

LAUREL MOUNTAIN MIDSTREAM, LLC
Springhill Compressor Station
General Operating Permit Application Supplement

A. Process Description

The Springhill Compressor Station (facility) is currently permitted (GP5-26-00587A) for two (2) engines, one (1) dehydrator/reboiler and four (4) storage tanks. The facility provides compression and dehydration for a natural gas gathering system in the Marcellus shale. Separation of natural gas liquids does not occur at the station.

This Application has been prepared and submitted to provide for operation of the following equipment:

- One (1) Existing 1,340 bhp CAT G3516LE (4SLB) Engine
- One (1) Existing 1,340 bhp CAT G3516LE (4SLB) Engine with OxCat
- One (1) Existing 25 MMscfd TEG Dehydrator with 0.25 MMBtu/hr Reboiler
- A total of 17,800 gallons of Existing Condensate/Produced Water Storage Tanks (including two (2) 150 bbl tanks, one (1) 100 bbl tank, and one (1) 24 bbl tank)
- Existing ancillary equipment with de minimis emissions

B. Limitations to Establish Synthetic Minor Classification

With federally enforceable emission limits (FEL) in-place, Springhill Compressor Station will qualify as a synthetic minor source, as summarized in Table 1:

Table 1 - Springhill Compressor Station Controlled PTE in TPY (w/ Federally Enforceable Limits (FEL))										
ID No	Emission Unit		Description	NOx	CO	VOC	SO2	Tot PM	HCHO*	Tot HAP*
1	Engine 1	1,500 bhp	Electric Engine	--	--	--	--	--	--	--
2	Engine 2	1,340 bhp	Caterpillar G3516 LE	25.88	24.46	7.25	0.03	0.49	3.23	4.09
3	Engine 3	1,340 bhp	Caterpillar G3516 LE (w/OxCat)	25.88	2.39	2.02	0.03	0.49	0.34	0.59
SSM	Facility Wide SSM		Startup/Shutdown/Maintenance	---	---	5.00	---	---	---	0.75
D1	Dehydrator 1 (25 MMscfd)		Regenerator Vent	---	---	9.30	---	---	---	1.18
			Reboiler (0.25 MMBtu/hr)	0.11	0.09	0.01	neg'l	neg'l	---	0.002
FUG	Process Fugitives		Process Piping Fugitives	---	---	0.63	---	---	---	0.16
TK1-TK4	Storage Tanks		Condensate/Produced Water	---	---	0.42	---	---	---	0.01
TLO	Truck Load-out		Condensate/Produced Water	---	---	0.29	---	---	---	0.01
Total:		4,180 bhp	TOTAL PTE:	51.86	26.94	24.91	0.06	0.98	3.57	6.80
Major Source Thresholds:				100	100	50	100	100	10	25

*HCHO is Formaldehyde; Total HAP includes HCHO, Acetaldehyde, Acrolein, BTEX, Methanol, and n-Hexane.

The following federal regulations are potentially applicable to natural gas compressor stations. Applicability to the facility has been determined as follows:

1. NSPS Dc, Steam Generating Units

40CFR§60.40c-§60.48c

[Not Applicable]

This rule does not apply because there is no steam generating unit at the facility with a maximum design heat input $10 \leq \text{MMBtu/hr} \leq 100$ (§60.40c(a))

2. NSPS Kb, Volatile Organic Liquid Storage Vessels

40CFR§60.110b-§60.117b

[Not Applicable]

This rule does not apply because each tank used for petroleum or condensate storage has a design capacity less than 1,589.874 m³ (10,000 bbl) and the liquids are stored prior to custody transfer (§60.110b(d)(4)).

3. NSPS GG, Stationary Gas Turbines

40CFR§60.330-§60.335

[Not Applicable]

This rule does not apply because there is no stationary gas turbine at the facility. (§60.330(a))

4. NSPS KKK, Leaks from Natural Gas Processing Plants

40CFR§60.630-§60.636

[Not Applicable]

This rule does not apply because the facility is not located at a natural gas processing plant that is engaged in the extraction of natural gas liquids from field gas. (§60.630(e))

5. NSPS LLL, Onshore Natural Gas Processing: SO₂ Emissions

40CFR§60.640-§60.648

[Not Applicable]

This rule does not apply because there is no gas sweetening unit at the facility. (§60.640(a))

6. NSPS IIII, Stationary Compression Ignition Internal Combustion Engines

40CFR§60.4200-§60.4219

[Not Applicable]

This rule does not apply because there is no stationary compression ignition (CI) engine at the facility. (§60.4200(a))

7. NSPS JJJJ, Stationary Spark Ignition Internal Combustion Engines

40CFR§60.4230-§60.4248

[Not Applicable]

This rule does not apply to the two (2) existing 1,340 bhp CAT G3516LE (4SLB) engines because they are both lean burn engines with maximum engine power greater than or equal to 500 hp and less than 1,350 hp and manufactured before January 1, 2008. (§60.4230(a)(4)(ii))

8. NSPS KKKK, Stationary Combustion Turbines

40CFR§60.4300-§60.4420

[Not Applicable]

This rule does not apply because there is no stationary combustion turbine at the facility. (§60.4300)

9. NESHAP HH, Oil and Natural Gas Production Facilities

40CFR§63.760-§63.779

[Applicable]

This rule does apply to the TEG dehydrator. However, because the dehydrator has an actual average benzene emission rate less than 0.90 megagram (0.99 ton) per year it is exempt from all requirements except to maintain records of actual benzene emissions to demonstrate continuing exemption status. (§63.764(e)(1))

This rule does not apply to storage vessels (tanks), compressors, or ancillary equipment because the facility is an area source of HAPs. (§63.760(b)(2))

10. NESHAP HHH, Natural Gas Transmission and Storage Facilities

40CFR§63.1270-§63.1289

[Not Applicable]

This rule does not apply because the facility is not a natural gas transmission or storage facility transporting or storing natural gas prior to local distribution or to a final end user. (§63.1270(a))

11. NESHAP ZZZZ, Stationary Reciprocating Internal Combustion Engines (RICE)

40CFR§63.6580-§63.6675

[Applicable]

This rule does apply to Engine 2, the 1,340 bhp Caterpillar 3516LE (4SLB) engine because it is a “new engine”; i.e., commenced construction on or after June 12, 2006. (§63.6590(a)(2)(iii)) The only requirement is compliance with 40 CFR part 60 subpart JJJJ (NSPS JJJJ) for spark ignition engines. No further requirements apply. (§63.6590(c)(1))

This rule does apply to Engine 3, the 1,340 bhp Caterpillar 3516LE (4SLB) engine because it is an “existing engine”; i.e., commenced construction before 06/12/06 (§63.6590(a)(1)(iii)). Compliance is required no later than 10/19/13 (§63.6595(a)). Because it is an existing, non-emergency, lean burn, stationary RICE greater than 500 hp, the requirements include CO emission limits (§63.6603), operating limits (§63.6603(a), Table 2d and Table 2b), performance testing (§63.6612, §63.6620, and Tables 3, 4 and 5), install a compliance monitoring system (CEMS and or CPMS) (§63.6625 and Table 6), data collection (§63.6635), notifications, reports and records (§63.6640 through §63.6660 and Table 7).

12. Mandatory Greenhouse Gases (GHG) Reporting

40CFR§98.1-§98.9

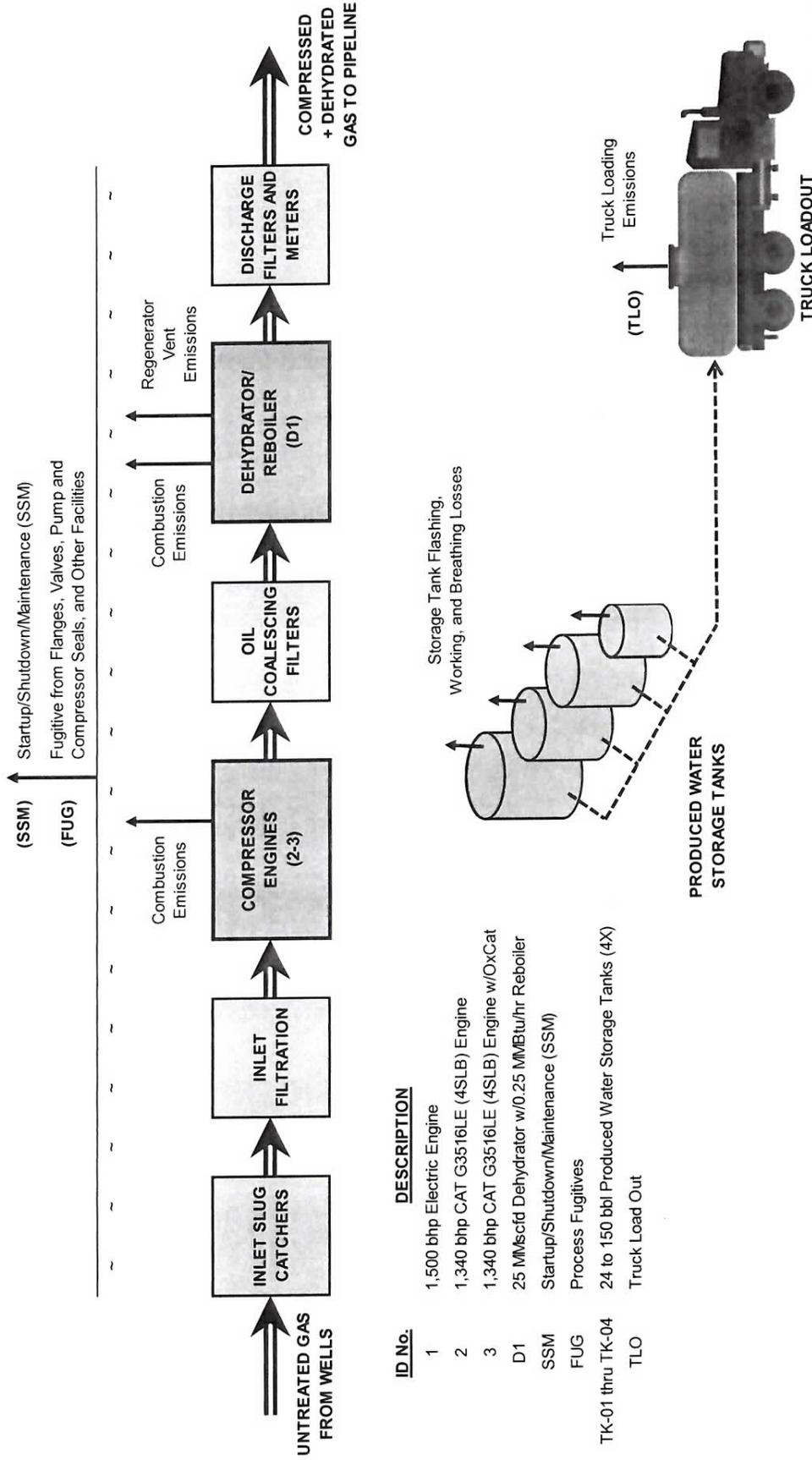
[Potentially Applicable]

This rule potentially applies because the facility has the potential to emit 25,000 MT (27,558 tons) or more per year of CO₂e emissions. Actual GHG emissions will be reported if the CO₂e emissions exceed the 25,000 MT per year threshold. (§98.2(a)).

C. Process Flow Diagram

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 Springhill Compressor Station
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Process Flow Diagram (PFD)



ID No.	DESCRIPTION
1	1,500 bhp Electric Engine
2	1,340 bhp CAT G3516LE (4SLB) Engine
3	1,340 bhp CAT G3516LE (4SLB) Engine w/OxCat
D1	25 MMscfd Dehydrator w/0.25 MMBtu/hr Reboiler
SSM	Startup/Shutdown/Maintenance (SSM)
FUG	Process Fugitives
TK-01 thru TK-04	24 to 150 bbl Produced Water Storage Tanks (4X)
TLO	Truck Load Out

E. Map/Aerial Photo

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Map and Aerial View

