

**Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit**

Review Report
Non-NSR/PSD Moderate Technical Permit Modification

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 (OAR chapter 340 division 216-8010 Table 1)	B:61. Rock, Concrete or Asphalt Crushing both portable and stationary 25,000 or more tons/year crushed
	C.3. Source electing to maintain the netting basis

Compliance and Emissions Monitoring Requirements:

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

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)	August 15
Greenhouse Gas Report (due date)	N

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

Air Programs

NSPS (list subparts)	A, IIII
NESHAP (list subparts)	A, ZZZZ, CCCCCC
CAM	N
Regional Haze (RH)	N
Synthetic Minor (SM)	N
SM-80	N
Title V	N
Part 68 Risk Management	N
Major HAP source	N

Federal major source	N
NSR	N
PSD	N
Acid Rain	N
Clean Air Mercury Rule	N
TACT	N
>20 Megawatts	N
Cleaner Air Oregon	N

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.

General Background

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

The facility operates six (6) rock crushers with ancillary equipment which are regulated by this permit. The types of rock crushers are two (2) cone crushers, one roll crusher, two (2) impact crushers, and a jaw crusher. The 350 ton/hour impact crusher was installed in 1995. 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.

A jaw crusher was installed in 2016. The jaw crusher is rated at 450 tons per hour and is powered by a constant-speed 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 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.

Reason for Permit Action and Fee Basis

3. Delta applied for a modification to their current permit to include a 1970 Caterpillar diesel-fired reciprocating internal combustion engine (RICE) with a rated capacity of 750 horsepower used for the screening plant located in Cell 5 at the facility into the permit.
4. Agency-initiated actions:
 - 4.a. Unpaved Roads (EU: UPR) emissions were calculated and included.
 - 4.b. The Jaw Crusher Engine (EU: JCE) PSELs and recordkeeping and reporting conditions were installed into the permit.
5. This action was designated a Non-PSD/NSR Simple Technical Permit Modification based on the facility's application to include one (1) existing diesel-fired generator into the permit. LRAPA elevated the action to a Non-PSD/NSR Moderate Technical Permit Modification as part of the Agency-initiated actions that resulted in a PSEL increase.

Emission Unit Descriptions

6. 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

Emission Unit	Emission Units ID	Pollution Control Device
*Screening Plant Stationary Engine: 1970 diesel-fired Caterpillar 750 horsepower engine	M-86	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

*Emission units being added to the permit.

Production and Operating Limits

- Emission Unit (EU) M-86 newly added to the permit has operating limits of 1,000 hours per year. The Unpaved Roads (EU: UPR) vehicle miles traveled is not to exceed 45,900 for any 12-consecutive calendar month period.

General Emission Limits and Standards

- Same as current Standard ACDP issued January 3, 2020, except the addition of a condition for non-fugitive particulate matter emissions from any process must not exceed the amount shown in Section 8010 of title 32 for the process weight allocated to such a process.

Plant Site Emission Limits (PSELs)

- Provided below is a summary of the baseline emission rate, 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	16	60.70	40	75	74.58
PM ₁₀	21.62	7.9	21.62	22	30	29.51
PM _{2.5}	NA	0.5	0.5	9	3.0	3.00
CO	0	0	0	0	4.5	4.53
NO _x	0	0	0	0	14	13.94
SO ₂	0	0	0	0	1.5	1.49
VOC	0	0	0	0	3.3	3.26
GHG	0	NA	0	0	0	257

- The Baseline Emission Rates (BER) for PM and PM₁₀ were adjusted for the inclusion of unpaved roads (EU: UPR). The increase to the baseline for PM and PM₁₀ was based on 40% of the current fugitive emissions from unpaved roads. This 40% was derived from the current production of the crusher plant operation (EU: CPO) compared to the production rate in 1978. The calculated 1978 EU: UPR emissions were added to the baseline to account for the unpaved roads in 1978 in accordance with LRAPA 42-0048(6)(d).

- 9.b. The BER for PM_{2.5} was not established in accordance with LRAPA 42-0048(3).
- 9.c. The BER for CO, NO_x, SO₂ and VOC was set at zero (0) tons per year for criteria pollutants. Though the facility was in operation in 1978, these pollutants were not evaluated at that time.
- 9.d. For GHGs, these pollutants were not evaluated prior to this permitting action.
- 9.e. The proposed netting basis was based on the updated baseline for PM and PM₁₀ in accordance with LRAPA 42-0046(3)(e)(B).
- 9.f. This permit for Delta is being issued after the March 1, 2023 effective date for amended OAR 340-222-0035(2), source specific PSELs levels were set in accordance with amended OAR 340-222-0035(2) for all pollutants.
- 9.g. The PSEL is a federally enforceable limit on the potential to emit.

Significant Emission Rate (SER)

- 10. 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)	PSEL Increase Due to Modification (tpy)	SER (tpy)
PM	75	14	0	14	25
PM ₁₀	30	7.9	0	7.9	15
PM _{2.5}	3.0	2.5	0	2.5	10
CO	4.5	4.5	0	4.5	100
NO _x	14	14	0	14	40
SO ₂	1.5	1.5	0	1.5	40
VOC	3.3	3.3	0	3.3	40
GHG	0	0	0	0	75,000

- 10.a. The PM PSEL was set per LRAPA 42-0041(2) and 42-0041(4)(a).

Type A and Type B State NSR

- 11. The proposed modification did not increase the PSEL over the netting basis of any pollutant above the SER and therefore, the facility is not subject to Type A or Type B State NSR for either a nonattainment or designated area under LRAPA 38-0010(2)(d).

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

- 12. This facility is located in an area that is designated attainment or unclassified for all regulated pollutants other than CO and PM₁₀. For pollutants other than CO and PM₁₀, 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 PM₁₀, the source is located in a maintenance area. The proposed PSELs for CO and PM₁₀, are less than the 100 tons per year threshold that determines the applicability of Major NSR.

Air Quality Analysis

13. Under LRAPA 38-0270(1), a source in an attainment area for a regulated pollutant must comply with LRAPA 40-0050 and LRAPA 40-0060, as applicable, for each regulated pollutant, other than GHGs, for which emission will exceed the netting basis by the SER or more due to the proposed modification. The proposed modification has no regulated pollutant that meets this criteria.
14. The facility is also located in a maintenance area for CO and PM₁₀. As neither of these pollutants will exceed the netting basis by the SER or more due to the proposed modification, no further action is required under LRAPA 38-0260.

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

15. Delta has modified their current permit to include diesel engines, which must be assessed for FHAP and TAC emissions. LRAPA used DEQ Toxics ATEI Combustion Emission Factor Search Tool for the FHAP/TAC emission factors from the 'Pre-2006 Tier 0 and Tier 1 Diesel Internal Combustion Engines, all engine less than 750 kW' for EU: M-86 and 'Post-2006 Tier 2, 3, and 4 Diesel Internal Combustion Engines' for EU: JCE.
16. 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 2016 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.
17. The table below represents only the potential emissions of FHAPs/TACs from Delta's two (2) engines, including the combustion of diesel with limited hours of operation under this modification. The current permit has the FHAPs/TACs for the sand and gravel operation.

CAS Number or DEQ ID*	Pollutant	PTE (tpy)	FHAP	CAO TAC
106-99-0	1,3-Butadiene	2.48E-03	Yes	Yes
91-57-6	2-Methyl naphthalene	7.87E-05	No	Yes
83-32-9	Acenaphthene	4.70E-06	Yes	Yes
208-96-8	Acenaphthylene	5.18E-06	Yes	Yes
75-07-0	Acetaldehyde	8.93E-03	Yes	Yes
107-02-8	Acrolein	3.86E-04	Yes	Yes
7664-41-7	Ammonia	3.31E-02	No	Yes
120-12-7	Anthracene	2.89E-06	No	Yes
7440-36-0	Antimony	3.63E-06	Yes	Yes
7440-38-2	Arsenic	9.77E-06	Yes	Yes
7440-39-3	Barium	4.26E-06	No	Yes
56-55-3	Benzo[a]anthracene	3.11E-07	Yes	Yes
71-43-2	Benzene	1.19E-03	Yes	Yes
50-32-8	Benzo[a]pyrene	9.21E-08	Yes	Yes
205-99-2	Benzo[b]fluoranthene	2.84E-07	Yes	Yes
192-97-2	Benzo[e]pyrene	9.32E-04	No	Yes

CAS Number or DEQ ID*	Pollutant	PTE (tpy)	FHAP	CAO TAC
191-24-2	Benzo[g,h,i]perylene	1.40E-07	Yes	Yes
207-08-9	Benzo[k]fluoranthene	8.35E-08	Yes	Yes
7440-41-7	Beryllium	3.05E-08	Yes	Yes
7440-43-9	Cadmium	6.93E-07	Yes	Yes
18540-29-9	Chromium (VI)	2.27E-06	Yes	Yes
218-01-9	Chrysene	4.29E-07	Yes	Yes
7440-48-4	Cobalt	7.60E-06	Yes	Yes
7440-50-8	Copper	3.71E-06	No	Yes
53-70-3	Dibenz[a,h]anthracene	8.54E-08	Yes	Yes
200*	DPM (Filt+Cond)	1.09E-01	No	Yes
100-41-4	Ethylbenzene	1.68E-01	Yes	Yes
206-44-0	Fluoranthene	2.37E-06	Yes	Yes
86-73-7	Fluorene	1.40E-05	Yes	Yes
50-00-0	Formaldehyde	1.74E-02	Yes	Yes
110-54-3	Hexane	8.80E-03	Yes	Yes
7647-01-0	Hydrochloric acid	1.33E-03	Yes	Yes
193-39-5	Indeno[1,2,3-cd]pyrene	6.86E-08	Yes	Yes
7439-92-1	Lead	4.38E-05	Yes	Yes
7439-96-5	Manganese	1.82E-05	Yes	Yes
7439-97-6	Mercury	1.01E-05	Yes	Yes
91-20-3	Naphthalene	2.67E-04	Yes	Yes
7440-02-0	Nickel	2.07E-05	Yes	Yes
401*	PAHs (excluding Naphthalene)	1.81E-04	Yes	Yes
198-55-0	Perylene	7.54E-09	No	Yes
85-01-8	Phenanthrene	2.91E-05	Yes	Yes
504*	Phosphorus	9.58E-05	No	Yes
7782-49-2	Selenium	1.34E-05	Yes	Yes
7440-22-4	Silver	5.47E-07	No	Yes
7440-28-0	Thallium	2.74E-06	No	Yes
108-88-3	Toluene	1.20E-03	Yes	Yes
1330-20-7	Xylene (mixture) including m-xylene, o-xylene, p-xylene	4.83E-04	Yes	Yes
7440-66-6	Zinc	5.96E-05	No	Yes
Total HAPs and TACs (tpy)			0.21	0.35

*DEQ ID number

New Source Performance Standards (NSPS)

18. 40 CFR part 60 subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is applicable to Delta because the one (1) generator engine (EU: JCE) was manufactured after the 2007 applicability date for CI ICE.
19. 40 CFR part 60 subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines is not applicable to Delta because none of the generator engines are a spark ignition internal combustion engine.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

20. 40 CFR part 63 subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines is applicable to one (1) of Delta's generator

engines. Emission Unit M-86 meets the applicability of 40 CFR 63.6585(a) and (c) and 63.6590(a)(1)(iii).

Toxic Release Inventory

21. 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

22. The review report for the renewal issued on January 3, 2020, contains the current compliance history for the facility. No enforcement actions have been taken since the permit was renewed.

Performance Testing

23. Delta must performance test the screening plant engine (EU: M-86) within 180 days after the issuance of this ACDP addendum. The engine (EU: M-86) must be tested for CO. The generator must meet the CO emission limitations in 40 CFR part 63 subpart ZZZZ Table 2d – *Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions*, of either limiting the concentration of CO from the exhaust to 23 ppmvd at 15% O₂ or reducing CO emissions by 70 percent or more.

Notification Requirements

24. Delta must submit a Notification of Intent at least 60 days prior to conducting a performance test in accordance with 40 CFR 63.6645(a), (g), and (h).

Recordkeeping Requirements

25. All recordkeeping in the permit issued January 3, 2020 will remain the same.
26. Jaw Crusher Engine (EU: JCE) required recordkeeping:
- 26.a. Hours of operation per month;
 - 26.b. Maintain manufacturer's certification;
 - 26.c. The diesel fuel sulfur content, and the cetane index or aromatic content; and
 - 26.d. Documentation of the operation and maintenance of the engine according to manufacturer's recommendations.

27. Screening Plant Engine (EU: M-86) required recordkeeping:
 - 27.a. Hours of operation per month;
 - 27.b. Copies of notifications including source test plans and source test results; and
 - 27.c. Records demonstrating continuous compliance with emission and operating limitations.
28. Unpaved Roads (EU: UPR)
 - 28.a. Vehicle miles traveled per month;
 - 28.b. Visible emissions survey logs per month; and
 - 28.c. Corrective action taken during any visual survey, as applicable.
29. The facility must maintain logs of all written or telephone complaints.

Reporting Requirements

30. The facility must submit to LRAPA the following reports by the dates indicated in the permit:
 - 30.a. Annual Reporting:
 - 30.a.i. PSEL calculations;
 - 30.a.ii. Total crushed rock production;
 - 30.a.iii. Hours of operation for each engine, EUs: JCE and M-86; and
 - 30.a.iv. Vehicle miles traveled on unpaved roads.
 - 30.b. Semi-Annual and Annual Reporting:
 - 30.b.i. Compliance reports in accordance with 40 CFR part 63 subpart ZZZZ for EU: M-86.
 - 30.c. Upon occurrence:
 - 30.c.i. Source test plan submitted at least 60 days prior to performance test; and
 - 30.c.ii. Source test results no later than 60 days after the performance test.

Public Notice

31. Pursuant to LRAPA 37-0066(4)(b)(B), issuance of a modified Standard Air Contaminant Discharge Permit with an increase in emissions requires LRAPA to provide 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 Thursday, June 29, 2023 at 8:00AM to Wednesday, August 2, 2023 at 5:00PM. No comments were received.

BE/RR
8/10/2023

Abbreviations, Acronyms, and Definitions

ACDP	Air Contaminant Discharge Permit	NA	Not applicable
AIE	Aggregate Insignificant Emissions	NESHAP	National Emissions Standards for Hazardous Air Pollutants
Agency	Lane Regional Air Protection Agency	NO _x	Nitrogen oxides
ASTM	American Society for Testing and Materials	NSPS	New Source Performance Standard
AQMA	Air Quality Maintenance Area	NSR	New Source Review
Calendar year	The 12-month period beginning January 1 st and ending December 31 st	O ₂	Oxygen
CFR	Code of Federal Regulations	OAR	Oregon Administrative Rules
CEMS	Continuous emissions Monitoring system	ORS	Oregon Revised Statutes
CI	Compression ignition	O&M	Operation and Maintenance
CMS	Continuous Monitoring System	Pb	Lead
CPMS	Continuous parameter Monitoring system	PCD	Pollution control device
CO	Carbon monoxide	PIR	Paved Industrial Roads
DEQ	Oregon Department of Environmental Quality	PM	Particulate matter
dscf	dry standard cubic foot	PM ₁₀	Particulate matter less than 10 microns in size
EPA	US Environmental Protection Agency	PM _{2.5}	Particulate matter less than 2.5 microns in size
FCAA	Federal Clean Air Act	ppmv	Part per million by volume
gal	gallon(s)	PSD	Prevention of Significant Deterioration
GDF	Gasoline dispensing facility	PSEL	Plant Site Emission Limit
GEN	Generator engine	PTE	Potential to Emit
gr/dscf	Grains per dry standard cubic foot	RACT	Reasonable Available Control Technology
HAP	Hazardous Air Pollutant as defined by LRAPA title 44	RICE	Reciprocating Internal Combustion Engine
HP	Horsepower	scf	Standard cubic foot
ICE	Internal combustion engine	SER	Significant Emission Rate
I&M	Inspection and maintenance	SIC	Standard Industrial Code
kW	kilowatt	SIP	State Implementation Plan
lb	pound(s)	SO ₂	Sulfur dioxide
LFG	Landfill Gas	Special Control Area	As defined in LRAPA title 29
LRAPA	Lane Regional Air Protection Agency	TRS	Total Reduced Sulfur
MMBtu	Million British thermal units	THC	Total Hydrocarbon
MMcf	Million cubic feet	UPR	Unpaved Roads
		VE	Visible emissions
		VOC	Volatile organic compound
		Year	A period consisting of any 12-consecutive calendar months

PLANT SITE EMISSION LIMITS										
Emission Units	PM	PM ₁₀	PM _{2.5}	CO	NO _x	SO ₂	VOC	Single HAP *	Aggregate HAP *	GHG
	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Sand & Gravel Crushing Operation (EU: CPO) ⁽¹⁾	40.00	20.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jaw Crusher Engine (EU: JCE) ⁽²⁾	0.12	0.12	0.12	2.03	2.31	0.72	2.31	2.18E-03	7.03E-03	257
M-86 Engine (EU: M-86) ⁽³⁾	0.83	0.83	0.83	2.51	11.63	0.77	0.94			
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
Potential to Emit (PTE)	74.58	29.51	3.00	4.53	13.94	1.49	3.26	0.0022	0.01	257
PSELS ⁽⁵⁾	75	30	3.0	4.5	14	1.5	3.3	0.00	0.00	257

(1) The Sand & Gravel Crushing Operation emissions are based on a throughput of the crusher of 2,000,000 tons per year.

(2) Emission unit ICE emissions were evaluated on 1,600 hours of operation per year.

(3) Emission unit M-86 emissions were evaluated on 1,000 hours of operation per year.

(4) Emission unit UPR emissions were evaluated on 45,900 Vehicle Miles Traveled per year.

(5) Rounded PSELS that are reflected in the permit.

* HAP emissions were evaluated for emission units JCE and M-86 together and it was demonstrated that the HAP emissions for a single or aggregate HAP were below de minimis.

Delta Sand & Gravel, Co.
 Expiration Date: January 3, 2025
 Modified Date: August 10, 2023

Review Report
 Permit No. 202119
 Page 12 of 20

Information Relied upon for Unpaved Roads: EU – UPR (Current)

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

Unpaved Roads Emission Calculations: EU – UPR (Current)

Unpaved Roads: EU - UPR (Current)			
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))	
PM ₁₀			
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))	
PM _{2.5}			
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	
PM ₁₀	8.57	tons per year	
PM _{2.5}	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)			

Information Relied upon for Unpaved Roads: EU – UPR (1978)

*** Percentage 1978 rock crushing production divided by current rock crushing production	0.40	40%
To determine what the emissions for Unpaved Roads in 1978, I used the baseline for PM of 15.9 tpy and divided by the current PM PSEL of 40 tpy to get the comparative percent and utilized the percent (40%) for the amount of for Vehicle Miles Traveled for 1978 (See Delta S&G Rock Crushing Emission Details		

1978: Site Haul Truck and Vehicle Miles Travel Information		
Mile traveled one way	1.5	miles
Miles traveled round trip	3.0	miles
Each truck makes	20	trips
Trucks at site making trips	3	trucks
Amount of trips made my truck	60	truck trips
Total miles	180	miles/day
Total Miles per week (6 days/wk)	900	Miles/week
Total miles per year (51 weeks)	45900	Miles/year
1978 Estimated at 40% ***	18,360	1978 Miles/year
Unloaded weight of trucks	38	tons
Loaded weight of trucks	82.5	tons
Average weight of trucks	60.25	tons

Unpaved Roads Emission Calculations: EU – UPR (1978)

1978: 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 PM10 & PM2.5 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
W =	60.25	Mean vehicle weight, tons (source supplied)
E =	8.29	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.) =	4.88	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
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
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))
1978 Estimated Annual Vehicle Miles Traveled, EU: UPR		
VMT	18,360	
Total Annual Particulate Matter Emissions, tons ((EF x VMT)/2000 lb/ton)		
PM	44.80	tons per year
PM10	13.72	tons per year
PM2.5	1.37	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).		
There was no control % calculated into the emissions because the facility at the time was not required to have water unpaved roads.		

Jaw Crusher Engine Calculations (EU: JCE)

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, PM₁₀, PM_{2.5}, NO_x, VOC, and CO are based on 40 CFR part 60 subpart IIII emission standards, and SO₂ 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 PM₁₀ and PM_{2.5} equal PM

40 CFR part 60 subpart IIII Emission Limits for EU: JCE		
Pollutant	Emission Limit	Emission Limit
	(g/kW-hr)	(lb/hp-hr)
PM	0.2	3.29E-04
CO	3.5	5.75E-03
NMHC + NO _x	4.0	6.58E-03
Where the conversion factor from g/kw-hr to lb/hp-hr is		
Conversion fac	1.0	1.64E-03

Screening Plant Stationary Engine Calculations (EU: M-86)

SCREENING PLANT STATIONARY ENGINE					
Horsepower of generator: M-86 diesel-fired Caterpillar 1970	750	hp-hr			
Delta's Maximum yearly hours of operation	1,000	hrs/year			
Maximum hourly diesel fuel combusted	10	gal/hr			
Maximum gallons combusted per year	10,000	gal/yr			
SCREENING PLANT ENGINE					
Pollutant	Max Design Capacity (hp-hr)	Emission Factors		Hourly Emission Rate (lbs/hr)	Annual Emissions (tpy) ⁽²⁾
		Factors ⁽¹⁾	Units		
PM	750.00	2.20E-03	lb/hp-hr	1.65	0.83
PM ₁₀	750.00	2.20E-03	lb/hp-hr	1.65	0.83
PM _{2.5}	750.00	2.20E-03	lb/hp-hr	1.65	0.83
SO ₂	750.00	2.05E-03	lb/hp-hr	1.54	0.77
NO _x	750.00	3.10E-02	lb/hp-hr	23.25	11.63
CO	750.00	6.68E-03	lb/hp-hr	5.01	2.51
VOC	750.00	2.51E-03	lb/hp-hr	1.88	0.94
Emission factors are based for an uncontrolled diesel industrial engine factors found in EPA AP-42 Table 3.3-1. Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines.					

FHAP and TAC Calculations for All Diesel Engines (EUs: JCE and M-86)

TAC	HAP	Compound	CAS	Annual Emissions for EU: JCE (tpy)	Annual Emissions for EU: M-86 (tpy)	Total for all Engines (tpy)
TAC	HAP	1,3-Butadiene	106-99-0	1.39E-03	1.09E-03	2.48E-03
TAC		2-Methyl naphthalene	91-57-6	7.87E-05		7.87E-05
TAC	HAP	Acenaphthene	83-32-9	4.70E-06		4.70E-06
TAC	HAP	Acenaphthylene	208-96-8	5.18E-06		5.18E-06
TAC	HAP	Acetaldehyde	75-07-0	5.01E-03	3.92E-03	8.93E-03
TAC	HAP	Acrolein	107-02-8	2.17E-04	1.70E-04	3.86E-04
TAC		Ammonia	7664-41-7	1.86E-02	1.45E-02	3.31E-02
TAC		Anthracene	120-12-7	2.89E-06		2.89E-06
TAC	HAP	Antimony	7440-36-0	2.04E-06	1.59E-06	3.63E-06
TAC	HAP	Arsenic	7440-38-2	1.77E-06	8.00E-06	9.77E-06
TAC		Barium	7440-39-3	2.39E-06	1.87E-06	4.26E-06
TAC	HAP	Benzo[a]anthracene	56-55-3	3.11E-07		3.11E-07
TAC	HAP	Benzene	71-43-2	1.19E-03		1.19E-03
TAC	HAP	Benzo[a]pyrene	50-32-8	9.21E-08		9.21E-08
TAC	HAP	Benzo[b]fluoranthene	205-99-2	2.84E-07		2.84E-07
TAC		Benzo[e]pyrene	192-97-2	2.10E-07	9.32E-04	9.32E-04
TAC	HAP	Benzo[g,h,i]perylene	191-24-2	1.40E-07		1.40E-07
TAC	HAP	Benzo[k]fluoranthene	207-08-9	8.35E-08		8.35E-08
TAC	HAP	Beryllium	7440-41-7	3.05E-08		3.05E-08
TAC	HAP	Cadmium	7440-43-9	5.17E-07	1.76E-07	6.93E-07
TAC	HAP	Chromium (VI)	18540-29-9	2.25E-06	2.39E-08	2.27E-06
TAC	HAP	Chrysene	218-01-9	4.29E-07		4.29E-07
TAC	HAP	Cobalt	7440-48-4	1.01E-07	7.50E-06	7.60E-06
TAC		Copper	7440-50-8	3.21E-06	5.00E-07	3.71E-06
TAC	HAP	Dibenzo[a,h]anthracene	53-70-3	6.64E-09	7.88E-08	8.54E-08
TAC		DPM (Filt+Cond)	200	1.09E-01	2.05E-05	1.09E-01
TAC	HAP	Ethylbenzene	100-41-4	6.98E-05	1.68E-01	1.68E-01
TAC	HAP	Fluoranthene	206-44-0	2.37E-06		2.37E-06
TAC	HAP	Fluorene	86-73-7	1.40E-05		1.40E-05
TAC	HAP	Formaldehyde	50-00-0	1.74E-02	5.45E-05	1.74E-02
TAC	HAP	Hexane	110-54-3	1.72E-04	8.63E-03	8.80E-03
TAC	HAP	Hydrochloric acid	7647-01-0	1.19E-03	1.35E-04	1.33E-03
TAC	HAP	Indeno[1,2,3-cd]pyrene	193-39-5	6.86E-08		6.86E-08
TAC	HAP	Lead	7439-92-1	2.33E-06	4.15E-05	4.38E-05
TAC	HAP	Manganese	7439-96-5	2.69E-06	1.55E-05	1.82E-05
TAC	HAP	Mercury	7439-97-6	9.67E-08	1.00E-05	1.01E-05
TAC	HAP	Naphthalene	91-20-3	1.69E-04	9.85E-05	2.67E-04
TAC	HAP	Nickel	7440-02-0	1.17E-06	1.95E-05	2.07E-05
TAC	HAP	PAHs (excluding Naphthalene)	401		1.81E-04	1.81E-04
TAC		Perylene	198-55-0	7.54E-09		7.54E-09
TAC	HAP	Phenanthrene	85-01-8	2.91E-05		2.91E-05

TAC	HAP	Compound	CAS	Annual Emissions for EU: JCE (tpy)	Annual Emissions for EU: M-86	Total for all Engines (tpy)
TAC		Phosphorus	504	5.38E-05	4.20E-05	9.58E-05
TAC	HAP	Selenium	7782-49-2	2.41E-06	1.10E-05	1.34E-05
TAC		Silver	7440-22-4	3.07E-07	2.40E-07	5.47E-07
TAC		Thallium	7440-28-0	1.54E-06	1.20E-06	2.74E-06
TAC	HAP	Toluene	108-88-3	6.75E-04	5.27E-04	1.20E-03
TAC	HAP	Xylene (mixture) including m-xylene, o-xylene, p- xylene	1330-20-7	2.71E-04	2.12E-04	4.83E-04
TAC		Zinc	7440-66-6	3.34E-05	2.61E-05	5.96E-05
					Total TAC	0.35
					Total HAP	0.21

Greenhouse Gas Calculations

[illegible]

Use the following formula to calculate a HHV for woodwaste on a wet basis:

$$HHVW = (100 - MV100) * 17.48$$

Where HHV_w = wet basis HHV, M = moisture content (percent)
17.48 is the HHV on a dry basis.

Use this new HHV to replace the default HHV in the calculator above once the "wood/woodwaste" fuel type is selected.

Anthropogenic combustion emissions (mtCO ₂ e)	233.5
Biogenic combustion emissions (mtCO ₂ e)	0
Total combustion emissions (mtCO₂e):	233.5

Conversion to short tons

Conversion to short tons	
Anthropogenic combustion emissions:	257
Biogenic combustion emissions	0
Total combustion emissions:	257

Lane Regional Air Protection Agency
 Standard Air Contaminant Discharge Permit

REVIEW REPORT

Delta Sand and Gravel Co.

999 Division Avenue
 Eugene, Oregon 97404
 Website: <http://www.deltasg.com>

Permit No. 202119

Source Information:

SIC	1442 - Stationary Rock Crushing	Source Categories (LRAPA Title 37, Table 1)	B. 61 - Rock, Concrete or Asphalt Crushing both portable and stationary 25,000 or more tons/year crushed C. 3 - Source electing to maintain the netting basis
NAICS	212321 - Construction Sand and Gravel Mining	Public Notice Category	II

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	n	Source test [date(s)]	n
Emission credits	n	COMS	n
Special Conditions	y	CEMS	n
Compliance schedule	n	Ambient monitoring	n

Reporting Requirements:

Annual report (due date)	Feb 15	Excess emissions report	y
NSPS Report (due date)	n	Other reports	n
Monthly report (due dates)	n		

Air Programs:

NSPS (list subparts)	IIII (4I)
NESHAP (list subparts)	CCCCC (6C), ZZZZ (4Z)
CAM	n
Regional Haze (RH)	n
Synthetic Minor (SM)	n
Part 68 Risk Management	n
Title V	n
ACDP (SIP)	n
New Source Review (NSR)	n
Prevention of Significant Deterioration (PSD)	n
Acid Rain	n
Clean Air Mercury Rule (CAMR)	n
TACT	y

Permitting Action

1. The permit is a renewal for an existing Air Contaminant Discharge Permit (ACDP) which was issued on October 26, 2012 and was originally scheduled to expire on October 26, 2017. The existing permit remains valid until the proposed permit is issued because the facility submitted a timely and complete application for renewal.

The facility indicated in their 2017 renewal application that no changes have been made to the facility since the last renewal.

Other Permits

2. Delta Sand and Gravel has a GDF (Gasoline Dispensing Facility) registration with LRAPA due to a gasoline throughput of less than 10,000 gallons per month.

Attainment Status

3. The facility is located in a maintenance area for CO and PM₁₀. The area is in attainment for all other criteria pollutants.
4. The facility is not located within 100 km of a Class I area.

General Background Information

5. Delta Sand and Gravel operates a stationary rock crushing facility.

The facility operates six (6) rock crushers with ancillary equipment which are regulated by this permit. The types of rock crushers are two cone crushers, one roll crusher, two impact crushers, and a jaw crusher. The 350 ton/hour impact crusher was installed in 1995. 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.

A jaw crusher was installed in 2016. The jaw crusher is powered by a constant-speed 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 the manufacturer's emission-related instructions.

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.

Fugitive emissions arise from material handling and material hauling. Fugitive emissions from the haul road are reduced through watering of the roads and a wheel washing station.

With the exception of the power provided by the one (1) diesel engine to the 2016 jaw crusher, electrical power for the facility is from transmissions lines.

The emission units regulated by the permit are the following:

Emission Unit (EU)	Pollution Controls
Five (6) Rock Crushers with Ancillary Equipment – 500 tons/hour max.	Water spray and trackout reduction measures
Stationary CI Engine – attached to Jaw Crusher	
Aggregate Insignificant Activities – Gasoline Dispensing Facility (GDF)	Submerged filling and work practices

6. In 2006, the facility requested a 72 acre expansion to provide a new source of aggregate adequate for cement. The request was opposed by the “Concerned Santa Clara Residents” and was denied by the City of Eugene. Modeling was done by LRAPA in November 2006 to determine the effects of a change in the haul road location. The modeling data suggested a decrease in emissions from the current route. The existing haul road produced the highest emissions. The proposed road is partially built. A copy of the modeling report is included in the facility file.

Reasons for Permit Issuance

7. The facility is listed in LRAPA Title 37, Table 1, Part B and therefore is required to have an ACDP. This is an existing facility applying for a renewal of it's ACDP. Lane Regional Air Protection Agency (LRAPA) has determined that the facility must obtain a Standard ACDP for the following reasons: The facility's requested PSEL is greater than the SER (Significant Emission Rate) for one or more regulated pollutants; and to maintain the facility's netting basis (LRAPA 37-0025(6)(a)(A)).

Compliance History

8. The facility was inspected on the following dates:

Date Inspected	Results
09/23/1993	In Compliance
11/18/1994	In Compliance
09/22/1995	In Compliance
10/02/1996	In Compliance
10/15/1997	In Compliance
09/30/1999	In Compliance
05/12/2000	Issued NON 1906
09/13/2005	In Compliance
07/14/2016	Not in Compliance – Fugitive Emissions: The facility modified procedures to minimize fugitive emissions.

9. During the prior permit period there were five (5), complaints recorded for this facility. The majority of the complaints were about fugitive dust. The source of the dust complaints were from gravel crushing, loading/hauling operations, and from track-out becoming airborne. No enforcement actions have been taken since the last permit renewal.

10. The following enforcement actions have been taken against this facility:

On May 15, 2000 LRAPA issued **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) issued, matter resolved through permit conditions.

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.

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.

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.

Aggregate Insignificant Activity – Gasoline Dispensing Facility (GDF)

11. The facility has one above-ground gasoline storage tank with a 6,000 gallon capacity. The monthly throughput is less than 10,000 gallons. This emission unit is subject to the applicable requirements of LRAPA's emission standards for Gasoline Dispensing Facilities [LRAPA 44-170 through 44-280] and is also subject to the applicable federal requirements of 40 CFR 63 Subpart CCCCCC (6C).

Because this storage tank has a capacity of more than 250 gallons, the facility must comply with the work practices requirements and the submerged fill requirements in LRAPA 44-230. The facility is not subject to the vapor balancing requirements in LRAPA 44-240 because the throughput is below the thresholds in LRAPA 44-190(4).

Plant Site Emission Limits (PSELs) Information

12.

Annual Plant Site Emission Limits (PSELs)
 (tons per year)

Pollutant	Baseline Emission Rate	Netting Basis		Plant Site Emission Limit (PSEL)			Increase over Netting Basis	SER
	(ton/yr)	Previous (ton/yr)	Proposed (ton/yr)	Previous (ton/yr)	Proposed (ton/yr)	Change (ton/yr)	(ton/yr)	(ton/yr)
PM	15.9	15.9	16	40	40	0	24	25
PM ₁₀	7.9	7.9	7.9	22	22	0	14.1	15
PM _{2.5}	NA	0.5	0.5	9.5	9	-0.5	9	10

- a. The proposed PSELs are derived by adding the generic PSEL level to the netting basis except for PM_{2.5}. The Potential to Emit (PTE) for PM_{2.5} is less than the 10 ton/yr SER so the PSEL for PM_{2.5} was lowered to the Generic PSEL level. A math error was discovered in the previous PM PSEL listed in the previous review report. The PM PSEL was adjusted downwards in the review report to correct the error and to match the value listed in the permit. The PM netting basis was rounded to the nearest whole ton since its value is over 10 tons/year.
- b. PSELs for CO, NO_x, SO₂, VOCs, HAPs, and GHGs are not included in this permit since emissions of these pollutants are less than the respective de minimis emission rates.
- c. The PM_{2.5} PSEL and netting basis was established as part of the previous permit renewal.
- d. Detailed emission calculations are attached to this review report.
- e. The PSEL is a federally enforceable limit on the potential to emit.
- f. Recordkeeping of the parameters listed in Condition 21 of the permit will be used to ensure compliance with the PSELs.

Significant Emission Rate (SER)

13. Additional permit requirements may be triggered if the PSEL increase over the Netting Basis is greater than the SER. The proposed PSEL minus the Netting Basis is less than the SER for each pollutant, thus no further air quality analysis is required.

Criteria Pollutants

14. A major source is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. This facility is not a major source of criteria pollutant emissions.

Hazardous Air Pollutants (HAPs)/Toxic Air Contaminants

15. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source 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 2016 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in rule. All 187 hazardous air pollutants are on the list of approximately 600 toxic air contaminants. The hazardous air pollutants and toxic air contaminants listed below were reported by the source in 2016 and verified by LRAPA. After the source is notified by LRAPA, they 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.

16. A major source for 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. Provided below is a summary of the HAP and toxic air contaminant emissions:

Hazardous Air Pollutant/Toxic Air Contaminants	Potential to Emit (pounds/year)
*Silica, crystalline (respirable)	1800
*Aluminum	270
Manganese	9.54
*Barium	4.1
*Zinc	1.78
Lead	0.9
*Copper and copper compounds	0.67
Chromium trioxide	0.5
Nickel	0.5
Arsenic	0.4
Cobalt	0.2
Beryllium	0.02
Cadmium	0.02
Selenium	0.02
Total	2,089

*Indicates toxic air contaminants reported that are not hazardous air pollutants.

NESHAPS Applicability

17. The facility is subject to 40 CFR 63 Subpart CCCCCC (6C) because the facility is an area source of HAPs and is registered as a GDF (Gasoline Dispensing Facility) with a monthly throughput of less than 10,000 gallons of gasoline.

The facility is required to keep records of the gasoline throughput and report gallons used annually.

The facility is an area source of HAPs since it does not have the potential to emit above the major source thresholds for HAPs.

18. The facility is subject to 40 CFR 63 Subpart ZZZZ (4Z) because the facility operates a stationary RICE (Reciprocating Internal Combustion Engine). However, the conditions of 40 CFR 63 Subpart ZZZZ are met by meeting the requirements of 40 CFR 60 Subpart IIII, and the facility is

subject to the NSPS, 40 CFR 60 Subpart IIII. Therefore, no further requirements apply to the facility under 40 CFR 63 Subpart ZZZZ.

NSPS Applicability

19. The standards, monitoring, and testing requirements of 40 CFR Part 60, Subpart OOO are not applicable to the facility because the facility is not a major source. LRAPA adopted the Nonmetallic Mineral Processing Plant NSPS (Subpart OOO) by reference for major sources only (LRAPA Title 46-535-(3)-qqq).
20. 40 CFR Part 60, Subpart UUU is not applicable to the facility because there are no operations of any of the affected equipment at the plant site (e.g. dryers or calciners).
21. The facility is subject 40 CFR 60 Subpart IIII (4I) because it operates a stationary compression ignition (CI) engine. The CI engine is a continuous speed engine that came as part of the jaw crusher and is not equipped with a diesel particulate filter.

TACT Applicability

22. The facility is required to meet Typically Available Control Technology since emissions of PM are greater than five (5) tons per year. While a formal TACT determination has not been completed, LRAPA has determined the facility is likely meeting TACT by conducting the following activities: [LRAPA 32-008]
 - a. Emissions of PM from this facility will be controlled by the use of water sprayers/sprinklers. This type of control equipment is considered TACT for this industry; and
 - b. Preventive maintenance will be required for the control equipment as a means to assure effective performance; and
 - c. A fugitive dust control program is required for the yard and haul roads.

Process Weight Limit

23. LRAPA's process weight rule limits non-fugitive emissions of particulate matter for specific processes as a function of the amount of material processed. All off the emissions from this facility are fugitive emissions and are not subject to the process weight rule. [LRAPA 32-045, and LRAPA 32-8010]

Source Testing

24. There have been no source tests required, nor performed at this facility. The use of emission factors is allowed because there is no established reference method to test for fugitive particulate emissions

Record Keeping and Reporting

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

Parameter or Activity	Recording Frequency
Total crushed rock production (tons)	Monthly
Log of the fugitive dust control measures that are implemented	Daily
A description of inspections and maintenance to air contaminant control systems	Upon occurrence
Water sprayer/sprinkler system inspection	Monthly
Gasoline storage tank throughput (gallons)	Monthly

26. The facility is required to submit an annual report by **February 15th** each year to include the information identified in Condition 22 of the permit.

Additional Limitations

27. The permit includes the visible emissions standards in LRAPA 32-010(3), the particulate grain-loading standard in LRAPA 32-015(2)(b)(B), the fugitive dust emission requirements in LRAPA 48-015, and the highest and best requirement of LRAPA 32-005. Following the Fugitive Dust Control Program, and the O&M Plan should assure compliance with the grain-loading, visible emissions, and fugitive dust limits and requirements.

Public Notice

28. The draft permit was on public notice from November 22, 2019 to December 26, 2019. No written comments were submitted during the 35-day comment period.

Cnc/cmw
01/03/20

Delta Sand and Gravel Emission Details

Rock Crushers with Ancillary Equipment				
Pollutant	Projected Max. Throughput (ton/yr)	Emission Factor (lbs PM/ton)	Conversion Factor (tons/lb)	Annual Emissions (tons)
PM	2,000,000	0.04	0.0005	40
PM ₁₀	2,000,000	0.02	0.0005	20
PM _{2.5}	2,000,000	0.0012	0.0005	1.2

PM Emission Factors were obtained from DEQ AQ-EF06 for rock crushing operations controlled by water spray
 Projected Annual Emissions = Projected Maximum Throughput x Emission Factor x Conversion Factor.

1978 Baseline and Netting Basis				
Pollutant	Projected Max. Throughput (ton/yr)	Emission Factor (lbs PM/ton)	Conversion Factor (tons/lb)	Annual Emissions (tons)
PM	792,795	0.04	0.0005	15.9
PM ₁₀	792,795	0.02	0.0005	7.9

PM Emission Factors were obtained from DEQ AQ-EF06 for rock crushing operations controlled by water spray

PM _{2.5} Netting Basis	
PM ₁₀ Revised Netting Basis	7.9
PM _{2.5} Fraction	0.06
PM _{2.5} Netting Basis	0.5
PM _{2.5} PSEL	9.0

PM_{2.5} Fraction = (EF/EF)

PM_{2.5} Netting Basis = Netting Basis x Fraction

PM_{2.5} PTE is less than the 10 ton/yr SER so the Generic PSEL is used for PM_{2.5}.