TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit 24-3657
Air Discharge Permit Application CO-1094

Issued: August 26, 2024

Alphia

SWCAA ID – 1286

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ABBREVIATIONS

List of Acronyms

ADP.....Air Discharge Permit

AP-42 .....Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA

ASIL.....Acceptable Source Impact Level

BACT.....Best available control technology

BART .....Best Available Retrofit Technology

CAM .....Compliance Assurance Monitoring

CAS#.....Chemical Abstracts Service registry number

CFR.....Code of Federal Regulations

EPA.....U.S. Environmental Protection Agency

EU .....Emission Unit

LAER .....Lowest achievable emission rate

MACT.....Maximum Achievable Control Technologies

mfr.....Manufacturer

NESHAP.....National Emission Standards for Hazardous Air Pollutants

NOV.....Notice of Violation/

NSPS.....New Source Performance Standard

PSD .....Prevention of Significant Deterioration

RACT.....Reasonably Available Control Technology

RCW .....Revised Code of Washington

SCC.....Source Classification Code

SDS .....Safety Data Sheet

SQER .....Small Quantity Emission Rate listed in WAC 173-460

Standard .....Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)

SWCAA .....Southwest Clean Air Agency

T-BACT .....Best Available Control Technology for toxic air pollutants

WAC .....Washington Administrative Code

List of Units and Measures

µg/m³.....Micrograms per cubic meter

µm .....Micrometer (10^{-6} meter)

acfm.....Actual cubic foot per minute

bhp.....Brake horsepower

dscfm.....Dry Standard cubic foot per minute

g/dscm.....Grams per dry Standard cubic meter

gpm .....Gallon per minute

gr/dscf .....Grain per dry standard cubic foot

hp.....Horsepower

kW.....Kilowatt

MMBtu.....Million British thermal unit

MMcf .....Million cubic feet

ppm .....Parts per million

ppmv .....Parts per million by volume

ppmvd .....Parts per million by volume, dry

ppmw.....Parts per million by weight

psig.....Pounds per square inch, gauge

rpm .....Revolution per minute

scfm.....Standard cubic foot per minute

tph .....Ton per hour

tpy .....Tons per year

List of Chemical Symbols, Formulas, and Pollutants

C_3H_8 .....Propane
CH_4.....Methane
CO .....Carbon monoxide
CO_2.....Carbon dioxide
CO_2e.....Carbon dioxide equivalent
H_2S .....Hydrogen sulfide
HAP.....Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
HCl.....Hydrochloric acid
Hg.....Mercury
N_2O .....Nitrous oxide
NH_3 .....Ammonia
NO_2 .....Nitrogen dioxide
NO_x .....Nitrogen oxides
O_2 .....Oxygen
O_3 .....Ozone
PM.....Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10} .....PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$ .....PM with an aerodynamic diameter 2.5 µm or less
SO_2 .....Sulfur dioxide
SO_x .....Sulfur oxides
TAP .....Toxic air pollutant pursuant to Chapter 173-460 WAC
TGOC.....Total Gaseous Organic Carbon
TOC.....Total Organic Carbon
TSP.....Total Suspended Particulate
VOC .....Volatile organic compound

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:	Alphia
Applicant Address:	350 N. Pekin Rd. Woodland, WA 98674
Facility Name:	Alphia
Facility Address:	350 N. Pekin Rd. Woodland, WA 98674
SWCAA Identification:	1286
Contact Person:	Eric Finke
Primary Process:	Pet Food Manufacturing
SIC/NAICS Code:	2047: Cat and Dog Food 311111: (2012) Dog and Cat Food Manufacturing
Facility Latitude and Longitude:	45° 54' 35.68" N 122° 45' 28.26" W
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

Alphia operates a pet food manufacturing and packaging facility in Woodland, Washington. Alphia receives raw material in bulk (corn, rice, oats, millet, bone meal, vitamin supplements, etc.) and processes it into dry kibble pet food. The facility typically operates 24 hr/day, 4-5 days/week depending upon the season and market demand.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CO-1094 dated March 7, 2024. Alphia submitted ADP application CO-1094 requesting the following:

- Installation of a Cleaver Brooks Model CBEX-E 700-400-150ST natural gas-fired boiler. A new boiler building will be built for this new installation.
- The Cleaver Brooks boiler will be replacing the Superior Boiler Works, model 4-5-625S-150-GP-G, and the Seattle Boiler Works, Inc. model HPT-550 boilers.
- A Sioux natural gas boiler will be installed to heat up rail tankers.

ADP 24-3657 will supersede ADP 01-2333 in its entirety.

4. PROCESS DESCRIPTION

4.a. Produce Receiving. Alphia receives raw material both in bulk and in bags. Bagged material is received on pallets or in "super sacks" and accounts for a fairly small portion of received tonnage at the facility. Bulk material is received via railcar and truck. Bulk material is dropped into enclosed dump pits and pneumatically conveyed to the storage silos and bins. Emissions from material handling are controlled with process enclosures and fabric filtration (filter vents, baghouses).

4.b. Boilers – Process Steam. Process steam for production processes at the facility is provided by one (1) natural gas-fired boiler. The boiler is located in a new boiler building. The boiler operates at variable fire rates in response to steam demand.

4.c. Kibble Production. Raw material is taken from storage and mixed according to product recipes. Mixed material is steam conditioned/cooked and formed into kibble while still hot/moist in one (1) of two (2) product extruders. Kibble from each extruder is sent to a dedicated dryer/cooler, which cools the kibble and removes excess moisture. The dryers are equipped with direct-fired natural gas heaters. After drying and cooling, finished product is conveyed to bulk storage silos to await packaging. The extruder/dryer room is the primary source of odor at the facility.

4.d. Process Control. Exhaust air from production processes is treated using a three-stage control system consisting of primary scrubbers, secondary scrubbers, and the addition of an odor neutralizing solution. Primary scrubbing is accomplished with two vertical sieve tray scrubbers arranged in parallel using condensation and caustic solution to control/convert volatile emissions. Secondary scrubbing is accomplished with a single horizontal, cross flow, packed bed scrubber using a halogen solution to oxidize odorous compounds in the exhaust stream. The third stage of the control system injects an odor neutralizing chemical solution directly into the exhaust stream of the secondary scrubber. The chemical solution mixes with exhaust gases in the main exhaust stack prior to ambient discharge.

4.e. Tanker Heating. One (1) natural gas-fired boiler is used to heat rail tankers.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Boiler – Cleaver Brooks (new). Cleaver Brooks natural gas-fired boiler with a rated heat input of 13.39 MMBtu/hr. The boiler is equipped with internal flue gas recirculation (FGR).

Location:	Approximate location 45º 54' 33" N 122º 45'27" W
Boiler Manufacturer:	Cleaver Brooks, Scotch Marine Boiler
Model Number:	CBEX-E 700-400-150ST
Serial Number:	T-5352
Heat Rate:	13.39 MMBtu/hr
Burner Manufacturer:	Cleaver Brooks (integrated)
Stack Diameter:	24"

Stack Height: 29' 7.5" from ground

5.b. Boiler – Sioux (new). Sioux natural gas-fired boiler with a rated heat input of 1.01 MMBtu/hr. The unit is used to heat rail tankers.

Location	Approximate location 45º 54' 34" N 122º 45' 25" W
Boiler Manufacturer:	Sioux
Model Number:	SF-25
Serial Number:	2308017-2308018
Heat Rate:	1.01 MMBtu/hr
Burner Manufacturer:	Power Flame
Burner Model Number:	Model J30A-10 Burner Serial number 022288885
Stack Diameter:	10"
Stack Height:	14' from ground

5.c. Raw Ingredient Storage Silos. Alphia uses a collection of twenty-eight (28) bulk silos to store individual types of raw material. The silos currently in use were installed in two (2) stages.

Original Silos.

Twenty (20) bulk storage silos installed as part of the original facility construction. Each silo is equipped with three (3) identical vent filters made of 9 oz/yd^2 polyester providing 250 ft^2 of filtration area each.

Expansion Silos.

Eight (8) bulk storage silos installed in 2013. Each silo is equipped with identical vent filters made of 9 oz/yd^2 polyester providing 250 ft^2 of filtration area each. Single product silos have three (3) filters. Two (2) product silos have six (6) filters.

5.d. Odor Scrubbing System. Exhaust streams from selected production processes (extruder, dryers, coolers, digest coater, etc.) are collected by a central exhaust system and vented to a three-stage control system.

a. Primary Scrubbers.

Two (2) parallel vertical sieve tray scrubbers using a packed tower counter-current configuration. Each scrubber has a rated airflow of ~9,000 cfm and a caustic scrubbing liquor (sodium hydroxide solution) circulation rate of 180 gpm. Both of the primary scrubbers vent to the secondary scrubber. Concentrated sodium hydroxide solution is added as necessary to maintain scrubbing liquor pH at 10.0 or higher. Scrubbing liquor is cooled by an indirect heat exchanger using cooling water from dedicated evaporative coolers.

b. Secondary Scrubber.

One (1) Ceilcote model HRPD-300 horizontal cross current packed bed wet scrubber with a rated airflow of 27,000 cfm. Exhaust from the primary scrubbers is combined with ~9,000 acfm of ambient air prior to entering the secondary scrubber. Exhaust gases are contacted with water and an active bromine and/or chlorine solution. The combination of free halogen and evaporative cooling is intended to neutralize odorous components and condense organic products carried in the gas. Specified water

circulation rate is 250 gpm. The activity level of scrubbing liquor is maintained by an automatic bromine and/or chlorine injection system.

c. *Odor Neutralizing System.*
One (1) NALCO odor neutralizing system installed on the exhaust of the secondary scrubber. The neutralizing system works by spraying a neutralizing solution (NALCO #1853) into the exhaust duct of the secondary scrubber. The neutralizing solution mixes with the gas stream and neutralizes remaining odor molecules before they exit the exhaust stack.

5.e. Insignificant Emission Units. The following pieces of facility equipment have been determined to have insignificant emissions and are not registered as emission units *(baghouses are vented back into the building space)*:

- Receiver baghouses (P16). Two (2) Fabric Filters Northwest, model C-55-6 baghouses, each with 370 ft^2 filter area of 16 oz felted polypropylene bags.
- Hammermill baghouses (114). Two (2) Fabric Filters Northwest, model 36-6 baghouses, each with 254 ft^2 filter area of 16 oz felted polypropylene bags. The Hammermill baghouses control emissions of particulate matter from the hammermills that feed the raw ingredient tanks.
- Scale tank baghouses (BT14). Two (2) Fabric Filters Northwest, model C-24-6 baghouses, each with 162 ft^2 filter area of 16 oz bags.
- Mixer baghouse #1 (BT19). One (1) National Filter baghouse, with 52 ft^2 filter area. Mixer baghouse #1 controls particulate matter emissions from the mixer.
- Mixer baghouse #2 (BT21). One (1) National Filter baghouse, with 5.4 ft^2 filter area. Mixer baghouse #2 controls particulate matter emissions from the mixer.
- Mix bin baghouses (BT35). Two (2) Fabric Filters Northwest, model C-24-6 baghouses, each with 162 ft^2 filter area of 16 oz bags. The mix bin baghouses control emissions of particulate matter from the mix bins.
- Salt tank baghouse (BT8). One (1) National Filter baghouse with 250 ft^2 filter area of 9 oz bags. The salt tank baghouses control particulate matter emissions from the salt tanks.
- Rework tank baghouses (BT29). Two (2) Fabric Filters Northwest, model C-24-6 baghouses, each with 162 ft^2 filter area of 16 oz polypropylene bags. The scale tank baghouses control particulate matter emissions from the rework tanks.

5.f. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Cleaver Brooks Model CBEX-E 700-400-150ST Natural Gas-fired Boiler	Ultra-low Sulfur Fuel (Natural Gas)
2	Sioux SF-25 Natural Gas-fired Boiler	Ultra-low Sulfur Fuel (Natural Gas)
3	Twenty-eight Raw Ingredient Storage Silos	Filter Vents
4	Process Units: Extruder, Dryers, Coolers, Digest Coater	Odor Scrubbing System – Two Primary Scrubbers, One Secondary Scrubber, and an Odor Neutralizing System.

6. EMISSIONS DETERMINATION

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.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if methods identified above, in the ADP, or elsewhere in this TSD have not provided adequate quantification of actual emissions.

6.a. Boiler – Cleaver Brooks. Emissions from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler - Cleaver Brooks

Heat Rate =	13.390	MMBtu/hr
Fuel Type =		Natural Gas
Natural Gas Heat Value =	1,020	Btu/scf for AP-42 emission factors
Natural Gas Heat Value =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	114.996	MMscf/yr

Pollutant	ppmvd @ 3% O_2	Emission Factor lb/MMBtu	Emission Factor lb/MMscf	lb/hr	tpy	Emission Factor Source
NO_X	12	0.0146	14.9	0.195	0.85	Manufacturer Guarantee
CO	30	0.0222	22.6	0.297	1.30	BACT
VOC		0.0054	5.5	0.0722	0.316	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2		0.00059	0.6	0.00788	0.0345	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0998	0.437	AP-42 Sec. 1.4 (7/98)
PM_{10}		0.0075	7.6	0.0998	0.437	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$		0.0075	7.6	0.0998	0.437	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.8E-05	1.2E-04	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	9.8E-04	4.3E-03	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	6,860.5	40 CFR 98
CH_4	0.001	25	0.055	56.55	3.2	40 CFR 98
N_2O	0.0001	298	0.066	67.41	3.9	40 CFR 98
Total GHG - CO_2e			117.098	120,143	6,867.6	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing and are approved by SWCAA.

6.b. Boiler - Sioux. Emissions from the combustion of natural gas by this boiler were calculated with the assumption that the boiler could operate at full rated capacity for 8,760 hours per year.

Boiler - Sioux

Heat Rate =	1.010 MMBtu/hr
Fuel Type =	Natural Gas
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	8.674 MMscf/yr

Pollutant	ppmvd @ 3% O_2	Emission Factor lb/MMBtu	Emission Factor lb/MMscf	lb/hr	tpy	Emission Factor Source
NO_X	30	0.0364	37.1	0.037	0.16	BACT
CO	50	0.0370	37.7	0.037	0.16	BACT
VOC		0.0054	5.5	0.0054	0.024	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2		0.00059	0.6	0.00059	0.0026	AP-42 Sec. 1.4 (7/98)
PM		0.0075	7.6	0.0075	0.033	AP-42 Sec. 1.4 (7/98)
PM_{10}		0.0075	7.6	0.0075	0.033	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$		0.0075	7.6	0.0075	0.033	AP-42 Sec. 1.4 (7/98)
Benzene		2.06E-06	0.0021	2.1E-06	9.1E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde		7.35E-05	0.075	7.4E-05	3.3E-04	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	517.5	40 CFR 98
CH_4	0.001	25	0.055	56.55	0.2	40 CFR 98
N_2O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO_2e			117.098	120,143	518.0	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing and are approved by SWCAA.

6.c. Material Handling. Emissions from material handling were estimated using emission factors from the AIRS Facility Subsystem SCC Emission Factor Listing for Criteria Air Pollutants (March 1990) for grain receiving, handling, and grinding. The baghouses have an estimated control efficiency of 99.98%.

Material Handling Emissions

Grains Received: 100,000 *tons*

Pollutant	Activity	Emission Factor *(lbs/ton)*	*Control Efficiency*	Calculated Emissions *(lbs)*	Calculated Emissions *(tons)*
PM/PM_{10}	Grain Receiving	2.5	*99.98%*	50.00	0.03
PM/PM_{10}	Handling	5.5	*99.98%*	110.00	0.06
PM/PM_{10}	Grinding	0.21	*99.98%*	4.20	0.00
Totals				164.20	0.08

6.d. Process System Scrubbers. Emissions of particulate matter from the primary and secondary scrubbing system was estimated using a control efficiency of 90% for the primary scrubbers, 95% for the secondary scrubber, and an inlet loading of 1.31 lb/ton product based on a source test provided from NW Pet's (the original company) Arizona facility.

Bromine and chlorine are expected at concentrations of 20 ppb. The emission factors listed are calculated using 27,000 cfm and an annual operation per year of 374,400 minutes.

Scrubbers

Annual Production 100,000 *tons of pet food*

Scrubber Operation 525,600 *minutes*

Pollutant	Emission Factor *(lbs/ton)*	Emission Factor *(lbs/min)*	*Primary Control Efficiency*	*Secondary Control Efficiency*	Calculated Emissions *(lbs)*	Calculated Emissions *(tons)*
Bromine		0.000224			117.73	0.06
Chlorine		0.000099			52.03	0.03
PM/PM_{10}	1.31		*90%*	*95%*	655.00	0.33

6.e. Emissions Summary

Air Pollutant	Potential to Emit (tpy)
NO_x	1.02
CO	1.46
VOC	0.34
SO_2	0.04

Air Pollutant	Potential to Emit (tpy)
PM	1.17
PM_{10}	1.17
$PM_{2.5}$	0.47

Toxic/Hazardous Air Pollutant	Potential to Emit (tpy)
Benzene [71-43-2]	0.0046
Bromine [7726-95-6]	0.059
Chlorine [7782-50-5]	0.026
Formaldehyde [50-00-0]	0.00013

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility 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 following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

7.a. 40 CFR 60 Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to any steam generating unit with a heat input greater than or equal to 10 MMBtu/hr, but less than or equal to 100 MMBtu/hr constructed, modified, or reconstructed after June 9, 1989. The Cleaver Brooks boiler at this facility is subject to this regulation.

7.b. 40 CFR 63 Subpart JJJJJJ [§63.11193 et seq] "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" establishes national emission limitations and operating limitations for HAP emitted from boilers fired on specific fuels at area sources.

The facility is an area source of HAP, and all of the boilers are classified as gas boilers. Gas-fired boilers, which burn gaseous fuel and only burn liquid fuel during periods of gas curtailment, gas supply interruption, and periodic testing up to 48 hr/yr, are not covered under the regulation; therefore, this regulation does not apply to the boilers.

7.c. 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 (RCW 70A.15) 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. This law applies to the facility.

7.d. 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 ADP for installation and establishment of an air contaminant source. This law applies to the facility.

7.e. WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants, and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

7.f. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, SO_2, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM_{10}, $PM_{2.5}$, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.

7.g. 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, SO_2, concealment and masking, and fugitive dust. This regulation applies to the facility.

7.h. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.

7.i. SWCAA 400-040(2) "Fallout" requires that emissions of PM from any source must not be deposited beyond the property under direct control of the owner(s) or operator(s) of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited. This regulation applies to the facility.

7.j. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere. This regulation applies to the facility.

7.k. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.

7.l. SWCAA 400-040(6) "Sulfur Dioxide" requires that no person is allowed to emit a gas containing in excess of 1,000 ppmd of SO_2, corrected to 7% O_2 or 12% CO_2 as required by the applicable emission standard for combustion sources.

The facility emits SO_2; therefore, this regulation applies to the facility.

7.m. SWCAA 400-040(8) "Fugitive Dust Sources" requires that reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize emissions. This regulation applies to the facility.

7.n. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met, and that no person is allowed to cause or permit the emission of PM from any combustion or incineration unit in excess of 0.23 g/Nm^3_{dry} (0.1 gr/dscf) of exhaust gas at standard conditions.

The facility has combustion units; therefore, this regulation applies to the facility.

7.o. SWCAA 400-060 "Emission Standards for General Process Units" requires that all new and existing general process units do not emit PM in excess of 0.23 g/Nm^3_{dry} (0.1 gr/dscf) of exhaust gas. The facility has general process units; therefore, this regulation applies to the facility.

7.p. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP 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 ADP application to request such changes. An ADP 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. This regulation applies to the facility.

7.q. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification. The new units meet the definition of a new source; therefore, this regulation applies to the facility.

7.r. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source will 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) BACT 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.

The facility is located in an area that is in attainment; therefore, this regulation applies to the facility.

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

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determination(s)

8.a. BACT Determination – Cleaver Brooks Boiler. The use of a natural gas-fired boiler equipped with a low NO_x burner and internal flue gas recirculation to achieve 9 ppm NO_x and 50 ppm CO meets the requirements of BACT for a boiler of this size. SWCAA believes it is appropriate to set the NO_X limit at 12 ppmvd @ 3% O_2 to allow for greater ability to tune for minimum production of CO and related products of incomplete combustion and to allow a reasonable margin for compliance.

8.b. BACT Determination – Sioux Boiler. The use of a natural gas-fired boiler equipped with a burner capable of achieving 30 ppm NO_x and 50 ppm CO meets the requirements of BACT for a boiler of this size.

Previous BACT Determination(s)

8.c. BACT Determination – Caustic Scrubbers. The use of caustic primary scrubbers followed by a secondary scrubber utilizing a bromine and/or chlorine scrubbing liquor has been determined to meet the requirements of BACT for emissions of odors from the drying, cooling, and cutting of product.

8.d. BACT Determination – Material Handling. The use of baghouses has been determined to meet BACT for the types and quantities of air contaminants emitted from the raw ingredient tanks.

8.e. Prevention of Significant Deterioration (PSD) Applicability Determination. 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.f. 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 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O_3), and SO_2 are emitted at levels where no adverse ambient air quality impact is anticipated.

9.b. Toxic Air Pollutant Review. ADP application CO-1094 will not increase emissions of TAPs and HAPs at levels above SQER listed in WAC 173-460 and therefore no adverse impact to the ambient air is anticipated. Previously approved BACT measures at the facility will limit emissions of Class A and B toxic air pollutants to below the applicable SQER.

Conclusions

9.c. Installation of the new boilers, as proposed in ADP application CO-1094, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.d. Installation of the new boilers, as proposed in ADP application CO-1094, 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.e. The new boilers, as proposed in ADP application CO-1094, will not violate 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 24-3657 in response to ADP application CO-1094. ADP 24-3657 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. Supersession of Previous Permits. ADP 24-3657 supersedes ADP 01-2333 in its entirety. Compliance will be determined under this ADP, not previously superseded ADPs. Existing approval conditions for units not affected by this project have been carried forward unchanged.

10.b. Emission Limits. Emissions for the boilers were limited to the quantity of emissions anticipated from operation for 8,760 hours per year at full rated load using the emission factors supplied in Section 6. Visible emissions were limited to 0% opacity.

10.c. Operational Limits and Requirements. If the results of performance monitoring of the boilers indicate emissions in excess of the level of emissions indicating proper operation, corrective action must be taken to restore proper operation. This is consistent with good air pollution practice to minimize emissions.

10.d. Monitoring and Recordkeeping Requirements. ADP 24-3657 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. The pH and free halogen concentration must be monitored for the scrubber liquor.

10.e. Reporting Requirements. ADP 24-3657 establishes general reporting requirements for annual air emissions, upset conditions, and excess emissions. Specific reporting requirements are established for hours of operation, fuel consumption, and material throughput.

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 must 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 will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

To SWCAA's knowledge, this facility can comply with all applicable standards during start-up 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 approval conditions.

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 approval conditions.

12. EMISSION MONITORING AND TESTING

12.a. Emission Testing Requirements – Cleaver Brooks Boiler. The Cleaver Brooks Boiler is required to be tested every five (5) years no later than the end of December. Tests may be performed up to three months prior and still meet this requirement; the testing date does not reset to a different month.

12.b. Emission Monitoring Requirements – Cleaver Brooks and Sioux Boilers. The boilers are required to be monitored annually to verify compliance with the emission limits specified

in the ADP. Corrective action is required to be taken if the boiler is found to not be meeting the emission limit. Emission monitoring is not required on a unit that has had a compliance test performed on it in the same year.

13. FACILITY HISTORY

13.a. General History. Northwest Pet was changed to Alphia in 2020.

13.b. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
01-2333	CO-665	02/21/2001	Approval to operate a new boiler and production line and modification of pollution control equipment.
92-1464	CO-468	10/29/1992	Compliance schedule for addition of odor control equipment.
91-1305	CO-352R	04/22/1991	Approval to construct and operate a dry pet food manufacturing facility. Superseded by O/A 01-2333.

13.c. Compliance History. A search of source records on file at SWCAA did not identify any previous or outstanding compliance issues over the past five (5) years.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP Application CO-1094. Public notice for ADP application CO-1094 was published on the SWCAA website for a minimum of fifteen (15) days beginning on March 26, 2024.

14.b. Public/Applicant Comment for ADP Application CO-1094. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CO-1094. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. SWCAA has determined that the project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) and has issued Determination of SEPA Exemption 24-030. This project only involves repair, remodeling, maintenance, or minor alteration of existing structures, equipment, or facilities, and will not involve material expansions or changes in use. There is no physical change proposed in the project that would have an adverse impact on the environment beyond that which has already been evaluated under previous SEPA reviews.