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**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

February 24, 2025

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

THROUGH: Phillip Martin, P.E., Engineering Manager, Existing Source Permits Section

THROUGH: Junru Wang, P.E., Existing Source Permits Section

FROM: Caleb Jobe, E.I., Existing Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2023-0579-C**
BCE Mach, LLC
Cassie Armour 17 20 S1H / Alice Tucker 17 20 S2H / Skeet 17 20 LW1H
SIC 1311, NAICS 211120
Facility ID No. 23698
Latitude: 34.47885°N, Longitude: 97.64585°W
Section 8, Township 1S, Range 4W, Stephens County, Oklahoma
Directions: From the intersection of Shamrock Rd. and Baseline Rd. in
Tussy, OK, drive west on Baseline Rd. for 4 miles, turn south onto N 3020
Rd. and drive 2 miles, turn west onto E 1750 Rd. and drive 1.8 miles, the
facility is to the south.

SECTION I. INTRODUCTION

BCE Mach, LLC (BCE or the applicant) has applied for an individual minor source construction permit for their Cassie Armour 17 20 S1H / Alice Tucker 17 20 S2H / Skeet 17 20 LW1H facility. The permit application was received July 11, 2023, and the facility commenced operation in June 2022.

This facility is part of the Enforcement Case No. 11597 for failure to obtain a construction and operating permit in a timely manner. Enforcement Case 11597 was opened in response to a self-disclosure submitted by Cheyenne Petroleum Company (Cheyenne) on June 2, 2023, and the case was closed on December 4, 2023. The facility was purchased by BCE on October 24, 2024. Since the issuance of the construction permit will bring the facility back into compliance, this permit will not require Compliance and Enforcement review when processing

Based on data provided by BCE, the facility has controlled emissions of 9.21 TPY NO_x, 17.41 TPY CO, 70.89 TPY VOC, and 3.94 TPY HAPs. The total emissions from the facility are below the major source thresholds. This facility, therefore, qualifies for a “synthetic minor” permit because the controlled emissions of each of the criteria pollutants are below the major source threshold of 100 TPY and the HAP emissions are below the 10 TPY threshold for a single HAP and below the 25 TPY threshold for any combination of HAPs.

SECTION II. PROCESS DESCRIPTION

Natural gas-fired gas lift compressor engine(s) may be used to enhance production by injecting compressed gas down the well casing to infuse gas into the flow of oil/condensate so that fluids can flow to the surface at a faster rate. The total fluids/gas stream from the wellhead(s) flow to a primary separator and a secondary separator, where oil/condensate and water are removed from the inlet stream and routed to the produced water storage tanks. Produced gas is routed to the sales gas pipeline. The fluids stream is sent to the heater treater(s), which promote separation of water and oil/condensate via the thermal breakdown of the stable emulsion. The hydrocarbon phase is stored in the oil/condensate storage tanks and the produced water is stored in the produced water storage tanks. Hydrocarbon vapors from the tanks are routed to combustor(s). Oil/condensate and produced water are transported off-site via pipeline or tank truck.

SECTION III. EQUIPMENT

The following is a list of current equipment

ID#	Equipment Type	Size/Rating	Control Type	Manufacture Date	Subject to NSPS or NESHAP?	
					No	If Yes, specify Subpart
ENG-1	Caterpillar G3406 NACHR Serial: 6228	215-HP	NSCR	After 1/1/2021	-	NSPS JJJJ/ NESHAP ZZZZ
ENG-2	Caterpillar G3406 NACHR Serial: 6264	215-HP	NSCR	4/2015	-	NSPS JJJJ/ NESHAP ZZZZ
HT-1	Heater Treater	0.75-MMBTUH	-	-	X	-
HT-2	Heater Treater	0.75-MMBTUH	-	-	X	-
HT-3	Heater Treater	0.75-MMBTUH	-	-	X	-
OILTK 1	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 2	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 3	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 4	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 5	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 6	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 7	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 8	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
OILTK 9	Oil/Condensate Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 1	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 2	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 3	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 4	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 5	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
PWTK 6	Produced Water Tank	400-bbl	Combustor	6/2022	-	NSPS OOOOa
LD-1	Oil/Condensate Truck Loading	-	-	-	X	-

ID#	Equipment Type	Size/Rating	Control Type	Manufacture Date	Subject to NSPS or NESHAP?	
					No	If Yes, specify Subpart
LD-2	Produced Water Truck Loading	-	-	-	X	-
COMB-1	Combustor	1.15-MMBTUH	-	-	X	-
COMB-2	Combustor	1.40-MMBTUH	-	-	X	-
COMB-3	Combustor	0.96-MMBTUH	-	-	X	-
FUG	Fugitive Emissions	-	-	-	-	NSPS OOOOa
BD	Compressor Blowdowns	-	-	-	X	-

SECTION IV. FACILITY-SPECIFIC OR REPRESENTATIVE SAMPLE

TANKS

The facility has provided a facility-specific sample that is less than three years old for each piece of equipment whose emissions are based on a sample.

FUGITIVES

Well Site Fugitive Considerations	Yes	No
The facility submitted a facility-specific sample of the inlet gas or sales gas.	X	
The facility submitted a representative facility sample of the inlet gas or sales gas from a representative facility that is within 10 miles and producing from the same formation(s).		X
The facility did not submit a liquid sample and assumed 100% VOC content for the liquid service components.		X
The facility submitted a facility-specific sample of the VOC containing liquid.	X	
The sample was no older than three (3) calendar years at the time of submittal.	X	

SECTION V. EMISSIONS

Unless otherwise stated emissions are based on 8,760 hours per year of operation with combustion sources firing field-grade natural gas with a maximum sulfur content of 162 ppmv.

ENGINES

Emissions of NO_x, CO, and VOC from ENG-1 and ENG-2 are calculated based on NSPS Subpart JJJJ limits. H₂CO emissions are calculated based on manufacturer data with a conservative estimate. H₂CO is not included in the VOC emission factors for ENG-1 and ENG-2. Since the NSPS Subpart JJJJ emission limit for VOC does not include H₂CO, H₂CO is added to the VOC emissions shown in the facility-wide emissions summary to represent total VOC for ENG-1 and ENG-2.

Engine Emission Factors

ID#	NO _x	CO	VOC	H ₂ CO
	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr
ENG-1 ⁽¹⁾	1.0	2.0	0.7 ⁽²⁾	0.3
ENG-2 ⁽¹⁾	2.0	4.0	1.0 ⁽²⁾	0.3

⁽¹⁾ Fuel consumption is 7,915-BTU/hp-hr

⁽²⁾ VOC does not include formaldehyde in its total.

Engine Emissions

ID#	NO _x		CO		VOC ⁽¹⁾		H ₂ CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
ENG-1	0.47	2.08	0.95	4.15	0.33	1.45	0.14	0.62
ENG-2	0.95	4.15	1.9	8.3	0.47	2.06	0.14	0.62

⁽¹⁾ VOC emissions do not include formaldehyde in its total but will include it in the facility-wide emissions.

HEATERS

Emissions are based on AP-42 (7/98), Section 1.4 and the ratings shown in the second table.

Heater Emission Factors

ID#	NO _x	CO	VOC
	lb/MMBTU	lb/MMBTU	lb/MMBTU
HT-1 – HT-3	0.0980	0.0824	0.0054

Heater Emissions

ID#	Rating	NO _x		CO		VOC	
	MMBTUH	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
HT-1	0.75	0.07	0.32	0.06	0.27	<0.01	0.02
HT-2	0.75	0.07	0.32	0.06	0.27	<0.01	0.02
HT-3	0.5	0.05	0.21	0.04	0.18	<0.01	0.01

TANKS

Flashing emissions from the condensate and produced water tanks were calculated using Gas-to-Oil Ratio methods, facility specific flash gas analysis, and the listed throughput. Flash emissions at the condensate and produced water tanks result as liquids under pressure enter the tanks at atmospheric pressure. Working and breathing (W/B) emissions calculated based on AP-42 (6/20), Section 7.1. Emissions from the storage tanks, OILTK 1, OILTK 2, OILTK 3, PWTK 1, & PWTK2 are routed to the Cassie Armour flare (COMB-1) for control. Emissions from the storage tanks, OILTK 4, OILTK5, OILTK 6, PWTK 3, & PWTK4 are routed to the Alice Tucker flare (COMB-2) for control. Emissions from the storage tanks, OILTK 7, OILTK 8, OILTK 9, PWTK 5, & PWTK 6 are routed to the Skeet flare (COMB-3) for control. To be conservative, flash emissions for the produced water tanks were calculated using 1% of Crude Oil (RVP-10).

Cassie Armour Tank Emissions (per tank)

Parameter	OILTK 1 – OILTK 3 Data	PWTK 1 – PWTK 2 Data
Throughput, gal/yr	1,400,000	2,100,000
Liquid in Tank(s)	Condensate/Oil	Produced Water
Working/Breathing Method/Tool	AP-42 (6/20), Section 7.1	AP-42 (6/20), Section 7.1

Parameter	OILTK 1 – OILTK 3 Data	PWTK 1 – PWTK 2 Data
Flash Calculation Method/Tool	GOR	GOR
Working/Breathing Emissions, TPY	6.02	8.52
Flashing Emissions, TPY ⁽¹⁾	37.36	0.56
Control Type	Combustor	Combustor
Capture Efficiency, %	98	98
Control Efficiency, %	98	98
Tank VOC Emitted at Tank, TPY	0.87	0.18
Tank VOC Emitted at Flare, TPY	0.85	0.18
Total VOC Emissions, TPY	1.72	0.33

Alice Tucker Tank Emissions (per tank)

Parameter	OILTK 4 – OILTK 6 Data	PWTK 3 – PWTK 4 Data
Throughput, gal/yr	1,400,000	2,100,000
Liquid in Tank(s)	Condensate/Oil	Produced Water
Working/Breathing Method/Tool	AP-42 (6/20), Section 7.1	AP-42 (6/20), Section 7.1
Flash Calculation Method/Tool	GOR	GOR
Working/Breathing Emissions, TPY	6.02	8.52
Flashing Emissions, TPY ⁽¹⁾	51.83	0.78
Control Type	Combustor	Combustor
Capture Efficiency, %	98	98
Control Efficiency, %	98	98
Tank VOC Emitted at Tank, TPY	1.16	0.19
Tank VOC Emitted at Flare, TPY	1.13	0.18
Total VOC Emissions, TPY	2.29	0.37

Skeet Tank Emissions (per tank)

Parameter	OILTK 7 – OILTK 9 Data	PWTK 5 – PWTK 6 Data
Throughput, gal/yr	1,400,000	2,100,000
Liquid in Tank(s)	Condensate/Oil	Produced Water
Working/Breathing Method/Tool	AP-42 (6/20), Section 7.1	AP-42 (6/20), Section 7.1
Gas VOC, %	87.71	87.71
Working/Breathing Emissions, TPY	6.02	8.52
Flashing Emissions, TPY ⁽¹⁾	18.04	0.27
Control Type	Combustor	Combustor
Capture Efficiency, %	98	98
Control Efficiency, %	98	98
Tank VOC Emitted at Tank, TPY	0.48	0.18
Tank VOC Emitted at Flare, TPY	0.47	0.17
Total VOC Emissions, TPY	0.95	0.35

LOADING

Emissions from loading condensate and produced water into tank trucks were estimated using AP-42 (6/08), Section 5.2, Equation 1, and the parameters listed in the table below. The vapor pressure, molecular weight, and temperature listed are from AP-42 (11/19), Section 7.1 defaults for Oklahoma City, Oklahoma and the residual liquid sample analysis. Produced water loading emissions were calculated with inputs adjusted to reflect a 99% water and 1% condensate mixture.

HAP emissions from loading are calculated based on the working/breathing emissions stream composition from residual (post-flash) liquid sample analysis.

Loading Parameters and Emissions

Parameter	LD-1	LD-2
Liquids Loaded	Condensate/Oil	Produced Water
Throughput, gal/yr	12,600,000	12,600,000
Saturation Factor	0.6	0.6
Temp., °F	62.87	62.87
TVP, psia	8.0511	8.0511
MW, lb/lbmol	50	50
VOC, wt. %	100	1
Emission Factor, lb/10 ³ gal ⁽¹⁾	5.76	0.06
VOC Emitted, TPY	36.26	0.36

⁽¹⁾ Final factor considering any VOC reduction stated for methane/ethane.

COMBUSTORS

Emission factors of NO_x and CO are taken from TCEQ publication RG-360A/11, Table A-6 (2/12). VOC emissions from the Combustors (COMB-1, COMB-2, & COMB-3) are based on the emissions from the storage tanks with a 98% destruction efficiency.

Combustor Combustion Emissions

ID#	Total Gas Combusted MMBTUH	Emission Factor lb/MMBTU		NO _x TPY	CO TPY
		NO _x	CO		
COMB-1	1.15	0.138	0.2755	0.70	1.39
COMB-2	1.4	0.138	0.2755	0.85	1.69
COMB-3	0.96	0.138	0.2755	0.58	1.16

Combustor Emissions

ID#	Process Point(s)	VOC Emissions, TPY
COMB-1	Cassie Armour Tanks	2.91
COMB-2	Alice Tucker Tanks	3.75
COMB-3	Skeet Tanks	1.75

FUGITIVES

Emissions from fugitive equipment leaks (FUG1) are based on EPA's "Protocol for Equipment Leak Emission Estimates" (11/95, EPA-453/R-95-017), an estimated number of components, and the VOC (C₃₊) and HAP content of the materials handled.

Fugitive Emissions

ID#	VOC, TPY
FUG1	10.85

COMPRESSOR BLOWDOWNS

Blowdown emissions are based on the estimated number of blowdowns per compressor per year. The volume per blowdown is estimated based on compressor make/model and average pound per hour emission rates for each pollutant.

Compressor Blowdowns

ID#	VOC, TPY
MSS	1.42

FACILITY-WIDE EMISSIONS**Facility-Wide Emissions**

ID#	Description	NOx		CO		VOC	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
ENG-1	215-hp Caterpillar G3406 NACHR ⁽¹⁾	0.47	2.08	0.95	4.15	0.33	2.07
ENG-2	215-hp Caterpillar G3406 NACHR ⁽¹⁾	0.95	4.15	1.9	8.3	0.47	2.68
HEAT1	0.75-MMBTUH Heater Treater	0.07	0.32	0.06	0.27	<0.01	0.02
HEAT2	0.75-MMBTUH Heater Treater	0.07	0.32	0.06	0.27	<0.01	0.02
HEAT3	0.5-MMBTUH Heater Treater	0.05	0.21	0.04	0.18	<0.01	0.01
OILTK-1	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.87
OILTK-2	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.87
OILTK-3	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.87
OILTK-4	400-bbl Oil/Condensate Tank	-	-	-	-	-	1.16
OILTK-5	400-bbl Oil/Condensate Tank	-	-	-	-	-	1.16
OILTK-6	400-bbl Oil/Condensate Tank	-	-	-	-	-	1.16
OILTK-7	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.48
OILTK-8	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.48
OILTK-9	400-bbl Oil/Condensate Tank	-	-	-	-	-	0.48
PWTK-1	400-bbl Produced Water Tank	-	-	-	-	-	0.18
PWTK-2	400-bbl Produced Water Tank	-	-	-	-	-	0.18
PWTK-3	400-bbl Produced Water Tank	-	-	-	-	-	0.19
PWTK-4	400-bbl Produced Water Tank	-	-	-	-	-	0.19
PWTK-5	400-bbl Produced Water Tank	-	-	-	-	-	0.18
PWTK-6	400-bbl Produced Water Tank	-	-	-	-	-	0.18
LD-1	Condensate Loading	-	-	-	-	-	36.26
LD-2	Produced Water Loading	-	-	-	-	-	0.52
COMB-1	1.15-MMBTUH Cassie Amour Flare ^{(2) (3)}	0.16	0.7	0.32	1.39	0.66	2.91
COMB-2	1.4-MMBTUH Alice Tucker Flare ^{(2) (3)}	0.19	0.85	0.39	1.69	0.86	3.75
COMB-3	0.96-MMBTUH Skeet Flare ^{(2) (3)}	0.13	0.58	0.26	1.16	0.40	1.75
FUG	Fugitive Emissions	-	-	-	-		10.85
BD	Compressor Blowdowns	-	-	-	-		1.42
Total Emissions		2.09	9.21	3.98	17.41	2.72	70.89

⁽¹⁾ – Equipped with NSCR and includes formaldehyde in VOC total.

⁽²⁾ – Includes uncombusted VOC emissions from the tanks.

⁽³⁾ – Based on max hourly heating value

Facility-Wide HAP Emissions

ID#	Benzene	Ethylbenzene	H ₂ CO	n-Hexane	Toluene	Xylene	Other	Total HAPs
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
ENG-1	0.01	<0.01	0.62	-	<0.01	<0.01	0.01	0.71
ENG-2	0.01	<0.01	0.62	-	<0.01	<0.01	0.01	0.71
HEAT1	<0.01	-	<0.01	0.01	<0.01	-	<0.01	0.01
HEAT2	<0.01	-	<0.01	0.01	<0.01	-	<0.01	0.01
HEAT3	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01
OILTK-1	<0.01	-	-	0.08	<0.01	<0.01	0.01	0.09
OILTK-2								
OILTK-3								
OILTK-4								
OILTK-5								
OILTK-6								
OILTK-7								
OILTK-8								
OILTK-9								
PWTK-1	<0.01	-	-	0.01	<0.01	<0.01	<0.01	0.01
PWTK-2								
PWTK-3								
PWTK-4								
PWTK-5								
PWTK-6								
LD-1	0.03	-	-	1.13	0.01	<0.01	0.08	1.25
LD-2	<0.01	-	-	0.02	<0.01	<0.01	<0.01	0.02
COMB-1	<0.01	-	-	0.09	<0.01	<0.01	0.01	0.10
COMB-2	<0.01	<0.01	-	0.12	<0.01	<0.01	0.01	0.14
COMB-3	<0.01	-	-	0.06	<0.01	-	<0.01	0.06
FUG	<0.01	0.04	-	0.35	0.09	0.27	0.01	0.78
BD	0.02	<0.01	-	0.03	<0.01	<0.01	<0.01	0.04
Total	0.08	0.04	1.25	1.91	0.12	0.28	0.14	3.94

The total HAP emissions from the equipment at the facility are 3.94 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]

Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Fees) [Applicable]

The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. Required annual information (Turn-Around Document) shall be provided to Air Quality.

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 controlled 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 “synthetic minor” source.

OAC 252:100-9 (Excess Emission Reporting Requirement) [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, and 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 engines and the heaters are subject to the requirements of this subchapter. OAC 252:100, Appendix C specifies a PM emission limitation of 0.60 lbs/MMBTU for all equipment at this facility with a heat input rating of 10-MMBTUH or less. Table 3.2-3 of AP-42 (7/00) lists the total PM emissions from 4-stroke, rich-burn, natural gas-fired engines to be 0.02 lbs/MMBTU. This permit requires the use of natural gas for all fuel-burning equipment to ensure compliance with Subchapter 19.

Point	Equipment	Maximum Heat Input (MMBTUH)	Emissions (lbs/MMBTU)	
			Appendix C	Potential
ENG-1	215-HP Caterpillar G3406 NACHR ⁽¹⁾	1.7	0.60	0.02
ENG-2	215-HP Caterpillar G3406 NACHR ⁽¹⁾	1.7	0.60	0.02
HT-1	0.75-MMBTUH Heater Treater	0.75	0.60	<0.01
HT-2	0.75-MMBTUH Heater Treater	0.75	0.60	<0.01
HT-3	0.5-MMBTUH Heater Treater	0.5	0.60	<0.01

⁽¹⁾ Equipped with NSCR.

Section 19-12 limits emissions of particulate matter from industrial processes and direct-fired fuel-burning equipment based on their process weight rates. Since there are no significant particulate emissions from the nonfuel-burning processes at the facility compliance with the standard is assured without any special monitoring provisions.

OAC 252:100-25 (Visible Emissions and Particulate Matter) [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 any on-site equipment be fueled only with natural gas to ensure compliance with this requirement.

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 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. Under normal operating conditions, this facility will not cause a problem in this area; therefore it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2, Section 31-7 limits the ambient air impact of H₂S emissions from any new or existing source to 0.2 ppm for a 24-hour average (equivalent to 283 µg/m³). An analysis of inlet liquid to this facility showed hydrogen sulfide content of 25 ppm. Inlet gas H₂S concentration is limited to not more than 4 ppmv. Air dispersion modeling using EPA's AERSCREEN modeling program resulted in a facility-wide maximum H₂S 24-hour impact of 53.9 µg/m³, which demonstrates compliance with the OAC 252:100-31-7(b) concentration limit.
Part 5 limits sulfur dioxide emissions from new petroleum or natural gas process equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000-BTU/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. Gas produced from oil and gas wells having 162 ppmv or less total sulfur will ensure compliance with Subchapter 31. The permit requires the use of pipeline-grade natural gas or field gas with a maximum sulfur content of 162 ppmv for all fuel-burning equipment to ensure compliance with Subchapter 31.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]
This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50-MMBTUH to emissions of 0.2 lb of NO_x per MMBTU. There are no equipment items that exceed 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 cracking unit, or petroleum catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5-psia at maximum storage

temperature to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. The facility is located prior to custody transfer; therefore, the storage tanks are exempted from this requirement.

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 the physical equipment (loading arm and pump) to conduct this type of loading and is not subject to this requirement.

Part 5 limits the VOC content of coatings from any coating line or other coating operation. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment. The VOC emission is less than 100 pound per day and so is exempt.

Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The equipment at this location 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))

[Not 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 JJJJ and OOOOa Applicable]
NSPS Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. This subpart regulates storage vessels with a capacity greater than or equal to 75 m³ (472 bbl) that are used to store volatile organic liquids.

This subpart does not apply to vessels with a design capacity less than or equal to 1,589.874 m³ (~10,000 bbl) used for petroleum or condensate stored, processed, or treated prior to custody transfer. The storage tanks are considered prior to custody transfer and are less than the applicable capacity limit; therefore, the storage tanks are not subject to this subpart.

Subpart GG, Stationary Gas Turbines. There are none at this facility.

Subpart VV, Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The equipment is not in a SOCMI plant.

Subpart KKK, Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. The facility does not engage in natural gas processing.

Subpart LLL, Onshore Natural Gas Processing: SO₂ Emissions. This subpart affects sweetening units and sweetening units followed by sulfur recovery units. This facility does not have a sweetening unit.

Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. There are no compression ignition engines located 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. Engines ENG-1 and ENG-2 were manufactured after June 12, 2006. Therefore, they are subject to this subpart and the permit requires compliance with all applicable requirements of this subpart.

The owner/operator of a stationary SI-ICE with a maximum engine power greater than or equal to 500-HP must comply with the emission standards in Table 1 of Subpart JJJJ. The applicable standards of Table 1 of Subpart JJJJ are listed as follows.

**Emission Standards from Table 1, Subpart JJJJ, g/hp-hr
 For Non-Emergency SI Natural Gas Engines**

Rated Power (HP)	Mfg. Date	NO_x	CO	VOC
100 ≤ HP < 500	7/1/2008	2.0	4.0	1.0
	1/1/2011	1.0	2.0	0.7

Since Engines ENG-1 and ENG-2 are non-certified engines, the owner/operator must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the owner/operator must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours of use or 3 years, whichever comes first, thereafter to demonstrate compliance. Performance tests must comply with the requirements specified in §60.4244. All applicable requirements have been incorporated into the permit.

Subpart OOOO, Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015. The following table outlines the applicability of the subpart.

NSPS Subpart OOOO Applicability

§60.5365 section	Applicable? Y/N	Affected Facility	Comment
(a)	N	Gas well	After 9/18/15
(b)	N	Centrifugal compressor using wet seals	At a well site, not applicable
(c)	N	Reciprocating compressor	At a well site, not applicable
(d)		Pneumatic controller:	
	N	(1) between wellhead and point of custody transfer or an oil pipeline, bleed rate > 6 SCFH	Devices are low bleed
	N	(2) between wellhead and point of custody transfer to the natural gas transmission or storage segment, bleed rate > 6 SCFH	Devices are low bleed
	N	(3) located at natural gas processing plant, continuous bleed	Not at a gas plant
(e)	N	Storage vessel with the potential for VOC emissions ≥ 6 TPY	After 9/18/15
(f)	N	Group of all equipment in a process unit located at a gas plant	Not at a gas plant
(g)	N	Sweetening units located at gas processing plants	Not at a gas plant
(h)	N	Well completion following hydraulic fracturing	After 9/18/15

Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After September 18, 2015, and on or Before December 6, 2022. The following table outlines the applicability of the subpart.

NSPS Subpart OOOOa Applicability

§60.5365a section	Applicable? Y/N	Affected Facility	Comment
(a)	Y	Well	Subject
(b)	N	Centrifugal compressor using wet seals	At a well site, not applicable
(c)	N	Reciprocating compressor	At a well site, not applicable
(d)		Pneumatic controller:	
	N	(1) not located at a plant, bleed rate > 6 SCFH	Devices are low bleed
	N	(2) located at a gas plant, continuous bleed	Not a gas plant
(e)	Y	Storage vessel with the potential for VOC emissions ≥ 6 TPY	OILTK1-9 and PWTK1-6
(f)	N	Group of all equipment in a process unit located at a gas plant	Not at a gas plant
(g)	N	Sweetening units located at gas processing plants	Not at a gas plant
(h)		Pneumatic pump:	

§60.5365a section	Applicable? Y/N	Affected Facility	Comment
	N	(1) gas-driven diaphragm pump at a gas plant	Not at a gas plant
	N	(2) gas-driven diaphragm pump at a well site	None present
(i)	Y	Fugitive emissions components at a well site	Subject
(j)	N	Fugitive emissions components at a compressor station	Not at a compressor station

Subpart OOOOb, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After December 6, 2022. The following table outlines the applicability of the subpart.

NSPS Subpart OOOOb Applicability

§60.5365b section	Applicable? Y/N	Affected Facility	Comment
(a)	N	Well	Before 12/6/2022
(b)	N	Centrifugal compressor using wet seals	Not applicable
(c)	N	Reciprocating compressor	Not applicable
		Pneumatic controller:	
(d)	N	(1) not located at a plant, bleed rate > 6 SCFH	Devices are low bleed
	N	(2) located at a gas plant, continuous bleed	Not a gas plant
(e)	N	Tank Battery with the potential for VOC emissions ≥ 6 TPY and/or methane emissions ≥ 20 TPY	Before 12/6/2022
(f)	N	Group of all equipment in a process unit located at a gas plant	Not at a gas plant
(g)	N	Sweetening units located at gas processing plants	Not at a gas plant
		Pneumatic pump:	
(h)	N	(1) gas-driven diaphragm pump at a gas plant	Not at a gas plant
	N	(2) gas-driven diaphragm pump at a well site	None present
(i)	N	Fugitive emissions components at a well site	Before 12/6/2022
(j)	N	Fugitive emissions components at a compressor station	Before 12/6/2022

NESHAP, 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the pollutants subject to 40 CFR 61 (arsenic, asbestos, radionuclides, coke oven emissions, mercury, beryllium, vinyl chloride, and benzene) except for benzene. Subpart J affects process streams, which contain more than 10% benzene by weight. Benzene is present only in trace amounts in any product stream in this facility.

NESHAP, 40 CFR Part 63

[Subpart ZZZZ Applicable]

Subpart HH, Oil and Natural Gas Production Facilities. This subpart applies to affected sources that are located at facilities which are major and area sources of HAP. This facility is an area source of HAP emissions. The only affected unit at an area source is the TEG dehydration unit. There are no dehydration units at the facility.

Subpart HHH, affects Natural Gas Transmission and Storage Facilities that are major sources of HAP. Since this facility is a production facility, this subpart does not apply.

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 the following new or reconstructed RICE 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):

- 1) Stationary RICE located at an area source;
- 2) The following Stationary RICE located at a major source of HAP emissions:
 - i) 2SLB and 4SRB stationary RICE with a site rating of ≤ 500 brake HP;
 - ii) 4SLB stationary RICE with a site rating of < 250 brake HP;
 - iii) Stationary RICE with a site rating of ≤ 500 brake HP which combust landfill or digester gas equivalent to 10% or more of the gross heat input on an annual basis;
 - iv) Emergency or limited use stationary RICE with a site rating of ≤ 500 brake HP; and
 - v) CI stationary RICE with a site rating of ≤ 500 brake HP.

No further requirements apply for engines subject to NSPS under this part. A stationary RICE located at an area source of HAP emissions is new if construction commenced after June 12, 2006. Based on emission calculations, this facility is an area source of HAP. Engines ENG-1 and ENG-2 were construction after June 12, 2006. They will comply with the requirements of Subpart ZZZZ by complying with NSPS Subpart JJJJ.

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, this subpart does not apply.

Subpart JJJJJ, 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. There are no boilers located at this facility.

SECTION VIII. COMPLIANCE

TIER CLASSIFICATION AND PUBLIC REVIEW

This application has been determined to be **Tier I** based on the request for a new minor NSR construction permit for a minor facility. 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 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 applicant has a current lease given to accomplish the permitted purpose.

FEE PAID

A fee of \$2,000 for the individual minor facility construction permit has been paid.

COMPLIANCE AND ENFORCEMENT CASES

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

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 that would prevent issuance of the permit. Issuance of the construction permit is recommended, contingent on public review.

DRAFT

**PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

BCE Mach, LLC**Permit No. 2023-0579-C****Cassie Armour 17 20 S1H / Alice Tucker 17 20 S2H / Skeet 17 20 LW1H**

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on July 11, 2023. The Evaluation Memorandum dated February 24, 2025, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction and continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and emission limitations for each point:

Point	Source	NO _x		CO		VOC	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
ENG-1	215-hp Caterpillar G3406 NACHR ⁽¹⁾	0.47	2.08	0.95	4.15	0.33	2.07 ⁽²⁾
ENG-2	215-hp Caterpillar G3406 NACHR ⁽¹⁾	0.95	4.15	1.9	8.3	0.47	2.68 ⁽²⁾
HEAT1	0.75-MMBTUH Heater Treater	0.07	0.32	0.06	0.27	0.01	0.02
HEAT2	0.75-MMBTUH Heater Treater	0.07	0.32	0.06	0.27	0.01	0.02
HEAT3	0.5-MMBTUH Heater Treater	0.05	0.21	0.04	0.18	0.01	0.01
OILTK-1	400-bbl Oil/Condensate Tank	-	-	-	-	-	14.88 ⁽³⁾
OILTK-2	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-3	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-4	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-5	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-6	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-7	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-8	400-bbl Oil/Condensate Tank	-	-	-	-	-	
OILTK-9	400-bbl Oil/Condensate Tank	-	-	-	-	-	
PWTK-1	400-bbl Produced Water Tank	-	-	-	-	-	2.10 ⁽³⁾
PWTK-2	400-bbl Produced Water Tank	-	-	-	-	-	
PWTK-3	400-bbl Produced Water Tank	-	-	-	-	-	
PWTK-4	400-bbl Produced Water Tank	-	-	-	-	-	
PWTK-5	400-bbl Produced Water Tank	-	-	-	-	-	
PWTK-6	400-bbl Produced Water Tank	-	-	-	-	-	
LD-1	Condensate Loading	-	-	-	-	-	36.26
LD-2	Produced Water Loading	-	-	-	-	-	0.52
COMB-1	1.15-MMBTUH Cassie Armour Flare ^{(2) (3)}	-	0.70	-	1.39	-	-
COMB-2	1.4-MMBTUH Alice Tucker Flare ^{(2) (3)}	-	0.85	-	1.69	-	-
COMB-3	0.96-MMBTUH Skeet Flare ^{(2) (3)}	-	0.58	-	1.16	-	-
BD	Compressor Blowdowns	-	-	-	-	-	1.42

⁽¹⁾ Equipped with NSCR.

⁽²⁾ Includes H₂CO.

⁽³⁾ Includes uncaptured and uncombusted emissions.

2. The fuel-burning equipment shall be fired with pipeline natural gas or natural gas with a sulfur content less than 162 ppmv. Compliance can be shown by the following methods: for pipeline natural gas, a current gas company bill; for natural gas, a current lab analysis, stain-tube analysis, gas contract, tariff sheet, etc. Compliance shall be demonstrated at least once every calendar year.
3. The permittee shall be authorized to operate this facility continuously (24 hours per day, every day of the year, 8,760 hours).
4. The engines shall have permanent identification plates attached, which show the make, model number, and serial number.
5. Engines ENG-1 and ENG-2 shall each be operated with their exhaust gases passing through a properly functioning NSCR.
6. The permittee shall conduct an initial test of NO_x and CO emissions from any engine listed in S.C. #1 or any replacement engine; other than (1) an Emergency Use Engine (i.e., any engine that drives a generator or firewater pump, or other emergency use equipment and operates no more than 500 hours per year), or (2) any engine equal to or less than 250 horsepower (hp). The initial test must be performed within 180 days of engine startup. Testing shall be conducted using EPA reference methods, if applicable, or a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD.

At least twice per calendar year, the permittee shall conduct tests of NO_x and CO emissions from any controlled engine greater than 250 hp. Testing shall be conducted using EPA reference methods, if applicable, or a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD "Portable Analyzer Guidance" document, or an equivalent method approved by AQD. Testing is required for any controlled engine greater than 250 hp that runs for more than 440 hours during a semi-annual period. A semi-annual period is defined as a calendar semi-annual period (i.e., January through June & July through December). Each semi-annual test shall be separated by at least 120 days. In the first year of operation, any engine started after March 31st only requires one test regardless of hours operated. The initial test may be counted as the first semi-annual test of an engine.

Replacement of any equipment with emissions specified in this permit are authorized under OAC 252:100-7-15(a)(2)(C), provided the replacement unit does not require a change in any emission limit and the owner or operator notifies the DEQ in writing within fifteen (15) days of the startup of the replacement unit. The replacement unit shall meet the definition under OAC 252:100-7-1.1. Installation of an "affected facility," "affected source," or "new source" as those terms are defined in 40 CFR Section 60.2, 40 CFR Section 63.2, and 40 CFR Section 61.02, respectively, that is subject to an emission standard, equipment standard, work practice standard or recordkeeping requirement in a federal NSPS (40 CFR Part 60) or a federal NESHAP (40 CFR Parts 61 and 63) shall comply with all applicable requirements.

7. When periodic compliance testing shows engine exhaust emissions in excess of the lb/hr limits in Specific Condition No. 1, the permittee shall comply with the provisions of OAC 252:100-9 for excess emissions.
8. 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. 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
 - c. 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?
 - d. 60.4236 What is the deadline for importing or installing stationary SI ICE produced in the previous model year?
 - e. 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
 - f. 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?
 - g. 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
 - h. 60.4246 What parts of the General Provisions apply to me?
9. The permittee shall comply with NSPS, Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015, and on or Before December 6, 2022, for all affected facilities located at this site.
 - a. § 60.5360a What is the purpose of this subpart?
 - b. § 60.5365a Am I subject to this subpart?
 - c. § 60.5370a When must I comply with this subpart?
 - d. § 60.5375a What GHG and VOC standards apply to well affected facilities?
 - e. § 60.5380a What GHG and VOC standards apply to centrifugal compressor affected facilities?
 - f. § 60.5385a What GHG and VOC standards apply to reciprocating compressor affected facilities?
 - g. § 60.5390a What GHG and VOC standards apply to pneumatic controller affected facilities?
 - h. § 60.5393a What GHG and VOC standards apply to pneumatic pump affected facilities?
 - i. § 60.5395a What VOC standards apply to storage vessel affected facilities?
 - j. § 60.5397a What fugitive emissions GHG and VOC standards apply to the affected facility which is the collection of fugitive emissions components at a well site and the affected facility which is the collection of fugitive emissions components at a compressor station?

- k. § 60.5398a What are the alternative means of emission limitations for GHG and VOC from well completions, reciprocating compressors, the collection of fugitive emissions components at a well site and the collection of fugitive emissions components at a compressor station?
- l. § 60.5400a What equipment leak GHG and VOC standards apply to affected facilities at an onshore natural gas processing plant?
- m. § 60.5401a What are the exceptions to the equipment leak GHG and VOC standards for affected facilities at onshore natural gas processing plants?
- n. § 60.5402a What are the alternative means of emission limitations for GHG and VOC equipment leaks from onshore natural gas processing plants?
- o. § 60.5405a What standards apply to sweetening unit affected facilities at onshore natural gas processing plants?
- p. § 60.5406a What test methods and procedures must I use for my sweetening unit affected facilities at onshore natural gas processing plants?
- q. § 60.5407a What are the requirements for monitoring of emissions and operations from my sweetening unit affected facilities at onshore natural gas processing plants?
- r. § 60.5408a What is an optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure?
- s. § 60.5410a How do I demonstrate initial compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, collection of fugitive emissions components at a compressor station, and equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
- t. § 60.5411a What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing emissions from centrifugal compressor wet seal fluid degassing systems, reciprocating compressors, pneumatic pumps and storage vessels?
- u. § 60.5412a What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my centrifugal compressor, and storage vessel affected facilities?
- v. § 60.5413a What are the performance testing procedures for control devices used to demonstrate compliance at my centrifugal compressor and storage vessel affected facilities?
- w. § 60.5415a How do I demonstrate continuous compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, and collection of fugitive emissions components at a compressor station affected facilities, and affected facilities at onshore natural gas processing plants?
- x. § 60.5416a What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my centrifugal compressor, reciprocating compressor, pneumatic pump and storage vessel affected facilities?
- y. § 60.5417a What are the continuous control device monitoring requirements for my centrifugal compressor and storage vessel affected facilities?
- z. § 60.5420a What are my notification, reporting, and recordkeeping requirements?

- aa. § 60.5421a What are my additional recordkeeping requirements for my affected facility subject to GHG and VOC requirements for onshore natural gas processing plants?
 - bb. § 60.5422a What are my additional reporting requirements for my affected facility subject to GHG and VOC requirements for onshore natural gas processing plants?
 - cc. § 60.5423a What additional recordkeeping and reporting requirements apply to my sweetening unit affected facilities at onshore natural gas processing plants?
 - dd. § 60.5425a What parts of the General Provisions apply to me?
 - ee. § 60.5430a What definitions apply to this subpart?
 - ff. § 60.5432a How do I determine whether a well is a low pressure well using the low pressure well equation?
10. 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?
 - f. § 63.6605 What are my general requirements for complying with this subpart?
 - g. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations?
 - h. § 63.6615 When must I conduct subsequent performance tests?
 - i. § 63.6620 What performance tests and other procedures must I use?
 - j. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
 - k. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?
 - l. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
 - m. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?
 - n. § 63.6645 What notifications must I submit and when?
 - o. § 63.6650 What reports must I submit and when?
 - p. § 63.6655 What records must I keep?
 - q. § 63.6660 In what form and how long must I keep my records?
 - r. § 63.6665 What parts of the General Provisions apply to me?
 - s. § 63.6670 Who implements and enforces this subpart?
 - t. § 63.6675 What definitions apply to this subpart?
11. Condensate throughput at the facility shall not exceed 12,600,000 gallons (12-month rolling total). Produced water throughput at the facility shall not exceed 12,600,000 gallons (12-month rolling total). Emissions from the storage tanks shall be routed to the flares.

12. The facility is limited to 104 blowdowns per year. The permittee shall record the number of compressor blowdowns on a monthly and 12-month rolling total.
13. The permittee shall maintain records of operations as listed below. These records shall be maintained 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. Periodic testing for NO_x and CO emissions for the applicable engines.
 - b. Operating hours for the applicable engines if less than 440 hours per semi-annual period and not tested.
 - c. For the fuel(s) burned, the appropriate document(s) as described in Specific Condition No. 2.
 - d. Facility condensate and produced water throughputs (monthly and 12-month rolling total).
 - e. Records of the number of compressor blowdowns (monthly and 12-month rolling total).
 - f. Records required under NSPS 40 CFR Part 60, Subparts JJJJ and OOOOa.
 - g. Records required under NESHAP 40 CFR Part 63, Subpart ZZZZ.
14. The permittee shall submit an application for an operating permit within 180 days of starting operation under this permit.

February 24, 2025

Chickasaw Nation
Attn.: Bill Anoatubby, Governor
P.O. Box 1548
Ada, OK 74821

Re: Permit Application No. **2023-0579-C**
Cassie Armour 17 20 S1H / Alice Tucker 17 20 S2H / Skeet 17 20 LW1H
SIC 1311, NAICS 211120
Facility ID No. 23698
Latitude: 34.47885°N, Longitude: 97.64585°W, Stephens County

Dear Mr. Anoatubby:

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, 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. 2023-0579-C

BCE Mach, LLC,

having complied with the requirements of the law, is hereby granted permission to construct the Cassie Armour 17-20 S1H / Alice Tucker 17-20 S2H / Skeet 17-20 LW1H located in Section 8, Township 1S, Range 4W, Stephens County, Oklahoma, and subject to the 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 date of issuance below, except as Authorized under Section B of the Standard Conditions.

DRAFT

Lee Warden, P.E.

Permits and Engineering Group Manager

Issuance Date

BCE Mach, LLC
Attn.: Mr. Justin Flanagan
14201 Wireless Way, Suite 300
Oklahoma City, OK 73134

Re: Construction Permit No. **2023-0579-C**
Cassie Armour 17 20 S1H / Alice Tucker 17 20 S2H / Skeet 17 20 LW1H
SIC 1311, NAICS 211120
Facility ID No. 23698
Latitude: 34.47885°N, Longitude: 97.64585°W

Dear Mr. Flanagan:

Enclosed is the permit authorizing construction of the referenced facility above. 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 submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at Caleb.Job@deq.ok.gov, or (405) 702-4187.

Sincerely,



Caleb Jobe, E.I.
Existing Source Permits Section
AIR QUALITY DIVISION

Enclosures

**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
9-10-21

ACFM	Actual Cubic Feet per Minute	GEP	Good Engineering Practice
AD	Applicability Determination	GHG	Greenhouse Gases
AFRC	Air-to-Fuel Ratio Controller	GR	Grain(s) (gr)
API	American Petroleum Institute		
ASTM	American Society for Testing and Materials	H₂CO	Formaldehyde
		H₂S	Hydrogen Sulfide
		HAP	Hazardous Air Pollutants
BACT	Best Available Control Technology	HC	Hydrocarbon
BAE	Baseline Actual Emissions	HCFC	Hydrochlorofluorocarbon
BBL	Barrel(s)	HFR	Horizontal Fixed Roof
BHP	Brake Horsepower (bhp)	HON	Hazardous Organic NESHAP
BTU	British thermal unit (Btu)	HP	Horsepower (hp)
		HR	Hour (hr)
C&E	Compliance and Enforcement		
CAA	Clean Air Act	I&M	Inspection and Maintenance
CAM	Compliance Assurance Monitoring	IBR	Incorporation by Reference
CAS	Chemical Abstract Service	ICE	Internal Combustion Engine
CAAA	Clean Air Act Amendments		
CC	Catalytic Converter	LAER	Lowest Achievable Emission Rate
CCR	Continuous Catalyst Regeneration	LB	Pound(s) [Mass] (lb, lbs, lbm)
CD	Consent Decree	LB/HR	Pound(s) per Hour (lb/hr)
CEM	Continuous Emission Monitor	LDAR	Leak Detection and Repair
CFC	Chlorofluorocarbon	LNG	Liquefied Natural Gas
CFR	Code of Federal Regulations	LT	Long Ton(s) (metric)
CI	Compression Ignition		
CNG	Compressed Natural Gas	M	Thousand (Roman Numeral)
CO	Carbon Monoxide or Consent Order	MAAC	Maximum Acceptable Ambient Concentration
COA	Capable of Accommodating		
COM	Continuous Opacity Monitor	MACT	Maximum Achievable Control Technology
		MM	Prefix used for Million (Thousand-Thousand)
D	Day	MMBTU	Million British Thermal Units (MMBtu)
DEF	Diesel Exhaust Fluid	MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
DG	Demand Growth		
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)	MMSCF	Million Standard Cubic Feet (MMscf)
		MMSCFD	Million Standard Cubic Feet per Day
EGU	Electric Generating Unit	MSDS	Material Safety Data Sheet
EI	Emissions Inventory	MWC	Municipal Waste Combustor
EPA	Environmental Protection Agency	MWe	Megawatt Electrical
ESP	Electrostatic Precipitator		
EUG	Emissions Unit Group	NA	Nonattainment
EUSGU	Electric Utility Steam Generating Unit	NAAQS	National Ambient Air Quality Standards
		NAICS	North American Industry Classification System
FCE	Full Compliance Evaluation	NESHAP	National Emission Standards for Hazardous Air Pollutants
FCCU	Fluid Catalytic Cracking Unit		
FESOP	Federally Enforceable State Operating Permit	NH₃	Ammonia
FIP	Federal Implementation Plan	NMHC	Non-methane Hydrocarbon
FR	Federal Register	NGL	Natural Gas Liquids
		NO₂	Nitrogen Dioxide
GACT	Generally Achievable Control Technology	NO_x	Nitrogen Oxides
GAL	Gallon (gal)	NOI	Notice of Intent
GDF	Gasoline Dispensing Facility	NSCR	Non-Selective Catalytic Reduction

NSPS	New Source Performance Standards	SNCR	Selective Non-Catalytic Reduction
NSR	New Source Review	SO₂	Sulfur Dioxide
		SO_x	Sulfur Oxides
O₃	Ozone	SOP	Standard Operating Procedure
O&G	Oil and Gas	SRU	Sulfur Recovery Unit
O&M	Operation and Maintenance		
O&NG	Oil and Natural Gas	T	Tons
OAC	Oklahoma Administrative Code	TAC	Toxic Air Contaminant
OC	Oxidation Catalyst	TEG	Triethylene Glycol
		THC	Total Hydrocarbons
PAH	Polycyclic Aromatic Hydrocarbons	TPY	Tons per Year
PAE	Projected Actual Emissions	TRS	Total Reduced Sulfur
PAL	Plant-wide Applicability Limit	TSP	Total Suspended Particulates
Pb	Lead	TV	Title V of the Federal Clean Air Act
PBR	Permit by Rule		
PCB	Polychlorinated Biphenyls	µg/m³	Micrograms per Cubic Meter
PCE	Partial Compliance Evaluation	US EPA	U. S. Environmental Protection Agency
PEA	Portable Emissions Analyzer		
PFAS	Per- and Polyfluoroalkyl Substance	VFR	Vertical Fixed Roof
PM	Particulate Matter	VMT	Vehicle Miles Traveled
PM_{2.5}	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers	VOC	Volatile Organic Compound
PM₁₀	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers	VOL	Volatile Organic Liquid
POM	Particulate Organic Matter or Polycyclic Organic Matter	VRT	Vapor Recovery Tower
		VRU	Vapor Recovery Unit
ppb	Parts per Billion	YR	Year
ppm	Parts per Million		
ppmv	Parts per Million Volume	2SLB	2-Stroke Lean Burn
ppmvd	Parts per Million Dry Volume	4SLB	4-Stroke Lean Burn
PSD	Prevention of Significant Deterioration	4SRB	4-Stroke Rich Burn
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		