTING PROGRAM

CITY OF BRENTWOOD
SOLID WASTE ORGANICS DIVERSION PROJECT
CIP PROJECT NO. 542-54021

Adoption Date: October 22, 2024 (City Council Meeting)

In accordance with Section 15074(d) of the California Environmental Quality Act Guidelines, this Mitigation Monitoring and Reporting Program identifies the mitigation measures for the City of Brentwood's (City) Solid Waste Organics Diversion Project (Project).

The City's Director of Public Works will be responsible for ensuring that these mitigation measures are implemented for the Project. This includes ensuring that, where applicable, the appropriate mitigation measures are included in construction contracts and construction specifications and drawings that are prepared for the Project. The City will also be responsible for overseeing field inspections that are conducted (as necessary) on a timely basis to ensure that the specified mitigation measures are being implemented. The construction contractor(s) selected for the Project will be required to implement the specified measures in a timely manner.

The measures shown in **Table 1** are to be adopted by the City Council as part of the approval of this Project. Table 1 provides the adopted mitigation measures, including the timing, implementing responsibility, and monitoring responsibility for each measure.

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
Biological Resources			
Mitigation Measure BIO-1: General Construction Measures All contractors and equipment operators will be made aware of the ecological values of the site and will be given instructions to comply with all mitigation measures. Construction activities will be limited to a designated work area (including the work corridor and staging areas). The work area will be clearly identified and will be staked and flagged where necessary prior to initiation of construction activities. This will include flagging of riparian and wetland habitats in the vicinity of work areas to ensure their avoidance and protection.	Pre-construction; Construction	City; Construction Contractors; Qualified Biologist	(1) City to include the identified measures in the construction specifications issued to construction contractors. (2) City to retain Qualified Biologist to prepare and provide ecological training to construction contractors. (3) Construction contractors to implement measures.
Mitigation Measure BIO-2: Participation in the ECCCHCP The City will participate in the East Contra Costa County Habitat Conservation Plan (ECCCHCP) for the project to mitigate potential impacts to special-status species or their habitats covered under the ECCCHCP. This coverage will allow the City to minimize and compensate for potential effects resulting from construction- and operation-related activities associated with the project through implementation of all applicable conservation measures and compensation mechanisms of the ECCCHCP. To compensate for unavoidable project-related effects the City will pay either the applicable fee or dedication of land in lieu of the fee as described in Chapter 9, Funding, and in Brentwood Ordinance number 850.	Pre-construction	City	(1) City to obtain ECCCHCP Certificate of Coverage from City Planning Division. (2) City to submit payment for applicable fees to the East Contra Costa County Habitat Conservancy.
Mitigation Measure BIO-3: Special-Status Amphibians and Reptiles The City will implement pre-construction surveys, as necessary per the ECCCHCP, for California tiger salamander, silvery legless lizard, western pond turtle, California horned lizard, giant garter snake, and San Joaquin whipsnake in the annual,	Pre-construction; Construction	City; Qualified Biologist	(1) City to retain Qualified Biologist to conduct pre-construction surveys. (2) City to retain Qualified Biologist to conduct construction monitoring and develop avoidance and minimization measures, if needed.

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
ruderal grassland habitat associated with the project. Surveys will be implemented in accordance with methods described in Section 6.4.3 of the ECCCHCP. If any ECCCHCP-covered species are found (California tiger salamander, silvery legless lizard, western pond turtle, or giant garter snake), all applicable avoidance and minimization measures, construction monitoring, conservation measures, and/or mitigation fees of the ECCCHCP will be implemented. If any special-status species not covered by the ECCCHCP (California horned lizard and San Joaquin whipsnake) are discovered, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW. Protection measures developed in consultation with CDFW could include developing appropriate construction buffers, use of exclusion fencing, and biological monitoring of all initial clearing and grubbing activities.			(3) City to include requirement to implement avoidance and minimization measures in construction contracts.
Mitigation Measure BIO-4: Burrowing Owls The City will implement pre-construction surveys for burrowing owls or burrows at proposed construction sites with potential habitat in accordance with methods described in Section 6.4.3 of the ECCCHCP. If the burrowing owls nests or burrows are discovered in the work areas, all applicable avoidance and minimization measures, construction monitoring, conservation measures, and/or mitigation fees for this species in the ECCCHCP will be implemented.	Pre-construction; Construction	City; Qualified Biologist	(1) City to retain Qualified Biologist to conduct pre-construction surveys. (2) City to retain Qualified Biologist to conduct construction monitoring and develop avoidance and minimization measures, if needed. (3) City to include requirement to implement avoidance and minimization measures in construction contracts.
Mitigation Measure BIO-5: Other Special-Status Birds If construction activities are scheduled to occur between February 15 and September 15, preconstruction surveys will be conducted at proposed construction sites within 30 days prior	Pre-construction; Construction	City; Qualified Biologist	(1) City to retain Qualified Biologist to conduct pre-construction surveys. (2) City to retain Qualified Biologist to conduct construction monitoring

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
to any such activities to determine whether any nests of special-status birds are present. A qualified biologist will search within 1,000 feet of sites for raptor nests, and within 250 feet of sites for passerine nests. Biologists will conduct a visual and aural search of the survey area on foot, using binoculars to scan tree tops for the presence of nests. If any nests are identified, measures to reduce impacts to less-than-significant levels, such as species-specific buffers and nest monitoring, would be developed in consultation with appropriate resource agencies (CDFW and/or USFWS).			and develop avoidance and minimization measures, if needed. (3) City to include requirement to implement avoidance and minimization measures in construction contracts.
Mitigation Measure BIO-6: American Badger The City will implement pre-construction surveys for American badgers or burrows at proposed construction areas with potential habitat in conjunction with burrowing owl surveys. If any American badgers or burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection measures developed in consultation with CDFW could include developing appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.	Pre-construction; Construction	City; Qualified Biologist	(1) City to retain Qualified Biologist to conduct pre-construction surveys. (2) City to retain Qualified Biologist to conduct construction monitoring and develop avoidance and minimization measures, if needed. (3) City to include requirement to implement avoidance and minimization measures in construction contracts.
Mitigation Measure BIO-7: Ringtail The City will implement pre-construction surveys for ringtail and their burrows at proposed construction areas with potential habitat. If any ringtail or ringtail burrows are found, measures to reduce impacts to less-than-significant levels would be developed in consultation with CDFW, and/or mitigation fees for this species in the ECCCHCP will be implemented. Protection	Pre-construction; Construction	City; Qualified Biologist	(1) City to retain Qualified Biologist to conduct pre-construction surveys. (2) City to retain Qualified Biologist to conduct construction monitoring and develop avoidance and minimization measures, if needed. (3) City to include requirement to implement avoidance and

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
measures developed in consultation with CDFW would likely be similar to those developed for American badger and could include developing appropriate construction buffers, use of exclusion fencing, biological monitoring of all initial clearing and grubbing activities, and species trapping and relocation.			minimization measures in construction contracts.
Cultural Resources			
Mitigation Measure CULT-1: Accidental Discovery of Archaeological Resources In the event that cultural resources are inadvertently discovered during project construction activities, work will be halted within 100 feet of the find and a qualified archaeologist (i.e., an archaeologist that meets the qualifications at 36 CFR Part 61) will be retained to assess its potential significance. In the event that indigenous cultural resources are identified, the consulting Native American Tribes will be notified and both the archaeologist, and a Tribal cultural resource specialist will evaluate the find for potential significance as a cultural resource and Tribal cultural resource. Construction activities may continue in other areas but may not resume in the area of the find until its significance is assessed and it is appropriately treated. If the find is not significant, then no additional cultural resources investigations are necessary and project work may resume in the area of the find. If the find is determined significant then a mitigation plan will be developed in consultation with the City of Brentwood, and the consulting Native American Tribes. The mitigation plan will address the boundaries of the find and will direct efforts to avoid further impacts to the resource. Should the resource not be able to be avoided by project design, additional cultural resources investigations such as data recovery may be warranted and would be determined in consultation with the City of Brentwood, Native American Tribe traditionally and culturally affiliated with the geographic area of the project site, and any other relevant regulatory agencies or interested parties, as	Construction	City; Construction Contractors; Qualified Archaeologist	(1) City to include identified measures in construction contracts. (2) City to confirm work halted within required buffer in the event of inadvertent discovery of cultural resources. (3) City to retain Qualified Archaeologist to oversee implementation of associated measures.

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
appropriate and will be described in the mitigation plan. Best efforts will be taken to protect the cultural character, integrity, and steps will be taken to protect the confidentiality of any identified cultural resources.			
Mitigation Measure CULT-2: Accidental Discovery of Human Remains If human remains are inadvertently uncovered during project activities, then the stipulations of State of California Health and Safety Code Section 7050.5 will be followed to treat the discovery. This code section states that the County Coroner must be notified immediately of the discovery of human remains and no further disturbance may occur in the area of the discovery until the County Coroner has made a determination regarding the origin and disposition of the remains pursuant to PRC Section 5097.98. If the human remains are determined to be of Native American origin, the County Coroner will notify the NAHC, who will determine and notify a Most Likely Descendent. There shall be no pictures taken or testing done on Native American human remains. Treatment of the remains will be determined in consultation with the Most Likely Descendent, the City of Brentwood, and appropriate regulatory agencies.	Construction	City; Construction Contractors	(1) City to include identified measures in construction contracts. (2) City to notify County Coroner in the event of accidental discovery of human remains. (3) City to confirm implementation of measures based on determination of County Coroner.

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
Geology and Soils			
Mitigation Measure GEO-1: Accidental Discovery Of Paleontological Resources Should construction or grading activities result in the discovery of unique paleontological resources (e.g., teeth, bones, fossils), the finds shall be set aside and all excavation activity shall cease within 100 feet of the specific place of discovery until a qualified archaeologist, paleontologist, or historian has assessed the find and, if deemed significant, salvaged the find in a timely manner. The decision to conduct paleontological salvage operations will be determined by the qualified archaeologist, paleontologist, or historian in consultation with City staff. Work may proceed on other parts of the project while assessment and/or salvage by the qualified archaeologist, paleontologist, or historian is underway. Finds determined significant by the paleontologist shall be conserved and deposited with a recognized repository such as the University of California Museum of Paleontology.	Construction	City; Construction Contractors; Qualified Archaeologist	(1) City to include identified measures in construction contracts. (2) City to confirm work halted within required buffer in the event of accidental discovery of paleontological resources. (3) City to retain Qualified Archaeologist to oversee implementation of associated measures.
Noise			
Mitigation Measure NOISE-1. Reduce Operational (Permanent) Stationary Noise To ensure that City of Brentwood's daytime (i.e., 55 dBA L_{eq}) and nighttime (45 dBA L_{eq}) and Contra Costa County's residential noise limits (i.e., 60 dBA L_{dn}) are not exceeded, the City shall implement the following measures. Prior to commencing operation of the proposed anaerobic digester and BDPS, the City of Brentwood shall prepare an operational noise mitigation and monitoring plan, in consultation with a qualified acoustical engineer. Specific measures that may be recommended include the selection of alternative, quieter equipment options, selection and	Pre-construction; Construction	City; Construction Contractor; Qualified Acoustical Engineer	(1) City to include the identified measures in the construction specifications issued to construction contractors. (2) City to retain Qualified Acoustical Engineer to assist with noise mitigation and monitoring plan. (3) City to ensure project noise levels do not exceed City of Brentwood and Contra Costa County noise standards.

Table 1. Mitigation Measures and Monitoring and Reporting Requirements for the City of Brentwood Solid Waste Organics Diversion Project			
Measure	**Timing**	**Implementation Responsibility**	**Implementation Action**
installation of equipment enclosures, and, or in combination with the aforementioned, construct a solid (i.e., no openings between noise sources and offsite receptors) sound barrier on the eastern boundary of the project site. Based on the final selection of alternative equipment type, enclosures and barriers, and prior to final installation and operation of equipment, the plan shall be verified by the acoustical professional, using site-specific parameters (equipment sound pressure levels, enclosure transmission loss parameters, individual equipment operational activity hours) to confirm that the daytime and nighttime noise levels adopted by the City of Brentwood and Contra Costa County are not exceeded at any nearby noise-sensitive receptor. Documentation (e.g., noise model inputs, noise reduction recommendations, residual noise levels) shall be prepared and submitted to the City of Brentwood for approval.			

From: Lisjan Nation <cvltribe@gmail.com>
Sent: Thursday, May 16, 2024 11:50 AM
To: Patel, Vatsal <vpatel@brentwoodca.gov>
Subject: Re: Notification of Consultation Opportunity pursuant to Public Resources

Hello,

Thank you for your email. The Tribe is requesting a copy of the CHRIS and EIR for this project, along with the SLF from Native American Heritage Commission and any additional archeological reports. Our physical address is: PO BOX 6487 Oakland CA 94603 or if you would prefer to send them electronically, please send them to this email address.

'Uni (Respectfully),
Francis Ranstead, Tribal Administrative Assistant
Confederated Villages of Lisjan Nation

From: Lisjan Nation <cvltribe@gmail.com>
Sent: Wednesday, August 7, 2024 12:57 PM
To: Patel, Vatsal <vpatel@brentwoodca.gov>
Subject: Re: Notification of Consultation Opportunity pursuant to Public Resources

Hi Vatsal,

Thank you for your email. We could not access the CHRIS and SLF. It seems to just be an image of the Box logo. If you can resend a link, that would be great. Can you also please describe the extent of proposed ground disturbance? We have some concerns about the project because of its proximity to Marsh Creek and would like more information.

I am also attaching a list of the Tribe's standard mitigation measures. We only propose Tribal monitoring (measure 1) for certain projects, but we ask that measures 2 and 3 be incorporated into any project within Lisjan territory.

'Uni (Respectfully),
Lucy Gill, Cultural Resource Manager II
Confederated Villages of Lisjan Nation

From: Lisjan Nation <cvltribe@gmail.com>
Sent: Monday, August 12, 2024 7:21 PM
To: Patel, Vatsal <vpatel@brentwoodca.gov>
Cc: Michelle Brown <michelle@robertson-bryan.com>; Wichert, Casey <cwichert@brentwoodca.gov>
Subject: Re: FW: Notification of Consultation Opportunity pursuant to Public Resources

Hi Vatsal,

Thank you very much for sending these along and working to incorporate our comments. We are happy with the second mitigation measure regarding human remains. Regarding the first mitigation measure, we still have a couple of concerns:

1) This measure sufficiently addresses the unanticipated discovery of cultural resources, but we are concerned that it does not fully address the unanticipated discovery of the separate category of Tribal Cultural Resources. Only Tribal representatives can assess whether a Tribal Cultural Resource is significant, whereas archaeologists can assess whether a cultural resource is significant. Therefore, we ask that the consulting Native American Tribes be notified as soon as an inadvertent discovery is made, so that they can also assess the significance of any Native American cultural resource as a Tribal Cultural Resource.

2) The Confederated Villages of Lisjan Nation does not typically see data recovery excavation as a culturally appropriate mitigation measure for Tribal Cultural Resources. Could you please remove this clause?

One other possibility, if this is preferable, would be to keep the language as it is currently (in the updated version) for unanticipated discovery of cultural resources and include these two additional provisions under a separate mitigation measure specifically for Tribal Cultural Resources.

Thank you so much for working with us to protect our Tribal Cultural Resources.

'Uni (Respectfully),
Lucy Gill, Cultural Resource Manager II
Confederated Villages of Lisjan Nation

On Tue, Aug 13, 2024 at 2:21 PM Patel, Vatsal <vpatel@brentwoodca.gov> wrote:

Lucy,

Please see our final draft of the mitigation measures.

We've revised the language as data recovery without including the word excavation. Unfortunately, this is the best we can do for this project.

We've also added the additional language about mitigation plan will be developed in consultation with the City and the consulting Native American Tribes as requested.

Thank you for your understanding.

Vatsal

From: Lisjan Nation <cvltribe@gmail.com>
Sent: Tuesday, August 13, 2024 4:12 PM
To: Patel, Vatsal <vpatel@brentwoodca.gov>
Cc: Michelle Brown <michelle@robertson-bryan.com>; Wichert, Casey <cwichert@brentwoodca.gov>
Subject: Re: FW: Notification of Consultation Opportunity pursuant to Public Resources

Vatsal,

Thank you very much. The Tribe appreciates your work on this matter.

'Uni (Respectfully),
Lucy Gill, Cultural Resource Manager II
Confederated Villages of Lisjan Nation

6 September 2024

Casey Wichert
City of Brentwood
2201 Elkins Way
Brentwood, CA 94513
cwichert@brentwoodca.gov

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, SOLID WASTE ORGANICS DIVERSION PROJECT, SCH#2024080229, CONTRA COSTA COUNTY

Pursuant to the State Clearinghouse's 6 August 2024 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Solid Waste Organics Diversion Project, located in Contra Costa County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by

the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter G. Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

September 13, 2024

Casey Wichert
City of Brentwood, Director of Public Works
2201 Elkins Way
Brentwood, CA 94513

Subject: SCH No. 2024080229 – Initial Study and Mitigated Negative Declaration for the Solid Waste Organics Diversion Project – City of Brentwood

Dear Mr. Wichert:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments on the proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

Project Description

The City of Brentwood Public Works Department, acting as Lead Agency, has prepared and circulated a Draft Initial Study (IS) and Mitigated Negative Declaration (MND) in order to comply with CEQA and to provide information to, and solicit consultation with, Responsible Agencies in the approval of the proposed project.

The proposed Solid Waste Organics Diversion Project is located at the City of Brentwood Wastewater Treatment Plant (WWTP) at 2251 Elkins Way, the city's Solid Waste Transfer Station (Brentwood Transfer Station; CalRecycle Solid Waste Information System (SWIS) No. 07-AA-0068) at 2301 Elkins Way, and on City-owned land adjacent to and east of the WWTP, in Contra Costa County. The project site is approximately 12 acres, and the project area is currently zoned for Public Facilities and Parks.

The proposed project would expand the Solid Waste Transfer Station to accommodate new equipment to separate and prepare organic waste for a new anaerobic digester; install an anaerobic digester and associated infrastructure; install centrifuges, biosolids dryers, and pyrolysis units to process material from the anaerobic digester; install pipelines and an interconnector station to convey renewable natural gas generated by the anaerobic digester to a Pacific Gas & Electric main line; construct ancillary facilities related to above project components; realign a paved pedestrian path from Sunset Park to the Marsh Creek trail; and conduct tree removal to accommodate new facilities and pedestrian path realignment.

Per the Brentwood Transfer Station's Solid Waste Facility Permit (SWFP), the maximum permitted tonnage is up to 400 tons per day. The permitted hours of operation are Monday through Friday from 4:00 a.m. to 7:00 p.m., Saturday and Sunday from 7:00 a.m. to 6:00 p.m., and for Public Clean-Up Days (10 per calendar year), 7:00 a.m. to 6:00 p.m., Saturday or Sunday. The maximum permitted traffic volume is 225 incoming refuse and hauling vehicles (includes outgoing transfer trucks) and on Public Clean-Up Days, up to 700 vehicles/day. The permitted acreage is 5.7 acres.

Comments

CalRecycle staff's comments on the proposed project are listed below. Where a specific location in the document is noted for the comment, please ensure the comment is addressed throughout all sections of the Draft IS/MND, in addition to the specific location noted.

IS, Page No. 2, Chapter 1.4

It is stated that the California Integrated Waste Management Board may have jurisdiction over elements of the project.

The California Integrated Waste Management Board is now CalRecycle.

IS, Page No. 5, Chapter 2.4.1

It is stated the City operates the transfer station under Solid Waste Facility Permit No. 07-AA-0068 issued by the Contra Costa Environmental Health Division on February 14, 2014, and concurred by the California Integrated Waste Management Board.

Currently, CalRecycle acts as the Enforcement Agency (EA) for the City of Brentwood. The most current SWFP was issued by CalRecycle on August 7, 2019.

IS, Page No. 7-9, Chapter 2.5.1

It is stated that the Solid Waste Transfer Station would be expanded to provide space for new equipment required to extract the organic waste to be processed by the anaerobic digester. The existing transfer station building is approximately 20,800 square feet. A new pre-engineered metal building, approximately 20,000 square feet in size, would be added west of and adjacent to the existing building, at the current location of the yard waste pad. It is further stated that a new yard waste pad would be constructed. This yard waste pad would be a concrete pad with an area of approximately 10,000 square feet, located just south of the existing transfer station fence line.

Will any of this new construction require an increase in the permitted acreage of 5.7 acres and/or a change to the SWFP boundary of the Transfer Station? If so, please provide the updated acreage and boundary lines.

IS, Page No. 7, Chapter 2.5.1

It is stated that the municipal solid waste coming into the Transfer Station would be sorted and processed using the newly installed equipment to create multiple products to

increase recycling volume for the city and produce an organic waste slurry for the anaerobic digester.

Confirming the slurry will be produced at the transfer station and sent off site to the WWTP for anaerobic digestion?

IS, Page No. 9, Chapter 2.5.2
It is stated that the City would construct an approximate 2-million gallon anaerobic digester to process WWTP biosolids, organic material from municipal solid waste, some yard waste, and high strength waste. The anaerobic digester would be constructed on City-owned land adjacent to and east of the transfer station and WWTP.

Will the anerobic digester and subsequent processing equipment be located within the boundaries of the WWTP? If so, Title 14 of the California Code of Regulations (14 CCR) Section 17896.6 (a)(1) states that there are In-Vessel Digestion exclusions (from solid waste permitting requirements) for Publicly Owned Treatment Works Treatment Plants (POTWs). Will the WWTP meet this exclusion? If not, the anaerobic digestion activity could be subject to solid waste permitting requirements. What is the maximum daily tonnage that will be received, proposed hours of operation, maximum traffic volume (vehicles per day) and acreage? Please reach out to the EA contact to discuss possible permitting requirements.

IS, Page No. 10, Chapter 2.5.3
It is stated that the biosolids dryer and pyrolysis system (BDPS) would process digested biosolids (digestate) from the anaerobic digester into biochar; the pyrolysis system would convert approximately half of the volatile organic material to biochar. It is also stated that the location for the additional centrifuges, biosolids dryers, and pyrolysis units under the project overlaps with the location proposed for the WWTP Phase II Expansion Project resulting in overlapping construction areas.

Confirming that the BDPS would be located within the boundaries of the WWTP? Per Public Resources Code (PRC) Section 40201, “Transformation” means incineration, pyrolysis, distillation, or biological conversion other than composting. The pyrolysis activity could be subject to solid waste permitting requirements as a Transformation activity. Here is a link to the CalRecycle website for more information: https://calrecycle.ca.gov/swfacilities/permitting/permittype/fullpermit/. What is the maximum daily tonnage that will be received, proposed hours of operation, maximum traffic volume (vehicles per day) and acreage? Please reach out to the EA contact to discuss possible permitting requirements.

IS, Page No. 18, Chapter 2.7.2, Table 2
Table 2 describes operational truck and workforce traffic for both the Transfer Station and WWTP.

It appears that traffic could be potentially increased to implement the project, but it is not clear how the Transfer Station could specifically be impacted. The Transfer Station is currently permitted for 225 vehicles per day. Would this number need to be changed and if so, to what? Will any of the other SWFP parameters, as described in the Project Description section of this comment letter, need to be changed? If so, which parameters and what would be the changes?

Additional Information
The following is a link to CalRecycle's CEQA homepage which may assist the Lead Agency in preparing the Final MND:
https://calrecycle.ca.gov/swfacilities/permitting/ceqa/.

Solid Waste Regulatory Oversight
CalRecycle is the EA for the City of Brentwood and responsible for providing regulatory oversight of solid waste handling activities, including permitting and inspections. Please contact me, Cody Oquendo, to discuss any regulatory requirements for the proposed project.

Conclusion
CalRecycle staff thanks the Lead Agency for the opportunity to review and comment on the environmental document and hopes that this comment letter will be useful to the Lead Agency preparing the Final MND and in carrying out their responsibilities in the CEQA process.

CalRecycle staff requests copies of any subsequent environmental documents, copies of public notices and any Notices of Determination for this proposed project.

If the environmental document is adopted during a public hearing, CalRecycle staff requests 10 days advance notice of this hearing. If the document is adopted without a public hearing, CalRecycle staff requests 10 days advance notification of the date of the adoption and proposed project approval by the decision-making body.

If you have any questions regarding these comments, please contact me at 916.341.6719 or by e-mail at Cody.Oquendo@calrecycle.ca.gov.

Sincerely,

Cody Oquendo, Environmental Scientist
Permitting & Assistance Branch – South Unit
Waste Permitting, Compliance & Mitigation Division
CalRecycle

cc: Benjamin Escotto, CalRecycle
Jeff Hackett, CalRecycle
Alexenia Aldape, CalRecycle
Randy Friedlander, CalRecycle
Jon Carlson, City of Brentwood

Project Title: *** MULTI-YEAR *** **Project #:**

Solid Waste Organics Diversion — 542-54021

Project Category:	Community Facilities Improvements
Location:	Solid Waste Transfer Station, 2301 Elkins Way
Project Manager:	C. Wichert
Project Priority:	1B - Mandatory
Est. Completion Date:	2025/26
Future Annual O & M Impact:	TBD
Public Art Requirement:	Exempt
General Plan Policy:	IF 1-1, IF 5-2, IF 5-3, IF 5-4

Description/Justification:

In order to comply with regulatory requirements associated with the passage of AB 1826 and SB 1383, the City will be required to recycle organic wastes and divert them away from landfills. In particular, SB1383 requires a 75% reduction in the disposal of organic waste by 2025. In order to comply with SB 1383 requirements, the City will construct a facility to mechanically separate and recover organic material, digest the organic material to produce biogas, and capture the biogas to generate renewable natural gas which will be sold to generate revenue.

Project Status:

A design-build contract for this project has been finalized and approved by City Council on 01/23/24, by Resolution 2024-08. Design is expected to take approximately 8 months and construction is planned to begin December 2024.

Supplemental Information:

SB 1383 was passed as a means to reduce climate pollution caused by the decomposition of organic waste in landfills. Organic waste includes yard and food waste and wastewater biosolids, among other things. Currently, the City's organic waste is disposed of in local landfills. In order to comply with SB 1383 requirements, the City will have to find alternative means of disposal by 2025. Several options to meet this requirement will be explored, including composting, and extraction, digestion, and energy recovery. Some compliance alternatives have the added benefit of generating energy that can be harnessed and used in various ways. The initial planning and design work is proposed to begin in FY 2023/24 and will be funded by the Solid Waste Enterprise ($1,167,200) and Wastewater Enterprise ($291,800). Future funding for this project will come from the Solid Waste and Wastewater Enterprise Funds and the City will actively pursue any grant funding for this project if it becomes available. It is anticipated future funding for this project will come through loan or bond financing, to be repaid with future Solid Waste and Wastewater Enterprise revenues. Renewable energy could generate annual revenue up to $5.6M from the sale of renewable natural gas; and an additional revenue source estimated at $1M-$2M annually may also be available from tipping fees generated by the acceptance of high strength organic waste. This project was included in the City's Strategic Plan for FY 2022/23 - FY 2023/24.

PROJECT FINANCING	CURRENT		PROPOSED				
PROJECT EXPENDITURES	**Prior**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**TOTAL**
70239 **Legal**		20,000					**$ 20,000**
90040 **Planning and Design**	1,200,000	1,164,000					**$ 2,364,000**
90050 **Construction**		44,200,000	40,675,000				**$ 84,875,000**
90070 **Project Administration**		1,500,000	1,500,000				**$ 3,000,000**
TOTAL	**$ 1,200,000**	**$ 46,884,000**	**$ 42,175,000**				**$ 90,259,000**
PROJECT FUNDING	**Prior**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**TOTAL**
47-Var **Enterprise**	1,200,000	259,000					**$ 1,459,000**
Other		46,625,000	42,175,000				**$ 88,800,000**
TOTAL	**$ 1,200,000**	**$ 46,884,000**	**$ 42,175,000**				**$ 90,259,000**

SUBJECT: An amendment to the Brentwood Municipal Code to update Chapter 5.68 (Mobile Vending) to establish new mobile vending regulations and an amendment to Chapter 17.850 (Temporary Use Permits) to add regulations related to Long-Term Mobile Vending Facilities

DEPARTMENT: Community Development Department

STAFF: Alexis Morris, Director of Community Development
Erik Nolthenius, Planning Manager
Jennifer Hagen, Senior Planner

TITLE/RECOMMENDATION

Waive the first reading and introduce:

1. An ordinance approving an amendment (Rezone No. 24-004) to Brentwood Municipal Code Chapter 17.850 (Temporary Use Permits) to add regulations related to Long-Term Mobile Vending Facilities and Commissaries.

2. An ordinance approving an amendment to Brentwood Municipal Code Chapter 5.68 (Mobile Vending) to establish new mobile vending regulations.

These two ordinances and text amendments are exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines, as they are not a "project" and have no potential to result in a direct or reasonably foreseeable indirect physical change to the environment. 14 Cal. Code Regs. § 15378(a). Further, the Ordinances are exempt from CEQA as there is no possibility that either Ordinance or their implementation would have a significant negative effect on the environment. 14 Cal. Code Regs. § 15061(b)(3).

FISCAL IMPACT

If the Ordinances changes are approved, any fees for permits or revenue from business license tax certificates would be included in the General Fund. If approved, the new fees for permits would be submitted for approval by the City Council at a future meeting and would most likely be similar to recently adopted fees for sidewalk vending permits. Business license tax and fees are already included in the City's FY2023/24 Cost Allocation Plan. The amount of revenue collected will depend on the

fee amount proposed and the volume of mobile vending activity, but is not expected to have a material impact on overall General Fund revenues.

Any revenue generated by administrative citations for enforcement of the proposed Ordinances would be included in the General Fund.

BACKGROUND

CITY COUNCIL DIRECTION

On February 27, 2024, the City Council considered a new ordinance regulating Sidewalk Vending (Ordinance No. 1069) and a new ordinance repealing and replacing the City's regulations related to Mobile Vending (Ordinance No. 1070) in order to comply with new State laws and to adopt new standards to protect public health and safety. Since the proposed amendments were not part of the City's Zoning Ordinance, the amendments were not presented to the Planning Commission and were reviewed directly by the City Council that evening. The City Council provided direction related to the Mobile Vending Ordinance, including directing staff to work on additional amendments and regulations for long-term mobile vending facilities that may be considered as part of the focused zoning ordinance update within Title 17.

Upon the second reading of both ordinances on March 12, 2024, the City Council adopted the Sidewalk Vending Ordinance, but reopened consideration of the Mobile Vending Ordinance and continued the item to a future date, and directed continued discussion of the ordinance to the Land Use and Development (LUD) committee.

LAND USE AND DEVELOPMENT COMMITTEE (LUD) DIRECTION

On May 29, 2024, LUD provided recommendations on regulations for long-term mobile vending facilities that would be included in Chapter 17.850 (Temporary Use Permits) in order to create a process for mobile vending facilities to operate for longer timeframes than the time limits proposed in the draft Chapter 5.68. Since the updates proposed would be within Title 17, the Planning Commission was required to consider and make a recommendation on the proposed amendments to Chapter 17.850 prior to the amendments being presented to the City Council.

PLANNING COMMISSION ACTION

The Planning Commission considered the amendments to Chapter 17.850 at a public hearing at its regular meeting of September 3, 2024, and was supportive of the requested text amendments. The Planning Commission agreed that the amendments would help to provide greater opportunities for new mobile vending facilities that did

not fit within the new specified guidelines as outlined in Chapter 5.68 since the operational characteristics of long-term mobile vendors and commissaries are different than vendors that move regularly. The Planning Commission unanimously adopted Resolution No. 24-035, recommending that the City Council approve the amendments (RZ 24-004), amending Chapter 17.850 (Temporary Use Permits) to add regulations related to Long-Term Mobile Vending Facilities and Commissaries.

ANALYSIS

CHAPTER 5.68 (MOBILE VENDING)

The current Mobile Vending Ordinance (Mobile Vending--BMC 5.68) (attached) had not been revised since 1996 and has become outdated relative to state law and the types of mobile vending that are most prevalent in Brentwood. The current ordinance lacks precise definitions of the different types of mobile vendors, is inconsistent with the State's new sidewalk vending regulations, does not specify hours of operation in residential zones, does not address special events or vending of prohibited materials (e.g., drug paraphernalia or fireworks). Staff is recommending the repeal and replacement of the current ordinance in its entirety due to the number of changes proposed.

The proposed new Mobile Vending from Motorized Vehicles Ordinance (attached) includes more precise definitions, new regulations for hours of operation and requires a new type of permit from the City in addition to a business tax certificate. The proposed ordinance allows these types of businesses to operate in the City, but creates robust new standards that are clearer and easier to understand for both residents and businesses and are more enforceable. Below are some, but not all, of the updated regulations.

- Obtaining a health permit from Contra Costa County, if applicable;
- Obtaining a permit and business tax certificate from the City, and payment of all applicable fees;
- Identification documentation requirements;
- Location and siting requirements, including distance from certain locations and other mobile vendors, and time restrictions;
- Placing hours of operation restrictions;
- Obtaining liability insurance in the amount of $1 Million;
- Requiring compliance with the City's sign regulations and noise regulations;
- Prohibiting vending of alcohol, cannabis, adult-oriented material, tobacco products, products that contain nicotine, any product or device used to smoke/vape nicotine or cannabis, fireworks, or any weapons (including

knives, air soft guns, pellet guns, paintball guns, or anything that may resemble a gun);
- Establishing violations of the ordinance as a misdemeanor; and
- Adding a definition for a long-term mobile vending facility, which would need to comply with requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code.

LUD Recommended Changes to Proposed Ordinance

Based on LUD recommendations, the following changes have been incorporated into the attached Ordinance; modifying the version reviewed by the City Council in March 2024:

- Added a separate restrictive category prohibiting registered sex offenders from obtaining permits;
- Changed the allowable hours to operate a mobile vending facility within the public right-of-way in one spot from two (2) hours to three (3) hours;
- Added provisions prohibiting mobile vending on private property or within the public right-of-way within three hundred (300) feet from any single-family residentially zoned property, measured from the location of the mobile vending facility to the residential structure.
    - Although this has been included in the proposed draft, there are potential impacts and consequences that this may have related to mobile vending at or near public parks. Since the majority of the City parks are located within residential neighborhoods, this provision would essentially ban mobile vending at or near most parks. If the City Council would like mobile vending to be allowed at City parks, the Council could consider adding an exception to this provision to the attached ordinance in Section 5.68.040 (C)(f), Public Right of Way, Location and Siting Requirements.
- Added a provision prohibiting mobile vending on private property or within the public right-of-way within the Downtown Specific Plan – Downtown Core District, unless approved as part of a Temporary Special Permit.
- Added a separation requirement on private property or within the right-of-way within one hundred (100) feet from the main entrance to any eating establishment, outdoor dining area, or similar food service business, measured from the location of the mobile vending facility to the commercial structure, unless the mobile vending facility first obtains written permission from the business owner.
    - It should be noted that LUD recommended a separation requirement of three hundred (300) feet. After reviewing this recommendation with legal counsel, legal counsel recommended reducing the distance to

100 feet based on the potential of the larger distance to mostly, or completely, ban food trucks City-wide.

Time Limits

Mobile vending facilities are moveable, located outside, and must be moved to a commissary at night. They may be temporary uses, or, if they comply with the requirements of Title 17 (Zoning) of the Brentwood Municipal Code, may operate as a long-term mobile vending facility. Section 5.68.050(M), Operating Regulations, stipulates that, except for long-term mobile vending facilities, mobile vending shall not occur on the same private property more than cumulative four (4) days within a thirty-day period. Title 17 (Zoning) of the Brentwood Municipal Code will govern the term allowed for a long-term mobile vending facility.

There may be circumstances where mobile vending facilities could operate for a longer period of time or on a semi-permanent basis; this could potentially include during a restaurant remodel or as part of a new development project that includes an on-site commissary. Staff is proposing the below amendments to Chapter 17.850 (Temporary Use Permits) to address these circumstances.

Effective Date

As described below, staff conducted extensive public outreach for this City Council hearing and will conduct additional outreach to mobile vendors if the ordinance is adopted by the City Council. The attached Mobile Vending Ordinance includes an effective date of March 1, 2025. If adopted, the ordinance's later effective date will allow staff time to conduct outreach to the effected businesses and allow those businesses additional time to prepare for obtaining a permit from the City.

CHAPTER 17.850 (TEMPORARY USE PERMITS)

Operational characteristics of long-term mobile vendors and commissaries are different than vendors that move regularly. "Long-term mobile vending facilities" are defined as those *that operate on a longer-term than allowed in Chapter 5.68, not short-term basis, that are allowed by the underlying non-residential zoning district, are an ancillary use to a primary use on the property, or that can not meet all requirements as outlined in Chapter 5.68, and comply with all the requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code*. Long-term mobile vending facilities may include those that wish to remain on the private or public property more than the number of hours or days allowed in Chapter 5.68.

Based on the unique operating characteristics, staff recommends that a new approval process and new regulations for these operations be incorporated into Title 17 Zoning

of the BMC. Aspects of Chapter 5.68 (e.g., the requirement for a mobile vending license) would still apply, but new zoning regulations would create additional land use regulations and standards applicable only to long-term mobile vending facilities and commissaries. Applying the relevant sections of Chapter 5.68 and new zoning regulations to long-term mobile vending facilities and commissaries would ensure consistency of regulations for these facilities, as well as ensure their safe and sanitary operation on a long-term basis.

Temporary Review Process

Staff is recommending modifications to Brentwood Municipal Code Chapter 17.850 (Temporary Use Permits (TUP)) (attached) in order to establish clear and concise criteria in which to review and approve long-term mobile vending facilities and commissaries with associated mobile vending facilities. Permitting long-term mobile vending facilities and commissaries through the TUP process allows the City greater flexibility in approving, denying, and/or revoking permits. Major TUPs are reserved for larger events or applications, while minor TUPs are considered more routine in nature. Applicants would be required to apply for a major TUP upon initial submittal and would be allowed to apply for a minor TUP for subsequent renewals each year. This would allow the City to review each permit on an annual basis prior to renewal.

Long-Term Mobile Vending Standards

In addition to the need for updated regulations for mobile vendors that are only at a location for a short amount of time, there is a need for new regulations that apply specifically to mobile vendors that may be able to operate for longer timeframes than the time limits proposed in the draft Chapter 5.68.

LUD recommended that the following general parameters for long-term mobile vending zoning regulations be included in revisions to Chapter 17.850.

1. **Setbacks.** Long-term mobile vending facilities would be required to be located at least five feet from the edge of any driveway or public sidewalk, utility boxes and vaults, handicapped ramp, building entrance, exit or emergency access/exit way, or emergency call box and be located a minimum distance of 15 feet in all directions of a fire hydrant.

2. **Parking requirements.** Long-term mobile vending facilities would only be permitted to be parked in a designated parking space(s) on a paved surface outside any designated fire lane. The mobile vending facility and associated seating, if any, shall also be located outside any parking or loading space that

is required to fulfill the minimum parking requirements for the principal use on the property, during the principal use's hours of operation.

3. **Seating requirements.** All associated tables, seating, and/or shade structures must be removed at the end of each business day and may not be permanently erected outside of business operations. In addition, all associated furnishings shall be maintained in a clean manner such that it does not create an unsightly appearance.

4. **Utilities.** Electric outlet hookups are required to be installed for long-term mobile vending facilities and must be used while the mobile vending facility is on the premises. No generators shall be utilized on-site. If extension cords, hoses or other utilities are required, they shall be safety secured and not impede any path of travel.

5. **Accessibility Requirements.** Long-term mobile vending facilities must operate in a manner and have access to restrooms consistent with current California Building Code (CBC) standards, which shall be provided on site and located within a maximum of 50 feet from the proposed long-term mobile vending facility parking location, unless otherwise approved by the community development director. Restrooms shall be provided, at no charge, for customer use during normal business hours and shall be continuously maintained in a clean and sanitary manner.

Commissaries

In addition to the need for updated regulations for mobile vendors that operate and sell within the City, there is a need for regulations for mobile vendors that utilize an existing commercial building as a commissary and remain onsite overnight, which is not permitted under general regulations outlined in the draft Chapter 5.68.

A "Commissary" is defined as *a food facility that services mobile food facilities, mobile support units, or vending machines where any of the following occur: (1) food, containers, or supplies are stored; (2) food is prepared or prepackaged for sale or service at other locations; (3) utensils are cleaned; or (4) liquid and solid wastes are disposed, or potable water is obtained. A commissary may be considered in an underlying non-residential zoning district, if the commissary is an ancillary use to a primary permitted use on the property, and complies with all the requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code*. TUP approval would be required in order to allow for a mobile vending facility to remain on-site overnight, when associated with an on-site commissary.

Staff is recommending the following general parameters for commissary and associated mobile vending facilities be included in revisions to Chapter 17.850 related to long-term mobile vending facilities.

1. **Ownership.** All associated mobile vending facilities approved to be on the site of a commissary must be directly owned or operated by the commissary.

2. **Number of Mobile Vending Facilities per Commissary.** No more than two mobile vending facilities may be approved through the Temporary Use Permit process for each commissary.

3. **Parking Requirements.** The mobile vending facility associated with the commissary is only permitted to be parked in a designated parking space(s) on a paved surface outside any designated fire lane. The mobile vending facility and associated seating, if any, should also be located outside any parking or loading space that is required to fulfill the minimum parking requirements for the principal use on the property, during the principal use's hours of operation.

4. **County Approval.** Prior to operating, a commissary shall obtain a commissary permit issued by Contra Costa County, if applicable.

COMMUNITY OUTREACH

Prior to the February 27, 2024 City Council meeting, the May 29, 2024 LUD meeting, and the September 3, 2024 Planning Commission meeting, additional public outreach to current mobile vendors was done which resulted in several vendors providing comments and recommendations on the draft Ordinance. Prior to this City Council meeting, a notification letter was mailed and emailed to 74 businesses that City staff identified as Mobile Vendors with either an active City of Brentwood Business Tax Certificate, or individuals who expressed interest in obtaining information regarding upcoming revisions. The letter included details regarding the proposed municipal code revisions, the date/time of the City Council meeting, information about when/where the agenda with the draft ordinances would be available, as well as information pertaining to submitting public comments. The letter was also shared with the Downtown Brentwood Coalition, the Chamber of Commerce, and the Foodie Crew, as they provide mobile food vendor event planning services.

If the City Council adopts the new ordinances, Community Development staff will conduct further outreach to the businesses impacted by the new regulations. This will include making contact with businesses directly, social media posts, and

advertisements in local publications. A Mobile Vending brochure will be circulated during the outreach. More detailed information regarding how to obtain a Mobile Vending permit with a link to the applications will also be available on the City's website. Community Development staff will continue to collaborate with other departments involved with both Mobile Vendors and Sidewalk Vendors, including Finance, Police and Parks & Recreation.

CONCLUSION

These proposed ordinance amendments, if adopted, will assist in the City's desire to regulate mobile vending, while also safe-guarding the flow of pedestrian movement on public and private sidewalks and in the public right-of-way, and ensure no interference with the performance of police, firefighter, and emergency medical personnel services. In addition, this amendment will provide greater clarity to Community Enrichment staff to regulate the type of vending, and the time, place, and manner of vending from vehicles upon the street in order to promote public safety.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

The City of Brentwood published a public hearing notice in the Brentwood Press on October 11, 2024.

ENVIRONMENTAL DETERMINATION

The proposed ordinances are exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption - in that the proposed ordinances would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. There is no potential to result in either a direct physical change to the environment or a reasonably foreseeable indirect physical change to the environment. None of the circumstances described in CEQA Guidelines Section 15300.2 applies.

In addition to CEQA Guidelines Section 15061(b)(3), the proposed ordinances would also be exempt from the CEQA pursuant to CEQA Guidelines Section 15311(c) in that the proposed ordinances relate to the placement of seasonal or temporary use mobile food units, in generally the same locations from time to time in areas designed for public use. Finally, the ordinances are not a "project" and have no potential to result in a direct or reasonably foreseeable indirect physical change to the environment. 14 Cal. Code Regs. § 15378(a).

ATTACHMENT(S)

1. Previous Actions
2. Draft Ordinance Chapter 5.68 (Mobile Vending)
3. Draft Ordinance Chapter 17.850 (Temporary Use Permits)

ATTACHMENT 1

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On July 12, 1994, the City Council adopted Urgency Ordinance No. 590, establishing a temporary moratorium on use permits for vending operations.

On August 23, 1994, the City Council adopted Ordinance No. 544, extending the moratorium on the processing of new use permits for mobile vending operations for an additional ten months and fifteen days.

On December 27, 1994, staff returned to the City Council seeking direction regarding ordinance regulations pertaining to mobile vending operations. Council directed staff through the Planning Commission to develop an ordinance to regulate mobile vending operations.

On April 25, 1995, the City Council conducted a public hearing on the introduction of Ordinance No. 551, Mobile-Vending, which was proposed by the Planning Commission to establish processing procedures, design and location guidelines for mobile vendors. The City Council declined to adopt Ordinance No. 551, and directed staff to develop an alternate ordinance restricting motorized vending to two hours per day per location.

On May 30, 1995, the City Council approved the introduction and waived the first reading of Mobile Vending Ordinance No. 554.

On June 13, 1995, the City Council adopted Ordinance No. 554, establishing business license requirements and standards for mobile vending with an effective date of October 1, 1995.

On February 27, 2024, the City Council considered the first reading and adoption of a new ordinance regulating Sidewalk Vending (Ordinance No. 1069) and a new ordinance repealing and replacing the City's regulations related to Mobile Vending (Ordinance No. 1070).

On March 12, 2024, the City Council adopted the Sidewalk Vending Ordinance (Ordinance No. 1069), but continued the Mobile Vending Ordinance to a future date.

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD, CALIFORNIA, REPEALING AND REPLACING CHAPTER 5.68 OF THE BRENTWOOD MUNICIPAL CODE REGARDING MOBILE VENDING AND DECLARING THE ORDINANCE EXEMPT FROM CEQA

WHEREAS, the City of Brentwood, California ("City") is a municipal corporation, duly organized under the California Constitution and laws of the State of California; and

WHEREAS, pursuant to the police powers delegated to it by the California Constitution, the City has the authority to enact laws which promote the public health, safety, and general welfare of its citizens, including mobile vending on both public and private property; and

WHEREAS, the City may regulate mobile food facilities operating in the right-of-way, pursuant to Vehicle Code section 22455 and Health and Safety Code section 114315; and

WHEREAS, vehicles that produce, prepare, cook, and carry food, foodstuffs, food products, and all associated wares and merchandise for purposes of sale on the public streets pose special danger to the public health, safety, and welfare of children and residents in the City; and

WHEREAS, the sale of food, foodstuffs, food products, and all associated wares and merchandise on public streets from vehicles can cause dangerous conditions on the City's roads and streets through the congregation of large crowds and imposition of the flow of traffic on the public right-of-way. In addition, mobile vending from both public and private property creates the potential for increased safety hazards, such as, but not limited to: inhibiting the ability of disabled individuals and other pedestrians to follow a safe path of travel; interfering with the performance of police, firefighter, and emergency medical personnel services; encouraging pedestrians to cross mid-block or stand in roadways to purchase food; and creating obstacles and contributing to congestion for pedestrian, vehicle, and bicycle traffic; and;

WHEREAS, the City has the authority to regulate the type of vending, and the time, place, and manner of vending from vehicles upon the street in order to promote public safety; and

WHEREAS, the City desires to regulate mobile vending, while also safe-guarding the flow of pedestrian movement on public and private sidewalks and in the public right-of- way, and ensure no interference with the performance of police, firefighter, and emergency medical personnel services; and

WHEREAS, the City Council finds that the regulation of mobile vendors engaged in the sale of food and food products will help to ensure that mobile vendors

obtain all necessary permits and comply with applicable sanitation, food preparation, and food handling laws, and thereby will protect the public health and safety against health problems such as food contamination, poor hygienic practices, and the threat of food poisoning; and

WHEREAS, the City Council finds that regulation of mobile vending in residential areas is necessary to ensure that such areas are protected from excessive noise and traffic impacts while allowing economic opportunities for mobile vendors; and

WHEREAS, the City Council finds that, because mobile vending is typically transient in nature, the City, law enforcement, and other health and safety regulators, are less able to hold mobile vending businesses accountable for health and safety violations than other businesses operating from fixed locations. Therefore, the City Council finds that it is necessary to establish regulations for the identification of applicants and restricting permits from those persons with records of certain criminal conduct that pose a threat to public safety; and

WHEREAS, the City Council finds that regulation of mobile vending is necessary as vendors have regular and routine access to children, often in secluded or unmonitored areas, so ensuring that no one is being authorized to operate in residential neighborhoods that is a threat to the health, safety, or welfare of the public or children is of paramount importance; and

WHEREAS, the City Council finds young people in the community are susceptible to: distraction while at school; being drawn away from school or to cross busy streets, thereby obstructing traffic and causing vehicular collisions with pedestrians; or to fraudulent business conduct. To promote the health, safety and welfare of children while they are near schools, it is necessary to regulate commercial activity near locations which have high concentrations of unsupervised youth, such as in the vicinity of schools before and after class hours; and

WHEREAS, the City Council finds that there are unique geographic and historical characteristics of the City that prevent mobile vendors from operating in City streets adjacent to certain sidewalks and pedestrian pathways without detrimentally affecting the public health, safety, and welfare. Among these are City streets, sidewalks and pathways located in certain older portions of the City where the nature of the underlying use as a high pedestrian traffic area and/or access to designated historical buildings and/or structures are incapable of supporting both pedestrian traffic and mobile vendors. Further, mobile vendors that attract additional pedestrian traffic can inhibit the ability of disabled individuals, block building ingress/egress within these areas, particularly in the non-residential areas of the Downtown Specific Plan – Downtown Core District. In addition, mobile vending within the Downtown Specific Plan – Downtown Core District results in substantial potential for litter and damage caused by vendors and their patrons, which would be detrimental to the welfare of the community as the use and enjoyment of the most significant historical resource within the City of Brentwood would be degraded. Furthermore, in order to preserve and promote economic viability consistent with

Brentwood General Plan Economic Development Goal ED4 to "Emphasize Downtown as the thriving central gathering area of Brentwood that reflects the city's unique character and heritage, and provides for a range of retail uses, services, and public areas," the Downtown Specific Plan – Downtown Core District which contains many restaurants that attract customers, needs special consideration and protection from competing mobile vendors by generally prohibiting mobile vendors, except when approved as part of a Special Event Permit and/or Temporary Use Permit; and

NOW, THEREFORE, the City Council of the City of Brentwood does ordain as follows:

SECTION 1. Recitals. The above recitals are true and correct and are hereby adopted as findings in support of this Ordinance as if fully set forth herein.

SECTION 2. CEQA. This Ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the CEQA Guidelines, in that CEQA applies only to projects which have the potential for causing a significant effect on the environment, and it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment since the proposed ordinance would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. In addition to CEQA Guidelines Section 15061(b)(3), the proposed ordinance would also be exempt from the CEQA pursuant to CEQA Guidelines Section 15311(c) in that the proposed ordinance relates to the placement of seasonal or temporary use mobile food units, in generally the same locations from time to time in areas designed for public use. The City Clerk shall cause a Notice of Exemption to be filed as authorized by CEQA and the State CEQA Guidelines.

SECTION 3. Severability. If any section, sentence, clause or phrase of this Ordinance or the application thereof to any entity, person or circumstance is held for any reason to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect other provisions or applications of this Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are severable. The City Council of the City of Brentwood hereby declares that it would have adopted this Ordinance and each section, sentence, clause or phrase thereof, irrespective of the fact that any one or more section, subsections, sentences, clauses or phrases be declared invalid or unconstitutional.

SECTION 4. Amendment. The Brentwood Municipal Code is hereby amended to repealed and replace Chapter 5.68 (Mobile Vending) in its entirety with the revised Chapter 5.68 (Mobile Vending) as provided in Exhibit A1, attached hereto and incorporated herein.

SECTION 5. Effective Date. This Ordinance shall become effective March 1, 2025.

SECTION 6. Publication Date. This ordinance shall be published in accordance with Government Code Section 36933. The City Clerk is directed to cause

the Municipal Code text to be entered in the Brentwood Municipal Code of the City of Brentwood to be modified accordingly.

THE FOREGOING ORDINANCE was introduced with the first reading waived at a regular meeting of the City Council of the City of Brentwood on the 22nd day of October 2024 by the following vote:

AYES:
NOES:
ABSENT:
RECUSE:

APPROVED

_____
Joel R. Bryant
Mayor

ATTEST:

_____
Amanda McVey
Interim City Clerk

EXHIBIT "A1"

Chapter 5.68

MOBILE VENDING.

5.68.010 Purpose.

5.68.020 Definitions.

5.68.030 Permits Required.

5.68.040 Location and Siting Requirements.

5.68.050 Operating Regulations.

5.68.060 Suspension; Rescission.

5.68.070 Appeals to City Manager.

5.68.080 Violations; Penalties.

5.68.090 Severability.

Section 5.68.010 Purpose.

This Chapter establishes requirements for the vending of food and goods in the public right-of-way and on private property, including but not limited to city facilities and parking lots, to prevent traffic, safety, and health hazards. The primary purpose of the public streets, sidewalks, parking lots, and other public ways is for use by vehicular and pedestrian traffic. Regulating mobile vending will protect the public health and safety and ensure safe pedestrian and vehicular traffic. Unregulated vending in the public right-of-way, from any vehicles including mobile food vehicles or food trucks contributes to traffic congestion and can impede the orderly movement of pedestrians and vehicles. The unregulated use of congested streets and sidewalks with a high concentration of vehicular, pedestrian and commercial activity by mobile food vendors can make the streets and walkways unsafe for motorists, cyclists, pedestrians, and mobile food vendors themselves.

Section 5.68.020 Definitions.

For purposes of this Chapter, the following definitions apply:

A. "Applicant" means a person who is applying for a mobile vendor permit pursuant to this Chapter.

B. "City" means the City of Brentwood.

C. "City manager" means the city manager of the City of Brentwood, or their designee.

D. "Compact mobile food operation" means a mobile food facility that operates from an individual or from a pushcart, stand, display, pedal-driven cart, wagon, showcase, rack, or other nonmotorized conveyance.

E. "Commissary" means a food facility that services mobile food facilities, mobile support units, or vending machines where any of the following occur: (1) food, containers, or supplies are stored; (2) food is prepared or prepackaged for sale or service at other locations; (3) utensils are cleaned; or (4) liquid and solid wastes are disposed, or potable water is obtained. A commissary may be considered in an underlying non-residential zoning district, if the commissary is an ancillary use to a primary permitted use on the property, and complies with all the requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code.

F. "County" means the County of Contra Costa.

G. "Food" means and refers to any substance as defined by California Health and Safety Code Section 113781, as a raw, cooked, or processed edible substance, ice, beverage, an ingredient used or intended for use or for sale in whole or in part for human consumption, and chewing gum.

H. "Long-term mobile vending facility" means a mobile vending facility that operates on a longer-term than allowed in Chapter 5.68, not short-term, basis, that is allowed by the underlying non-residential zoning district, is an ancillary use to a primary use on the property, or that can not meet all requirements as outlined in Chapter 5.68, and complies with all the requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code.

I. "Mobile food facility" means any vehicle used in conjunction with a commissary or other permanent food facility upon which food is sold or distributed at retail. "Mobile food facility" does not include a "transporter" used to transport packaged food from a food facility, or other approved source to the consumer. It means any motor vehicle or device, including, but not limited to, cars, trucks, and vans, or any vehicle or device that is pushed, pulled, carried, towed or otherwise transported by a motor vehicle or device and equipped to store, prepare, serve, advertise, promote, offer, convey, barter, trade, solicit and/or sell food, foodstuffs, food products, and all associated wares, goods, and merchandise.

J. "Mobile vending" means the selling, advertising, promoting, offering, or soliciting to sell, convey, barter, or trade food, products, goods, merchandise, and/or services from a mobile food facility or mobile vending facility.

K. "Mobile vending facility" means both a "mobile food facility" and any vehicle used in conjunction with mobile vending.

L. "Mobile vendor" means and refers to any individual or person (natural and corporate) that operates or assists in the operation of a mobile food facility or mobile vending facility.

M. "Mobile vendor permit" means a permit issued by the City to a mobile vendor pursuant to this Chapter.

N. "Permittee" means a person who has been issued a mobile vendor permit pursuant to this Chapter.

O. "Person" means an individual, firm, partnership, corporation, company, association, or other legal entity and includes a trustee, receiver, assignor or similar representative of any of them.

P. "Temporary special permit" means an event authorized by a permit issued by the City for the temporary use of, or encroachment on, the sidewalk or any other public area, including, but not limited to, an encroachment permit, special event permit, or temporary use permit under Chapter 17.850, for purposes including, but not limited to, filming, parades, or outdoor concerts.

Section 5.68.030 Permits Required.

A. It shall be unlawful for any person to maintain, manage, or operate a mobile vending facility within the City unless such activity is maintained, managed, or operated in strict compliance with all applicable city, county, state, and federal laws, rules, and regulations, including but not limited to the requirements of Title 17 (Zoning) of the Brentwood Municipal Code if applicable.

B. Prior to operating, a mobile vendor shall obtain the following:

1. a mobile food facility permit issued by Contra Costa County, if applicable; and

2. a business tax certificate issued pursuant to Chapter 5.04 of this Code; and

3. a mobile vendor permit issued by the City pursuant to this Chapter.

C. The mobile vendor permit application shall be approved or conditionally approved by the Director provided all the following criteria, in addition to any others which may be imposed by the City, have been met:

1. Accurate completion of the application, including submittal of all required information or supporting documentation, including, but not limited to, a currently valid driver's license for operation of the mobile vending facility;

2. Payment of all applicable fees, which shall be non-refundable;

3. An affidavit signed by the applicant attesting that the information provided in the application is true and correct and that the applicant is not a registered sex offender and has not been found guilty or pled no contest to any of the following within five years prior to the date of the application: any crime involving driving under the influence of alcohol or other controlled substance; any crime involving reckless driving; any offense resulting in the suspension of a driver's license; a criminal assault; any child annoyance or sex-related crime; any drug-related misdemeanor or felony; the sale, distribution or display of obscene material; or indecent exposure; and

4. Mobile vendors shall maintain, at all times during which the mobile vending facility is in operation, a policy of $1 million general comprehensive liability insurance as approved by the City and insuring against injury or death of a person and for claims of property damage resulting from the applicant's use of the public right-of-way. The City and its officials, officers, employees and agents shall be named as additional insureds under such insurance policy. Submission and approval of such insurance shall be a condition precedent to approval and issuance of any permit. In addition, the mobile vendor shall indemnify, defend and hold the City and its officials, officers, employees and agents harmless from any claims arising out of or related to the vendor's ownership, operation, or use of its mobile vending facility, except as otherwise permitted by applicable law.

5. Confirmation of compliance with all conditions and requirements of this Chapter.

D. The mobile vendor permit application may be denied (initially or upon application for a renewed permit) for any of the following reasons:

1. Failure to submit a complete application with full application fee;

2. Fraud or misrepresentation made in the application or in the course of operating a mobile vending facility;

3. Being a registered sex offender or having a conviction or plea of no contest in the previous five years of a crime as listed in subsection (C)(3) of this Section;

4. Violation of this Chapter or the terms of the mobile vendor permit.

5. It is determined by the Community Development Director that the operation would not be operated in a compatible, efficient, harmonious, nuisance-free, orderly, and safe, manner at all times.

6. In the case of an application for a long-term mobile vending facility or commissary, and only if required by the requirements of Title 17 (Zoning) of the Brentwood Municipal Code to obtain a mobile vendor permit application, the use is not allowed in the underlying zoning district and/or is not an ancillary use on the property.

E. Except in cases of a long-term mobile vending facility or commissary, the term of each mobile vendor permit, unless sooner terminated, suspended or revoked, shall be valid for a calendar year: twelve (12) months, or fraction thereof, from the date of issuance. The term of a permit for a long-term mobile vending facility or commissary shall be specified under Title 17 (Zoning) of the Brentwood Municipal Code. Upon the expiration of such term, and consistent with the other provisions of this Chapter, the holder of such mobile vendor permit may renew the mobile vendor permit for one additional one-year term by submitting a new application, together with any fees that may be required, and by complying with all other terms of this article. All mobile vendor permits issued pursuant to this Section shall expire and have no further force and effect upon the date specified in the permit.

F. A separate health permit and/or mobile vendor permit shall be obtained for each mobile vending facility or commissary even when conducted under the same ownership. A City business tax certificate shall be obtained prior to operating a mobile vending facility; a single business tax certificate may be obtained for multiple mobile vending facilities if they report gross receipts on one set of books.

G. Any business tax certificate and/or mobile vendor permit issued pursuant to this Chapter shall be personal and shall not be assigned, transferred, sold or otherwise conveyed by the person to whom such permit has been issued to any other person; any such attempted assignment, transfer or conveyance shall immediately render such permit void.

H. Each mobile vending facility shall at all times have permanently affixed to the vehicle in a manner designated by the City and any other local regulatory agency evidence of a current and valid mobile vendor permit issued by the City and evidence of a current and valid Contra Costa County mobile food facility permit, when applicable.

Section 5.68.040 Location and Siting Requirements.

A. Generally

All mobile vending facilities shall be located so as not to impede safe movement of vehicular, bicycle or pedestrian traffic, and to maintain a clear line of sight for vehicles, bicycles and pedestrians. No mobile vending facilities shall be located so as to obstruct access to or circulation through any parking lot, or to obstruct access to any public sidewalk or alley. In addition, no commissary may be established without complying with all the requirements contained in Title 17 (Zoning) which may include obtaining a temporary use permit under Chapter 17.850.

B. Private Property

1. A mobile vending facility may only operate on private property so long as it is an ancillary use to a permitted use in the zone where the mobile vending is conducted.

2. A mobile vending facility operating on private property shall first obtain written permission from the property owner.

3. A mobile vending facility shall be parked in a parking space on a paved surface outside any designated fire lane and outside any parking or loading space that is required for the principal use on the property. Operating on dirt lots is prohibited.

4. Mobile vending operations shall not reduce the available parking on the property below the minimum number of parking spaces required to serve the existing use(s) on the lot.

5. A total of one (1) mobile vending facilities may be located on a single private property without the need for a Temporary Use Permit issued by the City pursuant to Chapter 17.850 of the Brentwood Municipal Code. A Temporary Use Permit shall be required whenever two (2) or more mobile vending facilities are proposed to be on a single private property at the same time.

6. A mobile vending facility on private property shall be a minimum of one hundred (100) feet from the main entrance to any eating establishment, outdoor dining area, or similar food service business, measured from the location of the mobile vending facility to the commercial structure, unless the mobile vending facility first obtains written permission from the business owner.

7. A mobile vending facility on private property shall be a minimum of three hundred (300) feet from any single-family residentially zoned property, measured from the location of the mobile vending facility to the residential structure.

8. A mobile vending facility may not vend on any private property within the Downtown Specific Plan – Downtown Core District unless approved as part of a Temporary Special Permit.

C. Public Right of Way

1. Mobile vending in the public right-of-way is permitted only as set forth in this Section.

2. A mobile vending facility in operation within the public right of way shall be located as follows:

a. A minimum of twenty-five (25) feet from any street intersection controlled by a traffic light, crosswalk, or stop sign.

b. A minimum of twenty-five (25) feet from any bus stop.

c. A minimum of twenty-five (25) feet from any pedestrian or vehicular entrance to any school facility. The twenty-five (25) feet distance shall be measured from the driveway or pedestrian walkway which is closest to the mobile vending facility. This prohibition may be waived for special events for which the City issues a Temporary Special Permit, or by written permission of the school district or any other entity which operates the applicable school.

d. Any other reasonable locational requirements deemed necessary by the City in order to protect the public health and safety.

e. A minimum of one hundred (100) feet from the main entrance to any eating establishment, outdoor dining area, or similar food service business, measured from the location of the mobile vending facility to the commercial structure, unless the mobile vending facility first obtains written permission from the business owner.

f. A minimum of three hundred (300) feet from any single-family residentially zoned property, measured from the location of the mobile vending facility to the residential structure.

3. A mobile vending facility operating in the public right-of-way shall, at all times, operate in compliance with the California Vehicle Code, Title 10 (Vehicles and Traffic) of the Brentwood Municipal Code, and all posted parking, stopping, and standing restrictions.

4. When parked in the designated parking area within the public right of way, a mobile vending facility may only serve customers from the adjacent sidewalk and shall not serve customers from the side of the vehicle closest to the motorized travel lanes of the street or an adjacent parking stall. This would prohibit service in angled parking stalls unless directly abutting a paved pedestrian pathway.

5. A mobile vending facility that operates in the public right-of-way may not stop or park at a location on the street for any longer than allowed by parking restrictions on the street, but in any event may not operate the mobile vending facility for longer than three (3) hours, and shall not return to the same location, or a location within one thousand feet (1000 feet) of the location, within two (2) hours unless approved as part of a Temporary Special Permit.

6. To ensure that a mobile vending facility is ancillary and not a primary use, a mobile vending facility may only vend on a parcel containing a principal building and shall not park, operate, or be placed on a vacant parcel.

7. A mobile vending facility may not vend within the public right-of-way within the Downtown Specific Plan – Downtown Core District unless approved as part of a Temporary Special Permit.

Section 5.68.050 Operating Regulations.

To operate lawfully within the City, every mobile vendor must comply with the following standards unless approved as part of a Temporary Special Permit:

A. Mobile vending facilities shall not connect to temporary or permanent on-site water, gas, electricity, telephone, cable sources, or other utilities.

B. Mobile vending facilities shall not stand or park in the public right-of-way as follows:

1. For residential zones, between the hours of 9:00 pm and 6:00 am.

2. For non-residential zones, between the hours of 12:00 am and 6:00 am.

C. Tables, chairs, free-standing umbrellas, and shade structures are prohibited on streets, parking spaces, and on sidewalks.

D. Outside of hours of active operations, mobile vending facilities shall be removed from the operating site, whether on private property or in the public right-of-way. Mobile vending facilities shall not be parked overnight at the location of operation nor at a residential property unless approved as part of a Temporary Special Permit. A mobile food facility must be stored at an approved commissary in accordance with the required permit from Contra Costa County. All commissaries within the City shall comply with all the requirements contained in Title 17 (Zoning) of the Brentwood Municipal Code.

E. Mobile vendors shall not use any noise amplification or external speakers. Any mobile food facility shall be subject to the requirements of Chapter 9.32 (Noise Regulations) of the Brentwood Municipal Code.

F. Any signage advertising, displaying, or promoting the products and/or services of a mobile vending facility must be permanently attached to or painted on the mobile vending facility. All such signs shall be subject to the provisions of Chapter 17.640 (Sign Ordinance) of the Brentwood Municipal Code. No signs or banners that are separate from the mobile vending facility shall be placed at the operating site or within the public right-of-way.

G. Mobile vendors are prohibited from littering and discharging waste into storm drains. The mobile vendor must remove litter caused by its products from any public and private property within a twenty-five (25) foot radius of the mobile vending facility's location. All mobile vendors shall provide separate and clearly marked receptacles for trash, recycling, organic waste, and/or compost, according to the collection services available, at the operating site. Mobile vendors shall properly dispose of all trash, recycling, organic waste, and/or compost generated by their operations daily.

H. Mobile vending facilities must have current and valid vehicle registration clearly marked on their vehicle license plates while vending.

I. Mobile vendors must display a valid mobile vendor permit and business tax certificate issued by the City within the vehicle used for vending.

J. Mobile vendors shall maintain, at all times during which the mobile vending facility is in operation, a policy of $1 million general comprehensive liability insurance as approved by the City and insuring against injury or death of a person and for claims of property damage resulting from the applicant's use of the public right-of-way. The City and its officials, officers, employees and agents shall be named as additional insureds under such insurance policy. Submission and approval of such insurance shall be a condition precedent to approval and issuance of any permit. In addition, the mobile vendor shall indemnify, defend and hold the City and its officials, officers, employees and agents harmless from any claims arising out of or related to the vendor's ownership, operation, or use of its mobile vending facility, except as otherwise permitted by applicable law.

K. All food products sold, distributed, conveyed, traded, or provided from the mobile vending facility shall comply will all applicable food labeling requirements established by the State of California.

L. Mobile vendors shall not vend alcohol, cannabis, adult-oriented material, tobacco products, products that contain nicotine, any product or device used to smoke/vape nicotine or cannabis, fireworks, or any weapons (including knives, air soft guns, pellet guns, paintball guns, or anything that may resemble a gun).

M. Except for long-term mobile vending facilities which are approved through a temporary use permit under Chapter 17.850 , mobile vending shall not occur on the

same private property more than a cumulative four (4) days within a thirty-day period unless approved as part of Temporary Special Permit.

Section 5.68.060 Suspension; Rescission.

A. A mobile vendor permit issued under this Chapter may be suspended or rescinded by the City Manager for any cause that would have warranted denial thereof in the first instance, or for failure to comply with any of the provisions of this Chapter or any of the conditions of the mobile vendor permit, including but not limited to fraud or misrepresentation in the course of vending; fraud or misrepresentation in the application for the permit; or vending in a manner that creates a public nuisance or constitutes a danger to the public.

B. Notice of the suspension or rescission of a mobile vendor permit issued under this Chapter shall be mailed, postage prepaid, to the holder of the permit at his or her last known address.

C. No person whose mobile vendor permit has been revoked pursuant to this Chapter shall be issued a mobile vendor permit for a period of two (2) years from the date revocation becomes final.

Section 5.68.070 Appeals to City Manager.

In the event that any applicant or permittee desires to appeal from any denial, suspension, rescission, order, or other ruling of the Director made under the provisions of this Chapter, such applicant, permittee, or other person aggrieved shall have the right to appeal such action or decision to the City Manager pursuant to Chapter 1.12 of this Code. The decision of the City Manager, or his or her designee, on the appeal shall be final and binding on all parties concerned.

Section 5.68.080 Violations; Penalties.

A. It is unlawful for any person to violate any provision or fail to comply with any requirements of this Chapter. A person who violates any provision of this Chapter is guilty of a misdemeanor.

B. This Section is intended to be cumulative to, and not in place of, other rights and remedies available to the City pursuant to the Brentwood Municipal Code and state law, including, but not limited to, commencement of any civil action, the issuance of administrative fines and fees, or administrative action to abate a violation as a public nuisance.

C. The City hereby declares that mobile vending facilities and mobile vendors that are not in compliance with the provisions of this Section are a detriment to the public health, safety, and general welfare and are a public nuisance as defined in Chapter 8.00 (Nuisances) of the Brentwood Municipal Code.

D. Nothing contained herein shall be construed to impede the City's or County's ability to enforce County Health Department codes and regulations.

Section 5.68.090 Severability.

If any provision, clause, sentence or paragraph of this chapter, or application thereof to any person or circumstances, be held invalid by a court of law, such invalidity shall not affect other provisions or applications of the chapter which can be given effect without the invalid provisions or applications of the chapter and, therefore, the provisions of this chapter are declared to be severable.

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD APPROVING A ZONING TEXT AMENDMENT TO THE BRENTWOOD MUNICIPAL CODE (RZ 24-004), WHICH WOULD AMEND CHAPTER 17.850 (TEMPORARY USE PERMITS) TO ADD REGULATIONS RELATED TO MOBILE VENDING FACILITIES AND COMMISSARIES

WHEREAS, City staff prepared a zoning text amendment ("the Ordinance") that would amend Brentwood Municipal Code Chapter 17.850 (Temporary Use Permits) to add regulations related to Mobile Vending Facilities; and

WHEREAS, the Ordinance would amend Title 17 (Zoning) of the Brentwood Municipal Code, and the Planning Commission is charged with reviewing amendments to said title prior to their consideration by the City Council; and

WHEREAS, pursuant to the police powers delegated to it by the California Constitution, the City has the authority to enact laws which promote the public health, safety, and general welfare of its citizens, including mobile vending on both public and private property; and

WHEREAS, the City may regulate mobile food facilities operating in the right-of-way, pursuant to Vehicle Code section 22455 and Health and Safety Code section 114315; and

WHEREAS, vehicles that produce, prepare, cook, and carry food, foodstuffs, food products, and all associated wares and merchandise for purposes of sale on the public streets pose special danger to the public health, safety, and welfare of children and residents in the City; and

WHEREAS, the sale of food, foodstuffs, food products, and all associated wares and merchandise on public streets from vehicles can cause dangerous conditions on the City's roads and streets through the congregation of large crowds and imposition of the flow of traffic on the public right-of-way. In addition, mobile vending from both public and private property creates the potential for increased safety hazards, such as, but not limited to: inhibiting the ability of disabled individuals and other pedestrians to follow a safe path of travel; interfering with the performance of police, firefighter, and emergency medical personnel services; encouraging pedestrians to cross mid-block or stand in roadways to purchase food; and creating obstacles and contributing to congestion for pedestrian, vehicle, and bicycle traffic; and

WHEREAS, the City has the authority to regulate the type of vending, and the time, place, and manner of vending from vehicles upon the street in order to promote public safety; and

WHEREAS, the City desires to regulate mobile vending, while also safe-guarding the flow of pedestrian movement on public and private sidewalks and in the

public right-of- way, and ensure no interference with the performance of police, firefighter, and emergency medical personnel services; and

WHEREAS, the regulation of mobile vendors engaged in the sale of food and food products will help to ensure that mobile vendors obtain all necessary permits and comply with applicable sanitation, food preparation, and food handling laws, and thereby will protect the public health and safety against health problems such as food contamination, poor hygienic practices, and the threat of food poisoning; and

WHEREAS, on August 23, 2024, the City gave public notice of a Planning Commission public hearing to be held to consider this Ordinance by advertisement in the Brentwood Press, a newspaper of general circulation; and

WHEREAS, on September 3, 2024, the Planning Commission held a duly-noticed public hearing to consider the staff report, recommendation by staff, and public testimony concerning this Ordinance. Following the public hearing, the Planning Commission voted to recommend that the City Council adopt the proposed Ordinance by a vote of 5-0; and

WHEREAS, the City published a notice of public hearing in the Brentwood Press on October 11, 2024, in accordance with City policies and Government Code Section 65090; and

WHEREAS, on October 22, 2024, the City Council held a duly-noticed public hearing to consider the Ordinance, including: (1) the public testimony and agenda reports prepared in connection with the Ordinance, (2) the policy considerations discussed therein, and (3) the consideration by the City's Planning Commission; and

WHEREAS, this amendment is exempt from the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the CEQA Guidelines, in that CEQA applies only to projects which have the potential for causing a significant effect on the environment, and it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment since the proposed ordinance would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. In addition to CEQA Guidelines Section 15061(b)(3), the proposed ordinance would also be exempt from the CEQA pursuant to CEQA Guidelines Section 15311(c) in that the proposed ordinance relates to the placement of seasonal or temporary use mobile food units, in generally the same locations from time to time in areas designed for public use.

WHEREAS, all legal prerequisites to the adoption of the Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BRENTWOOD DOES ORDAIN AS FOLLOWS:

SECTION 1. Recitals. The above recitals are incorporated into this Ordinance as though fully set forth herein.

SECTION 2. CEQA. Pursuant to California Environmental Quality Act ("CEQA") Section 15061(b)(3) of the CEQA Guidelines, this project is exempt from CEQA as it applies only to projects which have the potential for causing a significant effect on the environment, and it can be seen with certainty that there is no possibility that the Ordinance may have a significant effect on the environment since the proposed ordinance would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. In addition to CEQA Guidelines Section 15061(b)(3), the proposed ordinance would also be exempt from the CEQA pursuant to CEQA Guidelines Section 15311(c) in that the proposed ordinance relates to the placement of seasonal or temporary use mobile food units, in generally the same locations from time to time in areas designed for public use.

SECTION 3. Rezoning. Brentwood Municipal Code Section 17.870.008 provides:

> *No rezoning of property or text amendment shall occur which is inconsistent with the city's community development plan. In making a decision, the planning commission and council shall consider the consistency of the proposed action to the community development plan and other applicable city plans, and shall consider whether the proposed action is inappropriate or otherwise contrary to the public interest.*
>
> The zoning text amendments set forth in Exhibit A1 are consistent with the General Plan, as amended from time to time, insomuch as they are responsive to the changing needs of the local businesses and community. The amendments are consistent with Brentwood General Plan Economic Development Goal ED 1 to "Establish and maintain a healthy, balanced approach to economic development that encourages a diversity of businesses which provide employment, services, and goods." In addition, the zoning text amendments will help to regulate the type of vending, and the time, place, and manner of vending from vehicles upon the private property and public streets in order to promote public safety.

SECTION 4. Severability. If any section, sentence, clause or phrase of this Ordinance or the application thereof to any entity, person or circumstance is held for any reason to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect other provisions or applications of this Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are severable. The City Council of the City of Brentwood hereby declares that it would have adopted this Ordinance and each section, sentence, clause or phrase thereof, irrespective of the fact that any one or more section, subsections, sentences, clauses or phrases be declared invalid or unconstitutional.

SECTION 5. Amendment. The Brentwood Municipal Code is hereby amended to update Brentwood Municipal Code Chapter 17.850 (Temporary Use Permits) as provided in Exhibit A1, attached hereto and incorporated herein.

Revisions to existing sections are reflected in ~~strikethrough~~ for deletions and underline for additions.

SECTION 6. Effective Date. This Ordinance shall become effective March 1, 2025.

SECTION 7. Publication Date. This ordinance shall be published in accordance with Government Code Section 36933. The City Clerk is directed to cause the Municipal Code text to be entered in the Brentwood Municipal Code of the City of Brentwood to be modified accordingly.

THE FOREGOING ORDINANCE was introduced with the first reading waived at a regular meeting of the City Council of the City of Brentwood on the 22nd day of October 2024 by the following vote:

AYES:
NOES:
ABSENT:
RECUSE:

APPROVED

_____
Joel R. Bryant
Mayor

ATTEST:

_____
Amanda McVey
Interim City Clerk

EXHIBIT "A1"

Chapter 17.850

TEMPORARY USE PERMITS

§ 17.850.001 Purpose.

This chapter establishes procedures and standards for the granting of temporary use permits for short-term activities on private property. Compliance with applicable standards ensures that the establishment, maintenance, or operation of the short-term activity would not be detrimental to the public health, safety, and welfare of persons residing or working in the neighborhood of the proposed activity.

§ 17.850.002 Applicability of provisions.

This chapter shall apply to those uses for which a temporary use permit is required by the zoning ordinance.

§ 17.850.003 Temporary use defined.

A temporary use is defined as "a short-term activity established for a fixed period of time on private property, with the intent to discontinue such use upon the expiration of the permitted time period that does not meet the normal development or use standards of the applicable zone." This definition does not include "special events," as those are defined and regulated in accordance with Title 7.

§ 17.850.004 Temporary use permit required.

A temporary use shall not be conducted, established, or operated in any manner without the approval and maintenance of a valid temporary use permit in compliance with this chapter, unless otherwise exempt under the provisions of this chapter.

§ 17.850.005 Review authority.

A. Temporary use permits shall be reviewed and approved or denied administratively by the community development director, in compliance with this chapter.

B. The community development director may refer any permit to the planning commission.

C. The decision of the community development director or planning commission regarding a temporary use permit shall be final, subject to appeal in compliance with Chapter 17.880 (Appeal).

D. No public hearing is required before the community development director's decision on a temporary use permit. A public hearing shall, however, be required for any permit that is referred by the community development director to the planning commission.

§ 17.850.006 Exempt temporary uses.
The following temporary uses are allowed without the necessity of obtaining a temporary use permit:

A. Construction Yards—On-Site. On-site contractors' construction yards, including one manufactured unit for temporary office use during normal business hours, for an approved construction project that is within the city. The construction yard shall be removed immediately upon completion of the construction project, or the expiration of the building permit authorizing the construction project, whichever occurs first.

B. Emergency Facilities. Emergency public health and safety needs/land use activities, as determined by the city manager.

C. Events on Sites Approved for Public Assembly. An event on the site of, or within, a golf course, meeting hall/facility, school, theater, or other similar facility designed, and approved by the city for public assembly.

D. Fund-Raising Car Washes.

1. Car washes on property within a nonresidential zone, limited to a maximum of two days per month for each sponsoring organization.

2. Sponsorship shall be limited to educational, fraternal, religious, or service organizations directly engaged in civic or charitable efforts, or to tax exempt organizations in compliance with Section 501(c) of the Federal Revenue and Taxation Code.

E. Garage Sales. Garage sales, not to exceed three per year and two consecutive days.

§ 17.850.007 Allowed temporary uses.
The city, through the community development director, may grant a temporary use permit for the following temporary uses on nonresidential properties or on private properties approved with an institutional use, for the specified time limits, but in no event for more than twelve months, except model home complexes and construction yards, which may be approved for any length of time, provided the community development director finds that the use meets any conditions or requirements set forth herein and that the use will not be detrimental to the public health, safety and welfare of persons residing or working in the neighborhood of the proposed activity. Other temporary uses that do not fall within the categories defined below shall instead comply with the planning permit requirements and development standards that otherwise apply to the property.

A. Agricultural Produce Sales. Retail sales of agricultural produce at produce stands or in a certified farmer's market.

B. Construction Yards—Off-Site. Off-site offices, contractors' construction, corporation, or storage yards for an approved construction project that is within

the city. The yards shall be removed immediately upon completion of the construction project, or the expiration of the building permit authorizing the construction project, whichever occurs first.

C. Events. Animal rides, art and craft exhibits, bike rodeos, car shows, carnivals, circuses, concerts, egg hunts, fairs, farmer's markets, festivals, flea markets, food events, holiday events, runs, marathons, walk-a-thons, and bike-a-thons or similar activities, open air theaters but excluding drive-in theaters, outdoor entertainment/sporting events, parades, petting zoos, processions, rallies, religious revivals, rodeos, rummage sales, runs, secondhand sales, swap meets, and other similar special events for up to five consecutive days, or six two-day weekends, or twelve individual days, within a twelve-month period, allowed only on non-residentially zoned properties, or on private properties approved with an institutional use.

D. Location Filming. The temporary use of a specific site for the location filming of commercials, movies, videos, etc., for the time specified by the community development director, but not to exceed twelve months.

E. Model Homes. A model home or model home complex may be authorized before the completion of subdivision improvements in compliance with the following standards:

1. Provisions for suitable off-street parking with adequate ingress and egress to serve the model home complex.

2. Provision of suitable landscaping to enhance the model home complex.

3. When the builder submits an application for the final permits to build on the lots utilized for the model home complex, the parking lot and trap fences shall be removed and the driveway slabs shall be poured in front of each of the garages of all model homes. This will require the removal of all landscaping in front of the garages for the model homes.

4. The poured driveway slabs and on-street parking will temporarily serve as the required parking for the model home complex and the sales office may remain in the model until all models in the subdivision have been sold.

5. The sales office shall be converted back to residential use and/or removed before the issuance of the final building permit.

6. The review authority may require other conditions of approval deemed necessary to protect the public health, safety, and general welfare of persons residing or working in the neighborhood.

F. Outdoor Retail Sales within Nonresidential Zones.

1. Sales of merchandise customarily sold on the premises by an established business physically located and doing business at the same location as the

temporary use. The sales of merchandise are limited to four events per calendar year per business conducting the sale, not exceeding four consecutive days per event.

2. Sales of merchandise not customarily sold on the premises, when the sales will be by an established business physically located and doing business in the city. The entity conducting the temporary sale shall dedicate all retail sales tax collected at the sale to accrue to the city. The sales are limited to four events per calendar year per business conducting the sale, not exceeding four consecutive days per event.

G. Pyrotechnics. Events proposing the use of pyrotechnics.

H. Seasonal Sales Lots. Seasonal sales lots (e.g., Halloween, Thanksgiving, Christmas, etc.) including temporary residence/security trailers on non-residentially zoned properties. However, a permit shall not be required when the sales are in conjunction with an established commercial business holding a valid city business license, or produce stands or farmer's markets; provided, the activity shall be limited to forty-five days of operation per calendar year.

I. Temporary Occupancy During Construction.

1. Major Development Projects. Temporary structures on the subject property may be used during the construction phase of an approved major development project (e.g., residential projects with five or more dwelling units or any commercial or industrial project). The structures or property may be used as offices or for the storage of equipment and/or tools, provided the temporary structures and the project itself are located within the city.

2. Minor Development Projects. An existing dwelling unit or a temporary structure on the subject property may be used during the construction phase of an approved minor development project (e.g., residential projects with four or fewer dwelling units). The structure or property may be used as a temporary residence, an office, or for the storage of equipment and/or tools.

3. Appropriate Conditions. The temporary use permit shall contain reasonable and necessary conditions regarding the following matters:

a. Required permits for the provision of sewer, gas, electricity and water services.

b. Provisions for adequate ingress and egress.

c. Provisions for the work to be performed on-site.

d. Provisions for the storage of asphalt, concrete, and dirt at designated sites within the subject property; provided, the applicant furnishes a schedule, acceptable to the community development director, for the periodic disposal or recycling of these materials.

e. Provisions designed to minimize potential conflicts between the work to be performed on-site and the ordinary business and uses conducted within the city.

f. Length of Permit. The permit may be approved for up to twelve months following the issuance of the companion building permit, or upon completion of the subject development project, whichever occurs first.

g. Condition of Site Following Completion. All temporary structures and related improvements shall be completely removed from the subject site following expiration of the temporary use permit or upon completion of the development project, whichever occurs first.

J. Temporary Real Estate Sales and/or Rental Offices. A temporary real estate sales and/or rental office may be established within the area of an approved subdivision, solely for the first sale or rental of homes or units, provided a temporary use permit has been approved for the model home complex and construction of the model homes is being diligently pursued in compliance with subsection E of this section (Model homes). An application for a temporary real estate office may be approved for a maximum of twelve months from the date of approval.

K. Temporary Work Structures/Trailers. A temporary classroom, office, or similar structure, including a manufactured or mobile unit, may be approved for a maximum of twelve months from the date of approval, as an accessory use or as the first phase of a development project provided:

1. The use is authorized by a building permit for the mobile unit or trailer, and the building permit for the permanent structure;

2. The use is appropriate because:

a. The mobile unit or trailer will be in place for a maximum of twelve months during construction or remodeling of a permanent approved commercial type structure, or upon expiration of the building permit for the permanent structure, whichever occurs first, or

b. The applicant has demonstrated that the temporary work site is a short-term necessity for a maximum of twelve months, while a permanent work site is being obtained; and

3. The mobile unit or trailer is removed before final building inspection or the issuance of a certificate of occupancy for the permanent structure.

L. Long-Term Mobile Vending Facilities. A Long-Term Mobile Vending Facility as defined in Chapter 5.68 may be approved for a maximum of twelve months from the date of approval, on private property so long as it is an ancillary use to a permitted use in the zone where the mobile vending is conducted in compliance with the following standards:

1. Setbacks. Long-term mobile vending facilities must be located at least five feet from the edge of any driveway or public sidewalk, utility boxes and vaults, accessible ramp, building entrance, exit or emergency access/exit way, or emergency call box and be located a minimum distance of 15 feet in all directions of a fire hydrant.

2. Parking Requirements. Long-term mobile vending facilities are only permitted to be parked in a designated parking space(s) on a paved surface outside any designated fire lane. The mobile vending facility and associated seating, if any, shall also be located outside any parking or loading space that is required to fulfill the minimum parking requirements for the principal use on the property, during the principal use's hours of operation.

3. Seating Requirements. All associated tables, seating, and/or shade structures shall be removed at the end of each business day and shall not be permanently erected outside of the mobile vending facilities business hours. In addition, all associated furnishings shall be maintained in a clean manner such that it does not create an unsightly appearance.

4. Utilities. Electric outlet hookups are required to be installed for long-term mobile vending facilities and must be used while the mobile vending facility is on the premises. No generators shall be utilized on-site. If extension cords, hoses or other utilities are required, they shall be safely secured and not impede any path of travel.

5. Accessibility Requirements. Long-term mobile vending facilities must operate in a manner and have access to restrooms consistent with current California Building Code (CBC) standards, which shall be provided on site and located within a maximum of 50 feet from the proposed long-term mobile vending facility parking location, unless otherwise approved by the community development director. Restrooms shall be provided, at no charge, for customer use during normal business hours and shall be continuously maintained in a clean and sanitary manner.

M. Commissary. A Commissary as defined in Chapter 5.68 may be approved for a maximum of twelve months from the date of approval, on private property so long as it is an ancillary use to a permitted use in the zone where the commissary is conducted in compliance with the following standards:

1. All associated mobile vending facilities approved to be on the site of a commissary must be directly owned or operated by the commissary.

2. Number of Mobile Vending Facilities per Commissary. No more than two mobile vending facilities may be approved through the Temporary Use Permit process for each commissary.

3. Parking Requirements. The mobile vending facility associated with the commissary is only permitted to be parked in a designated parking space(s) on a paved surface outside any designated fire lane. The mobile vending

facility and associated seating, if any, shall also be located outside any parking or loading space that is required to fulfill the minimum parking requirements for the principal use on the property, during the principal use's hours of operation.

4. County Approval. Prior to operating, a commissary shall obtain a commissary permit issued by Contra Costa County, if applicable.

~~L.~~ N. Similar Temporary Activities. A temporary activity that the community development director determines is similar to the other activities listed in this section, and compatible with the applicable zone and surrounding land uses.

§ 17.850.008 Minor temporary use permit.

Allowed temporary uses, as defined in Section 17.850.007, including annual renewals for long-term mobile vending facilities and commissaries ~~and~~ occurring entirely upon private property not zoned for residential use or on private property with an approved institutional use and located within an existing development of sufficient size to provide adequate space, circulation and parking for the anticipated attendance, as determined by the community development director, may be permitted with a minor temporary use permit for any time period less than twelve months as approved by the community development director. With the exception of annual renewals for long-term mobile vending facilities and commissaries, which must continue to follow regulations as outline in Section 17.850.007(L and M), all minor temporary use permit approvals may be permitted if the applicant can demonstrate that the following performance standards are met:

A. A minor temporary use permit application shall be completed and submitted to the community development director for approval prior to the start of the short-term activity.

B. Hours of operation are limited to seven a.m. to ten p.m. daily.

C. Adequate parking for the anticipated attendance shall be provided.

D. All trash generated by the use shall be picked up both on- and off-site at the end of each event.

E. The applicant shall obtain county health department approval and submit such documentation with the application for any food service beyond what is allowed for existing permitted businesses on-site.

F. No consumption or sales of alcohol shall be allowed as part of the event, other than as permitted within existing businesses licensed by the California Department of Alcoholic Beverage Control located within the shopping center.

G. Any amplified sound used at the event or other noise generation activities shall be subject to Chapter 9.32 (Noise Regulations) of the Brentwood Municipal Code.

H. No additional lighting is allowed.

I. Adequate provision for safety and security measures shall be provided. The applicant shall be responsible for ensuring the safety and welfare of the attendees, as determined by the chief of police or designee. The police department may close the event due to failure to satisfy conditions of the permit.

J. Prior to the event, the applicant shall provide a statement to the city stating that the organizers of the event agree to indemnify, hold harmless, and defend the city, its officers, agents and employees from any and all liability or claims that may be brought against the city arising out of its approval of the minor temporary use permit, or arising out of the operation of the use or uses allowed under the permit, save and except that caused solely by the city's active negligence.

K. The applicant shall adhere to all building and fire codes and obtain any necessary permits and inspections prior to the event.

L. The applicant shall make a good faith effort to work with city staff in addressing any concerns that arise relating to the placement or operation of the event.

§ 17.850.009 Development standards.

The community development director shall review temporary use permits based on conformance to the following standards and the type of temporary use, using the requirements of the applicable zone, and Chapter 17.820 (Design and Site Development Review) and the specific site zoning standards for guidance:

A. Provision for access, floor areas, landscaping, utilities, and other structure and property development improvements and features.

B. Measures for removal of the activity and site restoration, to ensure that no changes to the site would limit the range of possible future land uses otherwise allowed by this title.

C. Unless an alternative time period is specified in Section 17.850.007 (Allowed temporary uses), provision for a fixed period not to exceed twelve months for all temporary uses or structures. The community development director may grant time extensions, provided such time extension is clearly demonstrated as necessary, and regulate operating hours and days.

D. Provision for parking facilities, including vehicular ingress and egress.

E. Regulation of potential nuisance factors (e.g., dirt, dust, glare, light, noise, odors, smoke, and vibration).

F. Regulation of temporary structures and facilities, including buffer areas, height, location of equipment, placement, setbacks, and size.

G. Provision for sanitary facilities.

H. Provision for waste collection and disposal.

I. Provision for safety and security measures. The chief of police may close the event due to failure to satisfy conditions of the permit.

J. Regulation of signs.

§ 17.850.010 Conditions of temporary use permit approval.
Temporary use permits shall include the following conditions of approval:

A. Provision of a certificate of insurance acceptable to the city's risk manager.

B. Submission of a performance bond or other surety devices, if necessary, to ensure that any temporary facilities or structures used will be removed from the site within a reasonable time following the event and that the property will be restored to its former condition, to the satisfaction of the community development director.

C. Prior to the event, the applicant shall provide a statement to the city stating that the organizers of the event agree to indemnify, hold harmless, and defend the city, its officers, agents and employees from any and all liability or claims that may be brought against the city arising out of its approval of the minor temporary use permit, or arising out of the operation of the use or uses allowed under the permit, save and except that caused solely by the city's active negligence.

D. Each site occupied by a temporary use shall be cleaned of debris, litter, or other evidence of the temporary activity on completion or removal of the activity, and shall thereafter be used in compliance with the provisions of this title.

E. Other conditions determined by the community development director to ensure the operation of the proposed temporary use in a compatible, efficient, harmonious, nuisance-free, orderly, and safe, manner.

§ 17.850.011 Revocation.
A temporary use permit or minor temporary use permit may be revoked or modified by the community development director when it is determined that any of the following occurs:

A. That circumstances have changed so that one or more of the provisions of this chapter are not being met or complied with.

B. That the temporary use permit was obtained by misrepresentation or fraud.

C. That one or more of the conditions of approval of the temporary use permit have not been met.

D. That the use is in violation of any statute, ordinance, policy, law or regulation.

SUBJECT: Second Reading of an Ordinance Implementing a Modification to the Brentwood Municipal Code to allow Pad-Mounted Transformers within Development Projects.

DEPARTMENT: Engineering

STAFF: Allen Baquilar, Director of Engineering/City Engineer

TITLE/RECOMMENDATION

Staff recommends that the City Council waive the second reading and adopt Ordinance No. 1077 of the City Council of the City of Brentwood, approving a modification to Brentwood Municipal Code Section 16.120.120, allowing Permittees to install pad-mounted transformers within development projects in certain circumstances, while the City monitors the nationwide supply chain issues related to underground transformers.

The proposed permanent ordinance is not an action subject to the California Environmental Quality Act (CEQA), as the action has no potential for resulting in physical change to the environment. (14 Cal. Code. Regs. § 15358.) Further, adoption of the permanent ordinance is exempt under CEQA because it will not cause a change in any of the physical conditions within the area affected by the ordinances. (14 Cal. Code Regs. § 15061(b)(3).)

FISCAL IMPACT

There is no anticipated direct fiscal impact as a result of the adoption of a permanent ordinance amending BMC Section 16.120.120, to allow residential and commercial development projects that include land subdivision to receive building permits.

Should the City Council not adopt the permanent ordinance, the previously adopted interim urgency ordinance allowing Permittees to install pad-mounted transformers within development projects is set to expire on March 26, 2025.

Should the City Council not adopt the permanent ordinance there would be a fiscal impact relating to developers pausing projects resulting in a loss of fees and revenues.

BACKGROUND

The Subdivision Map Act (Government Code Section 66410, et seq.) is a California state law that authorizes local governments, such as city councils, to regulate and control the design and improvement of subdivisions of land. To carry out this power, each local government, including the City of Brentwood, passes its own subdivision ordinance, which sets out the requirements imposed on developers in exchange for the privilege of subdividing their land.

One of these requirements is found in Brentwood Municipal Code ("BMC") Section 16.120.120(A)(1), which states:

> Utility distribution facilities, including, but not limited to, electric, communication, street lighting and advanced technology systems installed in and for the purpose of supplying service to any development, shall be required to be placed underground. "Advanced technology systems" shall be defined as all necessary appurtenances, equipment and facilities required for the provision of Internet, computer, fiber optic, cable television, telephone, and other communication services within the public right-of-way and upon private property. The design, installation, inspection and testing requirements for city acceptance of such system shall meet the minimum requirements as outlined in the city of Brentwood standard plans and specifications as approved by the city engineer. The developer shall also dedicate to the city that portion of the system within the public right-of-way and shall dedicate to the property owner the portion of the system within the private property.

As written, this includes all Pacific Gas & Electric Company ("PG&E") electric transformers, which must be placed underground.

Electric distribution transformers serve an important role in converting or stepping down currents from power lines rated at 300,000 to 750,000 volts to lower voltages for consumer use, typically just 110 to 250 volts, with higher voltages for commercial and industrial use. Without transformers, residents and businesses will not be able to receive electricity.

PG&E estimates January 2028 as the earliest availability of subsurface transformers, whereas surface (pad-mounted) transformers are available within 6-9 months after PG&E approval of plans.

The design of electrical distribution systems, which includes electric transformers for residential developments, must comply with general safety, accessibility, and environmental standards as outlined by State regulations such as the California Electrical Code, Fire Code, and Building Code. PG&E is responsible for planning, designing, and engineering its service facilities using company standards for design, materials, and construction. These standards focus on safety, accessibility, voltage limits, and installation requirements rather than specific size restrictions for transformers in residential or commercial settings.

Staff has researched various other City requirements throughout the Bay Area and Southern California and was not able to find an example of another City with a size restriction on transformers.

Staff has verified the pad-mounted residential transformer dimensions found in neighboring cities have dimensions roughly 34-inches x 37-inches x 25-inches (length x width x height) which is consistent with what would be expected for residential development in Brentwood and are rated to provide between 15 kiloVolt-Amps (kVA) to 50 kVA of electricity to homes which is typical for residential development.

Based on the City Council's direction, staff is including a restriction to on pad-mounted transformers to not exceed a height of 26-inches when placed on or between residential lots.

On October 8, 2024, the City Council considered the propose ordinance. After deliberation, the City Council, with a vote of 3-1, introduced and waived the first reading of Ordinance No. 1077 with direction to staff to change the sunset date for City Engineer authority to waive the underground transformer requirement to December 31, 2025.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

The permanent ordinance is not an action subject to the California Environmental Quality Act (CEQA), as the action has no potential for resulting in physical change to the environment. (14 Cal. Code. Regs. § 15358.) Further, adoption of the permanent ordinance is exempt under CEQA because they will not cause a change in any of the physical conditions within the area affected by the ordinance. (14 Cal. Code Regs. § 15061(b)(3).)

ALTERNATIVE OPTION(S)

Alternative Options to the Staff Recommendation:

1. Do not approve staff's recommendation. The interim urgency ordinance will continue to be in effect until March 26, 2025. Thereafter or unless otherwise extended, residential and commercial builders will not be able to receive full timely approval of their joint trench plans until underground transformers are available, halting all development until supply issues are resolved, or until separate Planning Commission and City Council consideration is completed (which may not be feasible in all cases).

ATTACHMENT(S)

1. Previous Action
2. Permanent Ordinance Amending BMC Section 16.120.120

PREVIOUS ACTION

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On March 26, 2024, by Ordinance No. 1072, the City Council adopted an interim urgency ordinance authorizing the City Engineer to allow pad-mounted transformers for projects applicable to BMC Chapter 16.120.120 with additional screening requirements for residential applications.

On May 8, 2024, by Ordinance No. 1074, the City Council adopted an extension of interim urgency ordinance authorizing the City Engineer to allow pad-mounted transformers for projects applicable to BMC Chapter 16.120.120 with additional screening requirements for residential applications.

On October 8, 2024, by Ordinance No. 1077, the City Council adopted an ordinance approving a modification to the Brentwood Municipal Code Section 16.120.120, allowing Permittees to install pad-mounted transformers within development projects in certain circumstances, while the City monitors the nationwide supply chain issues related to underground transformers

ORDINANCE NO. 1077

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRENTWOOD AMENDING BRENTWOOD MUNICIPAL CODE SECTION 16.120.120 TO AUTHORIZE THE CITY ENGINEER TO WAIVE LIMITED UNDERGROUND UTILITY REQUIREMENTS, FINDING THE ACTION EXEMPT FROM CEQA, AND TERMINATING URGENCY ORDINANCE NO. 1074.

WHEREAS, the City of Brentwood ("City") presently requires development projects that include a land subdivision to install utility distribution facilities, including, but not limited to, electric, communication, street lighting and advanced technology systems installed in and for the purpose of supplying service to any development, to be placed underground as governed by Chapter 16.120.120 of the Brentwood Municipal Code ("BMC"); and

WHEREAS, according to multiple media sources, as well as developer testimonials, the construction industry is currently experiencing a severe shortage of subsurface electric distribution transformers; and

WHEREAS, the causes for this shortage are complex, and include increases in demand for such facilities due to growth in EV charger installation and the use of renewable energy sources, federal investment, storms and political events that have disrupted the global supply chain, the imposition of tariffs on foreign transformers, and the impacts of the COVID pandemic; and

WHEREAS, the lead time for the receipt of subsurface electric distribution transformers may delay the completion of construction projects by years if this requirement continues to be implemented; and

WHEREAS, the City Council of the City of Brentwood is authorized, pursuant to Article 11, Section 7 of the California Constitution, to make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws; and

WHEREAS, on March 26, 2024, the City Council adopted Urgency Ordinance No. 1072, amending Brentwood Municipal Code Section 16.120.120 to authorize the City Engineer to waive limited underground utility requirements and find the act exempt from CEQA; and

WHEREAS, on April 23, 2024, the City Council adopted Urgency Ordinance No. 1074, extending Urgency Ordinance No. 1072 for a period of an additional 10 months and 15 days; and

WHEREAS, on October 8, 2024, the City Council introduced and waived the first reading of Ordinance No. 1077 modifying Brentwood Municipal Code Section 16.120.120, allowing Permittees to install pad-mounted transformers in certain

circumstances, while the City monitors the nationwide supply chain issues for underground transformers; and

WHEREAS, the City desires to enact this ordinance in order to establish enduring requirements with respect to the placement of utilities underground or above ground.

NOW, THEREFORE, the City Council of the City of Brentwood does ordain as follows:

SECTION 1. Brentwood Municipal Code is hereby amended to read as provided in Exhibit A, attached hereto and incorporated herein. Deleted language is ~~struckthrough~~; additional language is underlined.

SECTION 2. This ordinance will be published in accordance with Government Code Section 36933 by either posting or publishing the ordinance in accordance with that law.

SECTION 3. The City Clerk is requested to cause the amended language of Brentwood Municipal Code Section 16.120.120 as quoted in Exhibit A, to be entered in the City of Brentwood Municipal Code.

SECTION 4. If any exhibit, section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, the holding will not affect the validity or enforceability of the remaining provisions, and the City Council declares that it would have adopted each provision of this ordinance irrespective of the validity of any other provision.

SECTION 5. The proposed Ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption - in that the proposed ordinance would only establish and clarify administrative processes and would not facilitate new construction or other groundbreaking activities. There is no potential to result in either a direct physical change to the environment or a reasonably foreseeable indirect physical change to the environment.

SECTION 6. This ordinance will take effect and be in force 30 days following its adoption, at which time Urgency Ordinance No. 1074 shall no longer be in effect.

THE FOREGOING ORDINANCE was introduced with the first reading waived at a regular meeting of the Brentwood City Council on the 8th day of October 2024 by the following vote:

And was adopted at a regular meeting of the Brentwood City Council on the 22nd day of October, 2024, by the following vote:

EXHIBIT 'A'

BRENTWOOD MUNICIPAL CODE

TITLE 16 ('Subdivisions and Land Development')

§ 16.120.120 Undergrounding—Electric, communication, street lighting and advanced technology systems.

A. General Provisions.

1. Utility distribution facilities, including, but not limited to, electric, communication, street lighting and advanced technology systems installed in and for the purpose of supplying service to any development, shall be required to be placed underground. "Advanced technology systems" shall be defined as all necessary appurtenances, equipment and facilities required for the provision of Internet, computer, fiber optic, cable television, telephone, and other communication services within the public right-of-way and upon private property. The design, installation, inspection and testing requirements for city acceptance of such system shall meet the minimum requirements as outlined in the city of Brentwood standard plans and specifications as approved by the city engineer. The developer shall also dedicate to the city that portion of the system within the public right-of-way and shall dedicate to the property owner the portion of the system within the private property.

2. All existing facilities except transmission facilities either along abutting streets or within a development shall also be underground at the time of development. "Along abutting streets" means on the same side of the abutting street as the property being developed, not the other side of the street.

3. The developer is responsible for complying with all requirements of this subsection, and shall make the necessary arrangements with the utility companies for the installation of such facilities.

4. The city council, following the consideration by the planning commission, may waive undergrounding requirements if unusual topographical, soil or any other unusual problems (such as prolonged supply chain delays) make such underground installations unreasonable or impractical in accordance with the following:

    a. If the requirement to underground utilities is waived, the city council may require the recordation of an improvement agreement, requiring the property owner and any subsequent owner of the subject property to join an underground utility assessment district, reimbursement district or similar improvement district, when such a district is formed, and to guarantee participation in such district by posting an improvement bond and recording a lien on subject property.

b. The affected developer or any utility company may submit information supporting a request for such waivers.

c. No waiver shall be granted in any undergrounding district previously established.

d. In the event such a waiver is granted as to a residential development, the developer shall be responsible for installing screening consisting of dense landscaping and/or wall(s) with a concrete apron meeting all PG&E requirements on at least three sides of the surface-mounted equipment and any such equipment proposed on residential lots shall not exceed 26-inches in height.

5. The City Engineer may waive undergrounding requirements as to equipment appurtenant to underground facilities (such as surface-mounted transformers, pedestal-mounted terminal boxes and meter cabinets, and concealed ducts) if unusual topographical, soil, or any other unusual problems (such as prolonged supply chain delays) make such underground installations unreasonable or impractical in accordance with the following:

a. The affected developer or any utility company may submit information supporting a request for such waiver.

b. In the event such a waiver is granted as to a residential development, the developer shall be responsible for installing screening consisting of dense landscaping and/or wall(s) with a concrete apron meeting all PG&E requirements on at least three sides of the surface-mounted equipment and any such equipment proposed on residential lots shall not exceed 26-inches in height.

c. The City Engineer's authority to waive such requirement shall sunset on December 31, 2025, unless otherwise amended by the city council.

B. Electric, Communication, Street Lighting and Advanced Technology Systems. All costs of placing existing or new facilities, required to be undergrounded by the developer, shall be paid for by the developer subject to the current California Public Utility Commission rules and regulations.

C. Advanced Technology Systems.

1. The developer shall design, install, test and dedicate to the city two advanced technology system conduits, size to be determined, within the public right-of-way. The developer shall install, in one of the conduits, a fiber optic system designed to serve the subject development for use by the city of Brentwood or one of its licensed franchisee. The fiber optic system shall be installed in accordance with the citywide advance technology master plan and approved by the city engineer. The second conduit shall remain empty and shall be reserved to serve the subject development for the use of a city licensed

franchisee not wishing to utilize the city's fiber optic system. Both conduits shall be installed to each lot line. The developer shall bear all design, construction, inspection, and testing costs associated with these underground requirements. Furthermore, the developer shall design, install, test and dedicate to the city all necessary components of the advanced technology system as depicted on the citywide advanced technology master plan.

2. The developer shall design, install, test and dedicate to the property owner two advanced technology system conduits, size to be determined, to connect the public advanced technology system to the individual home or building. The developer shall install, in one of the conduits, a fiber optic system designed to serve the subject property. The fiber optic system shall be installed in accordance with the citywide advance technology master plan and approved by the city engineer. The second conduit shall remain empty and shall be reserved to serve the subject property for the use of a city licensed franchisee not wishing to utilize the city's fiber optic system. The developer shall bear all design, construction, inspection and testing costs associated with these underground requirements.

3. The cable television or advanced technology company franchisee that elects to install facilities in the city's vacant conduit shall provide plans and specifications to the developer and the city of Brentwood. The licensed franchisee shall also inspect the facilities and certify to the city prior to final approval of the development that the cable television facilities or advanced technology systems are properly installed and serviceable. The design and installation shall meet the minimum criteria as outlined in the city of Brentwood standard plans and specifications.

   (Ord. 471 § 3, 1990; Ord. 609, 1999)

SUBJECT: Receive update and provide direction on ongoing implementation of action items from the General Plan's Conservation and Open Space Element

DEPARTMENT: Community Development

STAFF: Alexis Morris, Director of Community Development
Erik Nolthenius, Planning Manager

TITLE/RECOMMENDATION

Receive update and provide direction on implementation of action items from the General Plan's Conservation and Open Space Element that were previously identified as priorities.

FISCAL IMPACT

The FY 2024/25 – FY 2025/26 Operating Budget includes a $115,000 Strategic Plan budget for the estimated cost of implementing certain action items contained within the Conservation and Open Space Element prioritized by the City Council.

BACKGROUND

CITY COUNCIL DISCUSSION IN 2021, 2022, AND 2023

Following City Council discussion about implementation of the General Plan's Conservation and Open Space Element in October and December of 2021, staff reviewed the various action items to determine status and, for those not yet complete, prepare a preliminary estimate of the staff time and/or cost to do so.

The City Council then discussed implementation in more detail in February 2022. While that discussion touched on what actions could be implemented relatively quickly with minimal cost, there was no consensus on how to prioritize them. Rather, recognizing the significant amount of information involved, the City Council directed staff to return at a future meeting for a more detailed discussion. The majority of the City Council's discussion at that time focused on how to protect parks and open space from future development, and Council subsequently directed staff to in expedited fashion prioritize time and resources in the preparation of Measure Q and its adoption by the voters in November 2022.

In November 2023, the City Council again reviewed the action items and ultimately prioritized implementation of eight items, with four items to be implemented in the near-term (mid-2024) and the other four items to be brought back for further discussion at a later date.

ITEMS TO BE IMPLEMENTED IN THE NEAR-TERM (MID-2024)

The four action items listed below have been implemented and relate to providing additional information on the City's website, as well as incentives for using recycled water. A brief note is included at the end of each.

- *Action COS 4i: Provide a conservation page (or similar page) on the City's website that provides links to resource agencies (i.e., CDFW, USFWS, USACE, etc.) and provides information regarding local and regional conservation and environmental programs, to the extent that the City has readily available information.*

  Note: This action item is complete. The Conservation and Open Space page can be accessed here.

- *Action COS 8f: Provide a conservation page (or similar page) on the City's website that provides links to resource agencies (i.e., CARB, BAAWMD, EPA, etc.) and provides information regarding local and regional conservation and environmental programs, to the extent that the City has readily available information, including methods for pollution prevention such as reduced air pollutant and greenhouse gas emissions through use of alternative forms of transportation (i.e., bicycling, pedestrian, transit), through reducing wood-burning activities using EPA-certified wood-burning devices, etc.*

  Note: This action item is complete. The Conservation and Open Space page can be accessed here. This tool provides the public with easy links to (a) local and regional conservation and environmental programs, (b) state and federal conservation resources, and (c) environmental hazards protection resources.

- *Action COS 9f: Provide a conservation page (or similar page) on the City's website that provides links to resource agencies and provides information regarding local and regional conservation and environmental programs, to the extent that the City has readily available information, including recycling*

guidance for single family residences, businesses, and apartments, opportunities for reuse of materials, a description of how to compost, and a description of methods to reduce water use, such as appropriate reuse and recycling of water, water conservation measures, and xeriscaping.

Note: This action item is complete. The Conservation and Open Space page can be accessed here. It includes information on Brentwood programs regarding composting at home, water conservation, and recycled water, as well as links to all of the resources noted above.

- *Action COS 9d: Develop and provide incentives to developers and businesses that use reclaimed water and other non-potable water for landscaping.*

  Note: This action item is complete. An incentive is built-in given the significant cost savings compared to using potable water for landscaping. The use of recycled water is further encouraged by State regulations (AB 1572), which prohibit the use of potable water to irrigate nonfunctional turf on commercial, industrial, and institutional properties.

ITEMS TO BE BROUGHT BACK FOR FURTHER DISCUSSION

The four items listed below were identified by the City Council to be brought back for further discussion to review implementation status, with consideration given to schedule and budget. Notes are included at the end of each.

- *Action COS 3c: Develop CEQA Thresholds of Significance to assist staff, project applicants, and decision-makers in determining whether a project may have a significant effect on the environment under Section 21082.2 of the California Environmental Quality Act (CEQA).*

  Note: Work on this action item has not yet begun. It would include a collaborative effort between departments (and outside legal counsel), a significant amount of staff time, and potentially the use of a consultant to assist with preparing the thresholds. It is estimated that this effort would take several (6-9) months to complete with a cost of at least $35,000. The cost of completing this item may be adjusted if the Council decides to pursue adopting a set of City-specific VMT standards (separate item on the October 22, 2024 agenda).

- *Action COS 4f: Explore revising Title 17 (Zoning) of the Brentwood Municipal Code to include standards for creek setbacks and the protection of riparian habitat along creek corridors. The standards should include minimum setback requirements, site design standards, and requirements for the ongoing maintenance of creek and riparian habitat on public and private lands.*

  Note: The City Council recommended that this action item be included in the Focused Zoning Ordinance Update. After further consideration and analysis of the existing guidelines and resources, staff determined that although not currently incorporated into Title 17 (Zoning), the City requires substantial creek setbacks and riparian habitat protections through its participation in the East Contra Costa County Habitat Conservation Plan Association (HCPA), a Joint Powers Authority that includes the City of Brentwood. All new projects adjacent to creeks and sensitive riparian habitats are required to gain approval through the HCPA, which established a coordinated, regional approach to conservation and regulation of endangered species. Under the Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife have provided regional permits to the cities of Brentwood, Clayton, Oakley, and Pittsburg, as well as Contra Costa County.

  Staff recommends that these existing requirements simply be reaffirmed through the ongoing efforts with the Focused Zoning Code Update and the Objective Design Standards by reference. No new standards are proposed at this time, since the existing standards have already been reviewed and vetted by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife. Given the ease with which these standards would be referenced, it is estimated that no additional funding would be required and it would be completed within the next six months, concurrent with completion of the Focused Zoning Code Update and the Objective Design Standards.

- *Action COS 6b: Develop guidelines for remodels of potentially historic residential structures to ensure that the character and individuality of such residences is maintained. The guidelines should address (1) design styles, age of home, and other criteria to determine applicability of the guidelines; (2) exterior features that are important and covered by the guidelines (e.g., siding and exterior finishes, windows, doors, roofs, porches, garages, outbuildings, and streetscapes); (3) standards for modifications and renovation, including the extent of changes that can occur; and (4) activities that are exempt from*

the guidelines, such as interior improvements and routine maintenance and repair.

Note: The City Council recommended that this action item be included in the Objective Design Standards work program. After further consideration and examination of historic homes and resources within the city, staff notes that completion of this action item would be more appropriate in conjunction with any future update to the Downtown Specific Plan, or independent of it, where the majority of the historic homes and structures in the city are located. It would include a collaborative effort between departments (and outside legal counsel), a significant amount of staff time, and potentially the use of a consultant to assist with preparing the guidelines. It is estimated that this effort would take several (6-9) months to complete with a cost of at least $30,000.

CITY COUNCIL STRATEGIC INITIATIVE

Focus Area 4: Community Development:
2.a. Develop implementation plan for General Plan Conservation and Open Space policies to minimize impacts on the environment

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not applicable.

ENVIRONMENTAL DETERMINATION

Not applicable.

ALTERNATIVE OPTION(S)

None identified.

ATTACHMENT(S)

1. Previous Action

PREVIOUS ACTION

Previous actions related to this agenda item that were taken by the City Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.

- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

- On October 26, 2021, the Council discussed a future agenda item brought forward by Council Member Meyer related to implementation of the General Plan's Conservation and Open Space Element. At that time, the Council unanimously directed staff to add this item to the Strategic Plan process with an emphasis on prioritizing those actions remaining to be implemented. They also requested bringing the item back to the Council for a more in-depth discussion in February 2022, if feasible based on current workload of staff and Council.

- On December 1, 2021, the Council held a daylong workshop to discuss the Strategic Plan. At that time, staff made a comprehensive presentation with respect to, among other things, proposed goals and initiatives to be included in the Strategic Plan. One of the initiatives proposed by the Community Development Department was to "Protect Natural and Agricultural Resources." This included the development of an implementation plan for the General Plan's Conservation and Open Space Element, consistent with the direction provided on October 26, 2021 along with prioritizing remaining actions within their respective time frames and their associated cost.

- On February 22, 2022, the Council conducted a brief review of the Conservation and Open Space Element actions as part of a business item, but directed staff to return at a future meeting for a more detailed discussion.

- On November 14, 2023, the Council reviewed and discussed the action items contained within the Conservation and Open Space Element. Ultimately, the Council prioritized implementing action items COS 4i, COS 8f, COS 9f, COS 4f, COS 6b, COS 3c, and COS 9d.

SUBJECT: Planning Commission request regarding establishment of pervious surface requirements or guidelines for new projects

DEPARTMENT: Community Development

STAFF: Erik Nolthenius, Planning Manager
Alexis Morris, Director of Community Development
Allen Baquilar, Director of Engineering

TITLE/RECOMMENDATION

Provide staff direction on whether to spend time and resources on the Planning Commission's request.

FISCAL IMPACT

The fiscal impact associated with this item is approximately $15,000 and would be the responsibility of the General Fund. This includes outside legal review and assistance in preparing an update to Brentwood Municipal Code Section 14.20.050, stakeholder workshops and meetings.

BACKGROUND

On July 2, 2024, Planning Commissioner Johnson requested a future agenda item regarding the establishment of pervious surface requirements or guidelines for new projects. On August 6, 2024, Commissioner Johnson explained the request in more detail. The request stems from recent project-specific discussions about the use of pervious surfaces to satisfy stormwater treatment requirements. After taking public comment, the Planning Commission deliberated and voted unanimously to request that the City Council direct staff to study the establishment of pervious surface requirements or guidelines.

Per Brentwood Municipal Code Section 14.20.050 ('Stormwater Control Plan Required'), every application for a development project, including, but not limited to, a rezoning, tentative map, parcel map, conditional use permit, variance, site development permit, design review, or building permit that is subject to the development runoff requirements in the City's National Pollutant Discharge Elimination System (NPDES) permit must be accompanied by a stormwater control

plan that meets criteria in the most recent version of the Contra Costa Clean Water Program (CCCWP) Stormwater C.3. Guidebook.

The current version of the C.3 Guidebook requires regulated projects to meet the following goals:

- Reduce Stormwater Runoff: Minimize the quantity of stormwater runoff from new developments and redevelopment projects.
- Improve Water Quality: Ensure that stormwater is treated before it enters waterways, reducing pollutants like sediment, metals, oils, and chemicals.

The C.3 Guidebook provides a menu of low-impact design (LID) strategies aimed at maintaining or restoring the natural hydrologic functions of a site. LID design detains, treats, and infiltrates runoff by minimizing impervious area, using pervious pavements and green roofs, dispersing runoff to landscaped areas, and routing runoff to rain gardens, cisterns, swales, and other small-scale facilities distributed throughout a site.

Pervious surfaces include pervious concrete, pervious asphalt, porous pavers, and granular materials for roadways, sidewalks, or plazas that are designed to infiltrate runoff to the underlying soil rather than diverting the runoff to be treated at a bioretention basin.

The cost to install pervious surfaces are approximately three times higher than standard asphalt and concrete due to the specialized materials (such as material with void spaces) and specialized certification required to ensure proper installation.

Pervious surfaces are not recommended on certain sites. For example, they are not suggested for sites that contain clay soils due to soil expansion and contraction during wet and dry seasons, which results in a breakdown of the pervious surface. In addition, installation of pervious pavement on sloped sites requires special design features to prevent flooding/ponding at low points. Therefore, pervious surfaces would not be an available option for all projects.

Due to the specialized nature of pervious surfaces, the City Engineer has not adopted this material as an acceptable standard material within the public right of way. Pervious surfaces require specialized and more frequent maintenance and have a shorter lifespan than standard impervious surfaces which would affect the ability to adequately maintain City infrastructure without additional funding. Therefore,

residential projects that propose pervious streets have typically been required to form Homeowners' Associations for maintenance.

Lastly, with the latest update to the C.3 Guidebook on July 19, 2024, projects within Brentwood that create or replace an acre or more of impervious surface are now subject to Hydromodification Management (HM) required to control stormwater runoff intensities and durations to reduce the potential for downstream erosion of natural creeks and rivers. This typically requires projects to include on-site detention basins or underground vault systems precludes other uses, such as parks, over or within these stormwater facilities.

In summary, C.3 Guidelines encourage pervious surfaces in projects, however, it may not be the recommended LID strategy for all projects due to the specialized nature, higher cost to design, build and maintain, and site specific conditions (i.e. slope and soil). Also, with the recent requirement for HM, a basin or other detention facility would still be required for projects which would similarly limit space available that would otherwise be available due to pervious pavements for additional units, park or open space within developments.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Not Applicable.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

Do not direct staff to spend time and resources on this Planning Commission request at this time.

ATTACHMENT(S)

None.

SUBJECT: Planning Commission request regarding standards and methodology for Vehicle Miles Traveled (VMT)

DEPARTMENT: Community Development

STAFF: Erik Nolthenius, Planning Manager
Alexis Morris, Director of Community Development
Allen Baquilar, Director of Engineering

TITLE/RECOMMENDATION

Provide staff direction on whether to spend time and resources on the Planning Commission's request.

FISCAL IMPACT

The fiscal impact associated with this item is approximately $175,000 and would be the responsibility of the General Fund. This includes consultant costs, data collection, outside legal review, and stakeholder workshops and meetings. If this item moves forward, staff will bring a General Fund budget request at a later date.

BACKGROUND

At the July 2, 2024 meeting, Commissioner Brand requested a future agenda item regarding establishment of City VMT standards. At the August 6, 2024 meeting, Commissioner Brand explained the request in more detail. After taking public comment, the Planning Commission deliberated and voted unanimously to request that the City Council direct staff to proceed with further exploration of City-based methodology regarding VMT standards.

Change in CEQA Analysis

By way of background, effective July 1, 2020, the California Environmental Quality Act (CEQA) analysis of project-related transportation impacts shifted from the traditional method of delay and congestion (commonly referred to as level of service or LOS) to vehicle miles traveled (VMT). VMT is a metric that seeks to capture the total amount of vehicular travel associated with a project by estimating the number of vehicle trips generated and the length or distance of those trips. VMT is usually measured on a typical weekday, and can be expressed in several ways, such as total

VMT, total VMT per service population, home-based VMT per resident, and home-based work VMT per employee.

Senate Bill 743

This shift in analysis is a direct result of Senate Bill (SB) 743, which was signed into law in 2013 and initiated an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA. The goal was to more accurately measure the actual transportation-related impacts of any given project, as well as to promote the state's overarching goals of reducing greenhouse gas emissions and traffic-related air pollution, promote the development of a multimodal transportation system, and provide clean, efficient access to destinations.

Options to Evaluate VMT

The City has the ability to evaluate VMT on a project-by-project basis for transportation impacts, which it has done since implementation began in July 2020, utilizing methodology developed by the Contra Costa Transportation Authority (CCTA). CCTA's methodology uses the home-based VMT per capita metric for residential projects. Home-based VMT is the VMT for trips that begin and end at the residence. The recommended threshold of significance is that the project generated home-based VMT not exceed 85% of the same in the city or 85% of the existing countywide average home-based VMT per resident, whichever is less stringent.

The City also has the ability to adopt its own thresholds of significance. Pursuant to CEQA Guidelines section 15064.7, such thresholds must be adopted by ordinance, resolution, rule, or regulation. The thresholds must also be developed through a public review process, and be supported by substantial evidence.

The process for developing the City's own thresholds of significance would begin with hiring a traffic and/or environmental consultant to develop, test, and validate a methodology that could provide analysis of VMT and greenhouse gas (GHG) impacts of road travel into, out of, within and through Brentwood. Staff would work with the consultant to collect data, identify or develop VMT calculation tools, determine local thresholds of significance, identify mitigation measures (i.e. improve access to transit, adding bike lanes, reducing parking requirements). The process, which would include public & stakeholder workshops, would take approximately 8-12 months to complete.

In the absence of City-specific VMT standards, the City has been utilizing the standards set forth in the Contra Costa Transportation Authority Growth Management Program (GMP) Guidelines. Compliance with said Guidelines is required as part of

fulfillment of local jurisdictions' requirements under the GMP. According to the Guidelines, "local jurisdictions may choose to apply methods and thresholds that are more stringent than those outlined in [the Guidelines], and would still be considered to be in compliance with CCTA GMP requirements."[1]

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Not Applicable.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

Do not direct staff to spend time and resources on this Planning Commission request at this time.

ATTACHMENT(S)

None.

[1] Contra Costa Transportation Authority, *Growth Management Program Implementation Documents: Implementation Guide* (revised February 17, 2021), page 103, available online at: https://ccta.net/wp-content/uploads/2021/08/GMP_Implementation_Guide_FINAL_02172021.pdf

SUBJECT: A request from Council Member Mendoza to remove 2001 Shady Willow Lane from the list of surplus land to become a park.

DEPARTMENT: City Manager's Office

STAFF: Tim Ogden, City Manager
Amanda McVey, Interim City Clerk

TITLE/RECOMMENDATION

That the City Council consider and discuss the request from Council Member Mendoza to remove 2001 Shady Willow Lane from the list of surplus land to become a park.

FISCAL IMPACT

There is no fiscal impact associated with this agenda item.

BACKGROUND

Pursuant to Rule 4.4 (b)(2) of City Council Policy 110-1, this item has been placed on the agenda so that the City Council may discuss it and provide further direction to staff. Per Section 4.4, City Council discussion is limited to whether staff time and City resources should be spent on the item and the time period for scheduling.

On October 24, 2023, the City Council discussed 2001 Shady Willow Lane as a park estimated to cost approximately $1,000,000. No funding has been identified for the surplus land to become a park.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ATTACHMENT(S)

1. Previous Action

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On October 8, 2024, Council Member Mendoza requested removing 2001 Shady Willow Lane from the list of surplus land to become a park.

SUBJECT: A request from Council Member Mendoza requesting the City Council consider an objective design standard regarding shade ratios at new parks

DEPARTMENT: City Manager's Office

STAFF: Tim Ogden, City Manager
Amanda McVey, Interim City Clerk

TITLE/RECOMMENDATION

That the City Council consider and discuss the request from Council Member Mendoza requesting consideration of creating objective design standards in the Brentwood Municipal Code related to shade ratios in new parks.

FISCAL IMPACT

There is no fiscal impact associated with this agenda item.

BACKGROUND

Pursuant to Rule 4.4 (b)(2) of City Council Policy 110-1, this item has been placed on the agenda so that the City Council may discuss it and provide further direction to staff. Per Section 4.4, City Council discussion is limited to whether staff time and City resources should be spent on the item and the time period for scheduling.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Not Applicable.

DATE OF NOTICE

Not Applicable

ENVIRONMENTAL DETERMINATION

Not Applicable.

ATTACHMENT(S)

1. Previous Action

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On October 8, 2024, Council Member Mendoza requested a future agenda item requesting the City Council consider a design standard regarding shade ratios at new parks.

SUBJECT: A request from Council Member Mendoza requesting the City Council consider adding additional shade at existing parks

DEPARTMENT: City Manager's Office

STAFF: Tim Ogden, City Manager
Amanda McVey, Interim City Clerk

TITLE/RECOMMENDATION

That the City Council consider and discuss the request from Council Member Mendoza regarding solutions for potential shade improvements at existing parks.

FISCAL IMPACT

Direction should be provided regarding whether the shade is to come from natural landscaping, or artificial shade (sails, structures, canopy's, etc.); whether shade should be located over picnic tables, benches, play structures, or other certain areas of parks; and which parks are needing assessment for the additional shade features, all to assist in estimating fiscal impacts for consideration.

BACKGROUND

Pursuant to Rule 4.4 (b)(2) of City Council Policy 110-1, this item has been placed on the agenda so that the City Council may discuss it and provide further direction to staff. Per Section 4.4, City Council discussion is limited to whether staff time and City resources should be spent on the item and the time period for scheduling.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ATTACHMENT(S)

1. Previous Action

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On October 8, 2024, Council Member Mendoza requested a future agenda item requesting the City Council consider adding additional shade at existing parks.

SUBJECT: A request from Vice Mayor Meyer requesting the consideration of using Ag-Enterprise and/or Art Enterprise funds for John Marsh House

DEPARTMENT: City Manager's Office

STAFF: Tim Ogden, City Manager
Amanda McVey, Interim City Clerk

TITLE/RECOMMENDATION

That the City Council consider and discuss the request from Vice Mayor Meyer requesting the consideration of using Ag-Enterprise and/ or Art Enterprise funds towards the Interpretive Center at the John Marsh House.

FISCAL IMPACT

There is no fiscal impact associated with this agenda item.

BACKGROUND

Pursuant to Rule 4.4 (b)(2) of City Council Policy 110-1, this item has been placed on the agenda so that the City Council may discuss it and provide further direction to staff. Per Section 4.4, City Council discussion is limited to whether staff time and City resources should be spent on the item and the time period for scheduling.

The City Council previously considered funding this project in August 2022 and opted not to do so at the time. In 2022, the Interpretive Center was forecast to cost $234,000, and will cost more now.

CITY COUNCIL STRATEGIC INITIATIVE

Not Applicable.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ATTACHMENT(S)

1. Previous Action

ATTACHMENT "1"

Previous actions related to this agenda item that were taken by the Council are listed below. To view prior actions and materials, and Brentwood Municipal Code references in the staff report, as applicable:

- Visit www.brentwoodca.gov/meetings, and select the meeting date(s) desired to see the reference materials and videos.
- Visit www.brentwoodca.gov/municipalcode to research references to the Brentwood Municipal Code and search by the code section(s) cited.

On October 8, 2024, Vice Mayor Meyer requested a future agenda item requesting the City Council consider using Ag-Enterprise and/ or Art Enterprise funds towards the Interpretive Center at the John Marsh House.