



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit ADP 24-3620
Air Discharge Permit Application L-738**

Issued: January 24, 2024

Lakeside Industries - Portable RAP Crusher

SWCAA ID - 2794

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ABBREVIATIONS*List of Acronyms*

ADP	Air Discharge Permit	PSD	Prevention of Significant Deterioration
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	RCW	Revised Code of Washington
BACT	Best available control technology	SCC	Source Classification Code
CAS#	Chemical Abstracts Service registry number	SDS	Safety Data Sheet
CFR	Code of Federal Regulations	SQER	Small Quantity Emission Rate listed in WAC 173-460
EPA	U.S. Environmental Protection Agency	Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
EU	Emission Unit	SWCAA	Southwest Clean Air Agency
mfr	Manufacturer	T-BACT	Best Available Control Technology for toxic air pollutants
NOV	Notice of Violation/	WAC	Washington Administrative Code
NSPS	New Source Performance Standard		

List of Units and Measures

µg/m ³	Micrograms per cubic meter	ppmvd	Parts per million by volume, dry
acfm	Actual cubic foot per minute	psig	Pounds per square inch, gauge
gpm	Gallon per minute	rpm	Revolution per minute
gr/dscf	Grain per dry standard cubic foot	tph	Ton per hour
ppm	Parts per million	tpy	Tons per year
ppmv	Parts per million by volume		

List of Chemical Symbols, Formulas, and Pollutants

CO	Carbon monoxide	PM ₁₀	PM with an aerodynamic diameter 10 µm or less
CO ₂	Carbon dioxide	PM _{2.5}	PM with an aerodynamic diameter 2.5 µm or less
CO _{2e}	Carbon dioxide equivalent	SO ₂	Sulfur dioxide
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act	SO _x	Sulfur oxides
NO ₂	Nitrogen dioxide	TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
NO _x	Nitrogen oxides	VOC	Volatile organic compound
O ₂	Oxygen		
O ₃	Ozone		
PM	Particulate Matter with an aerodynamic diameter 100 µm or less		

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name: Lakeside Industries, Inc.
Applicant Address: PO Box 7016, Issaquah, Washington 98027

Facility Name: Lakeside Industries – Portable RAP Crusher
Facility Address: 500 Tennant Way, Longview, Washington 98632 (*initial location*)

SWCAA Identification: 2794

Contact Person: Amanda Neice, Environmental Engineer

Primary Process: RAP Recycling Operation
SIC/NAICS Code: 1429 / Crushed and Broken Stone
212319 / Other Crushed and Broken Stone Mining and Quarrying

Facility Classification: Natural Minor

2. FACILITY DESCRIPTION

This facility is a portable aggregate crushing plant configured with one aggregate crusher, one two-deck aggregate screen, and associated material conveyors. Lakeside Industries (Lakeside) operates the plant to process recycled asphalt. The plant is portable and used as needed to process material at various Lakeside facilities.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number L-738 (ADP Application L-738) dated October 31, 2023. Lakeside submitted ADP Application L-738 requesting approval of the following:

- One Astec impact crusher.
- One Astec 2-deck aggregate screen.
- Bulk material conveyors.

The current permitting action provides approval for a new portable aggregate crushing plant as proposed in ADP Application L-738. This is the initial permitting action for this facility.

4. PROCESS DESCRIPTION

- 4.a. Aggregate Crushing - Portable (*new*). Portable aggregate crushing equipment will be used to crush and screen primarily recycled asphalt from paving projects. Crushing operations will take place at multiple locations. Raw material is fed to the crushing unit using front-end loaders. Oversized material is returned to the crusher via conveyor. Sized material is transferred via conveyor belt to onsite storage piles. High pressure spray nozzles are used to control fugitive dust emissions at the entrance of the crusher. Other emission points are watered as necessary to control fugitive dust emissions. Wet suppression (sprinklers and hose sprays) are used to control fugitive emissions from associated haul roads and storage piles.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a. Aggregate Crusher – Astec (new). This unit is a horizontal impact crusher. This unit is integral to a closed circuit crushing plant. Wet suppression systems are used to control dust emissions at the inlet of the crusher and as necessary at the finished product delivery belt.

Make / Model: Astec / CS4250CC (s/n 420960)
 Year Built: 2023
 Capacity: 200 tph
 NSPS Applicable: OOO
 Location: Varies (portable)

- 5.b. Aggregate Screen - Astec (new). This unit is a 2-deck vibratory aggregate screen. This unit is integral to a closed circuit crushing plant. Wet suppression systems are used as necessary to control dust emissions from the screen and associated material handling points.

Make / Model: Astec / CS4250CC (s/n 420960)
 Year Built: 2023
 Capacity: 200 tph
 NSPS Applicable: OOO
 Location: Varies (portable)

- 5.c. Haul Roads and Storage Piles (new). Vehicle traffic and material handling operations generate fugitive dust emissions. Haul roads may be paved and/or unpaved depending on the location at which the facility is operating. Fugitive emissions from storage piles and haul roads are minimized with the use of low pressure wet suppression.

- 5.d. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Rock Crusher (Astec – Impact)	High pressure spray system, Wet Suppression
2	Aggregate Screen (Astec – Two deck)	Wet Suppression
3	Haul Roads and Storage Piles	Wet Suppression

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from the portable aggregate crushing plant proposed in ADP Application L-738 consist of particulate matter (PM).

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

- (a) Continuous emissions monitoring system (CEMS) data;
- (b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
- (c) Source emissions test data (other test method); and
- (d) Emission factors or methodology provided in this TSD.

- 6.a. Rock Crushing and Screening (new). Potential emissions from aggregate crushing operations are calculated based on a maximum material throughput of 500,000 tpy and applicable emission factors. Except for primary crushing, all emission factors for rock crushing are 'controlled' emission factors from the 8/04 version of EPA AP-42, Table 11.19.2-2. Emission factors for tertiary crushing have been used as an upper limit for secondary crushing as suggested in the 8/04 version of the table.

Emission factors for primary crushing are derived from the 1/95 version of EPA AP-42, Table 11.19.2-2 which only provided an 'uncontrolled' PM emission factor for primary crushing. An 'uncontrolled' PM₁₀ emission factor was calculated using a PM to PM₁₀ ratio of 2.1:1 as specified in the 1/95 table footnotes. An 'uncontrolled' PM_{2.5} emission factor was calculated using a PM to PM_{2.5} ratio of 12:1 as cited for tertiary crushing in the 8/04 table. A control efficiency of 80% (wet suppression) was applied to produce 'controlled' emission factors.

Annual emissions from aggregate crushing operations will be calculated based on actual material throughput using the same methodology.

Total Emissions:	PM	1.17 tpy
	PM ₁₀	0.43 tpy
	PM _{2.5}	0.07 tpy

Activity	Throughput (tpy)	Pollutant	Emission Factor - Controlled (lb/ton)	Turn Points	Emissions (tpy)
Primary crushing	500,000	PM	0.00014		0.035
		PM ₁₀	0.000067		0.017
		PM _{2.5}	0.000012		0.003
Secondary crushing	500,000	PM	0.0012		0.300
		PM ₁₀	0.00054		0.135
		PM _{2.5}	0.0001		0.025
Tertiary crushing		PM	0.0012		0.000
		PM ₁₀	0.00054		0.000
		PM _{2.5}	0.0001		0.000
Screening	500,000	PM	0.0022		0.550
		PM ₁₀	0.00074		0.185
		PM _{2.5}	0.00005		0.013
Loading/conveying	500,000	PM	0.00014	8	0.280
		PM ₁₀	0.000046		0.092
		PM _{2.5}	0.000013		0.026

- 6.b. Haul Roads (new). Potential emissions from unpaved haul roads are calculated based on an average truck weight of 33 tons, an average silt content of 4.8%, an average round trip distance of 0.5 miles, and the emission equation from EPA AP-42, Section 13.2.2 (11/06). The use of wet suppression is assumed to provide an overall control efficiency of 80% for fugitive dust emissions. Average truck weight represents an empty truck weight of 26,000 pounds and a 40,000 pound load of aggregate. The 4.8% silt content is the average silt content listed for sand and gravel plant processing roads in AP-42 Table 13.2.2.1 (11/06).

7. REGULATIONS AND EMISSION STANDARDS

Regulations that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the regulations, codes, or requirements listed below.

- 7.a. Title 40 Code of Federal Regulations Part 60 (40 CFR 60) Subpart OOO "Standards of Performance for Nonmetallic Mineral Processing Plants" establishes opacity and particulate matter emission limits for stationary (fixed) plants with capacities greater than 25 tons per hour and portable plants greater than 150 tons per hour that were constructed, reconstructed or modified after August 31, 1983. More stringent requirements apply to affected facilities constructed, reconstructed or modified on or after April 22, 2008. This subpart is applicable to the proposed rock crushing plant.
- 7.b. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.
- 7.c. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an Air Discharge Permit for installation and establishment of an air contaminant source.
- 7.d. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.
- 7.e. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM₁₀, PM_{2.5}, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.
- 7.f. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust.
- 7.g. SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.
- 7.h. SWCAA 400-109 "Air Discharge Permit Applications" requires that an Air Discharge Permit application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an Air Discharge Permit application to request such changes. An Air Discharge Permit must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits.
- 7.i. SWCAA 400-110 "New Source Review" requires that SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.
- 7.j. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source shall be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
 - (2) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;

- (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
- (4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determinations

- 8.a. BACT Determination – Aggregate Crushing and Screening. The use of high pressure wet suppression systems, including spray or fog nozzles operating at a minimum pressure of 80 psig, has been determined to meet the requirements of BACT for the proposed crushing and screening equipment. Because there are other wet suppression systems (e.g., sonic fogging systems) that utilize a lower water pressure but provide equivalent or superior levels of emission control, the permit will allow for wet suppression systems reviewed and approved by SWCAA that provide equivalent or superior control of particulate matter emissions.
- 8.b. BACT Determination – Fugitive Dust. The use of wet suppression has been determined to meet the requirements of BACT for fugitive dust emissions from storage piles, material transfer points, and haul roads at this facility.

Other Determinations

- 8.c. Prevention of Significant Deterioration (PSD) Applicability Determination. The potential to emit of this facility is less than applicable PSD applicability thresholds. Likewise, this permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.
- 8.d. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

- 9.a. Toxic Air Pollutant Review. This facility does not emit quantifiable amounts of TAPs. Toxic air pollutant impacts are presumed to be below regulatory significance.

Conclusions

- 9.b. Operation of a portable aggregate crushing plant, as proposed in ADP Application L-738, will not cause the ambient air quality requirements of Title 40 Code of Federal Regulations (CFR) Part 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.c. Operation of a portable aggregate crushing plant, as proposed in ADP Application L-738, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.d. Operation of a portable aggregate crushing plant, as proposed in ADP Application L-738, will not cause a violation of emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 24-3620 in response to ADP Application L-738. ADP 24-3620 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP Application L-738. Permit requirements established by this action are intended to implement BACT, minimize emissions, and assure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the maximum potential emissions calculated in Section 6 of this Technical Support Document.
- 10.b. Monitoring and Recordkeeping Requirements. ADP 24-3620 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements. Specific monitoring requirements are established for material throughput, spray system inspection, and haul road usage.
- 10.c. Reporting Requirements. ADP 24-3620 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for material throughput and haul road usage. Reports are to be submitted on an annual basis.
- 10.d. Rock Crushing Equipment. Permit requirements for the proposed rock crushing equipment are consistent with the operating scheme and material data submitted by the applicant. Visible emission limits have been established consistent with proper operation of the proposed equipment and wet suppression systems. High pressure spray systems (≥ 80 psig) have been determined to be a minimum BACT requirement for individual rock crushers.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

- 11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

The applicant did not identify any start-up and shutdown periods during which affected equipment is not capable of achieving continuous compliance with applicable technology determinations or approval conditions. To SWCAA's knowledge, this facility can comply with all applicable standards during startup and shutdown.

- 11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the permit requirements.
- 11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the permit requirements.

12. EMISSION MONITORING AND TESTING

- 12.a. Emission Testing Requirements – Rock Crushing Equipment. Affected rock crushers and associated screening equipment and belt conveyors are required to perform one-time opacity observations as required by 40 CFR 60 Subpart OOO. All of the crushing and screening equipment addressed by this permitting action is subject to the initial testing requirements of 40 CFR 60 Subpart OOO.

13. FACILITY HISTORY

- 13.a. Previous Permitting Actions. SWCAA has not previously issued any Permits for this facility.
- 13.b. Compliance History. A search of source records on file at SWCAA did not identify any outstanding compliance issues at this facility.

14. PUBLIC INVOLVEMENT OPPORTUNITY

- 14.a. Public Notice for ADP Application L-738. Public notice for ADP Application L-738 was published on the SWCAA internet website for a minimum of (15) days beginning on November 14, 2023.
- 14.b. Public/Applicant Comment for ADP Application L-738. SWCAA did not receive specific comments, a comment period request or any other inquiry from the public regarding this ADP application. Therefore no public comment period was provided for this permitting action.
- 14.c. State Environmental Policy Act. A complete SEPA checklist was submitted by Lakeside Industries - Portable RAP Crusher in conjunction with ADP Application L-738. After reviewing the checklist, SWCAA has made a Determination of Nonsignificance (SWCAA 24-001) concurrent with issuance of ADP 24-3620.