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OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **December 23, 2024**

TO: Lee Warden, P.E., Permits and Engineering Group Manager

THROUGH: Richard Kienlen, P.E., Engineering Manager, New Source Permits Section

THROUGH: Jennie Doan, E.I., Engineering Section, ROAT

FROM: Alexandria Mills, E.I., Engineering Section

SUBJECT: Evaluation of Permit Application Number **2024-0514-C**
Argo Development Partners
Facility: Oklahoma Bioprocessing Project (SIC 2869/NAICS 325120)
Facility ID: 24162
Section 3, Township 28N, Range 23E, Ottawa County
Latitude: 36.94066ºN, Longitude: 94.81652ºW
Address: US Hwy 69 Alternative & S. 592 Rd., Quapaw, OK

SECTION I. INTRODUCTION

Argo Development Partners (Argo) has applied for an individual minor source construction permit for their Oklahoma Bioprocessing Project. This facility will be a new bioprocessing plant (SIC 2869/NAICS 325120) in Ottawa County. This facility has no prior permits.

Based on the projected operations at this facility, facility-wide emissions are estimated to be 61.7 TPY of NO_X, 55.0 TPY of CO, 5.5 TPY of VOC, 2.3 TPY of PM_{10}, 1.9 TPY of $PM_{2.5}$, and 1.26 TPY of HAPs. Therefore, this facility qualifies for a "true minor" permit.

SECTION II. FACILITY DESCRIPTION

Argo is proposing to construct a bioprocessing plant that will receive an average of 164,000 tons annually of poultry litter. Poultry litter consisting of poultry manure and bedding material will be used to feed an anaerobic digestion process to produce pipe-line quality renewable natural gas (RNG) and commercial fertilizer. The bioprocessing plant is expected to produce an estimated 619,000 MMBtu of RNG, 8 million gallons of liquid fertilizer, and 60,000 tons of solid fertilizer per year.

The facility will consist of six (6) subsystems as listed below:

<u>Subsystem 1000: Front End Processing</u>
Each litter truck is weighed upon entering and exiting the facility. Once backed inside the enclosed receiving building, litter trucks are unloaded using a belt trailer into a storage pit built into the

building floor. The receiving building will be operated under negative pressure and connected to the odor-control system described under Subsystem 9000 below. Front-end loaders transfer the dumped litter to storage on an as-needed basis. In preparation for the digestion process, litter is loaded into a hopper for grinding, mixing and dilution. The pretreated feed slurry is transferred to hydrolysis tanks to begin the first step of anaerobic digestion and accelerate methanogenesis (biogas production).

Subsystem 2000: Anaerobic Digesters

Effluent from the hydrolysis tank is continuously transferred to the anaerobic digesters and mixed with impellers. The hydrolysis and acidogenesis steps continue the methanogenesis stage of anaerobic digestion. Raw biogas produced in the digesters is stored in biogas holders located at the top of each digester. Emergency vents are utilized during process disruption.

Subsystem 3000: Solids Separation

The feed is moved into the solids separation area by pump. A proprietary set of operations are used to remove solids from the digestate. Liquids are filtered prior to being sent to Subsystem 4000.

The solids are transferred by conveyor to a dryer, which reduces the moisture content to 10% or less. The dryers operate with controlled ventilation to create negative pressure, eliminating dust. An odor control system is used to remove ammonia and other constituents. The system utilizes a condenser for the evaporated water and dust control system that operates on pressurized water.

Subsystem 4000: Liquids Separation

The permeate undergoes a proprietary process to recover ammoniacal nitrogen at high purity. The effluent stream, which still has high total dissolved solids is sent to a membrane operation which recovers pure water that is recycled for dilution. The concentrate is stored in a buffer tank and then sent to a thermal unit which further removes moisture.

The liquid fertilizer is stored onsite in dedicated temperature-controlled tanks. The storage tank will be chilled as needed to maintain a temperature at which the product will not off-gas or release ammonia to the atmosphere. A nitrogen blanket will be supplied to the tank to prevent oxygen intrusion and maintain a positive low pressure in the headspace by use of nitrogen generators. Any venting of the headspace will flow through an ammonia scrubber to mitigate exposure to the atmosphere. This storage will be used until offloaded by use of a discharge pump at the outlet of the tank.

Subsystem 5000: Biogas Upgrading

Blower units are used to move the biogas from the digesters to Subsystem 5000. The biogas upgrading operations include feed compressors, H_2S, CO, CO_2 and O_2 removal, and a dryer to remove moisture. An enclosed flare is used to destroy non-used biogas.

Subsystem 9000: Supporting Equipment

This subsystem consists of the equipment used to support operations at the facility including:

- Chiller – used to maintain cool water temperatures for the air scrubber.

- Hot Water Boiler – a closed loop natural gas-fired hot water boiler used to provide hot water primarily to the hydrolysis tank and anaerobic digesters.
- Steam Boiler – natural gas-fired steam boiler use to provide steam to Subsystem 3000.
- Backup Generator – natural gas-fired emergency generator set used to maintain controlled shutdown and safe handling of biological processes/biogas in an emergency.
- Odor Control System (ODR-9901) – consists of three packed scrubbing columns operating in parallel. Circulating air from the receiving building is routed through the dryers and subsequently to ODR-9901. The scrubbing process uses sulfuric acid to remove ammonia and impurities from the air. Air is exhausted to the atmosphere after scrubbing. The liquid byproduct is 40% ammonium sulfate solution. The liquid byproduct will be stored onsite prior to being removed from the facility.

SECTION III. EQUIPMENT

The following is a list of proposed equipment.

ID#	Equipment Type	Size/Rating	Manufacture Date	Subject to NSPS or NESHAP Subpart
GEN-9001	Emergency Generator	1,341-hp	TBD	NSPS JJJJ/ NESHAP ZZZZ
HWB-9301	Hot Water Boiler	7-MMBtu/hr	TBD	-
STB-9401	Steam Boiler	15-MMBtu/hr	TBD	NSPS Dc
FLR-5801	Enclosed Flare	95-MMBtu/hr	TBD	-
DIG-2000	Biogas Emergency Vent	400-acfm	TBD	-
GMBR-5501	RNG Membranes - Tail Gas Vent	950-acfm	TBD	-
ODR-9901	Odor Control System	161,850-acfm	TBD	-
STP-4101	Ammonia Stripper	-	TBD	-
RCT-5201	H_2S Removal - Biological Scrubber	534-acfm	TBD	-
EVP-4401	Evaporator - Cooling Tower	700-gpm	TBD	-

SECTION IV. EMISSIONS

Unless otherwise stated emissions are based on 8,760 hours per year of operation with combustion sources firing pipeline-grade natural gas.

ENGINE

Emissions of NO_X, CO, and VOC are calculated based on NSPS Subpart JJJJ. H_2CO emissions are calculated based on AP-42 (7/00) Table 3.2-2 for uncontrolled, 4SLB engines. Since the NSPS Subpart JJJJ emission limit for VOC does not include H_2CO, H_2CO is added to the VOC emissions shown in the facility-wide emissions summary to represent total VOC for GEN-9001. Emissions are based on a rating of 1,341-hp (11.475 MMBtu/hr) and 200 hours of operation per year.

Emergency Generator Emission Factors

ID#	NO_X	CO	VOC (1)	SO_2	$PM_{10/2.5}$	H_2CO
	g/hp-hr	g/hp-hr	g/hp-hr	lb/MMBtu	lb/MMBtu	g/hp-hr
GEN-9001	2.0	4.0	1.0	5.88E-04	9.99E-03	0.072

(1) Does not include formaldehyde emissions.

Emergency Generator Emissions

ID#	NO_X		CO		VOC (1)		SO_2		$PM_{10/2.5}$		H_2CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
GEN-9001	6.00	0.60	11.99	1.20	3.00	0.30	0.01	<0.01	0.11	0.01	0.61	0.06

(1) Does not include formaldehyde emissions.

BOILERS

Emissions of NO_X, CO, VOC and SO_2 are based on AP-42 (7/98), Section 1.4, Table 1.4-1 through Table 1.4-2 for small commercial boilers, the rating listed below, and a fuel heating value of 1,020-BTU/SCF. Emissions of PM_{10} and $PM_{2.5}$ are based on USEPA Revisions to PM Emissions from Natural Gas Combustion by Roy Huntley, March 2012, SCC 10200603.

Boiler Emission Factors

ID#	NOx	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$
	lb/MMSCF	lb/MMSCF	lb/MMSCF	lb/MMSCF	lb/MMSCF	lb/MMSCF
HWB-9301 & STB-9401	100.0	84.0	5.5	0.6	0.52	0.43

Boiler Emissions

ID#	Rating	NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$	
	MMBTUH	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
HWB-9301	7.0	0.69	3.01	0.58	2.52	0.04	0.17	<0.01	0.02	<0.01	0.02	<0.01	0.01
STB-9401	15.0	1.47	6.44	1.24	5.41	0.08	0.35	0.01	0.04	0.01	0.03	0.01	0.03

FLARE

The flare will be used to control produced biogas during maintenance and/or destroy off-spec product. In scenario 1, biogas will be sent to the flare after H_2S removal (876 hours per year). In scenario 2, biogas will be sent to the flare prior to H_2S removal (438 hours per year).

Emission factors of NO_X and CO are based on manufacturer data. Emissions of SO_2 and H_2S are based on a biogas H_2S concentration of 100-ppmv and 7,000-ppmv for scenario 1 and 2, respectively, and a biogas heating value of 630 Btu/scf. Emissions of VOC are based on AP-42 (11/98) for Municipal Solid Waste Landfills, Table 2.4-2, and a biogas heating value of 630 Btu/scf. Emission factors of $PM_{10/2.5}$ are based on AP-42 (11/98) for Municipal Solid Waste Landfills, Table 2.4-5, and a biogas heating value of 630 Btu/scf.

Flare Combustion Emissions (Scenario 1)

ID#	Pollutants	Emission Factors	Control	Emissions	
				lb/hr	TPY (1)
FLR-5801	NO_X	0.25 lb/MMBTU	-	23.75	10.40
	CO	0.25 lb/MMBTU	-	23.75	10.40
	VOC	595 ppmv (2)	99%	0.17	0.08

ID#	Pollutants	Emission Factors	Control	Emissions	
				lb/hr	TPY [1]
	SO_2	100 ppmv H_2S [2], [3]	-	2.72	1.19
	$PM_{10/2.5}$	17.0 lb/MMSCF	-	2.56	1.12
	H_2S	100 ppmv [2]	98%	0.03	0.01

[1] Based on 876 annual hours of operation.
[2] Calculated using mass balance.
[3] Assuming 100% of H_2S is converted to SO_2.

Flare Combustion Emissions (Scenario 2)

ID#	Pollutants	Emission Factors	Control	Emissions	
				lb/hr	TPY [1]
FLR-5801	NO_X	0.25 lb/MMBTU	-	23.75	5.20
	CO	0.25 lb/MMBTU	-	23.75	5.20
	VOC	595 ppmv [2]	99%	0.17	0.04
	SO_2	7,000 ppmv H_2S [2], [3]	-	190.64	41.75
	$PM_{10/2.5}$	17.0 lb/MMSCF	-	2.56	0.56
	H_2S	7,000 ppmv [2]	98%	2.03	0.44

[1] Based on 438 annual hours of operation.
[2] Calculated using mass balance.
[3] Assuming 100% of H_2S is converted to SO_2.

Total flare combustion emissions are based on the combined annual emissions from Scenario 1 and 2 as summarized in the table below. Hourly emissions will remain the same for both scenarios with the exception of SO_2 and H_2S. These are based on the worst-case hourly emissions.

Flare Combustion Emissions

ID#	Operating Scenario	NO_X		CO		VOC		SO_2		$PM_{10/2.5}$		H_2S	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
FLR-5801	Scenario 1	23.75	10.40	23.75	10.40	0.17	0.08	2.72	1.19	2.56	1.12	0.03	0.01
	Scenario 2	23.75	5.20	23.75	5.20	0.17	0.04	190.64	41.75	2.56	0.56	2.03	0.44
Total		**23.75**	**15.60**	**23.75**	**15.60**	**0.17**	**0.11**	**190.64**	**42.94**	**2.56**	**1.68**	**2.03**	**0.46**

Biogas Emergency Vent

Emissions occur during start-up or process disruptions. Emissions are based on 1,460 hours per year and a flow rate of 400-scfm. Emissions of H_2S are based on a biogas H_2S concentration of 7,000-ppmv and a density of H_2S of 0.0961 lb/scf. Emissions of VOC are based on AP-42 (11/98) for Municipal Solid Waste Landfills, Table 2.4-2, and a default landfill gas VOC concertation (as hexane) of 0.24 lb/scf.

Biogas Emergency Vent Emissions

ID#	Pollutants	Emission Factors	Control	Emissions	
				lb/hr	TPY [1]
DIG-2000	VOC	595 ppmv [2]	-	3.43	2.50
	H_2S	7,000 ppmv [2]	-	16.14	11.79

[1] Based on 1,460 annual hours of operation.
[2] Calculated using mass balance.

RNG Membrane Tail Gas Vent

Emissions of H_2S are based on a biogas H_2S concentration of 10-ppmv, a flow rate of 950-scfm, and a density of H_2S of 0.0961 lb/scf.

RNG Membrane Tail Gas Vent Emissions

ID#	Pollutants	Emission Factor	Control	Emissions	
				lb/hr	TPY
GMBR-5501	H_2S	10 ppmv (1)	-	0.05	0.24

(1) Calculated using mass balance.

Odor Control System

Emissions are based on the collection of exhaust air from the Receiving Building (89,250-scfm), the Digestate Dewatering Building (12,600-scfm), and the solids dryer (60,000-scfm). The odor control system is equipped with a packed ammonia wet scrubber. Dryer combustion emissions were assumed to pass through the scrubber without control.

Emissions of NO_X, CO, VOC, and SO_2 are based on AP-42 (7/98), Section 1.4, Table 1.4-1 through Table 1.4-2 for small commercial boilers, a combined rating of 84 MMBtu/hr for seven (7) dryers, and a fuel heating value of 1,020-BTU/SCF. Emissions of PM_{10} and $PM_{2.5}$ are based on USEPA Revisions to PM Emissions from Natural Gas Combustion by Roy Huntley, March 2012, SCC 39000689. Emissions of NH_3 are based on a mass balance, flow rate of 161,850-scfm, and a control efficiency of 99%.

Odor Control System Emissions

ID#	Pollutants	Emission Factors	Control	Emissions	
				lb/hr	TPY
ODR-9901	NO_X	100 lb/MMSCF	-	8.24	36.07
	CO	84 lb/MMSCF	-	6.92	30.30
	VOC	5.5 lb/MMSCF	-	0.45	1.98
	SO_2	0.6 lb/MMSCF	-	0.05	0.22
	PM_{10}	0.52 lb/MMSCF	-	0.04	0.19
	$PM_{2.5}$	0.43 lb/MMSCF	-	0.04	0.16
	NH_3	3,850 lb/day (1)	99%	1.60	7.03

(1) Calculated using mass balance.

Ammonia Stripper

Emissions of NH_3 are based on mass balance of raw poultry litter in the anerobic digestors and 99.99% control efficiency by a water scrubber and acid bath.

Ammonia Stripper Emissions

ID#	Pollutants	Emission Factor	Control	Emissions	
				lb/hr	TPY
STP-4101	NH_3	- (1)	99.99%	<0.10	<0.10

(1) Based on mass balance.

H_2S Removal - Biological Scrubber

Emissions of H_2S are based on a biogas H_2S concentration of 1-ppmv, a flow rate of 534-scfm, and a density of H_2S of 0.0961 lb/scf.

H_2S Removal - Biological Scrubber Emissions

ID#	Pollutants	Emission Factor	Control	Emissions	
				lb/hr	TPY
RCT-5201	H_2S	1 ppmv (1)	-	<0.01	0.01

(1) Calculated using mass balance.

Evaporative Cooling Tower

Total particulate emissions are based on guidance from the New Mexico Environment Department, Air Quality Bureau, a circulation rate of 700-gpm, a drift of 0.02%, and total dissolved solids of 1,800 ppm. PM_{10} is assumed to be equivalent to 70.509% PM_{total} and $PM_{2.5}$ is assumed to be 0.226% PM_{total}.

Evaporative Cooling Tower Emissions

ID#	Throughput	PM_{10}		$PM_{2.5}$	
	gpm	lb/hr	TPY	lb/hr	TPY
EVP-4401	700	0.09	0.39	<0.01	<0.01

FACILITY-WIDE EMISSIONS

Facility-Wide Hourly Emissions Summary

ID#	Sources	NO_X	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	H_2S	NH_3
		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
GEN-9001	Emergency Generator	6.00	11.99	3.61(1)	0.01	0.11	0.11	-	-
HWB-9301	Hot Water Boiler	0.69	0.58	0.04	<0.01	<0.01	<0.01	-	-
STB-9401	Steam Boiler	1.47	1.24	0.08	0.01	0.01	0.01	-	-
FLR-5801	Enclosed Flare	23.75	23.75	0.17	190.64	2.56	2.56	2.03	-
DIG-2000	Biogas Emergency Vent	-	-	3.43	-	-	-	16.14	-
GMBR-5501	RNG Membranes - Tail Gas Vent	-	-	-	-	-	-	0.05	-
ODR-9901	Odor Control System	8.24	6.92	0.45	0.05	0.04	0.04	-	1.60
STP-4101	Ammonia Stripper	-	-	-	-	-	-	-	<0.1
RCT-5201	H_2S Removal - Biological Scrubber	-	-	-	-	-	-	<0.01	-
EVP-4401	Evaporator - Cooling Tower	-	-	-	-	0.09	<0.01	-	-
Total Emissions		**40.15**	**44.48**	**7.78**	**190.71**	**2.81**	**2.72**	**18.22**	**1.70**

(1) Includes formaldehyde emissions.

Facility-Wide Annual Emissions Summary

ID#	Sources	NO_X	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	H_2S	NH_3
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
GEN-9001	Emergency Generator	0.60	1.20	0.36(1)	<0.01	0.01	0.01	-	-

ID#	Sources	NO_X	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	H_2S	NH_3
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
HWB-9301	Hot Water Boiler	3.01	2.52	0.17	0.02	0.02	0.01	-	-
STB-9401	Steam Boiler	6.44	5.41	0.35	0.04	0.03	0.03	-	-
FLR-5801	Enclosed Flare	15.60	15.60	0.11	42.94	1.68	1.68	0.46	-
DIG-2000	Biogas Emergency Vent	-	-	2.50	-	-	-	11.79	-
GMBR-5501	RNG Membranes - Tail Gas Vent	-	-	-	-	-	-	0.24	-
ODR-9901	Odor Control System	36.07	30.30	1.98	0.22	0.19	0.16	-	7.03
STP-4101	Ammonia Stripper	-	-	-	-	-	-	-	<0.1
RCT-5201	H_2S Removal - Biological Scrubber	-	-	-	-	-	-	0.01	-
EVP-4401	Evaporator - Cooling Tower	-	-	-	-	0.39	<0.01	-	-
Total Emissions		**61.72**	**55.03**	**5.47**	**43.22**	**2.32**	**1.89**	**12.50**	**7.13**

(1) Includes formaldehyde emissions.

HAP EMISSIONS

HAP emissions for the emergency generator (GEN-9001) are based on AP-42 (7/00) Table 3.2-2, a heat input rating of 11.475 MMBtu/hr, and 200 hours per year.

Emergency Generator HAP Emissions

HAP	Emission Factor	Emissions (1)	
	lb/MMBtu	lb/hr	TPY
Acetaldehyde	8.36E-03	0.10	0.01
Acrolein	5.14E-03	0.06	0.01
Benzene	4.40E-04	0.01	<0.01
Formaldehyde	5.28E-02	0.61	0.06
Methanol	2.50E-03	0.03	<0.01
Hexane	1.11E-03	0.01	<0.01
Total	**-**	**0.83**	**0.08**

(1) Based on 200 hours per year.

HAP emissions for the boilers (HWB-9301 & STB-9401) are based on AP-42 (7/98), Table 1.4-2 through 1.4-4, a natural gas heating value of 1,020 Btu/scf, and heat rating of 7 MMBtu/hr for the hot water boiler and 15 MMBtu/hr for the steam boiler. HAP emissions from the odor control system (ODR-9901) are based on AP-42 (7/98), Table 1.4-2 through 1.4-4, a natural gas heating value of 1,020 Btu/scf, and a combined dryer heat rating of 84 MMBtu/hr.

Boiler and Odor Control System HAP Emissions

HAP	Emission Factor	Emissions (1)					
		HWB-9301		STB-9401		ODR-9901	
	lb/MMscf	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Formaldehyde	0.075	<0.01	<0.01	<0.01	<0.01	0.01	0.03
Hexane	1.80	0.01	0.05	0.03	0.12	0.15	0.65
Total	**-**	**0.01**	**0.06**	**0.03**	**0.12**	**0.16**	**0.68**

(1) Based on 8,760 hours per year.

HAP emissions for the enclosed flare (FLR-5801) are based on AP-42 (11/98), Table 2.4-1 and 2.4-3, a heat rating of 95 MMBtu/hr, a biogas heating value of 630 Btu/scf and 1,314 hours per year. HAP emissions from the biogas emergency vent (DIG-2000) are based on AP-42 (11/98), Table 2.4-1, a flow rate 400 scfm, a density of hexane of 0.2400 lb/scf, and 1,460 hours per year.

Enclosed Flare and Emergency Vent HAP Emissions

HAP	Emission Factor	Emissions			
		FLR-5801		DIG-2000	
	ppmv	lb/hr	TPY[(1)]	lb/hr	TPY[(2)]
1,1,1-Trichloroethane (methyl chloroform)	0.48	<0.01	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane	1.11	<0.01	<0.01	0.01	<0.01
1,1-Dichloroethane (ethylidene dichloride)	2.35	<0.01	<0.01	0.01	0.01
1,1-Dichloroethene (vinylidene chloride)	0.2	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane (ethylene dichloride)	0.41	<0.01	<0.01	<0.01	<0.01
1,2-Dichloropropane (propylene dichloride)	0.18	<0.01	<0.01	<0.01	<0.01
Acrylonitrile	6.33	<0.01	<0.01	0.04	0.03
Carbon disulfide	0.58	<0.01	<0.01	<0.01	<0.01
Carbon tetrachloride	0.004	<0.01	<0.01	<0.01	<0.01
Carbonyl sulfide	0.49	<0.01	<0.01	<0.01	<0.01
Chlorobenzene	0.25	<0.01	<0.01	<0.01	<0.01
Chloroethane (ethyl chloride)	1.25	<0.01	<0.01	0.01	0.01
Chloroform	0.03	<0.01	<0.01	<0.01	<0.01
Dichloromethane (methylene chloride)	14.3	0.01	<0.01	0.08	0.06
Ethylbenzene	4.61	<0.01	<0.01	0.03	0.02
Hexane	6.57	<0.01	<0.01	0.04	0.03
Mercury (total)	0.000292	<0.01	<0.01	<0.01	<0.01
Methyl isobutyl ketone	1.87	<0.01	<0.01	0.01	0.01
Perchloroethylene (tetrachloroethylene)	3.73	<0.01	<0.01	0.02	0.02
Trichloroethylene (trichloroethene)	2.82	<0.01	<0.01	0.02	0.01
Vinyl chloride	7.34	<0.01	<0.01	0.04	0.03
Xylenes	12.1	<0.01	<0.01	0.07	0.05
Total	**-**	**0.02**	**0.01**	**0.39**	**0.28**

(1) Based on 1,314 hours per year and a destruction efficiency of 99%.
(2) Based on 1,460 hours per year.

The total HAP emissions from the equipment at the facility are 1.23 TPY. Therefore, the individual and the total emissions of HAPs do not exceed the major source thresholds of 10/25 TPY.

SECTION VI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in "attainment" of these standards.

OAC 252:100-5 (Registration, Emissions Inventory, and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories have been submitted and fees paid for the past years.

OAC 252:100-7 (Permits for Minor Facilities) [Applicable]
Subchapter 7 sets forth the permit application fees and the basic substantive requirements of permits for minor facilities. Since criteria pollutant emissions are less than 100 TPY for each pollutant, and emissions of HAP will not exceed 10 TPY for any one HAP, or 25 TPY for any aggregate of HAP, the facility is defined as a minor source. As such, BACT is not required.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Thus, the emergency generator, boilers and dryers are subject to the requirements of this subchapter. This subchapter specifies a PM emissions limitation of 0.6 lb/MMBTU from fuel-burning equipment with a rated heat input of 10 MMBTUH or less. OAC 252:100, Appendix C specifies a PM emission limitation for equipment at this facility with a heat input rating of greater than 10 MMBTUH but less than 1,000 MMBTUH based on the following calculation: $E = 1.0428080X^{-0.238561}$, where E is the allowable emission

rate and X is the maximum heat input. Table 3.2-2 of AP-42 (7/00) lists the total PM emissions from 4-stroke, lean-burn, natural gas-fired engines to be 0.01 lb/MMBTU. Table 1.4-2 of AP-42 (7/98) lists the total PM emissions for natural gas-fired heaters to be 7.6 lb/MMft^3 or about 0.0075 lb/MMBTU. This permit requires the use of natural gas for all fuel-burning equipment to ensure compliance with Subchapter 19.

Comparison of PM Emission Rates to Allowable Emission Rates Under OAC 252:100 Appendix C for the Fuel-Burning Equipment

ID#	Equipment	Maximum Heat Input (MMBTUH	Emissions (lb/MMBTU)	
			Appendix C	Potential
GEN-9001	Emergency Generator	11.475	0.58	0.01
HWB-9301	Hot Water Boiler	7.0	0.60	0.01
STB-9401	Steam Boiler	15.0	0.55	0.01

Section 19-12 limits emissions of particulate matter from industrial processes and direct-fired fuel-burning equipment based on their process weight rates. OAC 252:100, Appendix G specifies a PM emission limitation for equipment at this facility with a process weight rate of 30 TPH or less based on the following calculation: $E = 4.10P^{0.67}$, where E is the allowable emission rate and P is the maximum process weight rate. OAC 252:100, Appendix G specifies a PM emission limitation for equipment at this facility with a process weight rate of greater than 30 TPH based on the following calculation: $E = (55.00P^{0.11})-40$, where E is the allowable emission rate and P is the maximum process weight rate.

Comparison of PM Emission Rates to Allowable Emission Rates Under OAC 252:100 Appendix G for the Solids Dryers

ID#	Equipment	Process Weight (TPH)	Emissions (lb/hr)	
			Appendix G	Potential
ODR-9901	Seven (7) Solids Dryers	18.72[(1)]	29.19	0.04

[(1)] Based on the annual process weight of 164,000 tons of poultry litter.

Comparison of PM Emission Rates to Allowable Emission Rates Under OAC 252:100 Appendix G for the Cooling Tower

ID#	Equipment	Throughput (gal/hr)	Process Weight (TPH)	Emissions (lb/hr)	
				Appendix G	Potential
EVP-4401	Evaporative Cooling Tower	42,000 gal/hr	175.14[(1)]	57.08	0.13

[(1)] Based on the circulation rate above and a density of water of 8.34 lb/gal.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. The permit will require that the fuel burning equipment be fueled only with natural gas to ensure compliance with this requirement. Exhaust air from the Receiving Building, the Digestate Dewatering Building, and the solids dryer are controlled by a packed ammonia wet

scrubber. The permit will require maintenance of the control device to ensure compliance with the opacity standard.

OAC 252:100-29 (Fugitive Dust) [Applicable]
No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originated in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Under normal operating conditions, this facility has negligible potential to violate this requirement; therefore, it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2 limits the ambient air concentration of H_2S emissions from any facility to 0.2 ppmv (24-hour average) at standard conditions which is equivalent to 283 µg/m^3. The applicant submitted H_2S modeling using AERMOD (version 23132) for the facility-wide emission rates as listed in the table below.

ID#	Equipment	H_2S Emission Rate (lb/hr)
DIG-2000	Biogas Vent	16.14
GMBR-5501	RNG Membrane Tail Gas Vent	0.05
FLR-5801	Enclosed Flare	2.03
RCT-5201	H2S Removal System Scrubber	0.00303

The modeled maximum 24-hr total impact from the amine units was 35.2 µg/m^3 (0.02 ppm). Therefore, this facility as a whole would be in compliance with this part.

Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. The permit requires all fuel-burning equipment shall only be fueled with pipeline quality natural gas as defined in Part 72 having 0.5 grains sulfur/100 scf or less to ensure compliance with Subchapter 31.
Part 5 also limits hydrogen sulfide emissions from new petroleum or natural gas process equipment (constructed after July 1, 1972). Removal of hydrogen sulfide in the exhaust stream, or oxidation to sulfur dioxide, is required unless hydrogen sulfide emissions would be less than 0.3 lb/hr for a two-hour average. Hydrogen sulfide emissions shall be reduced by a minimum of 95% of the hydrogen sulfide in the exhaust gas. Direct oxidation of hydrogen sulfide is allowed for units whose emissions would be less than 100 lb/hr of sulfur dioxide for a two-hour average. Biogas does not meet the definition of natural gas. Therefore, the equipment at this facility does not meet the definition of "petroleum or natural gas process equipment" and is not subject to this requirement.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]
This subchapter limits new fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NOx per MMBTU, three-hour average. Fuel-burning equipment is defined in OAC 252:100-1 as any boiler, furnace, gas turbines or other combustion devices used to convert the combustion of fuel into usable energy. The enclosed flare does not meet the definition of "fuel-burning equipment." Therefore, there is no fuel-burning equipment that exceeds the 50 MMBTUH threshold.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
This facility has none of the affected sources: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit, or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Part 7 Applicable]
Part 3 requires VOC storage tanks constructed after December 28, 1974, with a size of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. This facility does not have any VOC storage tanks.
Part 3 requires VOC loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. This facility does not have any VOC storage tanks or loading activities.
Part 5 limits the organic solvent content of coating of parts and products. This facility will not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is not an affected operation.
Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. Temperature and available air must be sufficient to provide essentially complete combustion. The emergency generator is considered fuel-burning or refuse-burning equipment, therefore, it is subject to this requirement.
Part 7 requires all effluent water separator openings, which receive water containing more than 200 gallons per day of any VOC, to be sealed or the separator to be equipped with an external floating roof or a fixed roof with an internal floating roof or a vapor recovery system. No effluent water separators are located at this facility.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates TAC that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated anywhere in the state, there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any

credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

SECTION VII. FEDERAL REGULATIONS

NSPS, 40 CFR Part 60 [Subparts Dc and JJJJ Applicable]

Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units. This subpart affects each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of between 10 MMBTUH and 100 MMBTUH. The steam boiler (STB-9401) has a maximum design heat input capacity of 15.0 MMBTUH. The steam boiler is subject to the notification and recordkeeping requirements of this subpart.

Subpart Kb, Volatile Organic Liquid (VOL) Storage Vessels. This subpart regulates hydrocarbon storage tanks larger than 19,813-gal (75 m^3) capacity and built after July 23, 1984. This facility does not have any VOL storage vessels.

Subpart VVa, Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry. This facility does not produce any of the chemicals listed in §60.489. Therefore, this facility is not subject to this subpart.

Subpart III, VOC Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes. This subpart applies to air oxidation reactors located at synthetic organic chemical manufacturing facilities which produce chemicals listed in this subpart. This facility does not produce any of the chemicals listed in §60.617. Therefore, this facility is not subject to this subpart.

Subpart NNN, VOC Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations. This subpart applies to facilities that produce chemicals listed in this subpart where the facility is equipped with a distillation unit constructed after December 30, 1983. This facility does not produce any of the chemicals listed in §60.667. Therefore, this facility is not subject to this subpart.

Subpart RRR, VOC Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes. This subpart applies to facilities that produce chemicals listed in this subpart where the facility is equipped with a reactor process unit constructed after June 29, 1990. This facility does not produce any of the chemicals listed in §60.707. Therefore, this facility is not subject to this subpart.

Subpart IIII, Stationary Compression Ignition Internal Combustion Engines. There are no stationary compression ignition internal combustion engines at this facility.

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission

standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and numerous manufacture dates. The 1,341-hp emergency generator (GEN-9001) was constructed after June 12, 2006, and manufactured after January 1, 2009, the regulatory applicability date for emergency engines with greater than 25-hp. Therefore, the emergency generator is subject to this subpart, and the permit requires compliance with all applicable requirements of this subpart.

Emission Standards from Table 1, Subpart JJJJ, g/hp-hr
For Stationary Emergency Engines >25 HP

Rated Power (HP)	NO_X	CO	VOC
≥ 130 HP	2.0	4.0	1.0

NESHAP, 40 CFR Part 61 [Not Applicable]
There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides, or vinyl chloride except for benzene. Subpart J, Equipment Leaks of Benzene, only affects process streams, which contain more than 10% benzene by weight. All process streams at this facility are below this threshold.

NESHAP, 40 CFR Part 63 [Subpart ZZZZ Applicable]
Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Owners and operators of a new or reconstructed RICE located at an area source must meet the requirements of Subpart ZZZZ by complying with either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines).

GEN-9001 was constructed after June 12, 2006, and is a new stationary RICE located at an area source of HAPs. GEN-9001 will comply with NESHAP Subpart ZZZZ by complying with the requirements of NSPS Subpart JJJJ for SI engines.

Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters at major sources of HAPs. Because this facility is an area source of HAPs, this subpart does not apply.

Subpart JJJJJJ, Industrial, Commercial, and Institutional Boilers. This subpart affects new and existing boilers located at area sources of HAP, except for gas-fired boilers. Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Boilers (STB-9401 and HWB-9301) meet the definition of gas-fired boilers; therefore, they are not subject to this subpart.

SECTION VIII. COMPLIANCE

TIER CLASSIFICATION AND PUBLIC REVIEW
This application has been determined to be **Tier I** based on the request for a minor construction permit. Information on all permit actions is available for review by the public in the Air Quality Section of the DEQ web page: *www.deq.ok.gov*.

The draft permit will undergo public notice on the DEQ's web site as required in OAC 252:4-7-13(g). The public, tribal governments, and the EPA will have 30 days to comment on the draft permit. Permits available for public review and comment are found at this location: https://www.deq.ok.gov/permits-for-public-review/.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the application involves only land owned by the applicant.

FEE PAID

A fee of $2,000 for an individual minor source construction permit was paid.

COMPLIANCE AND ENFORCEMENT CASE

There are no active Air Quality compliance or enforcement issues concerning this facility.

INSPECTION

An inspection was determined to not be necessary as part of this review.

SECTION IX. SUMMARY

The facility has demonstrated the ability to comply with all applicable air quality rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the construction permit is recommended, contingent on public review.

DRAFT

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Argo Development Partners **Permit No. 2024-0514-C**
Oklahoma Bioprocessing Project

The permittee is authorized to construct in conformity with the specifications submitted to the Air Quality Division on June 7, 2024. The Evaluation Memorandum dated December 23, 2024, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and emission limitations:

ID#	Sources	NO_X	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	H_2S	NH_3
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
GEN-9001	Emergency Generator[(1)]	-	-	-	-	-	-	-	-
HWB-9301	Hot Water Boiler	3.01	2.52	0.17	0.02	0.02	0.01	-	-
STB-9401	Steam Boiler	6.44	5.41	0.35	0.04	0.03	0.03	-	-
FLR-5801	Enclosed Flare	15.60	15.60	0.11	42.94	1.68	1.68	0.46	-
DIG-2000	Biogas Emergency Vent	-	-	2.50	-	-	-	11.79	-
GMBR-5501	RNG Membranes - Tail Gas Vent	-	-	-	-	-	-	0.24	-
ODR-9901	Odor Control System	36.07	30.30	1.98	0.22	0.19	0.16	-	7.03
STP-4101	Ammonia Stripper	-	-	-	-	-	-	-	<0.1
RCT-5201	H_2S Removal - Biological Scrubber	-	-	-	-	-	-	0.01	-
EVP-4401	Evaporator - Cooling Tower	-	-	-	-	0.39	-	-	-

(1) The emergency generator is limited under NSPS Subpart JJJJ and does not have specific lb/hr and TPY limits in this permit.

2. The fuel-burning equipment shall use pipeline-grade natural gas as defined in Part 72 having a sulfur limit of 0.5 grains sulfur/100 scf or less. Compliance can be shown by a current gas company bill or supplier conformance statement/tariff. Compliance shall be demonstrated at least once every calendar year.

3. Except for the emergency generator (GEN-9001), the permittee shall be authorized to operate the facility 24 hours per day, every day of the year (8,760 hours).

4. Throughput at the facility shall not exceed 164,000 tons of poultry litter/year (12-month rolling total).

5. The enclosed flare (FLR-5801) shall be limited as follows:

Operating Scenario	**Annual Hours of Operation**
Flaring with Prior H_2S Removal	876 hours of operation per year, 12-month rolling total
Flaring without Prior H_2S Removal	438 hours of operation per year, 12-month rolling total

6. The odor control system (ODR-9901) shall be equipped with a packed column scrubber with a 99% control efficiency for NH_3. The scrubber shall be operated and maintained according to the manufacturer's recommendations.

7. The ammonia stripper (STP-4101) shall be equipped with a water scrubber and acid bath with a 99.99% control efficiency for NH_3. The scrubber shall be operated and maintained according to the manufacturer's recommendations.

8. Venting from the biogas emergency vent (DIG-2000) shall be limited to 1,460 hours of operation per year and a flow rate not to exceed 400 scfm, 12-month rolling total.

9. No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

10. The emergency generator (GEN-9001) shall have permanent identification plates attached, which show the make, model number, and serial number.

11. The emergency generator (GEN-9001) shall be operated no more than 100 hours per year (12-month rolling total) for non-emergency situations including maintenance and testing. Emergency use is not limited in accordance with NSPS, 40 CFR Part 60, Subpart JJJJ.

12. The emergency generator (GEN-9001) shall be equipped with non-resettable hour meters, and the hours of operation shall be recorded monthly, along with a 12-month rolling total.

13. The permittee shall comply with all applicable requirements of the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, Subpart Dc, for each affected steam generating unit including but not limited to the following:

    a. § 60.40c Applicability and delegation of authority.
    b. § 60.41c Definitions.
    c. § 60.42c Standard for sulfur dioxide (SO_2).
    d. § 60.43c Standard for particulate matter (PM).
    e. § 60.44c Compliance and performance test methods and procedures for sulfur dioxide.
    f. § 60.45c Compliance and performance test methods and procedures for particulate matter.
    g. § 60.46c Emission monitoring for sulfur dioxide.
    h. § 60.47c Emission monitoring for particulate matter.
    i. § 60.48c Reporting and recordkeeping requirements.

14. The permittee shall comply with all applicable requirements of the NSPS for Stationary Spark Ignition Internal Combustion Engines, Subpart JJJJ, for each affected engine including but not limited to the following:

    a. § 60.4230 Am I subject to this subpart?
    b. § 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?
    c. § 60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?
    d. § 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
    e. § 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?
    f. § 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?
    g. § 60.4236 What is the deadline for importing or installing stationary SI ICE produced in the previous model years?
    h. § 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?
    i. § 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?
    j. § 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?
    k. § 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?
    l. § 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?
    m. § 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?
    n. § 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
    o. § 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?
    p. § 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
    q. § 60.4246 What General Provisions and confidential information provisions apply to me?
    r. § 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?
    s. § 60.4248 What definitions apply to this subpart?

15. The permittee shall comply with all applicable requirements of the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE), Subpart ZZZZ, for each affected engine, including but not limited to:

    a. § 63.6580 What is the purpose of subpart ZZZZ?
    b. § 63.6585 Am I subject to this subpart?
    c. § 63.6590 What parts of my plant does this subpart cover?
    d. § 63.6595 When do I have to comply with this subpart?
    e. § 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
    f. § 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?
    g. § 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?
    h. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
    i. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?
    j. § 63.6605 What are my general requirements for complying with this subpart?
    k. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
    l. § 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?
    m. § 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I owner or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
    n. § 63.6615 When must I conduct subsequent performance tests?
    o. § 63.6620 What performance tests and other procedures must I use?
    p. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
    q. § 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?
    r. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
    s. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?
    t. § 63.6645 What notifications must I submit and when?
    u. § 63.6650 What reports must I submit and when?
    v. § 63.6655 What records must I keep?

w. § 63.6660 In what form and how long must I keep my records?
x. § 63.6665 What parts of the General Provisions apply to me?
y. § 63.6670 Who implements and enforces this subpart?
z. § 63.6675 What definitions apply to this subpart?

16. The permittee shall maintain records of operations as listed below. These records shall be stored on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request.

a. Facility-wide emissions of all criteria pollutants (monthly, 12-month rolling total) as specified by S.C. No. 1.
b. Record of poultry litter throughput (monthly and 12-month rolling totals), as specified in S.C. No. 4.
c. Record of hours of operation and corresponding operating scenario for the enclosed flare (monthly and 12-month rolling totals), as specified in S.C. No. 5.
d. Record of hours of venting and flowrate (scfm) for the biogas emergency vent (monthly and 12-month rolling totals), as specified in S.C. No. 8.
e. Record of hours of operation for the emergency generator (monthly and 12-month rolling totals), as specified in S.C. No. 12.
f. For the fuel(s) burned, the appropriate document(s) as specified in S.C. No. 2.
g. Maintenance records for the scrubber.
h. Records required under NSPS 40 CFR Part 60, Subparts Dc and JJJJ.
i. Records required under NESHAP 40 CFR Part 63, Subpart ZZZZ.

17. The permittee shall submit an application for an operating permit within 180 days of commencement of operation of any emission source whose construction has been authorized by this permit.

Argo Development Partners
Attn.: Miles Walker
P.O. Box 6672
Laconia, NH 03247

SUBJECT: Permit No. **2024-0514-C**
Oklahoma Bioprocessing Project (Facility ID: 24162)
Section 3, Township 28N, Range 23E, Ottawa County, Oklahoma

Dear Miles Walker:

Enclosed is the permit authorizing the construction/operation of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation in this matter. If you have any questions, please refer to the permit number above and contact me at Alexandria.Mills@deq.ok.gov, or (405) 702-4195.

Sincerely,

Alexandria Mills, E.I.
Engineering Section
AIR QUALITY DIVISION

Enclosures

Robert Singletary
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

December 23, 2024

Cherokee Nation
Attn.: Chuck Hoskin, Jr., Principal Chief
P.O. Box 948
Tahlequah, OK 74465

Re: Permit Application No. **2024-0514-C**
Argo Development Partners
Oklahoma Bioprocessing Project (Facility ID: 24162)
Ottawa County
Date Received: June 7, 2024

Dear Mr. Hoskin:

The Oklahoma Department of Environmental Quality (ODEQ), Air Quality Division (AQD), has received the Tier I application referenced above. A Tier I application requires AQD to provide a 30-day public comment period on the draft Tier I permit on the ODEQ website. Since the proposed project falls within your Tribal jurisdiction, AQD is providing this direct notice. This letter notification is in addition to email notifications provided to tribal contacts on record.

Copies of draft permits and comment opportunities are provided to the public on the ODEQ website at the following location:

https://www.deq.ok.gov/permits-for-public-review/

If you prefer a copy of the draft permit, or direct notification by letter for any remaining public comment opportunities, if applicable, on the referenced permit action, please notify our Chief Engineer, Phillip Fielder, by e-mail at phillip.fielder@deq.ok.gov, or by letter at:

Department of Environmental Quality, Air Quality Division
Attn.: Phillip Fielder, Chief Engineer
P.O. Box 1677
Oklahoma City, OK, 73101-1677

Thank you for your cooperation. If you have any questions, I can be contacted at (405) 702-4237, and Mr. Fielder may be reached at (405) 702-4185.

Sincerely,

Lee Warden

Lee Warden, P.E.
Permits and Engineering Group Manager
AIR QUALITY DIVISION

Robert Singletary
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

December 23, 2024

Quapaw Nation
Attn.: Wena Supernaw, Chairman
5681 South 630 Road
Quapaw, OK 74363

Re: Permit Application No. **2024-0514-C**
Argo Development Partners
Oklahoma Bioprocessing Project (Facility ID: 24162)
Ottawa County
Date Received: June 7, 2024

Dear Wena Supernaw:

The Oklahoma Department of Environmental Quality (ODEQ), Air Quality Division (AQD), has received the Tier I application referenced above. A Tier I application requires AQD to provide a 30-day public comment period on the draft Tier I permit on the ODEQ website. Since the proposed project falls within your Tribal jurisdiction, AQD is providing this direct notice. This letter notification is in addition to email notifications provided to tribal contacts on record.

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Lee Warden

Lee Warden, P.E.
Permits and Engineering Group Manager
AIR QUALITY DIVISION

Robert Singletary
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

December 23, 2024

Peoria Tribe of Indians of Oklahoma
Attn.: Craig Harper, Chief
P.O. Box 1527
Miami, OK 74355-1527

Re: Permit Application No. **2024-0514-C**
Argo Development Partners
Oklahoma Bioprocessing Project (Facility ID: 24162)
Ottawa County
Date Received: June 7, 2024

Dear Mr. Harper:

The Oklahoma Department of Environmental Quality (ODEQ), Air Quality Division (AQD), has received the Tier I application referenced above. A Tier I application requires AQD to provide a 30-day public comment period on the draft Tier I permit on the ODEQ website. Since the proposed project falls within your Tribal jurisdiction, AQD is providing this direct notice. This letter notification is in addition to email notifications provided to tribal contacts on record.

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P.O. Box 1677
Oklahoma City, OK, 73101-1677

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Sincerely,

Lee Warden

Lee Warden, P.E.
Permits and Engineering Group Manager
AIR QUALITY DIVISION

Robert Singletary
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

December 23, 2024

Ottawa Tribe of Oklahoma
Attn.: Kalisha Dixon Pheasant, Chief
P.O. Box 110
Miami, OK 74355

Re: Permit Application No. **2024-0514-C**
Argo Development Partners
Oklahoma Bioprocessing Project (Facility ID: 24162)
Ottawa County
Date Received: June 7, 2024

Dear Kalisha Dixon Pheasant:

The Oklahoma Department of Environmental Quality (ODEQ), Air Quality Division (AQD), has received the Tier I application referenced above. A Tier I application requires AQD to provide a 30-day public comment period on the draft Tier I permit on the ODEQ website. Since the proposed project falls within your Tribal jurisdiction, AQD is providing this direct notice. This letter notification is in addition to email notifications provided to tribal contacts on record.

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Attn.: Phillip Fielder, Chief Engineer
P.O. Box 1677
Oklahoma City, OK, 73101-1677

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Sincerely,

Lee Warden

Lee Warden, P.E.
Permits and Engineering Group Manager
AIR QUALITY DIVISION

Robert Singletary
Executive Director

OKLAHOMA Environmental Quality

Kevin Stitt
Governor

December 23, 2024

Miami Nation
Attn.: Douglas G Lankford, Chief
P.O. Box 1326
Miami, OK 74355

Re: Permit Application No. **2024-0514-C**
Argo Development Partners
Oklahoma Bioprocessing Project (Facility ID: 24162)
Ottawa County
Date Received: June 7, 2024

Dear Mr. Lankford:

The Oklahoma Department of Environmental Quality (ODEQ), Air Quality Division (AQD), has received the Tier I application referenced above. A Tier I application requires AQD to provide a 30-day public comment period on the draft Tier I permit on the ODEQ website. Since the proposed project falls within your Tribal jurisdiction, AQD is providing this direct notice. This letter notification is in addition to email notifications provided to tribal contacts on record.

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P.O. Box 1677
Oklahoma City, OK, 73101-1677

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Sincerely,

Lee Warden

Lee Warden, P.E.
Permits and Engineering Group Manager
AIR QUALITY DIVISION

PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2024-0514-C

Argo Development Partners,

having complied with the requirements of the law, is hereby granted permission to construct the Oklahoma Bioprocessing Project located in Section 3, Township 28N, Range 23E, Ottawa County, Oklahoma, subject to Standard Conditions dated February 13, 2020, and Specific Conditions both attached.

In the absence of construction commencement, this permit shall expire 18 months from the issuance date, except as authorized under Section B of the Standard Conditions.

DRAFT

Lee Warden, P.E. **Issuance Date**

Permits and Engineering Group Manager

MINOR SOURCE PERMIT TO OPERATE / CONSTRUCT
AIR POLLUTION CONTROL FACILITY
STANDARD CONDITIONS
(February 13, 2020)

A. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ) in accordance with and under the authority of the Oklahoma Clean Air Act. The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. This specifically includes compliance with the rules of the other Divisions of DEQ: Land Protection Division and Water Quality Division.

B. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-7-15(g)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-7-15(f)]

C. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-7-18(a)]

D. Unless specified otherwise, the term of an operating permit shall be unlimited.

E. Notification to the Air Quality Division of DEQ of the sale or transfer of ownership of this facility is required and shall be made in writing by the transferor within 30 days after such date. A new permit is not required. [OAC 252:100-7-2(f)]

F. The following limitations apply to the facility unless covered in the Specific Conditions:

1. No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility. [OAC 252:100-3]
2. All facilities that emit air contaminants are required to file an emission inventory and pay annual operating fees based on the inventory. Instructions are available on the Air Quality section of the DEQ web page. *www.deq.ok.gov* [OAC 252:100-5]
3. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-9]
4. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning subchapter. [OAC 252:100-13]
5. No particulate emissions from new fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lbs/MMBTU. [OAC 252:100-19]
6. No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. [OAC 252:100-25]

7. No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]
8. No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lbs/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
9. Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with an organic material vapor-recovery system. [OAC 252:100-37-15(b)]
10. All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

G. Any owner or operator subject to provisions of NSPS shall provide written notification as follows: [40 CFR 60.7 (a)]

1. A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
2. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
3. A notification of the actual date of initial start-up of an affected facility postmarked within 15 days after such date.
4. If a continuous emission monitoring system is included in the construction, a notification of the date upon which the test demonstrating the system performance will commence, along with a pretest plan, postmarked no less than 30 days prior to such a date.

H. Any owner or operator subject to provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]

I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by this subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least five years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (f)]

J. Any owner or operator subject to the provisions of NSPS shall conduct performance test(s) and furnish to AQD a written report of the results of such test(s). Test(s) shall be conducted within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial start-up. [40 CFR 60.8]

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
11-21-2024

ACFM	Actual Cubic Feet per Minute
AD	Applicability Determination
AFRC	Air-to-Fuel Ratio Controller
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
AVO	Audio, Visual, or Olfactory
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
BBL	Barrel(s)
BHP	Brake Horsepower (bhp)
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BTU	British thermal unit (Btu)
C&E	Compliance and Enforcement
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstract Service
CAAA	Clean Air Act Amendments
CC	Catalytic Converter
CCR	Continuous Catalyst Regeneration
CD	Consent Decree
CEM	Continuous Emission Monitor
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CI	Compression Ignition
CNG	Compressed Natural Gas
CO	Carbon Monoxide or Consent Order
COA	Capable of Accommodating
COM	Continuous Opacity Monitor
D	Day
DEF	Diesel Exhaust Fluid
DG	Demand Growth
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)
EGU	Electric Generating Unit
EI	Emissions Inventory
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EUG	Emissions Unit Group
EUSGU	Electric Utility Steam Generating Unit
FCE	Full Compliance Evaluation
FCCU	Fluid Catalytic Cracking Unit
FEL	Federally Enforceable Limit(s)
FIP	Federal Implementation Plan
FR	Federal Register
GACT	Generally Achievable Control Technology
GAL	Gallon (gal)
GDF	Gasoline Dispensing Facility
GEP	Good Engineering Practice
GHG	Greenhouse Gases
GR	Grain(s) (gr)
H_2CO	Formaldehyde
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbon
HFR	Horizontal Fixed Roof
HON	Hazardous Organic NESHAP
HP	Horsepower (hp)
HR	Hour (hr)
I&M	Inspection and Maintenance
IBR	Incorporation by Reference
ICE	Internal Combustion Engine
LAER	Lowest Achievable Emission Rate
LB	Pound(s) [Mass] (lb, lbs, lbm)
LB/HR	Pound(s) per Hour (lb/hr)
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
LT	Long Ton(s) (metric)
LPE	Legally and Practicably Enforceable
M	Thousand (Roman Numeral)
MAAC	Maximum Acceptable Ambient Concentration
MACT	Maximum Achievable Control Technology
MM	Prefix used for Million (Thousand-Thousand)
MMBTU	Million British Thermal Units (MMBtu)
MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
MMSCF	Million Standard Cubic Feet (MMscf)
MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
MWC	Municipal Waste Combustor
MWe	Megawatt Electrical
NA	Nonattainment
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System

NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NMHC	Non-methane Hydrocarbon
NGL	Natural Gas Liquids
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOI	Notice of Intent
NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
O&G	Oil and Gas
O&M	Operation and Maintenance
O&NG	Oil and Natural Gas
OAC	Oklahoma Administrative Code
OC	Oxidation Catalyst
OGI	Optical Gas Imaging
PAH	Polycyclic Aromatic Hydrocarbons
PAE	Projected Actual Emissions
PAL	Plant-wide Applicability Limit
Pb	Lead
PBR	Permit by Rule
PCB	Polychlorinated Biphenyls
PCE	Partial Compliance Evaluation
PEA	Portable Emissions Analyzer
PFAS	Per- and Polyfluoroalkyl Substance
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers
PM_{10}	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers
POM	Particulate Organic Matter or Polycyclic Organic Matter
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million Volume
ppmvd	Parts per Million Dry Volume
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
psia	Pounds per Square Inch Absolute
psig	Pounds per Square Inch Gage
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RAP	Regulated Air Pollutant or Reclaimed Asphalt Pavement
RFG	Refinery Fuel Gas
RICE	Reciprocating Internal Combustion Engine
RO	Responsible Official
ROAT	Regional Office at Tulsa
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SCF	Standard Cubic Foot
SCFD	Standard Cubic Feet per Day
SCFM	Standard Cubic Feet per Minute
SCR	Selective Catalytic Reduction
SER	Significant Emission Rate
SI	Spark Ignition
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SNCR	Selective Non-Catalytic Reduction
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SOP	Standard Operating Procedure
SRU	Sulfur Recovery Unit
T	Tons
TAC	Toxic Air Contaminant
TEG	Triethylene Glycol
THC	Total Hydrocarbons
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulates
TV	Title V of the Federal Clean Air Act
$\mu g/m^3$	Micrograms per Cubic Meter
US EPA	U. S. Environmental Protection Agency
VFR	Vertical Fixed Roof
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VOL	Volatile Organic Liquid
VRT	Vapor Recovery Tower
VRU	Vapor Recovery Unit
YR	Year
2SLB	2-Stroke Lean Burn
4SLB	4-Stroke Lean Burn
4SRB	4-Stroke Rich Burn