Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit

Review Report

Delta Sand & Gravel Co.
999 Division Avenue
Eugene, Oregon 97404
Website: https://deltasg.com/

Permit No. 202119

Source Information:

Primary SIC	1442
Secondary SIC	--
Primary NAICS	212321
Secondary NAICS	--
Public Notice Category	III

Source Category (LRAPA section 37-8010 Table 1)	B.61. Rock, Concrete or Asphalt Crushing both portable and stationary 25,000 or more tons/year crushed
	C.3. All sources electing to maintain the source's netting basis.
	C.4. All sources that request a PSEL equal to or greater than the SER for a regulated pollutant

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	N
Emission credits	N
Compliance schedule	N
Source test [date(s)]	N

COMS	N
CEMS	N
CPMS	N
Ambient monitoring	N

Reporting Requirements

Annual report (due date)	Feb 15
Emission fee report (due date)	N
Semi-Annual Report (due date)	N
Greenhouse Gas Report (due date)	N

Quarterly report (due dates)	N
Monthly report (due dates)	N
Excess emissions report	Y
Other reports	N

Air Programs

NSPS (list subparts)	A, IIII
NESHAP (list subparts)	ZZZZ
40 CFR part 64 Compliance Assurance Monitoring (CAM)	N
Regional Haze (RH)	N
TACT	N
40 CFR part 68 Risk Management	N
Cleaner Air Oregon (CAO)	N
Synthetic Minor (SM)	N
SM-80	N

Title V	N
Major FHAP Source	N
Federal Major Source	N
Type A State New Source Review	N
Type B State New Source Review	N
Prevention of Significant Deterioration (PSD)	N
Nonattainment New Source Review (NNSR)	N

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Permittee Identification

1. Delta Sand & Gravel Co. (Delta or facility) owns and operates a stationary rock crushing facility located at 999 Division Avenue, Eugene Oregon. The facility began operations in 1927.

2. The facility operates under the primary Standard Industrial Classification (SIC) code of 1442 – Construction Sand and Gravel and the primary North American Industry Classification System (NAICS) code of 212321 – Construction Sand and Gravel Mining.

General Background

3. Delta owns and operates a rock mining and crushing facility.

   The facility operates six (6) rock crushers ancillary equipment. The types of rock crushers are a jaw crusher, and two (2) cone crushers, one roll crusher, two (2) impact crushers. The current jaw crusher was installed in 2016. Its rated capacity is 450 tons per hour and is powered by a constant-speed internal combustion diesel engine that came as part of the crusher. The diesel engine was manufactured in 2008 by Caterpillar and is rated at 440 hp (328 kW). There is no diesel particulate filter, and the engine was installed according to the manufacturer's emission-related instructions.

   The impact crushers are equipped with water sprayers to reduce emissions. The impact crushers are also outfitted with an air recirculation system designed to entrain dust in the processed material until water can be applied. The ancillary equipment for processing the crushed materials consists of screens, conveyors, and storage piles. The screens and conveyors are outfitted with water sprayers/sprinklers to reduce fugitive emissions.

   There is a screening plant that moves within the facility site that is powered by a constant-speed internal combustion diesel engine that was manufactured in 2017 by Cummins and is rated at 475 horsepower (455 kW). The engine was installed according to the manufacturer's emission-related instructions.

   Unpaved roads are utilized to transport mined material throughout the facility. Fugitive dust from unpaved roads is controlled by water application, chemical suppressant, and gravel application (as applicable). The facility utilizes wheel/tire wash systems and periodic street sweeping to minimize trackout onto paved public roads.

   The facility operates a gasoline dispensing facility equipped with a 6,000 gallon above-ground storage tank and approximately 37,000 gal/year throughput. Emissions are controlled through submerged filling and work practices.

Reason for Permit Action and Fee Basis

4. The permit is a renewal for an existing Standard Air Contaminant Discharge Permit (ACDP) which was issued on January 3, 2020 and was originally scheduled to expire on January 3, 2025.

Attainment Status

5. Delta is located inside the Eugene-Springfield Air Quality Management Area. The facility is located in an area that has been designated attainment/unclassified for $PM_{2.5}$, ozone (VOC), NO_2, SO_2, and Pb and a maintenance area for CO and PM_{10}. The facility is located within 100 kilometers of three (3) Class I air quality protection areas: Diamond Peak, Mount Washington and Three Sisters Wilderness areas.

Permitting History

6. LRAPA has reviewed and issued the following permitting actions to this facility since the last permit renewal:

Date(s) Approved/Valid	Permit Action Type	Description
01/03/2020-01/03/2025	Standard ACDP	Renewal
08/10/2023	Non-NSR/PSD Moderate Technical Modification	Incorporating one (1) diesel generator for the screening plant and an agency-initiated action to incorporate unpaved roads and the Jaw Crusher Engine recordkeeping and reporting requirements.
4/22/2024	Non-NSR/PSD Simple Technical Modification	Replacement of screening plant generator (EU: M-86) with new generator (EU: SCE)

Emission Unit Descriptions

7. The emission units (EU) regulated by the permit are the following:

Emission Unit	Emission Units ID	Pollution Control Device
Crushing Plant Operation with six (6) rock crushers with Ancillary Equipment – 500 ton/hour maximum	CPO	Water spray
Jaw Crusher Stationary Engine: 2008 diesel-fired Caterpillar 440 horsepower engine	JCE	None
Screening Plant Stationary Engine: 2017 diesel-fired Cummins 475 horsepower engine	SCE	None
Unpaved Roads	UPR	Water application, chemical suppressant, gravel application (as applicable) and/or track-out reduction measures
Aggregate Insignificant Activities – Gasoline Dispensing Facility (GDF)	AIA	Submerged filling and work practices

Production and Operating Limits

8. Emission Unit JCE has operating limits of 1,600 hours for any 12-consecutive calendar month period.

9. Emission Unit SCE has operating limits of 1,000 hours for any 12-consecutive calendar month period.

10. The Unpaved Roads (EU: UPR) vehicle miles traveled (VMT) is not to exceed 45,900 for any 12-consecutive calendar month period.

Emission Limitations

11. The permittee is subject to the visible emission limitations under subsection 32-010. For all emission units, no person may emit or allow to be emitted any visible emissions that equal or exceed an average of 20 percent opacity. Compliance is demonstrated through a plant survey of visible emissions using EPA Method 22 to be completed at least once a quarter. The permittee is required

to take corrective action if any visible emissions are identified and contact LRAPA or conduct an EPA Method 9 test if the visible emission cannot be eliminated.

12. The facility's two internal combustion engines (EUs: JCE and SCE) are subject to the particulate grain loading standard under section 32-015 'Particulate Emission Limitations for Sources Other Than Fuel Burning Equipment, Refuse Burning Equipment and Fugitive Emissions'. The engines do not fall under the definition of fuel burning equipment, which is defined as 'equipment, other than internal combustion engines, the principal purpose of which is to produce heat or power by indirect heat transfer'. No person may cause, suffer, allow, or permit particulate matter emissions from any air contaminant source in excess of 0.10 grains per dry standard cubic foot (dscf) for equipment installed, constructed, or modified on or after April 16, 2015.

13. LRAPA's process weight rule under section 32-045 limits non-fugitive emissions of particulate matter for specific processes as a function of the amount of material processed. The facility is not subject to this rule because particulate matter emissions from the crushing plant operation (EU: CPO), unpaved roads (EU: UPR) are fugitive emissions. The particulate matter emissions from the internal combustion engines (EUs: JCE and SCE) are not subject to this rule because liquid and gaseous fuels and combustion air are not considered part of the process weight.

14. The facility is subject to fugitive emissions requirements under section 48-015. No person may cause, suffer, allow or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne. Compliance is demonstrated through a plant survey of visible emissions using EPA Method 22 to be completed at least once a week. The permittee is required to take corrective action if any visible emissions are identified and contact LRAPA or conduct an EPA Method 9 test if the visible emission cannot be eliminated.

15. Due to repeated community complaints and LRAPA inspection observations regarding fugitive dust and trackout, LRAPA has determined that specific operational, maintenance, and work practice requirements are needed to ensure that fugitive particulate matter control equipment and emission reduction processes associated with the Crushing Plant Operation (EU: CPO), Unpaved Roads (EU: UPR), and trackout are operated at the highest reasonable efficiency and effectiveness to minimize emissions. These Operation and Maintenance requirements have been established by permit conditions. Compliance with these conditions will be demonstrated through a written Operation and Maintenance Plan (O&M Plan).

16. EU: SCE and JCE are subject to 40 CFR part 60 subpart IIII – Standard of performance for Stationary Compression Ignition Internal Combustion Engines. The permit addendum issued on April 22nd, 2024 incorrectly categorized the engine displacement of EU: SCE as 'greater than or equal to ten (10) liters per cylinder and less than 30 liters per cylinder.' The actual displacement of this engine is 'less than 10 liters per cylinder'. This correction has been incorporated into the permit renewal. All applicable standards and emission limits have been updated accordingly.

17. Aggregate Insignificant Activities (EU: AIA) gasoline dispensing facility is subject to OAR 340-244-0238, 'Gasoline Dispensing Facilities: 2' because it is equipped with a gasoline storage tank that has a capacity of 250 gallons or more, and an annual gasoline throughput less than 120,000 gallons. Requirements include work practices, no top-off, submerged fill, recordkeeping, and reporting.

Typically Achievable Control Technology (TACT)

18. LRAPA 32-008(1) requires an existing unit at a facility prior to January 1, 1994, meet TACT if the emission unit meets the following criteria: The emission unit is not already subject to emission standards for the regulated pollutant under LRAPA title 30, title 32, title 33, title 38, title 39 or title 46 at the time TACT is required; the source is required to have a permit; the emission unit has emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate or ten (10) tons per

year of any gaseous pollutant; and LRAPA determines that air pollution control devices and emission reduction processes in use for the emissions do not represent TACT and that further emission control is necessary to address documented nuisance conditions, address an increase in emissions, ensure that the source is in compliance with other applicable requirements, or to protect public health or welfare, or the environment.

18.a. The crushing plant operation (EU: CPO) and unpaved roads (EU: UPR) are subject to TACT because they each emit greater than five (5) tons per year of particulate matter. While a formal TACT determination has not been completed for EU: CPO or UPR, LRAPA has determined that the facility is likely meeting TACT for these emission units by conducting the following activities:

18.a.i. The facility must control emissions of PM from these emission units by the use of water sprayers/sprinklers. This type of control equipment is considered TACT for this industry; and

18.a.ii. The facility must prepare an Operation and Maintenance Plan for any fugitive particulate matter control equipment and emission reduction processes associated with the crushing plant operation (EU:CPO) and unpaved roads (EU:UPR).

19. Subsection 32-008(2) requires new units installed or existing emission units modified on or after January 1, 1994, meet TACT if the emission unit meets the following criteria: The emission unit is not subject to Major NSR or Type A State NSR in title 38, and applicable NSPS in title 46, or any other standard applicable to only new or modified sources in title 30, title 33, title 39, or title 46 for the regulated pollutant; the source is required to have a permit; if new, the emission unit has emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; if modified, the emission unit would have an increase in emissions of any criteria pollutant equal to or greater than one (1) ton per year; and LRAPA determines that the proposed air pollution control devices and emission reduction processes do not represent TACT.

19.a. The Caterpillar generator (EU: JCE) is not subject to TACT because it is subject to an applicable Standard of Performance for New Stationary Sources in title 46. SO_X was not evaluated because SO_X emissions were below one (1) ton.

19.b. The Cummins generator (EU: SCE) is not subject to TACT because it is subject to an applicable Standard of Performance for New Stationary Sources in title 46. SO_X was not evaluated because SO_X emissions were below one (1) ton.

19.c. Emission Unit AIA (EU: AIA), gasoline dispensing facility, is not subject to TACT because it does not have emissions of any criteria pollutant equal to or greater than one (1) ton per year.

New Source Performance Standards (NSPS)

20. The permittee is subject to 40 CFR part 60 subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because the screening plant engine (EU: SCE) and the jaw crusher engine (EU: JCE) were manufactured after the 2007 applicability date for CI ICE.

40 CFR part 60, subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4200	Applicability	Yes	None.	NA
60.4201	Emission standards	Yes	Subject to (a)	21.a & 26.a
60.4202	Emission standards	No	None.	NA

40 CFR part 60, subpart IIII Citation	Description	Applicable to Source (Yes/No)	Comments	Permit Condition
60.4203	Emission standards	No	None.	NA
60.4204	Emission standards	Yes	Subject to (b).	21 & 26
60.4205	Emission standards	No	None.	NA
60.4206	Emission standards	Yes	None.	22 and 27
60.4207	Fuel requirements	Yes	Subject to (b).	21.a.ii. & 26.a.ii.
60.4208	Other requirements	No	None.	NA
60.4209	Monitoring requirements	No	None.	NA
60.4210	Compliance requirements	No	None.	NA
60.4211	Compliance requirements	Yes	Subject to (a), (c) & (g).	23-25 & 28-30
60.4212	Testing requirements	No	None.	NA
60.4213	Test methods	No	None.	NA
60.4214	Notification, reporting, and recordkeeping	No	None.	NA
60.4215	Special requirements	No	None.	NA
60.4216	Special requirements	No	None.	NA
60.4217	Special requirements	No	None.	NA
60.4218	General provisions	No	None.	NA
60.4219	Definitions	Yes	None.	NA

21. Each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station operated by the permittee is subject to 40 CFR part 60 subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants because the capacity of the crushing plant is greater than 25 tons per hour. LRAPA has adopted and incorporated this subpart by reference for major sources only and therefore does not maintain authority to regulate the permittee under this subpart. [LRAPA 46-535(1)].

22. 40 CFR part 60 subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines is not applicable to Delta because the generator engines are not spark ignition internal combustion engines.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

23. The jaw crusher engine and the screening plant engines (EUs: JCE and SCE) are subject to 40 CFR part 63 subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines because these emission units are considered new stationary RICE under this regulation. However, under 40 CFR 63.6590(c)(1), a new or reconstructed stationary RICE at an area source of federal HAP emissions must meet the requirements of 40 CFR part 63 subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for these engines under 40 CFR part 63 subpart ZZZZ.

Plant Site Emission Limits (PSELs)

24. Provided below is a summary of the baseline emission rate (BER), netting basis, plant site emission limits, and potential to emit (PTE):

Pollutant	Baseline Emission Rate (tpy)	Netting Basis		Plant Site Emission Limits (PSEL)		PTE (tpy)
		Previous (tpy)	Proposed (tpy)	Previous PSEL (tpy)	Proposed PSEL (tpy)	
PM	60.70	60.70	60.70	74	64	63.76
PM_{10}	21.62	21.62	21.62	29	24	23.70
$PM_{2.5}$	NA	0.5	0.5	2.3	1.9	1.88
CO	NA	NA	NA	4.0	3.4	3.39
NO_X	NA	NA	NA	5.0	2.5	2.47
SO_2	NA	NA	NA	1.2	1.2	1.21
VOC	NA	NA	NA	2.9	2.6	2.63
GHG	NA	NA	NA	de minimis	de minimis	483

24.a. In accordance with LRAPA 42-0048(3), a BER for $PM_{2.5}$ was not established.

24.b. The BERs for CO, NO_X, SO_2, and VOC were not established. Though the facility was in operation in 1978, these pollutants were not evaluated at that time.

24.c. The BER for GHG was not established because the permittee did not request a PSEL for GHG between 2000 and 2010.

24.d. GHG has no proposed PSEL because the calculated GHG is below de minimis limit of 2,756 (short ton).

24.e. There are no proposed changes to the netting basis from the netting basis established in the Standard ACDP issued on August 10, 2023.

24.f. PSELs are set at the facility potential to emit in accordance with section 42-0041(3) for all pollutants.

24.g. The PSELs are federally enforceable limit on the potential to emit.

Significant Emission Rate (SER)

25. The PSEL increase over the netting basis is less than the Significant Emission Rate (SER) as defined in LRAPA title 12 for all pollutants as shown below.

Pollutant	Proposed PSEL (tpy)	PSEL Increase Over Netting Basis (tpy)	PSEL Increase Due to Utilizing Existing Baseline Period Capacity (tpy)	SER (tpy)
PM	64	3.3	0	25
PM_{10}	24	2.4	0	15
$PM_{2.5}$	1.9	1.4	0	10
CO	2.5	2.5	0	100
NO_X	2.5	2.5	0	40
SO_2	1.2	1.2	0	40
VOC	2.6	2.6	0	40
GHG	de minimis	0	0	75,000

Unassigned Emissions and Emission Reduction Credits

26. The facility has zero (0) unassigned emissions. Unassigned emissions are equal to the netting basis

minus the source's current PTE, minus any banked emission reduction credits. The facility has zero (0) tons of emission reduction credits.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

27. This facility is located in an area that is designated attainment or unclassified for all regulated pollutants other than CO and PM_{10}. For pollutants other than CO and PM_{10}, the proposed PSELs are less than the federal major source threshold for non-listed sources of 250 tons per year per regulated pollutant and are not subject to Major NSR. For CO and PM_{10}, the source is located in a maintenance area. The proposed PSELs for CO and PM_{10}, are less than the 100 tons per year threshold that determines the applicability of Major NSR.

Federal Hazardous Air Pollutants (FHAP)/Toxic Air Contaminants (TAC)

28. A major source for Federal hazardous air pollutants (HAPs) is a facility that has the potential to emit 10 or more tons per year of any single HAP or 25 or more tons per year of combined HAPs. This facility is not a major source of hazardous air pollutants. The facility's HAP emissions were evaluated, as described below, and determined to be below the de minimis level of one (1) tpy for single or aggregate HAPs.

    28.a. FHAP and TAC emissions from the crushing plant operation (EU: CPO) were evaluated using emission calculation procedures published by San Diego County Air Pollution Control District for aggregate crushers in emission factor table 'O11-C02-Crushing-Primary Material-Water Spray.'

    28.b. FHAP and TAC emissions from two internal combustion diesel engines (EUs: JCE and SCE), were evaluated using DEQ Toxics ATEI Combustion Emission Factor Search Tool with the FHAP/TAC emission factors from the '*Post-2006 Tier 2, 3, and 4 Speciated Compounds for Uncontrolled Diesel Internal Combustion Engine.'*

    28.c. FHAP and TAC emissions form the gasoline dispensing facility (EU: AIA) were evaluated using emission factors from California Air Resources Board "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013)," US EPA AP-42 Table 5.2-7., and DEQ 2018 GDF VOC Estimates, and FHAP weight percentages from EPA Speciate v.4.5.

29. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. The facility has not been notified by LRAPA and is therefore not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2023 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in rule. All FHAPs are on the list of approximately 600 toxic air contaminants. The FHAPs and toxic air contaminants listed below are based upon source testing and/or standard emission factors for the types of emission units at this facility. After the source is notified by LRAPA, Delta must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

30. Provided below is a summary of the Federal HAP and toxic air contaminant emissions:

CAS Number or DEQ ID	Pollutant	PTE (tpy)	FHAP	CAO TAC
106-99-0	1,3-Butadiene	4.65E-03	Y	Y
540-84-1	2,2,4-Trimethylpentane	2.16E-03	Y	Y
91-57-6	2-Methyl naphthalene	2.63E-04	N	Y

CAS Number or DEQ ID	Pollutant	PTE (tpy)	FHAP	CAO TAC
83-32-9	Acenaphthene	1.57E-05	Y	Y
208-96-8	Acenaphthylene	1.73E-05	Y	Y
75-07-0	Acetaldehyde	1.68E-02	Y	Y
107-02-8	Acrolein	7.25E-04	Y	Y
7429-90-5	Aluminum	4.50E-01	N	Y
7664-41-7	Ammonia	6.21E-02	N	Y
120-12-7	Anthracene	9.67E-06	N	Y
7440-36-0	Antimony	6.81E-06	Y	Y
7440-38-2	Arsenic	6.66E-04	Y	Y
7440-39-3	Barium	6.76E-03	N	Y
71-43-2	Benzene	5.98E-03	Y	Y
56-55-3	Benzo[a]anthracene	1.04E-06	Y	Y
50-32-8	Benzo[a]pyrene	3.08E-07	Y	Y
205-99-2	Benzo[b]fluoranthene	9.49E-07	Y	Y
192-97-2	Benzo[e]pyrene	7.03E-07	N	Y
191-24-2	Benzo[g,h,i]perylene	4.68E-07	Y	Y
207-08-9	Benzo[k]fluoranthene	2.79E-07	Y	Y
7440-41-7	Beryllium	3.01E-05	Y	Y
7440-43-9	Cadmium	3.17E-05	Y	Y
18540-29-9	Chromium (VI)	7.51E-06	Y	Y
218-01-9	Chrysene	1.43E-06	Y	Y
7440-48-4	Cobalt	3.30E-04	Y	Y
7440-50-8	Copper	1.12E-03	N	Y
53-70-3	Dibenzo[a,h]anthracene	2.22E-08	Y	Y
200	DPM (Filt+Cond)	3.63E-01	N	Y
100-41-4	Ethylbenzene	1.84E-03	Y	Y
206-44-0	Fluoranthene	7.92E-06	Y	Y
86-73-7	Fluorene	4.67E-05	Y	Y
50-00-0	Formaldehyde	5.81E-02	Y	Y
110-54-3	Hexane	5.78E-03	Y	Y
7647-01-0	Hydrochloric acid	3.99E-03	Y	Y
193-39-5	Indeno[1,2,3-cd]pyrene	2.29E-07	Y	Y
7439-92-1	Lead	1.51E-03	Y	Y
7439-96-5	Manganese	1.59E-02	Y	Y
7439-97-6	Mercury	3.23E-07	Y	Y
91-20-3	Naphthalene	5.64E-04	Y	Y
7440-02-0	Nickel	8.44E-04	Y	Y
198-55-0	Perylene	2.52E-08	N	Y
85-01-8	Phenanthrene	9.72E-05	Y	Y
504	Phosphorus	1.80E-04	N	Y
7782-49-2	Selenium	3.81E-05	Y	Y
7631-86-9	Silica, crystalline (respirable)	2.39E-01	N	Y
7440-22-4	Silver	1.03E-06	N	Y
7440-28-0	Thallium	5.14E-06	N	Y
108-88-3	Toluene	1.28E-02	Y	Y
1330-20-7	Xylene	6.71E-03	Y	Y
7440-66-6	Zinc	3.08E-03	N	Y

CAS Number or DEQ ID	Pollutant	PTE (tpy)	FHAP	CAO TAC
Total HAPs and TACs (tpy):			**0.14**	**1.27**

Toxic Release Inventory

31. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:

    - Cancer or other chronic human health effects;
    - Significant adverse acute human health effects; or
    - Significant adverse environmental effects.

    There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI Program is a federal program over which LRAPA has no regulatory authority.

    In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals in excess of the applicable reporting threshold for the chemical. Delta's NAICS code is 212321 – Construction Sand and Gravel Mining and therefore, the facility is not covered under TRI and the facility does not have to report any emissions to the TRI program.

Compliance History

32. The following table indicates the inspection history of this facility since 1993:

Type of Inspection	Date	Results
LRAPA – Full Compliance Evaluation	09/23/1993	No evidence of non-compliance
LRAPA – Full Compliance Evaluation	11/18/1994	No evidence of non-compliance
LRAPA – Full Compliance Evaluation	09/22/1995	No evidence of non-compliance
LRAPA – Full Compliance Evaluation	10/02/1996	No evidence of non-compliance
LRAPA – Full Compliance Evaluation	10/15/1997	No evidence of non-compliance. Trackout observed at the plant entrance.
LRAPA – Full Compliance Evaluation	09/30/1999	No evidence of non-compliance. Discussed recent complaints regarding trackout.
LRAPA – Response to Complaint	05/12/2000	Not in compliance. Facility failed to take reasonable precautions to prevent particulate matter emissions from unpaved roads and trackout. Issued NON 1906
LRAPA – Full Compliance Evaluation	09/13/2005	No evidence of non-compliance
RAPA – Response to Complaint	07/14/2016	Not in compliance. Fugitive emissions from crusher and haul roads observed. The facility modified procedures to minimize fugitive emissions.
LRAPA – Permitting Site Visit	6/14/2019	No evidence of non-compliance. Moderate trackout observed on

Type of Inspection	Date	Results
		Division Rd.

33. LRAPA has issued the following violation notices and/or taken the following enforcement actions against this facility:

33.a. On May 15, 2000 LRAPA issued Notice of Non-compliance (NON) 1906 for failure to take reasonable precautions to prevent particulate matter from becoming airborne and failure to promptly remove from paved streets, earth, or other material which does or may become airborne. No Notice of Violation (NOV) was issued, and the matter was resolved through permit conditions.

33.b. On August 3, 2000 LRAPA issued NON 1938 for failure to cover moving, open bodied trucks transporting materials likely to become airborne. NCP 00-1938 (NON 1938) was issued on September 20, 2000 in the amount of $600. The full amount was received October 18, 2000.

33.c. On October 1, 2003 LRAPA issued NON 2603 for failure to take reasonable precautions to prevent particulate matter from becoming airborne and failure to promptly remove from paved streets, earth, or other material which does or may become airborne. NCP 03-2603 (NON 2603) was issued on November 3, 2003 in the amount of $1,200. There was a request to reduce the penalty amount which was approved, and the penalty was reduced to $500. The full amount of $500 was received January 12, 2004.

33.d. On February 7, 2005 LRAPA issued NON 2753 for permit term violations. On January 11, 2005 and January 13, 2005 an LRAPA investigator documented a failure to take reasonable precautions to prevent particulate matter from becoming airborne and failure to promptly remove from paved streets, earth, or other material which does or may become airborne. NCP 05-2753 (NON 2753) was issued on March 17, 2005 in the amount of $1,200. There was a request to reduce the penalty amount, which was approved. Delta Sand and Gravel installed a wheel wash system to prevent PM trackout and the NCP penalty amount was reduced to $0. SFO 05-2753 was issued on March 29, 2006. A signed SFO was received April 3, 2006 with no further action taken.

34. Since May 2014, LRAPA has received ten (10) complaints related to this facility. Nearly all the complaints were related to fugitive dust from rock crushing, loading/hauling operations, and from trackout becoming airborne.

Source Test History

35. The facility is not required to conduct source testing nor has any source testing been performed in the past.

Recordkeeping Requirements

36. A record of the following data must be maintained for a period of at least **five (5) years** at the plant site and must be available for inspection by authorized representatives of LRAPA:

Activity	Recording Frequency
General Recordkeeping:	
PSEL calculations.	Monthly
Log of visible emission surveys and corrective actions.	Quarterly

Activity	Recording Frequency
Log of fugitive emission surveys and corrective actions.	Weekly
O&M Plan, including procedures for controlling fugitive particulate matter emissions from the Crushing Plant Operation (EU: CPO), Unpaved Roads (EU: UPR), and trackout.	Documentation
Log of inspections of fugitive particulate matter control systems.	Weekly
Log of the fugitive dust control measures that are implemented.	Daily
Log of each nuisance complaint and the resolution.	Upon receipt of complaint
Log of all planned and unplanned excess emissions.	Per occurrence
Jaw Crusher Engine (EU: JCE):	
Hours of operation.	Monthly
Manufacturer certification.	Documentation
Documentation stating that diesel fuel meets requirements.	Documentation
Operation and maintenance of the EU: JCE to achieve the emission standards for the EU: JCE entire life.	Documentation
Screening Plant Engine (EU: SCE)	
Hours of operation.	Monthly
Documentation stating that diesel fuel meets requirements.	Documentation
Manufacturer certification.	Documentation
Operation and maintenance of the EU: SCE to achieve the emission standards for the EU: SCE entire life.	Documentation
Unpaved Roads EU: UPR	
Vehicle miles traveled on Unpaved Roads.	Monthly
Aggregate Insignificant Activities – Gasoline Dispensing Facility (GDF) EU: AIA	
Operation and maintenance records of GDF equipment.	Upon occurrence
Total throughput of gasoline.	Monthly
Permanent changes made at the GDF.	Upon occurrence
Occurrence and duration of each equipment malfunction.	Upon occurrence
Actions taken during periods of equipment malfunction.	Upon occurrence
Manufacturer documentation demonstrating submerged fill tube compliance.	Documentation
Written spill clean up plan.	Documentation

Reporting Requirements

37. The facility must submit to LRAPA the following reports by the dates indicated:

Report	Reporting Period	Due Date
PSEL calculations.	Annual	February 15
Total crushed rock production.	Annual	February 15
Hours of operation for each engine (EUs: JCE and SCE).	Annual	February 15
Vehicle miles traveled on unpaved roads.	Annual	February 15

Public Notice

38. Pursuant to paragraph 37-0064(5)(a), issuance of a renewed Standard Air Contaminant Discharge Permit requires a Category III public notice according to title 31. In accordance with paragraph 31-0030(3)(c), LRAPA provided public notice of the proposed permit action and a minimum of 35 days for interested persons to submit written comments.

    The draft permit was on public notice from December 11th, 2024 to January 16th, 2025. No written comments were submitted during the public comment period. No public hearing was requested during the public comment period.

    AD/be/aa

    1/17/2025

LIST OF ABBREVIATIONS THAT MAY BE USED IN THIS REVIEW REPORT

ACDP	Air Contaminant Discharge Permit
AQMA	Air Quality Management Area
Act	Federal Clean Air Act
ASTM	American Society of Testing and Materials
Btu	British thermal unit
CAM	Compliance Assurance Monitoring
CAO	Cleaner Air Oregon
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CI	Compression Ignition
CMS	Continuous Monitoring System
CO	Carbon Monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COMS	Continuous Opacity Monitoring System
CPDS	Certified Product Data Sheet
CPMS	Continuous parameter monitoring system
DEQ	Department of Environmental Quality
dscf	Dry standard cubic feet
EF	Emission factor
EPA	US Environmental Protection Agency
EU	Emissions Unit
FCAA	Federal Clean Air Act
FHAP	Federal Hazardous Air Pollutant as defined by LRAPA title 12
ft^2	Square foot
FSA	Fuel sampling and analysis
GHG	Greenhouse Gas
gr/dscf	Grain per dry standard cubic feet (1 pound = 7000 grains)
HCFC	Halogenated Chlorofluorocarbons
ID	Identification number or label
I&M	Inspection and maintenance
LAER	Lowest Achievable Emission Rate
LRAPA	Lane Regional Air Protection Agency
MACT	Maximum Achievable Control Technology
MM	Million
MMBtu	Million British thermal units
MW	Megawatts
NA	Not applicable
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
O_2	Oxygen
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ORS	Oregon Revised Statutes
O&M	Operation and maintenance
Pb	Lead
PCD	Pollution Control Device
PM	Particulate matter
$PM_{2.5}$	Particulate matter less than 2.5 microns in size
PM_{10}	Particulate matter less than 10 microns in size
ppm	Parts per million
PSEL	Plant Site Emission Limit
psia	pounds per square inch, actual
PTE	Potential to Emit
RATA	Relative Accuracy Testing Audit
RICE	Reciprocating Internal Combustion Engine
SACC	Semi-Annual Compliance Certification
SCEMP	Surrogate Compliance Emissions Monitoring Parameter
Scf	Standard cubic foot
SER	Significant emission rate
SERP	Source emissions reduction plan
SI	Spark Ignition
SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	Sulfur dioxide
ST	Source test
TAC	Toxic air contaminant as defined by OAR 340-245-0020(56)
TACT	Typically Achievable Control Technology
TBI	To be installed
TPY	Tons per year
VE	Visible emissions
VMT	Vehicle miles traveled
VOC	Volatile organic compounds
VHAP	Volatile hazardous air pollutant
Year	A period consisting of any 12 consecutive calendar months

EMISSION DETAIL SHEETS

PLANT SITE EMISSION LIMITS										
Emission Units	PM	PM_{10}	$PM_{2.5}$	CO	NO_X	SO_2	VOC	Single HAP[6] *	Aggregate HAP *	GHG
	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	0.01932	tpy
Sand & Gravel Crushing Operation (EU: CPO)[1]	30.00	15.00	0.90	0.00	0.00	0.00	0.00	0.00E+00	1.93E-02	0.00
Jaw Crusher Engine (EU: JCE)[2]	0.12	0.12	0.12	2.03	2.31	0.72	2.31	5.81E-02	9.30E-02	483
Screening Plant Engine (EU-SCE)[3]	0.01	0.01	0.01	1.37	0.16	0.49	0.07			
Unpaved Road (EU: UPR)[4]	33.63	8.57	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aggregate Insignificant Activities - Gasoline Dispensing Facility (GDF)	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.03	0.00
Potential to Emit (PTE)	**63.76**	**23.70**	**1.88**	**3.39**	**2.47**	**1.21**	**2.63**	**0.06**	**0.14**	**483.18**
PSELs[5]	64	24	1.9	3.4	2.5	1.2	2.6	0.06	0.14	483
1. Delta S&G rock crushing operation emissions are based on a throughput of the crusher of 1,500,000 tons per year.										
2. Emission unit JCE emissions were evaluated on 1,600 hours of operation per year.										
3. Emission unit SCE emissions were evaluated on 1,000 hours of operation per year.										
4. Emission unit UPR emission were evaluated on 45,900 Vehicle Miles Traveled per year.										
5. Rounded PSELs that are reflected in the permit.										
6. The single highest HAP for the facility is Formaldehyde from the combustion of diesel in the generators.										
* HAP emissions were evaluated for emission units JCE and SCE together.										

Baseline and Netting:

Pollutant	Baseline (1)	Netting Basis		Plant Site Emission Limit (PSEL) (2)		PSEL Increase	PTE Emissions	Increase over Netting Basis	SER
		Previous	Proposed	Previous PSEL	Proposed PSEL				
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
PM	60.70	60.70	60.70	74	64.0	-10.0	63.76	3.30	25
PM_{10}	21.62	21.62	21.62	29	24.0	-5.0	23.70	2.38	15
$PM_{2.5}$	NA	0.50	0.50	2.3	1.9	-0.4	1.88	1.40	10
CO	NA	NA	NA	4.0	2.5	-1.5	3.39	NA	99
NO_X	NA	NA	NA	5.0	2.5	-3	2.47	NA	39
SO_2	NA	NA	NA	1.2	1.2	0.0	1.21	NA	39
VOC	NA	NA	NA	2.9	2.6	-0.3	2.63	NA	39
GHG	NA	NA	NA	NA	NA	NA	483	NA	75,000
1. In accordance with LRAPA 42-0048(3), a baseline emission rate for PM2.5 was not established. The baseline emission rates for CO, NOX, SO2, and VOC were not established. Though the facility was in operation in 1978, these pollutants were not evaluated at that time. The baseline meission rate for GHG was not established because the permittee did not request a PSEL for GHG between 2000 and 2010.									
2. There is no proposed PSEL for GHG because the calculated GHG is below the de minimis level of 2,756 (short ton).									

Crushing Plant Operation Calculations (EU:CPO):

Crushing Plant Operation (EU:CPO)			
Pollutant	Projected Max. Throughput (tpy)	Emission Factor[1] (lb/ton)	Annual Emissions (tons)
PM	1,500,000	0.04	30
PM_{10}	1,500,000	0.02	15
$PM_{2.5}$	1,500,000	0.0012	0.9
1. PM Emission Factors were obtained from DEQ AQ-EF06 for rock crushing opertions controlled by water spray			

Rock Crushing Operation (EU:CPO) HAP & TACs						
Projected max annual throughput:	1500000	tpy	PM EF:	0.04	lb/ton	
Compound	**CAS**	**HAP**	**TAC**	**SDC APCD EF (ppmw)**	**EF[1] (lb/ton)**	**PTE (tpy)**
Aluminum	7429-90-5	N	Y	15000	6.00E-04	4.50E-01
Arsenic	7440-38-2	Y	Y	22	8.80E-07	6.60E-04
Barium	7440-39-3	N	Y	225	9.00E-06	6.75E-03
Beryllium	7440-41-7	Y	Y	1	4.00E-08	3.00E-05
Cadmium	7440-43-9	Y	Y	1	4.00E-08	3.00E-05
Cobalt	7440-48-4	Y	Y	11	4.40E-07	3.30E-04
Copper	7440-50-8	N	Y	37	1.48E-06	1.11E-03
Lead	7439-92-1	Y	Y	50	2.00E-06	1.50E-03
Manganese	7439-96-5	Y	Y	530	2.12E-05	1.59E-02
Nickel	7440-02-0	Y	Y	28	1.12E-06	8.40E-04
Selenium	7782-49-2	Y	Y	1	4.00E-08	3.00E-05
Silica, crystalline (respirable)	7631-86-9	N	Y	7950	3.18E-04	2.39E-01
Zinc	7440-66-6	N	Y	99	3.96E-06	2.97E-03
					Total HAP:	0.01932
					Total TAC:	0.71865

1. The San Diego APCD tested for the concentration of pollutants in rocks, and listed them in terms of ppmw (part per million weight). To calculate concentration in terms of pounds, the concentration in ppmw is multiplied by 10^{-6}. That amount is then multiplied by the PM EF, to get the EF specific to that pollutant that is a

Stationary Engine Calculations (EU:JCE & SCE):

Jaw Crusher Engine (EU: JCE)		
Power of generator: Crusher diesel-fired Caterpillar 2008	440	hp-hr
	328	KW
Maximum yearly hours of operation	1,600	hrs/year
Maximum hourly diesel fuel combusted	8	gal/hr
Maximum gallons combusted per year	12,800	gal/yr

Jaw Crusher Engine (EU: JCE)					
Pollutant	**Max Design Capacity (hp-hr)**	**Emission Factors**		**Hourly Emission Rate (lbs/hr)**	**Annual Emissions (tpy)**
		Factors (1)	**Units**		
PM	440.00	3.29E-04	lb/hp-hr	0.14	**0.12**
PM_{10}	440.00	3.29E-04	lb/hp-hr	0.14	**0.12**
$PM_{2.5}$	440.00	3.29E-04	lb/hp-hr	0.14	**0.12**
SO_2	440.00	2.05E-03	lb/hp-hr	0.90	**0.72**
NO_X	440.00	6.58E-03	lb/hp-hr	2.89	**2.31**
CO	440.00	5.75E-03	lb/hp-hr	2.53	**2.03**
VOC	440.00	6.58E-03	lb/hp-hr	2.89	**2.31**

(1) Emission factors for PM, PM_{10}, $PM_{2.5}$, NO_X, VOC, and CO are based on 40 CFR 60.1039, Table 3 to Appendix I - Tier 3 Emission Standards) , and SO_2 is based on the uncontrolled diesel industrial engine factors found in EPA AP-42 Table 3.3-1. Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines. It is assumed that PM_{10} and $PM_{2.5}$ equal PM emissions

Emission Limits from 40 CFR 60.1039, Table 3 to Appendix I - Tier 3 Emission Standards. Rated Power: 130 ≤ kW ≤ 560.		
Pollutant	Emission Limit (g/kW-hr)	Emission Limit (lb/hp-hr)
PM	0.2	3.29E-04
CO	3.5	5.75E-03
NMHC + Nox	4.0	6.58E-03
Where the conversion factor from g/kw-hr to lb/hp-hr is:		
Conversion factor	1.0	1.64E-03

Screening Plant Engine (EU:SCE)		
Power of generator: Diesel-fired Cummins 2017	475	hp-hr
	455	KW
Maximum yearly hours of operation	1,000	hrs/year
Maximum hourly diesel fuel combusted	30	gal/hr
Maximum gallons combusted per year	30,000	gal/yr

Screening Plant Engine (EU:SCE)					
Pollutant	**Max Design Capacity (hp-hr)**	**Emission Factors**		**Hourly Emission Rate (lbs/hr)**	**Annual Emissions (tpy)**
		Factors [1]	**Units**		
PM	475	3.29E-05	lb/hp-hr	0.02	**0.01**
PM_{10}	475	3.29E-05	lb/hp-hr	0.02	**0.01**
$PM_{2.5}$	475	3.29E-05	lb/hp-hr	0.02	**0.01**
SO_2	475	2.05E-03	lb/hp-hr	0.97	**0.49**
NO_X	475	6.58E-04	lb/hp-hr	0.31	**0.16**
CO	475	5.75E-03	lb/hp-hr	2.73	**1.37**
VOC	475	3.12E-04	lb/hp-hr	0.15	**0.07**

(1) Emission factors for PM, PM_{10}, $PM_{2.5}$, NO_X, VOC, and CO are based on 40 CFR 1039.101 emission standards, and SO_2 are based on the uncontrolled diesel industrial engine factors found in EPA AP-42 Fifth Edition, Volume I Chapter 3: Stationary Internal Combustion Sources Table 3.3-1. Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines. It is assumed that PM_{10} and $PM_{2.5}$ equal PM emissions

40 CFR 1039.101, Table 1 Emission Limits for EU: SCE		
Pollutant	Emission Limit (g/kW-hr)	Emission Limit (lb/hp-hr)
PM	0.02	3.29E-05
CO	3.5	5.75E-03
NOx	0.4	6.58E-04
NMHC	0.19	3.12E-04
Where the conversion factor from g/kw-hr to lb/hp-hr is:		
Conversion factor	1.0	1.64E-03

<--- Table 1 of 1039.101 - Tier 4 Exhaust Emission Standards After the 2014 Model Year

Stationary Engines (EU:JCE & SCE) HAP/TAC Emissions						
Post-2006 Tier 2, 3, and 4 Speciated Compounds for Uncontrolled Diesel Internal Combustion Engine						
Compound	CAS	Emission Factor lb/M gal	Emission Rate (lb/year)	Annual Emissions Rate (tpy)	Federal HAP	CAO TAC
1,3-Butadiene	106-99-0	2.17E-01	9.30E+00	4.65E-03	Y	Y
2-Methyl naphthalene	91-57-6	1.23E-02	5.26E-01	2.63E-04	N	Y
Acenaphthene	83-32-9	7.35E-04	3.14E-02	1.57E-05	Y	Y
Acenaphthylene	208-96-8	8.10E-04	3.47E-02	1.73E-05	Y	Y
Acetaldehyde	75-07-0	7.83E-01	3.35E+01	1.68E-02	Y	Y
Acrolein	107-02-8	3.39E-02	1.45E+00	7.25E-04	Y	Y
Ammonia	7664-41-7	2.90E+00	1.24E+02	6.21E-02	N	Y
Anthracene	120-12-7	4.52E-04	1.93E-02	9.67E-06	N	Y
Antimony	7440-36-0	3.18E-04	1.36E-02	6.81E-06	Y	Y
Arsenic	7440-38-2	2.77E-04	1.18E-02	5.92E-06	Y	Y
Barium	7440-39-3	3.74E-04	1.60E-02	8.00E-06	N	Y
Benzene	71-43-2	1.86E-01	7.97E+00	3.99E-03	Y	Y
Benzo[a]anthracene	56-55-3	4.85E-05	2.08E-03	1.04E-06	Y	Y
Benzo[a]pyrene	50-32-8	1.44E-05	6.16E-04	3.08E-07	Y	Y
Benzo[b]fluoranthene	205-99-2	4.44E-05	1.90E-03	9.49E-07	Y	Y
Benzo[e]pyrene	192-97-2	3.29E-05	1.41E-03	7.03E-07	N	Y
Benzo[g,h,i]perylene	191-24-2	2.19E-05	9.36E-04	4.68E-07	Y	Y
Benzo[k]fluoranthene	207-08-9	1.31E-05	5.59E-04	2.79E-07	Y	Y
Beryllium	7440-41-7	4.77E-06	2.04E-04	1.02E-07	Y	Y
Cadmium	7440-43-9	8.08E-05	3.46E-03	1.73E-06	Y	Y
Chromium (VI)	18540-29-9	3.51E-04	1.50E-02	7.51E-06	Y	Y
Chrysene	218-01-9	6.70E-05	2.87E-03	1.43E-06	Y	Y
Cobalt	7440-48-4	1.58E-05	6.74E-04	3.37E-07	Y	Y
Copper	7440-50-8	5.02E-04	2.15E-02	1.07E-05	N	Y
Dibenzo[a,h]anthracene	53-70-3	1.04E-06	4.44E-05	2.22E-08	Y	Y
DPM (Filt+Cond)	200	1.70E+01	7.27E+02	3.63E-01	N	Y
Ethylbenzene	100-41-4	1.09E-02	4.67E-01	2.33E-04	Y	Y
Fluoranthene	206-44-0	3.70E-04	1.58E-02	7.92E-06	Y	Y
Fluorene	86-73-7	2.18E-03	9.35E-02	4.67E-05	Y	Y
Formaldehyde	50-00-0	2.71E+00	1.16E+02	5.81E-02	Y	Y
Hexane	110-54-3	2.69E-02	1.15E+00	5.76E-04	Y	Y
Hydrochloric acid	7647-01-0	1.86E-01	7.97E+00	3.99E-03	Y	Y
Indeno[1,2,3-cd]pyrene	193-39-5	1.07E-05	4.58E-04	2.29E-07	Y	Y
Lead	7439-92-1	3.64E-04	1.56E-02	7.78E-06	Y	Y
Manganese	7439-96-5	4.20E-04	1.80E-02	8.99E-06	Y	Y
Mercury	7439-97-6	1.51E-05	6.47E-04	3.23E-07	Y	Y
Naphthalene	91-20-3	2.64E-02	1.13E+00	5.64E-04	Y	Y
Nickel	7440-02-0	1.82E-04	7.80E-03	3.90E-06	Y	Y
Perylene	198-55-0	1.18E-06	5.04E-05	2.52E-08	N	Y
Phenanthrene	85-01-8	4.54E-03	1.94E-01	9.72E-05	Y	Y
Phosphorus	504	8.40E-03	3.60E-01	1.80E-04	N	Y
Selenium	7782-49-2	3.76E-04	1.61E-02	8.05E-06	Y	Y
Silver	7440-22-4	4.80E-05	2.05E-03	1.03E-06	N	Y
Thallium	7440-28-0	2.40E-04	1.03E-02	5.14E-06	N	Y
Toluene	108-88-3	1.05E-01	4.51E+00	2.26E-03	Y	Y
Xylene (mixture) including m-xylene, o-xylene, p-xylene	1330-20-7	4.24E-02	1.81E+00	9.07E-04	Y	Y
Zinc	7440-66-6	5.23E-03	2.24E-01	1.12E-04	N	Y
Annual Totals (tpy)					**0.09**	**0.52**

Unpaved Roads Calculations (EU:UPR):

Unpaved Roads (EU:UPR)			
Methodology		Empirical Equation	
Source Used		EPA AP-42. Chapter 13.2.2, Eq. 1a	
Equation		E = k(s/12)^a(W/3)^b	
Where:		a = 0.7 for PM and 0.9 for PM_{10} &$PM_{2.5}$ and b = 0.45. Both 'a' and 'b' are empirical constants	
Variable Descriptions and Calculations			
PM			
E =		Emission Factor, pounds per vehicle miles traveled (lb/VMT)	
k =	4.9	Particle size multiplier (lb/VMT), AP-42, Table 13.2.2.2	
a =	0.7	Unitless constant, AP-42, Table 13.2.2.2	
b =	0.45	Unitless constant, AP-42, Table 13.2.2.3	
s =	4.8	Silt Content of road surface material, %, AP-42, Table 13.2.2.1 - Stone quarrying and processing - Haul roads to/from pit (percent of mean)	
W =	60.25	Mean vehicle weight, tons (source supplied)	
E =	9.95	lb/VMT (PM emission factor)	
p =	150	Number of annual days with at least 0.01 inches of precipitation, unitless (AP-42 Figure 13.2.2-1)	
E(ext) =	**5.86**	EF for PM adjusted for rain days (AP-42, 13.2.2, Eq (2))	
PM10			
E =		Emission Factor, pounds per vehicle miles traveled (lb/VMT)	
k =	1.5	Particle size multiplier (lb/VMT), AP-42, Table 13.2.2.2	
a =	0.9	Unitless constant, AP-42, Table 13.2.2.2	
b =	0.45	Unitless constant, AP-42, Table 13.2.2.3	
s =	4.8	Silt Content of road surface material, %, AP-42, Table 13.2.2.1 - Stone quarrying and processing - Haul roads to/from pit (percent of mean)	
W =	60.25	Mean vehicle weight, tons (source supplied)	
E =	2.54	lb/VMT (PM_{10} emission factor)	
p =	150	Number of annual days with at least 0.01 inches of precipitation, unitless (AP-42 Figure 13.2.2-1)	
E(ext) =	**1.49**	EF for PM_{10} adjusted for rain days (AP-42, 13.2.2, Eq (2))	
PM2.5			
E =		Emission Factor, pounds per vehicle miles traveled (lb/VMT)	
k =	0.15	Particle size multiplier (lb/VMT), AP-42, Table 13.2.2.2	
a =	0.9	Unitless constant, AP-42, Table 13.2.2.2	
b =	0.45	Unitless constant, AP-42, Table 13.2.2.3	
s =	4.8	Silt Content of road surface material, %, AP-42, Table 13.2.2.1 - Stone quarrying and processing - Haul roads to/from pit (percent of mean)	
W =	60.25	Mean vehicle weight, tons (source supplied)	
E =	0.25	lb/VMT ($PM_{2.5}$ emission factor)	
p =	150	Number of annual days with at least 0.01 inches of precipitation, unitless (AP-42 Figure 13.2.2-1)	
E(ext) =	**0.149**	EF for $PM_{2.5}$ adjusted for rain days (AP-42, 13.2.2, Eq (2))	
Control %	**75**	Road watering efficiency (%)	
PM EF	**1.4655**	Emission factors with wet suppression control.	
PM_{10} EF	**0.3735**		
$PM_{2.5}$ EF	**0.0374**		
Annual Vehicle Miles Traveled, EU: UPR			
VMT	**45,900**	Total amount of vehicle miles traveled per year	
Total Annual Particulate Matter Emissions, tons ((EF x VMT)/2000 lb/ton			
PM	**33.63**	**tons per year**	
PM10	**8.57**	**tons per year**	
PM2.5	**0.86**	**tons per year**	
Silt Content of road surface material, %, AP-42, Table 13.2.2.1: Sand and gravel processing - Haul roads to/from pit (percent of mean)			

Site Haul Truck and Vehicle Miles Travel Information		
Mile traveled one way	1.5	miles
Miles traveled round trip	3.0	miles
Trips per day each Site Haul Truck makes	20	trips/day
Number of Site Haul Truck	3	Site haul trucks
Total Amount of Trips made per day	60	Total number of site haul truck trips/day
Number of Miles driven by Haul Trucks per Day	180	miles/day
Number of Miles driven by Haul Trucks per week (5 days/wk)	900	Miles/week
Total miles per year (51 weeks)	**45,900**	Miles/year
Unloaded Weight of Site Haul Truck	38	tons
Loaded Weight of Site Haul Truck	82.5	tons
Average Weight of a Site Haul Truck	**60.25**	tons

Aggregate Insignificant Activities – Gasoline Dispensing Facility (GDF) Calculations (EU:AIA):

GDF Activity - VOC Emissions (Submerged Fill Only)		
Storage Tank Size:	6,000	gal
Maximum Annual GDF Throughput:	37,000	gal/yr
Vehicles w/ ORVR[1] in Lane Co.	65	percent
Refueling - No ORVR[2]:	10.36	lbs/Mgals
Refueling - ORVR[3]:	0.21	lbs/Mgals
Source	EF (lb/Mgal)	
Tank Filling[4]	7.70	
Breathing[5]	1.00	
Adjusted Refueling	3.76	
Spillage[6]	0.61	
Hose Permeation	0.062	
Total VOC EF:	13.13	
VOC PTE (tpy)	**0.24**	

1. ORVR = Onboard Refueling Vapor Recovery
2.Refueling emission factor with no ORVR based on DEQ 2018 GDF VOC Estimates.
3. Refueling emission factor with no ORVR based on DEQ 2018 GDF VOC Estimates.
4. Tank filling emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table IV-I.
5. Breathing emission factor from US EPA AP-42, Table 5.2-7.
6. Spillage emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VI-I.
7.Hose permeation emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VII-I.

GDF Activity - HAP & TAC Emissions						
CAS	Pollutant	% by wt.[1]	EF (lbs/Mgals)	TPY	HAP	TAC
71-43-2	Benzene	0.82	0.11	0.002	Y	Y
100-41-4	Ethyl Benzene	0.66	0.09	0.002	Y	Y
110-54-3	Hexane	2.14	0.28	0.005	Y	Y
108-88-3	Toluene	4.36	0.57	0.011	Y	Y
540-84-1	2,2,4-Trimethylpentane	0.89	0.12	0.002	Y	Y
1330-20-7	Xylenes, Total	2.39	0.31	0.006	Y	Y
					Total HAP:	**0.03**
					Total TAC:	0.03

1. FHAP weight percentages based on EPA Speciate v. 4.5.

GHG Calculations:

Fuel Combustion Greenhouse Gas Calculator - Updated June 2021

This sheet calculates greenhouse gas emissions from fuel combustion.

1) Enter the combustion emission sources at the facility (e.g. "boiler 1") in the 1st column.

2) In the 2nd column, select the fuel type used in each emissions unit. If more than one fuel type was used in a single emissions unit, you must enter that same emissions unit on multiple rows and then enter the different fuel types in each row.

3) Enter the fuel quantities in the 3rd column and specify the unit of measure in the 4th column. Emissions are then calculated in metric tons of carbon dioxide equivalent ($mtCO_2e$). *See note below in red about fuel types and units.

Enter emissions information				Convert to mmBtu				Emissions (kg/mmBtu)			CO_2 Equivalent			Anthropogenic ($mtCO_2e$)			Biogenic ($mtCO_2$)
Emissions unit[1]	Fuel Type[2]	Quantity[3]	Fuel units[3]	HHV Units	HHV Unit	HHV	mmBtu	CH_4	CO_2	N_2O	CH_4	CO_2	N_2O	CH_4	CO_2	N_2O	
Crusher Generator	Distillate oil 2	12,800.00	Gallon	12,800	gallon	0.138	1,766	0	74	0	25	1	298	0.1	130.6	0.3	0
Screening Plant	Distillate oil 2	30,000.00	Gallon	30,000	gallon	0.138	4,140	0	74	0	25	1	298	0.3	306.2	0.7	0

Anthropogenic combustion emissions ($mtCO_2e$):	438.3
Biogenic combustion emissions ($mtCO_2e$):	0
Total combustion emissions ($mtCO_2e$):	**438.3**

Conversion to short tons

Anthropogenic combustion emissions:	483
Biogenic combustion emissions:	0
Total combustion emissions:	**483**