



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit ADP 22-3540
Air Discharge Permit Application L-730**

Issued: September 14, 2022

Kellogg Supply

SWCAA ID - 2764

Prepared By: Wess Safford
Air Quality Engineer
Southwest Clean Air Agency

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	2
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	NOV	Notice of Violation/
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	NSPS	New Source Performance Standard
ASIL	Acceptable Source Impact Level	PSD	Prevention of Significant Deterioration
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
mfr	Manufacturer	WAC	Washington Administrative Code
NESHAP	National Emission Standards for Hazardous Air Pollutants		

List of Units and Measures

acfm	Actual cubic foot per minute	ppmvd	Parts per million by volume, dry
dscfm	Dry Standard cubic foot per minute	ppmw	Parts per million by weight
gr/dscf	Grain per dry standard cubic foot	scfm	Standard cubic foot per minute
MMBtu	Million British thermal unit	tph	Ton per hour
MMcf	Million cubic feet	tpy	Tons per year
ppm	Parts per million		
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 _x	Nitrogen oxides	TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
O ₂	Oxygen	VOC	Volatile organic compound
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:	Kellogg Supply, Inc.
Applicant Address:	350 W Sepulveda Blvd, Carson, CA 90745
Facility Name:	Kellogg Supply
Facility Address:	207 Kangas Rd, Toledo, WA 98591
SWCAA Identification:	2764
Contact Person:	Aaron Leach, Director of Manufacturing
Primary Process:	Agricultural Soil Amendment Manufacturing
SIC/NAICS Code:	2879: Pesticides and Agricultural Chemicals, NEC 32532: Pesticide and Other Agricultural Chemical Manufacturing
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

Kellogg Supply proposes to install and operate a soil blending facility to manufacture packaged agricultural soil amendments. Finished product will be distributed to independent garden centers locally and mass merchant retailers nationally.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number L-730 (ADP Application L-730) dated August 10, 2022. Kellogg Supply submitted ADP Application L-730 requesting approval of the following:

- Installation of a new soil blending facility.

This is the initial permitting action for this facility.

4. PROCESS DESCRIPTION

- 4.a Bulk Material Handling and Blending (new). Sawmill by-products and composted admixtures are delivered to the site via truck. Incoming material is stored in outdoor piles. Material is handled on a first in, first out basis. Maximum storage time is estimated to be less than four months. A combination of blending equipment and front-end loaders are used to blend materials according to proprietary formulas to produce a variety of agricultural products. Blended materials are screened to develop proper particle sizing.
- 4.b Material Packaging and Storage (new). Blended materials are delivered to one of two bagging lines using front-end loaders, which are capable of operating simultaneously. Automated packaging machinery convey the products from the receiving hoppers into plastic bag packaging units. Automated palletizers assemble, cap and stretch-wrap bagged agricultural products onto pallets. Forklifts convey the palletized products to an exterior storage yard. Palletized products are loaded onto flatbed trucks for delivery to customers.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a Bagging Lines 1 and 2 (new). Two automated product bagging lines built around Premier Tech FFS-200 automated bagging machines. Each bagging line includes a feed hopper, chemical dosing feeders, an in-line mixer, a screen, a bagging machine, and an automated palletizer. Emissions from the bagging lines are vented to a dedicated baghouse. The baghouse is described below.

Make/Model: Donaldson / Dalamatic 1/3/15 (s/n DLM AD3609321)
 Air Flow: 1,800 acfm
 Filter Bags: 30
 Filtration Area: 485 ft²
 Filter Media 10.5 oz/yd³ Dura-Life polyester
 Cleaning Method: Pulse jet
 Exhaust: 39.7" dia vertical discharge at 16.5' above ground

5.b Material Handling and Storage (new). Vehicle traffic and material handling/blending operations generate fugitive dust emissions. Haul roads in the material storage area are unpaved.

5.c Haul Roads (new). Vehicle traffic on unpaved haul roads can generate fugitive dust emissions. Fugitive emissions from 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	Bagging Lines 1 and 2	Process Enclosure, Fabric Filtration (Donaldson – 1,800 cfm)
2	Material Handling and Storage	Wet Suppression, Good Management Practices
3	Haul Roads	Wet Suppression

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from the soil blending facility proposed in ADP Application L-730 consist of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM) sulfur dioxide (SO₂), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).

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 Bagging Lines 1 and 2 (new). Potential emissions from bagging line operations are calculated based on the rated discharge of the dedicated dust collector, a maximum emission concentration of 0.004 gr/dscf, and 8,760 hr/yr of operation. All PM emissions are assumed to be PM_{2.5}.

Baghouse	Discharge	Emission Conc.	Operation	PM/PM ₁₀ /PM _{2.5}	
	(acfm)	(gr/dscf)	(hr/yr)	(lb/hr)	(tpy)
Dalamatic	1,800	0.004	8,760	0.062	0.27

- 6.b Bulk Material Handling/Blending (new). Potential emissions from material handling and blending operations are calculated based on maximum proposed material throughput of 42,500 tpy, a total of eight transfer points, and emission factors from Equation 1 of EPA AP-42 (1/95) section 13.2.4.2 "Aggregate Handling and Storage Piles".

$$\text{Emissions (lbs)} = k * 0.0032 * ((U/5)^{1.3})(M/2)^{1.4}) * \text{tons handled}$$

$$k = 0.74 \text{ for PM, } 0.35 \text{ for PM}_{10}, 0.053 \text{ for PM}_{2.5}$$

$$U = \text{Mean wind speed (4.47 mph)}$$

$$M = \text{Moisture content (60.53\%)}$$

Transfer Point	PM EF	PM		PM ₁₀		PM _{2.5}	
	(lb/ton)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Trailer to stockpile	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Stockpile to loader	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Loader to input hopper	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Input hopper to dosing hopper	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Dosing hopper to inline mixer	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Inline mixer to screen	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Screen to distribution line	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Distribution line to bagger	1.73E-5	9.80E-4	3.67E-4	4.64E-4	1.74E-4	7.02E-5	2.63E-5
Total:		7.84E-3	2.94E-3	3.71E-3	1.39E-3	5.62E-4	2.11E-4

- 6.c Bulk Material Storage (new). Potential emissions from material storage piles are calculated based on a maximum of 30 storage piles, a pile height of 12 feet, a pile radius of 43 feet, 365 days per year of operation, and an emission equation from "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures" (EPA 9/92). PM₁₀ and PM_{2.5} emissions are estimated using the ratio of particle size multipliers provided in EPA AP-42 Section 13.2.4 Equation 1. Hourly emission rates are estimated by apportioning annual emissions over 8,760 hr/yr of operation.

$$\text{Emissions (lbs)} = 1.7 * (s/1.5) * ((365-p)/235) * (f/15) * \text{storage piles}$$

$$s = \text{Average silt content for onsite stockpile material (2.46)}$$

$$p = \text{Annual number of days with } >0.01" \text{ precipitation (123 days)}$$

$$f = \text{Percentage of time unobstructed wind speed } >12 \text{ mph at mean pile height (6.75\%)}$$

Stockpile	PM EF	PM		PM ₁₀		PM _{2.5}	
	(lb/acre-day)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Each stockpile	1.292	0.0145	0.0637	0.0069	0.0301	0.0010	0.0046
	Total:	0.436	1.91	0.206	0.90	0.031	0.14

6.d Haul Roads (new). Potential emissions from unpaved haul roads are calculated based on an average truck weight of 27 tons, an average silt content of 4.8%, an average round trip distance of 0.5 miles, and Equation 1 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. 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).

Annual emissions will be calculated based on actual haul road traffic using the same methodology.

$$E = k \left(\frac{s}{12} \right)^a \left(\frac{w}{3} \right)^b$$

lb/vehicle mile travelled (uncontrolled)

Where: E = pounds of pollutant per vehicle mile traveled
 w = average truck weight in tons
 s = road surface silt content (%)
 k, a and b (see table below)

Constant	PM _{2.5}	PM ₁₀	PM (PM ₃₀)
k	0.15	1.5	4.9
a	0.9	0.9	0.7
b	0.45	0.45	0.45

Average Truck Weight =	27.000	tons	(assumes 26,500 lb empty truck weight)	
Round Trip Distance =	0.50	miles		
Total # of Trips =	3,000	loads		
Total Miles Traveled =	1,500	miles		
Assumed Silt Content =	4.8	%	(AP-42 Table 13.2.2-1)	
Assumed Control (wet supp.) =	80	%		
			Uncontrolled	Controlled
			EF	EF
			lb/mile	lb/mile
Pollutant			Emissions	Emission Factor Source
			tpy	
PM	6.94	1.39	1.04	AP-42 13.2.2 (11/06)
PM ₁₀	1.77	0.35	0.27	AP-42 13.2.2 (11/06)
PM _{2.5}	0.27	0.05	0.04	AP-42 13.2.2 (11/06)

- 6.e 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	0.00	0.00
CO	0.00	0.00
VOC	0.00	0.00
SO ₂	0.00	0.00
Lead	0.00	0.00
PM	3.22	3.22
PM ₁₀	1.44	1.44
PM _{2.5}	0.45	0.45
TAP	0.00	0.00
HAP	0.00	0.00
CO _{2e}	0.00	0.00

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 – Material Handling and Storage. The proposed use of wet suppression and good management practices has been determined to meet the requirements of BACT for material handling and storage operations at this facility.
- 8.b BACT Determination – Bagging Lines. The proposed use of process enclosure and high efficiency filtration has been determined to meet the requirements of BACT for bagging operations 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 soil blending facility, as proposed in ADP Application L-730, 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 soil blending facility, as proposed in ADP Application L-730, 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 Operations of a soil blending facility, as proposed in ADP Application L-730, 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 22-3540 in response to ADP Application L-730. ADP 22-3540 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-730. 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 22-3540 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, hours of operation, and haul road usage.
- 10.c Reporting Requirements. ADP 22-3540 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for material throughput, hours of operation and haul road usage. Reports are to be submitted on an annual basis.
- 10.d Material Handling and Storage. Most of the raw material delivered to the facility is organic with a high moisture content. Materials are not expected to be stored onsite for extended periods of time so it is not expected to dry out or begin to compost while in storage. Consequently, fugitive emissions from material handling and blending are not expected to be significant. Wet suppression and best management practices will be used as necessary to minimize dust emissions.
- 10.e Bagging Lines. Bagging and packaging operations are located inside the main process building and the bagging machines are vented to a dedicated dust collector. Dust emissions from these operations are expected to be minimal.

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

There are no formal emission monitoring or testing requirements for this facility.

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-730. Public notice for ADP Application L-730 was published on the SWCAA internet website for a minimum of (15) days beginning on August 12, 2022.
- 14.b Public/Applicant Comment for ADP Application L-730. 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. Lewis County is the lead agency for SEPA on this project. Lewis County issued a Determination of Nonsignificance (SEP21-0015) on July 15, 2021.