



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit ADP 24-3647
Air Discharge Permit Application CO-1096**

Issued: June 5, 2024

Lakeside Industries - Pelletizing Plant

SWCAA ID - 2803

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. Facility Identification	1
2. Facility Description	1
3. Current Permitting Action	1
4. Process Description	1
5. Equipment/Activity Identification	2
6. Emissions Determination	3
7. Regulations and Emission Standards	5
8. RACT/BACT/BART/LAER/PSD/CAM Determinations	6
9. Ambient Impact Analysis	6
10. Discussion of Approval Conditions	7
11. Start-up and Shutdown Provisions/Alternative Operating Scenarios/Pollution Prevention	7
12. Emission Monitoring and Testing	8
13. Facility History	8
14. Public Involvement Opportunity	8

ABBREVIATIONS*List of Acronyms*

ADP	Air Discharge Permit	NSPS	New Source Performance Standard
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	PSD	Prevention of Significant Deterioration
ASIL	Acceptable Source Impact Level	RACT	Reasonably Available Control Technology
BACT	Best available control technology	RCW	Revised Code of Washington
CAM	Compliance Assurance Monitoring	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
NESHAP	National Emission Standards for Hazardous Air Pollutants	T-BACT	Best Available Control Technology for toxic air pollutants
NOV	Notice of Violation/	WAC	Washington Administrative Code

List of Units and Measures

µg/m ³	Micrograms per cubic meter	ppm	Parts per million
µm	Micrometer (10 ⁻⁶ meter)	ppmv	Parts per million by volume
acfm	Actual cubic foot per minute	ppmv _d	Parts per million by volume, dry
lb/hr	Pounds per hour	ppmw	Parts per million by weight
lb/dy	Pounds per day	scfm	Standard cubic foot per minute
dscfm	Dry Standard cubic foot per minute	tph	Tons per hour
gr/dscf	Grain per dry standard cubic foot	tpy	Tons per year
kW	Kilowatt		
MMBtu	Million British thermal unit		

List of Chemical Symbols, Formulas, and Pollutants

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

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:	500 Tennant Way, Longview, WA 98623
Facility Name:	Lakeside Industries – Pelletizing Plant
Facility Address:	500 Tennant Way, Longview, WA 98623
SWCAA Identification:	2803
Contact Person:	Karen Deal, Sustainability Officer
Primary Process:	Asphalt Shingle Pelletizing Plant
SIC/NAICS Code:	2952 / Asphalt Felts and Coatings 324122 / Asphalt Shingle and Coating Materials Manufacturing
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

Lakeside Industries (Lakeside) proposes to install a facility to manufacture asphalt cement pellets from reclaimed asphalt shingle feedstock.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CO-1096 (ADP Application CO-1096) dated April 23, 2024. Lakeside submitted ADP Application CO-1096 requesting approval of the following:

- Installation of a new asphalt cement pellet manufacturing facility.

This is the initial permitting action for this facility.

4. PROCESS DESCRIPTION

- 4.a. Asphalt Cement Pelletizing. This facility produces asphalt cement pellets from reclaimed raw material products. Equipment and operations used to manufacture the pelletized asphalt cement include raw material handling and storage, two pelletizers, a coating drum, and final product handling and storage. The manufacturing process takes place under cover and is powered by utility electricity.

Raw material used to produce asphalt cement pellets will be recycled asphalt shingle grindings, bio-oil (produced from recycled fats/oils and plant-based oils), a dry additive (hydrated lime, gypsum), and lignin. All raw materials will be imported to the site in bulk via truck. Recycled asphalt shingle grindings will be stored under cover in piles, bio-oil and lignin will be stored in tanks, and dry additive will be stored in a vertical silo. The recycled asphalt shingle grindings are derived from manufacturer's new shingle reject and tear-off shingles. The shingles are ground in a separate operation. Shingle grindings are sampled and lab tested to confirm the feedstock is asbestos free.

Asphalt cement pellets are manufactured by mixing recycled asphalt shingle grindings with a binding agent (bio-oil) in a disc pelletizer. The facility operates two pelletizers in parallel. Bio-oil is spray-applied within a shrouded area of the pelletizer using a low pressure fan spray to avoid atomizing the oil. Dry additive is introduced during pelleting to promote agglomeration. The formed asphalt cement pellets are conveyed to a rotating drum where they are lightly coated with lignin and additional dry additive to harden the pellet shell. This prevents individual pellets

from sticking together. Fugitive emissions are minimized through the use of process enclosure, wet suppression, oil application, and a central dust control system.

- 4.b. Dry Additive Handling and Storage. Dry additive (hydrated lime, gypsum) is delivered to the facility in bulk by truck. Material is pneumatically conveyed from trucks to the top of a 30-ton storage silo. A stationary blower supplies the pneumatic conveyance system with low pressure air. Displaced headspace from the silo discharges through a vent filter on top of the silo.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a. Dry Additive Storage Silo (new). A single vertical bulk silo is used to store dry additive prior to use in the pelletizing process. The silo is pneumatically loaded from trucks. Silo headspace displaced during material delivery is exhausted through a dedicated vent filter.

Cement Silo	Make/Model:	Unknown
	Capacity:	30 tons
	Configuration:	Pneumatic receiving, gravity discharge
Vent Filter	Make/Model:	C&W DustTech / SK250-436
	No. of Filter Bags:	36
	Filtration Area:	250 ft ²
	Filter Media	Destex Polyester Dacron
	Air Flow:	1,200 acfm (max displacement rate during loading)
	Cleaning Method:	Mechanical shaker
	Exhaust:	Horizontal at ~46' above ground level
	Location:	46°6'49.48"N 122°54'26.42"W

- 5.b. Asphalt Cement Pellet Plant (new). Two disc pelletizers and associated support equipment are operated in parallel to produce asphalt cement pellets. Raw pellets are coated in a mixing drum. The pelletizers and coating drum are partially enclosed and vented to the Central Dust Collector.

Pelletizer	Make/Model:	(2) Mars Mineral / P-100
	Capacity:	30 ton/hr, 210 ton/dy
Dust Collector	Make/Model:	UAS Baghouse / Dusthog SFC 24-3-H55
	No. of Cartridges:	24
	Filtration Area:	6,120 ft ²
	Filter Media	ProTura Fire Retardant Nanofiber
	Air Flow:	12,000 acfm
	Cleaning Method:	Pulse jet
	Exhaust:	27" x 15", horizontal at ~8' above ground level (<i>under tent cover</i>)
	Location:	46°6'49.48"N 122°54'26.42"W

- 5.c. Material Handling and Screening (new). Bulk material handling operations at the facility have the potential to generate fugitive dust emissions. Fugitive emissions are minimized with the use of process enclosure, wet suppression systems (material transfer points), and oil application (pelletizers).

5.d. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Dry Additive Storage Silo	Process Enclosure, High Efficiency Filtration
2	Asphalt Cement Pelletizers and Coating Drum	Process Enclosure, Liquid Binding Agent, High Efficiency Filtration
3	Material Handling and Storage	Process Enclosure, Wet Suppression

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from asphalt pellet manufacturing operations proposed in ADP Application CO-1096 consist of particulate matter (PM) and toxic air pollutants (TAPs).

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:

- Continuous emissions monitoring system (CEMS) data;
- 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;
- Source emissions test data (other test method); and
- Emission factors or methodology provided in this TSD.

6.a. Bulk Material Handling/Storage (new). Potential emissions from bulk material handling are calculated based on maximum material throughput and emission factors from EPA AP-42 Table 11.19.2-2 (8/04). Annual emissions will be calculated based on actual material throughput using the same methodology.

Material Throughput:	30	tph		
	262,800	tpy		
		Emission Factor	Emissions	
Emission Factors	Pollutant	(lb/ton)	(lb/hr)	(tpy)
	PM	0.00014	0.0042	0.0184
Shingle Feeder	PM ₁₀	0.000046	0.0014	0.0060
	PM _{2.5}	0.000013	0.00039	0.0017
Pellet Screening	PM	0.0022	0.0660	0.289
	PM ₁₀	0.00074	0.0222	0.097
	PM _{2.5}	0.00005	0.0015	0.0066
Pellet Load-out	PM	0.00014	0.0042	0.0184
	PM ₁₀	0.000046	0.0014	0.0060
	PM _{2.5}	0.000013	0.00039	0.0017

- 6.b. Dust Collector / Silo Vent Filter (new). Potential emissions from operation of the Central Dust Collector and Dry Additive Silo vent filter are calculated based on the rated discharge of each unit, a maximum emission concentration of 0.005 gr/dscf, and 8,760 hr/yr of operation. All PM emissions are assumed to be PM_{2.5}. Annual emissions will be calculated based on actual hours of operation using the methodology.

Dust Collector	Rated Exhaust (acfm)	Emission Conc. (gr/dscf)	Operation (hr/yr)	PM/PM ₁₀ /PM _{2.5} Emissions	
				(lb/hr)	(tpy)
Central Dust Collector	12,000	0.005	8,760	0.514	2.25
Silo Vent Filter	1,200	0.005	8,760	0.051	0.23

- 6.c. TAP Emissions (new). Proposed operations include the use of hydrated lime which contains TAP compounds. Potential TAP emissions are calculated based on maximum lime usage, SDS content information, estimated PM emissions, and estimated lime content at each stage of the pelletizing process. Annual emissions will be calculated based on actual lime usage using the same methodology.

Pollutant	PM Emissions		Pollutant Wt %	Pollutant Emissions	
	(lb/hr)	(tpy)		(lb/hr)	(lb/yr)
Calcium Hydroxide					
Pellet Screening	0.0660	0.2891	15.3%	0.0101	88.5
Pellet Load-out	0.0042	0.0184	15.3%	0.0006	5.6
Dry Additive Silo Vent	0.0514	0.2253	90.0%	0.0463	405.5
Dust Control Baghouse	0.5143	2.2526	15.3%	0.0787	689.3
Magnesium Oxide					
Pellet Screening	0.0660	0.2891	0.51%	0.00034	2.9
Pellet Load-out	0.0042	0.0184	0.51%	0.00002	0.2
Dry Additive Silo Vent	0.0514	0.2253	3.0%	0.0015	13.5
Dust Control Baghouse	0.5143	2.2526	0.51%	0.0026	23.0

- 6.d. Emissions Summary/Facility-wide Potential to Emit. Facility-wide potential to emit as calculated in the sections above is summarized below.

<u>Pollutant</u>	<u>Potential Emissions (tpy)</u>	<u>Project Increase (tpy)</u>
NO _x	0.0	0.0
CO	0.0	0.0
VOC	0.0	0.0
SO ₂	0.0	0.0
Lead	0.0	0.0
PM	2.80	2.80
PM ₁₀	2.59	2.59
PM _{2.5}	2.49	2.49
TAP	0.61	0.61
HAP	0.0	0.0
CO _{2e}	0.0	0.0

Pollutant	CAS Number	Category	Facility-wide Emissions (lb/yr)	Project Increase (lb/yr)	WAC 173-460 SQER (lb/yr)
Calcium Hydroxide	1305-62-0	TAP B	1,188.8	1,188.8	1,750
Magnesium Oxide	1309-48-4	TAP B	39.6	39.6	5,250

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. 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.b. 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.c. 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.d. 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.e. 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.f. 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.g. 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.h. 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.i. 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 – Asphalt Pelletizing Plant. The proposed use of process enclosure and high efficiency filtration has been determined to meet the requirements of BACT for asphalt cement pellet manufacturing operations at this facility.
- 8.b. BACT Determination – Lime Storage and Handling. The proposed use of process enclosure and high efficiency filtration has been determined to meet the requirements of BACT for lime storage and handling equipment at this facility.
- 8.c. BACT Determination – Fugitive Dust. The proposed 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 for this source.

Other Determinations

- 8.d. 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.e. 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. TAP Small Quantity Review. The incremental increases in TAP emissions associated with this permitting action are quantified in Section 6 of this Technical Support Document. All incremental increases in individual TAP emissions are less than the applicable small quantity emission rate (SQER) identified in WAC 173-460.

Conclusions

- 9.b. Installation of an asphalt pelletizing plant, as proposed in ADP Application CO-1096, 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. Installation of an asphalt pelletizing plant, as proposed in ADP Application CO-1096, 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. Installation of an asphalt pelletizing plant, as proposed in ADP Application CO-1096, 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 24-3647 in response to ADP Application CO-1096. ADP 24-3647 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 CO-1096. 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 24-3647 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 hours of operation and material throughput.
- 10.c. Reporting Requirements. ADP 24-3647 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for hours of operation and material throughput. Reports are to be submitted on an annual basis.
- 10.d. Pellet Manufacturing. The pellet manufacturing process is mostly enclosed and served by emission control equipment. Fugitive emissions are expected to be minor. Proposed operations have been approved for 8,760 hr/yr of operation, but practical operation is likely to be much less.
- 10.e. Bulk Material Handling and Storage. Emissions from dry additive handling and storage are controlled with process enclosure and high efficiency filtration. Handling and storage of shingle grindings is not expected to generate significant amounts of fugitive dust, but wet suppression systems are available to minimize emissions as necessary. Handling of finished asphalt cement pellets is expected to generate some minor fugitive dust during load-out to trucks. Appropriate visible emission limits have been established for each operation.

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 separately 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 – Central Dust Collector. Emission testing of the Central Dust Collector is required on a continuing 7-year cycle. All emission testing shall be conducted in accordance with ADP 24-3647, Appendix A.

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 CO-1096. Public notice for ADP Application CO-1096 was published on the SWCAA internet website for a minimum of (15) days beginning on May 3, 2024.
- 14.b. Public/Applicant Comment for ADP Application CO-1096. 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. The City of Longview is the lead agency for SEPA on this project. The City of Longview issued a Mitigated Determination of Non-Significance for the project on May 28, 2024 (*File Number 2024-3*).