PRICE ENERGY CONSULTING, LLC
P. O. BOX 50676
MIDLAND, TX 79710-0676
(432) 528-2777

July 7, 2024

Air Permits Initial Review Team (APIRT)
Texas Commission on Environmental Quality
MC 161
P. O. Box 13087
Austin, TX 78711-3087

Re: Fasken Oil and Ranch Ltd – CN601051303
Fee CF Sec 15 5 Compressor Site

Dear Madam/Sir:

Enclosed, please find the completed forms and supporting documentation to register the above referenced facility under 106.512, Permit by Rule.

If you have any questions or require additional information, please contact me at the above address or telephone.

Sincerely,

Robert A. Price

Enclosures

Cc: TCEQ, Region 7
9900 W IH-20, Ste 100
Midland, TX 79706

Grant Huckabay, Fasken Oil and Ranch, Ltd – Midland, TX

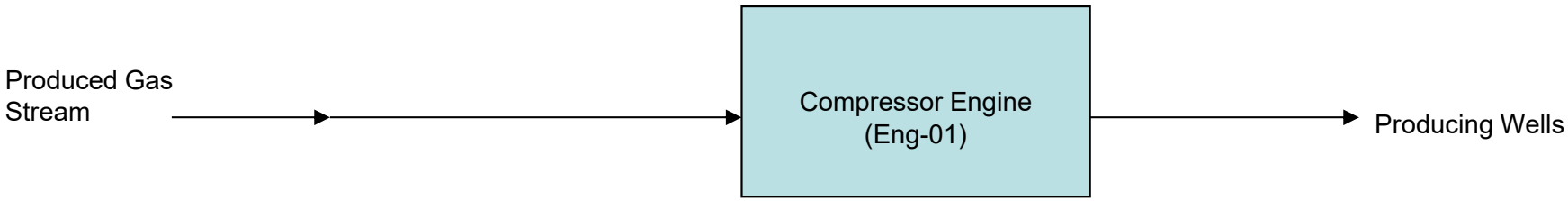
Fasken Oil and Ranch Ltd
Fee CF Sec 15 5 Compressor Site

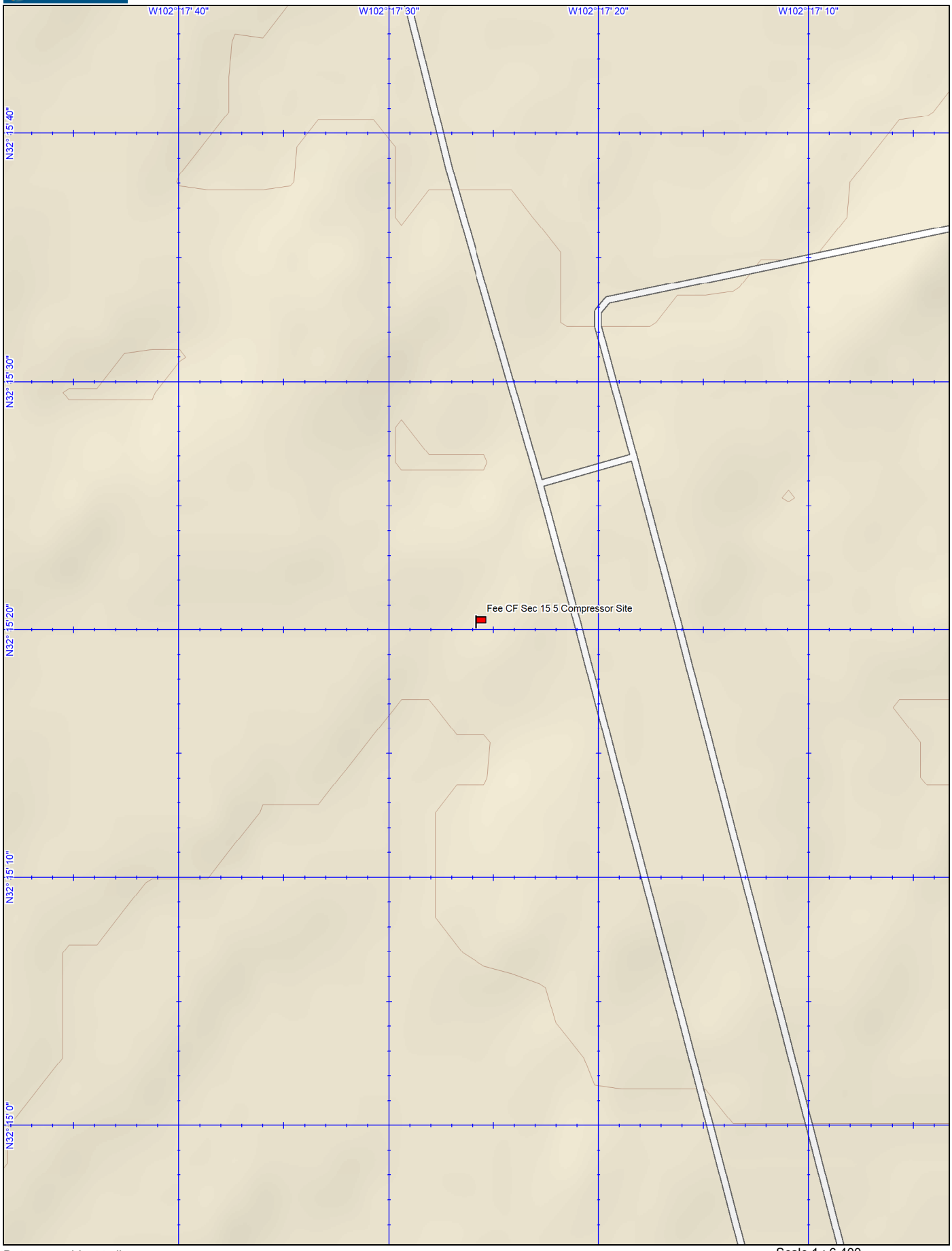
PROCESS DESCRIPTION:

This Permit by Rule is submitted to authorize emissions from the Gas Lift Compressor Engine located at the Fee CF Sec 15 5 Compressor Site. The compressor takes produced gas from the production facility and route it back to the producing wells to facilitate artificial lift.

In the event of an upset of the producing well or the gas supply, the unit is shut in.

Fee CF Sec 15 5 Compressor Site Process Flow Diagram





TN

MN (5.4°E)

Scale 1 : 6,400

0 180 360 540 720 900 ft

0 40 80 120 160 200 m

1" = 533.3 ft

Data Zoom 15-0

Fasken Oil and Ranch Ltd
Fee CF Sec 15 5 Compressor Site

Emission Rate Summary

		VOC Emissions		SO2 Emissions		NOx Emissions		CO Emissions		PM10 Emissions	
EPN	Description	Emissions (lbs/hr)	Emissions (tons/yr)	Emissions (lbs/hr)	Emissions (tons/yr)	Emissions (lbs/hr)	Emissions (tons/yr)	Emissions (lbs/hr)	Emissions (tons/yr)	Emissions (lbs/hr)	Emissions (tons/yr)
Eng-01	Compressor Engine	0.89	3.89	0.00	0.00	1.67	7.33	3.35	14.66	0.000	0.001
Totals		**0.89**	**3.89**	**0.00**	**0.00**	**1.67**	**7.33**	**3.35**	**14.66**	**0.000**	**0.001**

Fasken Oil and Ranch Ltd
Fee CF Sec 15 5 Compressor Site
Compressor Engine Emissions

Source Description:	Natural Gas Engine		
Manufacturer:	Cummins		
Model:	KTA19GCE		
Aspiration:	TA		
Compression Ratio:	8.5:1		
Engine Horsepower and RPM			
Engine Speed:	1800	rpm	Mfg data
Sea Level hp:	380	hp	Mfg data
Elevation:	n/a	msl	NMED/AQB Policy 02.07-01
Derate:	0.00%		3% per 1000 ft over 4000 ft
Site hp:	380	hp	Sea level hp *(100 - derate)
Fuel Consumption:			
BSCF:	7967	Btu/hp-hr	Mfg data
Fuel Heat Value:	1300	Btu/scf	Field Gas Analysis
Heat input:	3.0	MMBtu/hr	BSFC * site hp
Fuel Consumption:	2.3	Mscf/hr	Heat input / fuel heat value
Annual Fuel Usage:	20.4	MMscf/yr	8760 hrs/yr operation
Exhaust Parameters			
Exhaust Temp. (Tstk):	1347	^{o}F	Mfg data
Stack Height:	15	ft	Mfg data
Stack Diameter:	0.5	ft	Mfg data
Exhaust Flow:	2126	acfm	Mfg data
Exhaust Velocity:	180.5	ft/sec	Exhaust flow/stack area

Emissions Calculations
Controlled Emissions

	NO_X	**CO**	**NMHC**	**SO_2***		
	2	4	1		g/hp-hr	Mfg data
				0.45	gr S/ 100 scf	Pipeline Specification
	1.67	**3.35**	**0.84**	**0.00**	lb/hr	Hourly emission rate
	7.3	**14.7**	**3.7**	**0.0**	tpy	Annual emission rate

* SO_2 calculation assumes 100% conversion of fuel elemental sulfur to SO_2

	PM10	**PM2.5**	**Formaldehyde**			
	0.000071	0.000071			g/hp-hr	Mfg data
			0.06	0	gr S/Mscf	Pipeline Specification
	0.000	**0.000**	**0.05**	**0.00**	lb/hr	Hourly emission rate
	0.001	**0.001**	**0.2**	**0.0**	tpy	Annual emission rate

* SO_2 calculation assumes 100% conversion of fuel elemental sulfur to SO_2
**PM10 Emissions are estimated using AP-42

NAAQS Compliance: .3125D = .3125*1000' = 312.5. Therefore, total NOx at battery (11.6 tons) < 250 tons.

Table 29
RECIPROCATING ENGINES

ENGINE DATA

Emission Point Number from Table 1(a) Eng-01

Manufacturer Cummins
Model No. KTA19GC380
Serial No. 37221201
Orig. Mfr. Date 1/15/2006
Rebuild Dates (s)
No. of Cylinders 6
Compression Ratio 8.5:1

APPLICATION

x Gas Compression
Electric Generation
Refrigeration
Other (Specify)

x 4 StrokeCycle	X Carburetted	x Spark Ignited	Dual Fuel
2 Stroke Cycle	Fuel Injected	Diesel	

Naturally Aspirated	Blower/Pump Scavenged	Turbocharged & I.C. X
Turbocharged	Intercooled (I.C)	I.C. Water Temperature

Ignition/Injection Timing: Fixed x Variable

	Mfg. Rating	Proposed Operating Range
Horsepower	380	
Speed (rpm)	1800	

FUEL DATA

X Field Gas	Landfill Gas	LP Gas	Other
Natural Gas	Digester Gas	Diesel	

Heat Value (specify units) LHV 1300 (HHV) (LHV)
Fuel Sulfur Content 0.45 (granins/100scf)(weight percent)

FULL LOAD EMISSIONS DATA

	NOx 2 g/bhp-hr	CO 4 g/bhp-hr	HCHO 0.06 gr/bhp/hr
	ppmv	ppmv	
NMNEHC	VOC(C3+) 1 g/bhp-hr	Total HC g.bhp-hr	
	ppmv	ppmv	

missions versus engine speed and load.

Method of Emissions Control:

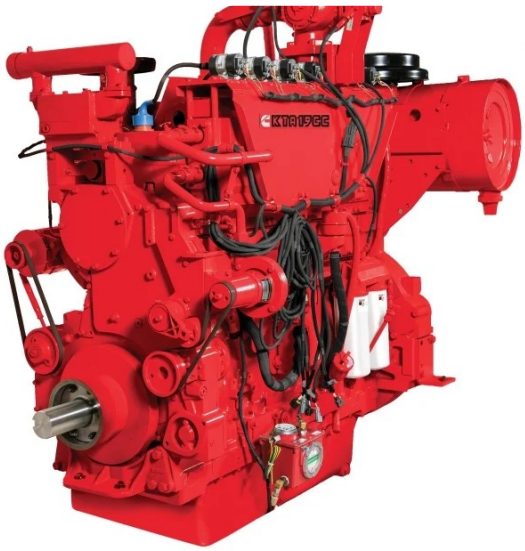
Lean Operation	Parameter Adjustment	SCAR Catalyst
Stratified Charge	X NSCR Catalyst	Other (Specify)

ADDITIONAL INFORMATION

On separate sheets attach the following:

A. A copy of engine manufacturer's site rating or general rating specification for the engine model.
B. Typical fuel analysis, including sulfur content and heating value. For gaseous fuels, provide mole parent of constituents.
C. Description of air/fuel ratio control system (manufacturer's information acceptable)
D. Details regarding principle of operation of emissions controls. If add-on equipment is used, provide make and model and manufacturer's information.
E. Exhaust parameter information on Table 1(a).

US AND CANADA



KTA19GCE GAS COMPRESSION APPLICATIONS

Power
380 - 420 hp
283 - 313 kW

Certification

Click Here to
Contact Sales

Applications

Oil & Gas Engines

Gas Compression

Overview:

Gathering compression applications require power that is reliable, durable and has world class support. It calls for the Cummins KTA19GCE – an emissions compliant capable, high-performance natural gas engine that shares the proven heritage of the Cummins K Series diesel engines and many of the same heavy-duty components. It is no surprise that the KTA19GCE has low maintenance cost, stays emissions compliant and keeps the gas flowing. Every day.

Specifications | Ratings | Features | Brochures

General Specifications

Inline 6-Cylinder, 4-Cycle, Natural Gas

Bore	6.25 in (159 mm)
Stroke	6.25 in (159 mm)
Displacement	18.8 L (1150 cubic in)
Power*	380 hp, 420 hp (283 kW, 313 kW)
Compression ratio	8.5:1
Aspiration	Turbocharged and aftercooled

** Weight is approximate and varies with options.

Engine Technical Data

Model		KTA19GCE
Curve Number		FR-4764
Output Power (1)		
100%	HP (kW)	420 (313)
75%	HP (kW)	315 (235)
Engine Speed		
100%	RPM	1800
Max Turn Down	RPM	1350
Aftercooler Water Inlet Temperature	°F (°C)	130 (54.4)
Compression Ratio		8.5:1
Emissions Data – Engine-Out Emissions (1)		
NOx	g/hp-hr (ppm)	12.9 (3177)
CO	g/hp-hr (ppm)	11.6 (4683)
VOC	g/hp-hr (ppm)	1.26 (715)
Fuel Consumption (1)		
100%	BTU/hp-hr (MJ/kW-hr)	7967 (11)
75%	BTU/hp-hr (MJ/kW-hr)	8498 (12)
Heat Rejection (1)		
Jacket Water	BTU/min (kW)	16,265 (286)
Aftercooler	BTU/min (kW)	1304 (23)
Exhaust	BTU/min (kW)	17,280 (304)
Exhaust System (1)		
Flow Rate	ft3/min (L/s)	2126 (1003)
Stack Temp	°F (°C)	1347 (731)
Max Back Pres.	in-Hg	2
Intake System (1)		
Flow Rate	ft3/min (L/s)	604 (285)
Max Restriction	in-H2O	15
Gas Pressure	Min - Max psi	15 - 30