July 15, 2016

SE TECHNOLOGIES
98 VANADIUM ROAD
BUILDING D, 2nd FLOOR
BRIDGEVILLE, PA 15017
(412) 221-1100
(412) 257-6103 (FAX)
http://www.se-env.com

West Virginia Dept. of Environmental Protection
Division of Air Quality – Permitting Section
601 57th Street, SE
Charleston, WV 25304

RE: Class II Administrative Update
Antonelli Compressor Station
Diversified Oil & Gas, LLC
Barbour County, West Virginia
Plant ID No. 001-00119
Permit No. G35-A019A

To Whom it May Concern:

On behalf of our client, Diversified Oil & Gas, LLC, we are pleased to submit one hard copy and two electronic copies of the Class II Administrative Update application for its Antonelli Compressor Station in Barbour County.

This update includes replacement of the permitted compressor driver engine with an Ajax 2802LE engine. There are no other proposed changes to this facility. This will not result in any increases in total facility emissions.

An application fee in the amount of $300 was determined to be applicable for a Class II administrative update application. A check, payable to WVDEP – Division of Air Quality has been included.

If there are any questions or concerns regarding this application, please contact me at 412-221-1100, Extension 210 or lmcconnell@se-env.com and we will provide any needed clarification or additional information immediately.

Sincerely,

Leanne McConnell

SE Technologies, LLC
Leanne McConnell – Environmental Scientist

cc w/ enc.: Drew Adamo – Diversified Oil & Gas, LLC

DIVERSIFIED OIL & GAS, LLC

G35-C GENERAL PERMIT
REGISTRATION APPLICATION

July 2016

Antonelli Compressor Station
Kasson, Barbour County
West Virginia

TECHNOLOGIES

98 Vanadium Road
Bridgeville, PA 15017
(412) 221-1100

G35-C GENERAL PERMIT REGISTRATION APPLICATION

DIVERSIFIED OIL & GAS, LLC

Antonelli Compressor Station

Kasson, Barbour County, West Virginia

Table of Contents

SECTION I

Application Form

west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475
Fax (304) 926-0479
www.dep.wv.gov

G35-C GENERAL PERMIT REGISTRATION APPLICATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION, RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS COMPRESSOR AND/OR DEHYDRATION FACILITIES

☐CONSTRUCTION
☐MODIFICATION
☐RELOCATION
☐CLASS I ADMINISTRATIVE UPDATE
☒CLASS II ADMINISTRATIVE UPDATE

SECTION 1. GENERAL INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): Diversified Oil & Gas, LLC

Federal Employer ID No. (FEIN): 45-4551458

Applicant's Mailing Address: PO Box 381087

City: Birmingham	State: AL	ZIP Code: 35238

Facility Name: Antonelli Compressor Station

Operating Site Physical Address: County Road 93 (Campbell Dairy)
If none available, list road, city or town and zip of facility.

City: Moatsville	Zip Code: 26405	County: Barbour

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):
Latitude: 39.21933°
Longitude: -79.88191°

SIC Code: NAICS Code: 211111	DAQ Facility ID No. (For existing facilities) 001-00119

CERTIFICATION OF INFORMATION

This G35-C General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of the Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. **Any administratively incomplete or improperly signed or unsigned G35-C Registration Application will be returned to the applicant. Furthermore, if the G35-C forms are not utilized, the application will be returned to the applicant. No substitution of forms is allowed.**

I hereby certify that is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Division of Air Quality immediately.

I hereby certify that all information contained in this G35-C General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible.

Responsible Official Signature: Robert R Hutson Sr. 304-584-4655
Name and Title: Robert Hutson Sr. Phone: 304-584-4655 Fax:
Email: RHutsonSr@divresinc.com Date: 7-7-16

If applicable:
Authorized Representative Signature: _____
Name and Title: Phone: Fax:
Email: Date:

If applicable:
Environmental Contact
Name and Title: Drew Adamo Phone: 724-471-2030 x2201 Fax:
Email: DAdamo@divresinc.com Date:

OPERATING SITE INFORMATION
Briefly describe the proposed new operation and/or any change(s) to the facility: Removal of the permitted Caterpillar G3516LE compressor engine and installation of an Ajax 2802LE compressor engine.
Directions to the facility: From Charleston, follow I-79N to Exit 115, WV-20 S. Continue on WV-20 to WV-57 E. In approximately 12 miles, turn left onto US-119 N. Follow for 2 miles then turn right onto Blue and Gray Expy. Then, turn right onto Main St and continue onto US-250 S for 2 miles. Turn left onto WV-38 E / WV-92 N. After approximately 4.5 miles, sharp right onto Campbell Dairy. Site will be approximately 0.8 miles on the right.

ATTACHMENTS AND SUPPORTING DOCUMENTS	
I have enclosed the following required documents:	
Check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR13 and 45CSR22). ☒ Check attached to front of application. ☐ I wish to pay by electronic transfer. Contact for payment (incl. name and email address): ☐ I wish to pay by credit card. Contact for payment (incl. name and email address): ☐$500 (Construction, Modification, and Relocation) ☒$300 (Class II Administrative Update) ☐$1,000 NSPS fee for 40 CFR60, Subpart IIII, JJJJ and/or OOOO [1] ☐$2,500 NESHAP fee for 40 CFR63, Subpart ZZZZ and/or HH [2] [1] Only one NSPS fee will apply. [2] Only one NESHAP fee will apply. The Subpart ZZZZ NESHAP fee will be waived for new engines that satisfy requirements by complying with NSPS, Subparts IIII and/or JJJJ. *NSPS and NESHAP fees apply to new construction or if the source is being modified.*	
☐ Responsible Official or Authorized Representative Signature (if applicable)	
☒ Single Source Determination Form **(must be completed in its entirety)** – Attachment A	
☐ Siting Criteria Waiver (if applicable) – Attachment B	☒ Current Business Certificate – Attachment C
☒ Process Flow Diagram – Attachment D	☒ Process Description – Attachment E
☒ Plot Plan – Attachment F	☒ Area Map – Attachment G
☒ G35-C Section Applicability Form – Attachment H	☒ Emission Units/ERD Table – Attachment I
☒ Fugitive Emissions Summary Sheet – Attachment J	
☒ Storage Vessel(s) Data Sheet (include gas sample data, USEPA Tanks, simulation software (e.g. ProMax, E&P Tanks, HYSYS, etc.), etc. where applicable) – Attachment K	
☐ Natural Gas Fired Fuel Burning Unit(s) Data Sheet (GPUs, Heater Treaters, In-Line Heaters if applicable) – Attachment L	
☒ Internal Combustion Engine Data Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment M	
☐ Tanker Truck Loading Data Sheet (if applicable) – Attachment N	
☐ Glycol Dehydration Unit Data Sheet(s) (include wet gas analysis, GRI- GLYCalc™ input and output reports and information on reboiler if applicable) – Attachment O	
☐ Pneumatic Controllers Data Sheet – Attachment P	
☐ Air Pollution Control Device/Emission Reduction Device(s) Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment Q	
☒ Emission Calculations (please be specific and include all calculation methodologies used) – Attachment R	
☒ Facility-wide Emission Summary Sheet(s) – Attachment S	
☒ Class I Legal Advertisement – Attachment T	
☒ One (1) paper copy and two (2) copies of CD or DVD with pdf copy of application and attachments	

All attachments must be identified by name, divided into sections, and submitted in order.

SECTION II

Attachments

ATTACHMENT A

Single Source Determination

ATTACHMENT A - SINGLE SOURCE DETERMINATION FORM

Classifying multiple facilities as one "stationary source" under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of Building, structure, facility, or installation as given in §45-14-2.13 and §45-19-2.12. The definition states:

"Building, Structure, Facility, or Installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

Is there a facility owned by or associated with the natural gas industry located within one (1) mile of the proposed facility? Yes ☐ No ☐

If Yes, please complete the questionnaire on the following page (Attachment A).

Please provide a source aggregation analysis for the proposed facility below:

The Class II Administrative Update does not impact previous determination.

ATTACHMENT C

Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT

BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
DIVERSIFIED OIL & GAS, LLC
599 MEADOW VIEW LN
THORNTON, WV 26440-7195

BUSINESS REGISTRATION ACCOUNT NUMBER: **2332-4268**

This certificate is issued on: 06/15/2016

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

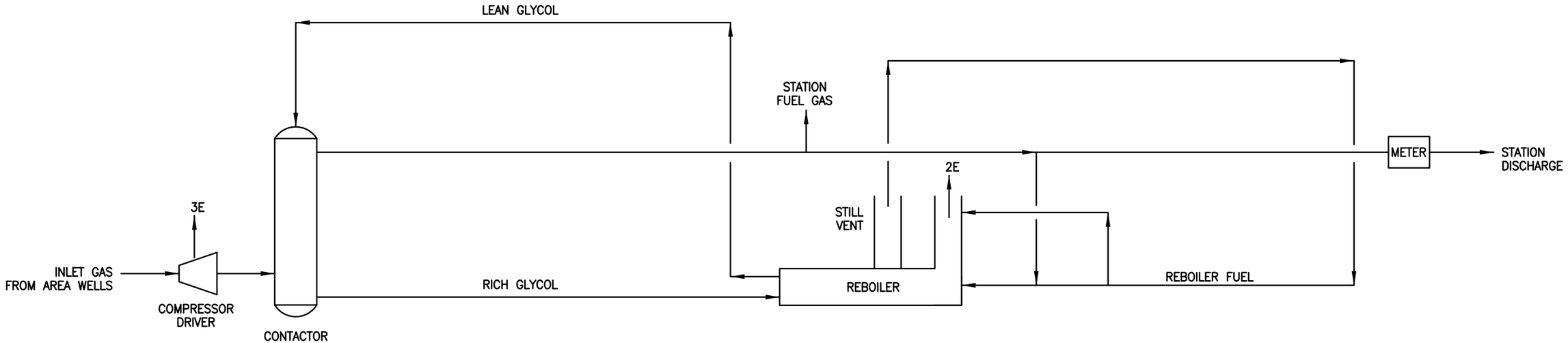
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1720594240

ATTACHMENT D

Process Flow Diagram



LEGEND:

↑ EMISSION POINT

DRAWN BY	DJF
DATE	7/13/16
CHECKED BY	LFM
SET JOB NO.	216070
SET DWG FILE	ANTONELLI FDb01.dwg
DRAWING SCALE	N.T.S.

TECHNOLOGIES
98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

DIVERSIFIED OIL & GAS, LLC

ANTONELLI COMPRESSOR STATION
BARBOUR COUNTY, WEST VIRGINIA
PROCESS FLOW DIAGRAM

DRAWING NAME: FIGURE 3

REV. 2

ATTACHMENT E

Process Description

Diversified Oil & Gas, LLC
Antonelli Compressor Station
Process Description

Diversified Oil & Gas, LLC is submitting a Class II Administrative Update for the Antonelli Compressor Station G35-A019A General Permit. Diversified is proposing to remove the permitted Caterpillar G3516LE compressor driver engine and replace it with a smaller Ajax 2802LE compressor driver engine.

The replacement engine (Ajax 2802LE) is considered a "new" engine and located at an area source of HAP emissions which makes it subject to subpart ZZZZ (40 CFR part 63). For this type of engine, there are no specific requirements the engine must meet unless the engine is already subject to subpart JJJJ (40 CFR part 60). Since the replacement engine was manufactured prior to the applicable date in 60.4230(a)(4), it is not subject to the requirements in subpart JJJJ. In summary, there are no requirements that apply to this engine.

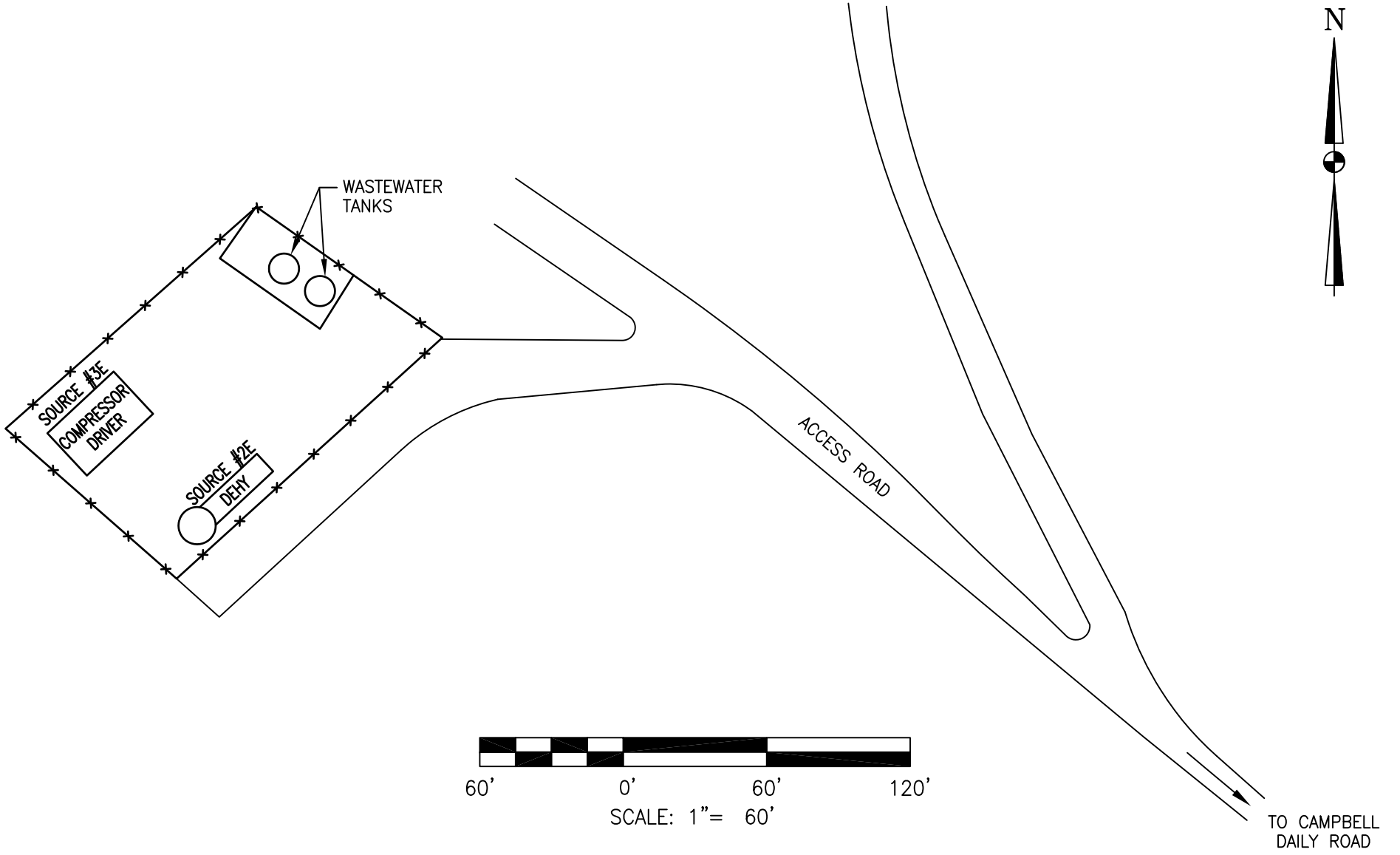
There are no other proposed changes to the facility. This will not result in any increases in emissions from this facility.

Natural gas flows from contiguous well pads to the Facility. The gas is compressed by the compressor driver engine. Then, the raw natural gas flows to the existing NATCO glycol dehydrator to dehydrate the gas and inject into a gathering line owned and operated by others.

The NATCO glycol dehydrator generates emissions from the still vent and re-boiler. There is no flash tank. Vapors from the still vent are comprised of water and various low molecular weight hydrocarbons. This vapor stream is used as fuel for the reboiler. Excess still vent vapors are routed to the reboiler vent where they are ignited by a glow plug and combusted. Although needs are anticipated to be minimal, supplemental re-boiler fuel is available from the dehydrated gas stream prior to injection into the sales line.

ATTACHMENT F

Plot Plan



DRAWN BY	DJF
DATE	7/5/16
CHECKED BY	LFM
SET JOB NO.	216070-01
SET DWG FILE	ANTONELLI CSa01.dwg
DRAWING SCALE	AS SHOWN

SE TECHNOLOGIES
98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

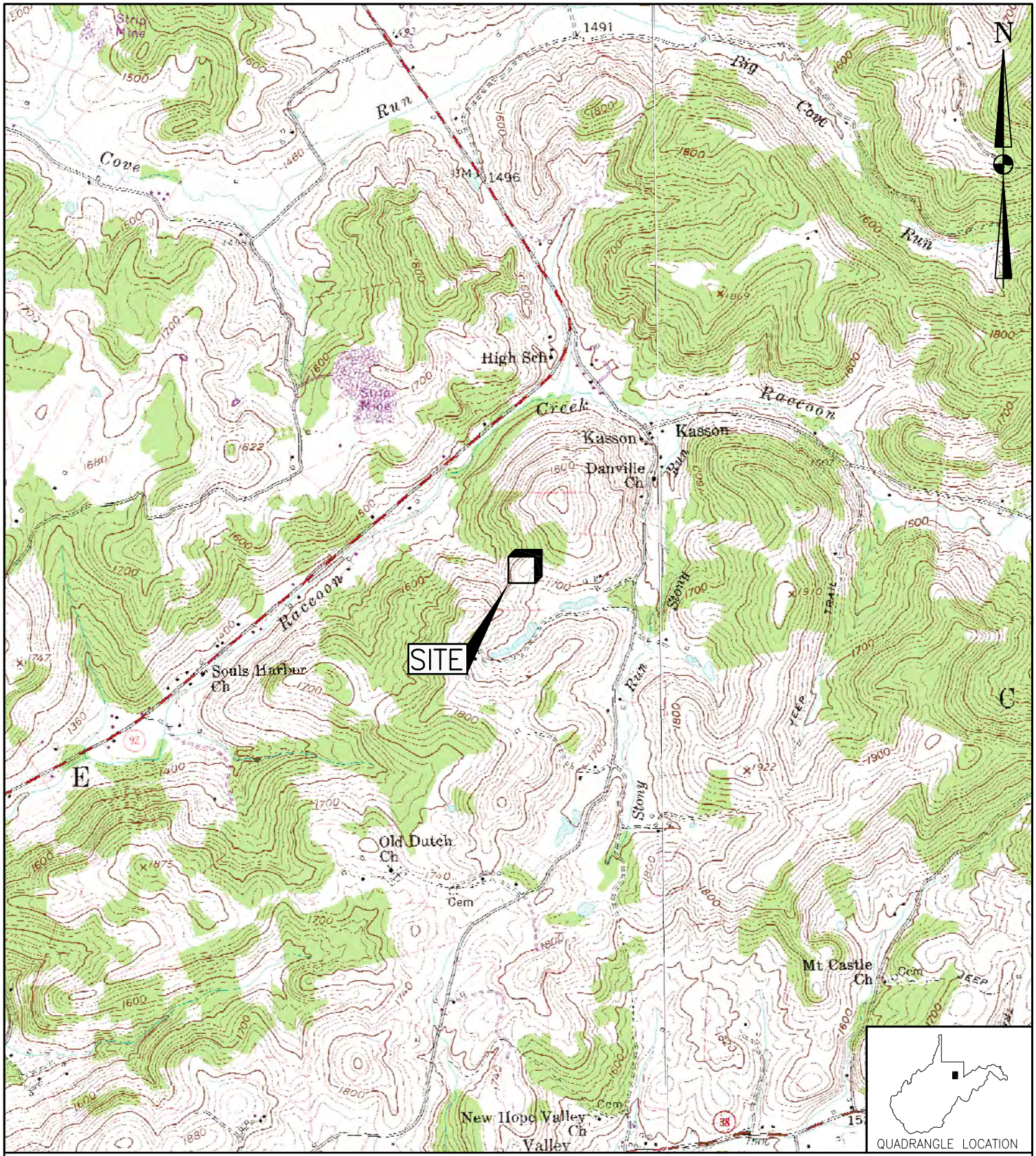
DIVERSIFIED OIL & GAS, LLC

ANTONELLI COMPRESSOR STATION
BARBOUR COUNTY, WEST VIRGINIA
SITE LAYOUT

DRAWING NAME	REV.
FIGURE 2	0

ATTACHMENT G

Area Map



REFERENCE: USGS 7.5' QUADRANGLE MAP OF: NESTORVILLE, WEST VIRGINIA; DATED 1958, PHOTOREVISED 1976.

DRAWN BY	DJF
DATE	6/27/16
CHECKED BY	LFM
SET JOB NO.	216070-01
SET DWG FILE	ANTONELLI CSm01.dwg
DRAWING SCALE	1"=2000'

TECHNOLOGIES
98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

DIVERSIFIED OIL & GAS, INC.

ANTONELLI COMPRESSOR STATION
BARBOUR COUNTY, WEST VIRGINIA
SITE LOCATION MAP

DRAWING NO.	REV.
FIGURE 1	0

Plot: env045 06/27/2016 13:32 G:\DIVERSIFIED OIL & GAS, LLC\216070\ANTONELLI CSm01.dwg

ATTACHMENT H

Section Applicability Form

ATTACHMENT H – G35-C SECTION APPLICABILITY FORM

General Permit G35-C Registration
Section Applicability Form

General Permit G35-C was developed to allow qualified applicants to seek registration for a variety of sources. These sources include storage vessels, gas production units, in-line heaters, heater treaters, glycol dehydration units and associated reboilers, pneumatic controllers, centrifugal compressors, reciprocating compressors, reciprocating internal combustion engines (RICEs), tank truck loading, fugitive emissions, completion combustion devices, flares, enclosed combustion devices, and vapor recovery systems. All registered facilities will be subject to Sections 1.0, 2.0, 3.0, and 4.0.

General Permit G35-C allows the registrant to choose which sections of the permit they are seeking registration under. Therefore, please mark which additional sections that you are applying for registration under. If the applicant is seeking registration under multiple sections, please select all that apply. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

GENERAL PERMIT G35-C APPLICABLE SECTIONS	
☐Section 5.0	Storage Vessels Containing Condensate and/or Produced Water[1]
☐Section 6.0	Storage Vessel Affected Facility (NSPS, Subpart OOOO)
☐Section 7.0	Control Devices and Emission Reduction Devices not subject to NSPS Subpart OOOO and/or NESHAP Subpart HH
☒Section 8.0	Small Heaters and Reboilers not subject to 40CFR60 Subpart Dc
☐Section 9.0	Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO)
☐Section 10.0	Centrifugal Compressor Affected Facility (NSPS, Subpart OOOO)[2]
☐Section 11.0	Reciprocating Compressor Affected Facility (NSPS, Subpart OOOO)[2]
☒Section 12.0	Reciprocating Internal Combustion Engines, Generator Engines. Microturbine Generators
☐Section 13.0	Tanker Truck Loading[3]
☒Section 14.0	Glycol Dehydration Units[4]

1 *Applicants that are subject to Section 5 may also be subject to Section 6 if the applicant is subject to the NSPS, Subpart OOOO control requirements or the applicable control device requirements of Section 7.*

2 *Applicants that are subject to Section 10 and 11 may also be subject to the applicable RICE requirements of Section 12.*

3 *Applicants that are subject to Section 13 may also be subject to control device and emission reduction device requirements of Section 7.*

4 *Applicants that are subject to Section 14 may also be subject to the requirements of Section 8 (reboilers). Applicants that are subject to Section 14 may also be subject to control device and emission reduction device requirements of Section 7.*

ATTACHMENT I

Emission Units Table

ATTACHMENT I – EMISSION UNITS / EMISSION REDUCTION DEVICES (ERD) TABLE

Include ALL emission units and air pollution control devices/ERDs that will be part of this permit application review. Do not include fugitive emission sources in this table. Deminimis storage tanks shall be listed in the Attachment K table. This information is required for all sources regardless of whether it is a construction, modification, or administrative update.

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed	Manufac. Date[3]	Design Capacity	Type[4] and Date of Change	Control Device(s)[5]	ERD(s)[6]
CE-1	1E	Caterpillar G3516LE Compressor Engine	2010		1,340 bhp / 1,400 rpm	Removal		
CE-2	3E	Ajax 2802LE Compressor Engine	Upon Permit	11/15/2006	400 bhp / 440 rpm	New	None	
RBV-1	2E	Dehydration Unit Re-Boiler Vent	2009		0.2 MMBtu/hr	Existing	None	
RSV-1	2E	Dehydration Unit Still Vent	2009		4.9 MMscf/day	Existing	RBV-1	

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] When required by rule
[4] New, modification, removal, existing
[5] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
[6] For ERDs use the following numbering system: 1D, 2D, 3D,... or other appropriate designation.

ATTACHMENT J

Fugitive Emissions Data Summary Sheet

ATTACHMENT J – FUGITIVE EMISSIONS SUMMARY SHEET

Sources of fugitive emissions may include loading operations, equipment leaks, blowdown emissions, etc.
Use extra pages for each associated source or equipment if necessary.

Source/Equipment: One (1) compressor and one (1) dehydration unit

Leak Detection Method Used	☐ Audible, visual, and olfactory (AVO) inspections	☒ Infrared (FLIR) cameras	☐ Other (please describe)	☐ None required

Component Type	Closed Vent System	Count	Source of Leak Factors (EPA, other (specify))	Stream type (gas, liquid, etc.)	Estimated Emissions (tpy)		
					VOC	HAP	GHG (CO_2e)
Pumps	☐ Yes ☐ No			☐ Gas ☐ Liquid ☐ Both			
Valves	☐ Yes ☒ No	36	EPA	☒ Gas ☐ Liquid ☐ Both	0.003	<0.01	4.43
Safety Relief Valves	☐ Yes ☒ No	2	EPA	☒ Gas ☐ Liquid ☐ Both	<0.01	<0.01	0.36
Open Ended Lines	☐ Yes ☒ No	2	EPA	☒ Gas ☐ Liquid ☐ Both	<0.01	<0.01	0.54
Sampling Connections	☐ Yes ☐ No			☐ Gas ☐ Liquid ☐ Both			
Connections (Not sampling)	☐ Yes ☒ No	147	EPA	☒ Gas ☐ Liquid ☐ Both	0.001	<0.01	1.97
Compressors	☐ Yes ☐ No			☐ Gas ☐ Liquid ☐ Both			
Flanges	☐ Yes ☐ No			☐ Gas ☐ Liquid ☐ Both			
Other[1]	☐ Yes ☐ No			☐ Gas ☐ Liquid ☐ Both			

[1] Other equipment types may include compressor seals, relief valves, diaphragms, drains, meters, etc.

Please provide an explanation of the sources of fugitive emissions (e.g. pigging operations, equipment blowdowns, pneumatic controllers, etc.):
Equipment leaks, blowdowns

Please indicate if there are any closed vent bypasses (include component): No
Specify all equipment used in the closed vent system (e.g. VRU, ERD, thief hatches, tanker truck loading, etc.) n/a

ATTACHMENT K

Storage Vessel Data Sheet(s)

ATTACHMENT K – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for ***each*** new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

NONE Present

The following information is REQUIRED:

□ Composition of the representative sample used for the simulation
□ For each stream that contributes to flashing emissions:
  □ Temperature and pressure (inlet and outlet from separator(s))
  □ Simulation-predicted composition
  □ Molecular weight
  □ Flow rate
□ Resulting flash emission factor or flashing emissions from simulation
□ Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION

1. Bulk Storage Area Name	2. Tank Name
3. Emission Unit ID number	4. Emission Point ID number
5. Date Installed , Modified or Relocated *(for existing tanks)* Was the tank manufactured after August 23, 2011? ☐ Yes ☐ No	6. Type of change: ☐ New construction ☐ New stored material ☐ Other ☐ Relocation
7A. Description of Tank Modification *(if applicable)*	
7B. Will more than one material be stored in this tank? *If so, a separate form must be completed for each material.* ☐ Yes ☐ No	
7C. Was USEPA Tanks simulation software utilized? ☐ Yes ☐ No ***If Yes, please provide the appropriate documentation and items 8-42 below are not required.***	

TANK INFORMATION

8. Design Capacity *(specify barrels or gallons).* Use the internal cross-sectional area multiplied by internal height.	
9A. Tank Internal Diameter (ft.)	9B. Tank Internal Height (ft.)
10A. Maximum Liquid Height (ft.)	10B. Average Liquid Height (ft.)
11A. Maximum Vapor Space Height (ft.)	11B. Average Vapor Space Height (ft.)
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume".	
13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
14. Number of tank turnovers per year	15. Maximum tank fill rate (gal/min)
16. Tank fill method ☐ Submerged ☐ Splash ☐ Bottom Loading	
17. Is the tank system a variable vapor space system? ☐ Yes ☐ No If yes, (A) What is the volume expansion capacity of the system (gal)? (B) What are the number of transfers into the system per year?	
18. Type of tank (check all that apply): ☐ Fixed Roof ☐ vertical ☐ horizontal ☐ flat roof ☐ cone roof ☐ dome roof ☐ other (describe) ☐ External Floating Roof ☐ pontoon roof ☐ double deck roof ☐ Domed External (or Covered) Floating Roof ☐ Internal Floating Roof ☐ vertical column support ☐ self-supporting ☐ Variable Vapor Space ☐ lifter roof ☐ diaphragm ☐ Pressurized ☐ spherical ☐ cylindrical ☐ Other (describe)	

PRESSURE/VACUUM CONTROL DATA

19. Check as many as apply:

☐ Does Not Apply ☐ Rupture Disc (psig)

☐ Inert Gas Blanket of _____ ☐ Carbon Adsorption[1]

☐ Vent to Vapor Combustion Device[1] (vapor combustors, flares, thermal oxidizers, enclosed combustors)

☐ Conservation Vent (psig) ☐ Condenser[1]

Vacuum Setting Pressure Setting

☐ Emergency Relief Valve (psig)

Vacuum Setting Pressure Setting

☐ Thief Hatch Weighted ☐ Yes ☐ No

[1] Complete appropriate Air Pollution Control Device Sheet

20. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name	**Flashing Loss**		**Breathing Loss**		**Working Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

Remember to attach emissions calculations, including TANKS Summary Sheets and other modeling summary sheets if applicable.

TANK CONSTRUCTION AND OPERATION INFORMATION			
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☐ Other (describe)			
21A. Shell Color:	21B. Roof Color:	21C. Year Last Painted:	
22. Shell Condition (if metal and unlined): ☐ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable			
22A. Is the tank heated? ☐ Yes ☐ No	22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?	
23. Operating Pressure Range (psig): **Must be listed for tanks using VRUs with closed vent system.**			
24. Is the tank a **Vertical Fixed Roof Tank**? ☐ Yes ☐ No	24A. If yes, for dome roof provide radius (ft):	24B. If yes, for cone roof, provide slop (ft/ft):	
25. Complete item 25 for **Floating Roof Tanks** ☐ Does not apply ☐			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type *(check one):* ☐ Metallic (mechanical) shoe seal ☐ Liquid mounted resilient seal ☐ Vapor mounted resilient seal ☐ Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? ☐ Yes ☐ No			
25D. If yes, how is the secondary seal mounted? *(check one)* ☐ Shoe ☐ Rim ☐ Other (describe):			
25E. Is the floating roof equipped with a weather shield? ☐ Yes ☐ No			
25F. Describe deck fittings:			
26. Complete the following section for **Internal Floating Roof Tanks** ☐ Does not apply			
26A. Deck Type: ☐ Bolted ☐ Welded	26B. For bolted decks, provide deck construction:		
26C. Deck seam. Continuous sheet construction: ☐ 5 ft. wide ☐ 6 ft. wide ☐ 7 ft. wide ☐ 5 x 7.5 ft. wide ☐ 5 x 12 ft. wide ☐ other (describe)			
26D. Deck seam length (ft.):	26E. Area of deck (ft^2):	26F. For column supported tanks, # of columns:	26G. For column supported tanks, diameter of column:
27. Closed Vent System with VRU? ☐ Yes ☐ No			
28. Closed Vent System with Enclosed Combustor? ☐ Yes ☐ No			
SITE INFORMATION			
29. Provide the city and state on which the data in this section are based:			
30. Daily Avg. Ambient Temperature (°F):	31. Annual Avg. Maximum Temperature (°F):		
32. Annual Avg. Minimum Temperature (°F):	33. Avg. Wind Speed (mph):		
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day):	35. Atmospheric Pressure (psia):		
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F):	36A. Minimum (°F):	36B. Maximum (°F):	
37. Avg. operating pressure range of tank (psig):	37A. Minimum (psig):	37B. Maximum (psig):	
38A. Minimum liquid surface temperature (°F):	38B. Corresponding vapor pressure (psia):		
39A. Avg. liquid surface temperature (°F):	39B. Corresponding vapor pressure (psia):		
40A. Maximum liquid surface temperature (°F):	40B. Corresponding vapor pressure (psia):		
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:			
41B. CAS number:			
41C. Liquid density (lb/gal):			
41D. Liquid molecular weight (lb/lb-mole):			
41E. Vapor molecular weight (lb/lb-mole):			
41F. Maximum true vapor pressure (psia):			
41G. Maximum Reid vapor pressure (psia):			
41H. Months Storage per year. From: To:			
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.			

STORAGE TANK DATA TABLE

List all deminimis storage tanks (i.e. lube oil, glycol, diesel etc.)

Source ID #[1]	Status[2]	Content[3]	Volume[4]
T1	EXIST	Wastewater (waste oil, drips from dehy)	2100
T2	EXIST	Wastewater (waste oil, drips from dehy)	2100

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:
   - EXIST Existing Equipment
   - NEW Installation of New Equipment
   - REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, diesel, mercaptan etc.
4. Enter the maximum design storage tank volume in gallons.

ATTACHMENT M

Internal Combustion Engine Data Sheet(s)

ATTACHMENT M – INTERNAL COMBUSTION ENGINE DATA SHEET

Complete this data sheet for each internal combustion engine at the facility. Include manufacturer performance data sheet(s) or any other supporting document if applicable. Use extra pages if necessary. *Generator(s) and microturbine generator(s) shall also use this form.*

Emission Unit ID#[1]	CE-1	CE-1	
Engine Manufacturer/Model	Caterpillar G3516LE	Ajax 2802LE	
Manufacturers Rated bhp/rpm	1,340bhp / 1,400rpm	400bhp / 440rpm	
Source Status[2]	REM	NS	
Date Installed/ Modified/Removed/Relocated[3]	2010	2016	
Engine Manufactured /Reconstruction Date[4]		11/15/2006	
Check all applicable Federal Rules for the engine (include EPA Certificate of Conformity if applicable)[5]	☒40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☒ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources
Engine Type[6]		2SLB	
APCD Type[7]		None	
Fuel Type[8]	RG	RG	
H_2S (gr/100 scf)	<1	<1	
Operating bhp/rpm	1,340bhp / 1,400rpm	400bhp / 440rpm	
BSFC (BTU/bhp-hr)		8580	
Hourly Fuel Throughput	ft^3/hr gal/hr	3,136 ft^3/hr gal/hr	ft^3/hr gal/hr
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)	$MMft^3$/yr gal/yr	27.47 $MMft^3$/yr gal/yr	$MMft^3$/yr gal/yr
Fuel Usage or Hours of Operation Metered	Yes ☒ No ☐	Yes ☒ No ☐	Yes ☐ No ☐

Calculation Methodology[9]	**Pollutant[10]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**
MD	NO_x	4.43	19.41	1.76	7.73		
MD	CO	5.58	24.41	1.06	4.64		
MD	VOC	0.92	4.01	0.71	3.09		
MD	SO_2	<0.01	<0.01	<0.01	<0.01		
MD	PM_{10}			0.03	0.15		
MD	Formaldehyde	0.74	3.23	0.265	1.16		
AP	Total HAPs			0.30	1.32		
AP	GHG (CO_2e)			490	2,147		

1 Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. Microturbine generator engines should be designated MT-1, MT-2, MT-3 etc. If more than three (3) engines exist, please use additional sheets.

2 Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Relocated Source
REM	Removal of Source		

3 Enter the date (or anticipated date) of the engine's installation (construction of source), modification, relocation or removal.

4 Enter the date that the engine was manufactured, modified or reconstructed.

5 Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII/JJJJ? If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6 Enter the Engine Type designation(s) using the following codes:

2SLB	Two Stroke Lean Burn	4SRB	Four Stroke Rich Burn
4SLB	Four Stroke Lean Burn		

7 Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	OxCat	Oxidation Catalyst
SCR	Lean Burn & Selective Catalytic Reduction		

8 Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas /Production Gas	D	Diesel

9 Enter the Potential Emissions Data Reference designation using the following codes. Attach all reference data used.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other	(please list)

10 Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

11 PTE for engines shall be calculated from manufacturer's data unless unavailable.

Engine Air Pollution Control Device
(Emission Unit ID# , use extra pages as necessary)

Air Pollution Control Device Manufacturer's Data Sheet included?
Yes ☐ No ☒
N/A – No Device

☐ NSCR ☐ SCR ☐ Oxidation Catalyst

Provide details of process control used for proper mixing/control of reducing agent with gas stream:

Manufacturer:	Model #:
Design Operating Temperature: °F	Design gas volume: scfm
Service life of catalyst:	Provide manufacturer data? ☐Yes ☐ No
Volume of gas handled: acfm at °F	Operating temperature range for NSCR/Ox Cat: From °F to °F
Reducing agent used, if any:	Ammonia slip (ppm):

Pressure drop against catalyst bed (delta P): inches of H_2O

Provide description of warning/alarm system that protects unit when operation is not meeting design conditions:

Is temperature and pressure drop of catalyst required to be monitored per 40CFR63 Subpart ZZZZ?
☐ Yes ☐ No

How often is catalyst recommended or required to be replaced (hours of operation)?

How often is performance test required?
☐ Initial
☐ Annual
☐ Every 8,760 hours of operation
☐ Field Testing Required
☐ No performance test required. If so, why (please list any maintenance required and the applicable sections in NSPS/GACT,

ATTACHMENT R

Supporting Emissions Calculations

Diversified Oil & Gas, LLC

Antonelli Compressor Station
Barbour County, PA

EMISSIONS SUMMARY

Emission Unit ID	Emission Point ID	Description	NOx lb/hr	CO lb/hr	VOC lb/hr	benzene lb/hr	Toluene lb/hr	n-Hexane lb/hr	formaldehyde lb/hr
CE-1	1E	CAT G3516LE - REMOVED							
CE-2	3E	Ajax 2808LE - NEW	1.76	1.06	0.71	0.007	0.003	0.002	0.265
RBV-1	2E	NATCO Glycol Dehydration Unit Reboiler	0.05	0.02					
RSV-1	2E	NATCO Glycol Dehydration Unit Still Vent			1.29	0.11	0.28	0.04	
		Fugitive Emissions			0.01				
Total			1.81	1.08	2.00	0.117	0.283	0.042	0.26

Emission Unit ID	Emission Point ID	Description	NOx tpy	CO tpy	VOC tpy	benzene tpy	Toluene tpy	n-Hexane tpy	formaldehyde tpy
CE-1	1E	CAT G3516LE - REMOVED							
CE-2	3E	Ajax 2808LE - NEW	7.73	4.64	3.09	0.029	0.014	0.007	1.16
RBV-1	2E	NATCO Glycol Dehydration Unit Reboiler	0.20	0.09					
RSV-1	2E	NATCO Glycol Dehydration Unit Still Vent			5.66	0.47	1.21	0.18	
		Fugitive Emissions			0.03				
Total			7.93	4.73	8.78	0.50	1.22	0.19	1.16

Permitted Emissions (tpy)	19.61	24.50	9.67	0.47	1.21	0.18	3.23
Difference Emissions (tpy)	-11.68	-19.77	-0.89	0.03	0.01	0.01	-2.07

*Benzene, toluene and n-Hexane emissions were not in previous permit for CAT G3516LE engine. So, increase in emissions shown above does not mean an actual increase.

Diversified Oil & Gas, LLC

Antonelli Compressor Station
Barbour County, PA

Un-Controlled Emission Rates

Source CE-2

Engine Data:

Engine Manufacturer	Ajax	
Engine Model	DPC-2802 LE	
Type (Rich-burn or Low Emission)	Lean Burn	
Aspiration (Natural or Turbocharged)	Turbo	
Manufacturer Rating	400	hp
Speed at Above Rating	440	rpm
Configeration (In-line or Vee)	In-line	
Number of Cylinders	2	
Engine Bore	15.000	inches
Engine Stroke	16.000	inches
Engine Displacement	5,652	cu. in.
Engine BMEP	61.1	psi
Fuel Consumption (HHV)	8,580	Btu/bhp-hr
Fuel Throughput	27.47	MMcf/yr

Emission Rates:	g/bhp-hr	lb/hr	tons/year	g/hr	lb/day	AP-42 2 Stroke Lean Burn lb/MMBtu	Comment
Oxides of Nitrogen, NOx	2.000	1.76	7.73	800	42.33		453.59 grams = 1 pound
Carbon Monoxide CO	1.200	1.06	4.64	480	25.40		2,000 pounds = 1 ton
VOC (NMHC)	0.800	0.71	3.09	320	16.93		
CO2e		490	2,147	0	11,764		
CO2		378	1,654		9,060	110	

0 ppmv H2S

Total Annual Hours of Operation	**8,760**					
SO2		0.002	0.0088		0.000588	Manf. Spec
PM2.5		0.1658	0.7261		0.0483	Manf. Spec - PM Filtera
PM (Condensable)		0.034	0.1490		0.00991	
CH4	5.1	4.4974	19.6988		0.0022	Manf. Spec
N2O		0.0008	0.0033		0.00022	40 CFR Part 98, Table
acrolein		0.0267	0.1170		0.00778	
acetaldehyde		0.0266	0.1166		0.00776	
formaldehyde	0.300	0.2646	1.1588			Manf. Spec
benzene		0.0067	0.0292		0.00194	
toluene		0.0033	0.0145		0.000963	
ethylbenzene		0.0004	0.0016		0.000108	
xylenes		0.0009	0.0040		0.000268	
n-hexane		0.0015	0.0067		0.000445	
methanol		0.0085	0.0373		0.00248	
Total HAPs		0.3019	1.3222			

Diversified Oil & Gas, LLC

Antonelli Compressor Station
Barbour County, PA

Fugitive Emissions

Volatile Organic Compounds, non-methane and non-ethane from gas analysis:	6.70	weight percent
Methane from gas analysis:	82.31	weight percent
Carbon Dioxide from gas analysis:	0.21	weight percent
Gas Density	0.0495	lb/scf

Emission Source:	Number*	Oil & Gas Production**	VOC %	VOC, lb/hr	VOC, tpy	VOC, lb/yr	CO2, lb/hr	CO2, tpy	CO2, lb/yr	CH4, lb/hr	CH4, tpy	CH4, lb/yr	CO2e, tpy
Valves:													
Gas/Vapor:	36	0.02700 scf/hr	6.7	0.003	0.014	28.27	0.000	0.000	0.89	0.040	0.174	347.19	4.34
Relief Valves:	2	0.04000 scf/hr	6.7	0.000	0.001	2.33	0.000	0.000	0.07	0.003	0.014	28.58	0.36
Open-ended Lines, gas:	2	0.06100 sfc/hr	6.7	0.000	0.002	3.55	0.000	0.000	0.11	0.005	0.022	43.58	0.54
Connectors:													
Gas:	147	0.00300 scf/hr	6.7	0.001	0.006	12.83	0.000	0.000	0.40	0.018	0.079	157.52	1.97

Blowdowns:	Pressure (psig)	Internal Volume (scf)	Projected Blowdown Events (per year)	Gas Released Per Year (scf)	Composition of Gas (% by volume)	Composite Weight (lb/scf)	VOCs Released (scf)	VOCs Released (lb/yr)	VOCs Released (lb/hr)	VOCs Released (tpy)
	800	500	12	6000	0.54	0.12	32.4	3.888	0.00044	0.0019

Fugitive Calculations:

	lb/hr	tpy
VOC	**0.006**	**0.025**
CH4	**0.066**	**0.288**
CO2	**0.000**	**0.001**
CO2e	**1.646**	**7.212**

Notes:
*Numbers are from 40 CFR 98, Table W-1B
**Factors are from 40 CFR 98, Table W-1A (scf/hr), where available. Remaining are API (lb/hr)

Diversified Oil & Gas, LLC

Antonelli Compressor Station
Barbour County, PA

Fuel Gas Composition Information:

	Fuel Gas mole %	Fuel M.W. lb/lb-mole	Fuel S.G.	Fuel Wt. %	LHV, dry Btu/scf	HHV, dry Btu/scf	AFR vol/vol	VOC NM / NE	Z Factor	GPM
Nitrogen, N2	0.829	0.232	0.008	1.304			-		0.0083	
Carbon Dioxide, CO2	0.085	0.038	0.001	0.211			-		0.0009	
Hydrogen Sulfide, H2S	-	-	-	-			-		-	
Helium, He	-	-	-	-			-		-	
Oxygen, O2	-	-	-	-			-		-	
Methane, CH4	91.330	14.652	0.506	82.314	830.6	922.4	8.704		0.9115	
Ethane, C2H6	5.605	1.685	0.058	9.468	90.7	99.2	0.935		0.0556	1.491
Propane	1.121	0.494	0.017	2.777	26.0	28.2	0.267	2.777	0.0110	0.307
Iso-Butane	0.263	0.153	0.005	0.859	7.9	8.6	0.081	0.859	0.0026	0.086
Normal Butane	0.298	0.173	0.006	0.972	9.0	9.7	0.092	0.972	0.0029	0.093
Iso Pentane	0.144	0.104	0.004	0.585	5.3	5.8	0.055	0.585	0.0014	0.053
Normal Pentane	0.081	0.059	0.002	0.330	3.0	3.3	0.031	0.330	0.0008	0.029
Hexane	0.244	0.210	0.007	1.179	10.7	11.6	0.110	1.179	0.0024	0.104
Heptane+	-	-	-	-			-	-	-	-
	100.000	17.800	0.615		983.2	1,088.7	10.276	6.702	0.9973	2.163

Gas Density (STP) = 0.050

Ideal Gross (HHV)	1,088.7
Ideal Gross (sat'd)	1,070.5
GPM	-
Real Gross (HHV)	1,091.6
Real Net (LHV)	985.8

Diversified Oil & Gas, LLC

Antonelli Compressor Station
Barbour County, PA

Specific Graivity of Air, @ 29.92 in. Hg and 60 -F 28.963
One mole of gas occupies, @ 14.696 psia & 32 - 359.2 cu ft. per lb-mole
One mole of gas occupies, @ 14.696 psia & 60 - 379.64 cu ft. per lb-mole

Hydrogen Sulfide (H2S) conversion chart:

0 grains H2S/100 scf	=	0.00000 mole % H2S
		0.0 ppmv H2S
0 mole % H2S	=	0 grains H2S/100 scf
		0.0 ppmv H2S
1 ppmv H2S	=	0.063 grains H2S/100 scf
		0.00010 mole % H2S

Ideal Gas at 14.696 psia and 60°F

		MW lb/mol	Specific Gravity	Lb per Cu Ft	Cu Ft per Lb	LHV, dry Btu/scf	HHV, dry Btu/scf	LHV Btu/lb	HHV Btu/lb	cu ft of air / 1 cu ft of gas	Z factor
Nitrogen	N2	28.013	0.9672	0.0738	13.552	0	0	0	0	0	0.9997
Carbon Dioxide	CO2	44.010	1.5196	0.1159	8.626	0	0	0	0	0	0.9964
Hydrogen Sulfide	H2S	34.076	1.1766	0.0898	11.141	587	637	6,545	7,100	7.15	0.9846
Helium	He	4.003	0.1382	0.0105	94.848						1.0006
Oxygen	O2	31.999	1.1048	0.0843	11.864	0	0	0	0	0	0.9992
Methane	CH4	16.043	0.5539	0.0423	23.664	909.4	1,010.0	21,520	23,879	9.53	0.9980
Ethane	C2H6	30.070	1.0382	0.0792	12.625	1,618.7	1,769.6	20,432	22,320	16.68	0.9919
Propane	C3H8	44.097	1.5226	0.1162	8.609	2,314.9	2,516.1	19,944	21,661	23.82	0.9825
Iso-Butane	C4H10	58.124	2.0069	0.1531	6.532	3,000.4	3,251.9	19,629	21,257	30.97	0.9711
Normal Butane	C4H10	58.124	2.0069	0.1531	6.532	3,010.8	3,262.3	19,680	21,308	30.97	0.9667
Iso Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,699.0	4,000.9	19,478	21,052	38.11	1.0000
Normal Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,706.9	4,008.9	19,517	21,091	38.11	1.0000
Hexane	C6H14	86.178	2.9755	0.2270	4.405	4,403.8	4,755.9	19,403	20,940	45.26	0.9879
Heptane	C7H16	100.205	3.4598	0.2639	3.789	5,100.0	5,502.5	22,000	23,000	52.41	0.9947

Real Gas at 14.696 psia and 60°F

		MW lb/mol	Specific Gravity	Lb per Cu Ft	Cu Ft per Lb	LHV, dry Btu/scf	HHV, dry Btu/scf	LHV Btu/lb	HHV Btu/lb	cu ft of air / 1 cu ft of gas	Gal/Mole
Nitrogen	N2	28.013	0.9672	0.0738	13.552	0	0	0	0	0	4.1513
Carbon Dioxide	CO2	44.010	1.5196	0.1159	8.626	0	0	0	0	0	6.4532
Hydrogen Sulfide	H2S	34.076	1.1766	0.0898	11.141	621	672	6,545	7,100	7.15	5.1005
Helium	He	4.003	0.1382	0.0105	94.848						3.8376
Oxygen	O2	31.999	1.1048	0.0843	11.864	0	0	0	0	0	3.3605
Methane	CH4	16.043	0.5539	0.0423	23.664	911	1,012	21,520	23,879	9.53	6.4172
Ethane	C2H6	30.070	1.0382	0.0792	12.625	1,631	1,783	20,432	22,320	16.68	10.126
Propane	C3H8	44.097	1.5226	0.1162	8.609	2,353	3,354	19,944	21,661	23.82	10.433
Iso-Butane	C4H10	58.124	2.0069	0.1531	6.532	3,101	3,369	19,629	21,257	30.97	12.386
Normal Butane	C4H10	58.124	2.0069	0.1531	6.532	3,094	3,370	19,680	21,308	30.97	11.937
Iso Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,709	4,001	19,478	21,052	38.11	13.86
Normal Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,698	4,009	19,517	21,091	38.11	13.713
Hexane	C6H14	86.178	2.9755	0.2270	4.405	4,404	4,756	19,403	20,940	45.26	15.566
Heptane	C7H16	100.205	3.4598	0.2639	3.789	5,101	5,503	22,000	23,000	52.41	17.468

USA COMPRESSION

USA Compression Unit 1657 Ajax 2802LE Engine Emissions

Date of Manufacture	November 15, 2006	Package Serial Number	85123	Date Modified/Reconstructed	Not Any
Driver Rated HP	400	Rated Speed in RPM	440	Combustion Type	Spark Ignited 2 Stroke
Number of Cylinders	2	Compression Ratio	6.1:1	Combustion Setting	Lean Burn
Displacement, in^3	5652	Fuel Delivery Method	Fuel Injected	Combustion Air Treatment	Naturally Aspirated

Raw Engine Emissions (Pipeline Quality Fuel Gas with little to no H2S)

Fuel Consumption *7800 LHV BTU/bhp-hr or 8580 HHV BTU/bhp-hr*
Altitude *1500 ft*
Maximum Air Inlet Temp *65 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	2.0		1.76	7.72
Carbon Monoxide (CO)	1.2		1.06	4.63
Volatile Organic Compounds (VOC or NMNEHC)	0.8		0.71	3.09
Formaldehyde (CH2O)	0.3		0.26	1.16
Particulate Matter (PM) Filterable+Condensable		4.83E-02	1.66E-01	7.26E-01
Sulfur Dioxide (SO2)		5.88E-04	2.02E-03	8.84E-03

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	NA	NA	NA
Methane (CH4)	5.1	4.50	17.87

[1] g/bhp-hr are based on Cameron Specifications assuming pipeline quality fuel gas, < 1500 ft elevation, and 65 F Air Inlet Temperature.
Note that g/bhp-hr values are based on 100% Load Operation.
It is recommended to apply a safety factor to CO emissions of 3.26, VOC emissions of 1.5, and CH2O emisions of 1.5 to allow for operational flexibility and fuel gas composition variability. .

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-1).

Catalytic Converter Emissions

Catalytic Converter Make amd Model: *None*
Number of Elements in Housing: *0*

	% Reduction	**lb/hr**	**TPY**
Nitrogen Oxides (NOx)	0	**1.76**	**7.72**
Carbon Monoxide (CO)	0	**1.06**	**4.63**
Volatile Organic Compounds (VOC or NMNEHC)	0	**0.71**	**3.09**
Formaldehyde (CH2O)	0	**0.26**	**1.16**
Particulate Matter (PM)	0	**1.66E-01**	**7.26E-01**
Sulfur Dioxide (SO2)	0	**2.02E-03**	**8.84E-03**

	% Reduction	**lb/hr**	**Metric Tonne/yr**
Carbon Dioxide (CO2)	0	**NA**	**NA**
Methane (CH4)	0	**4.50**	**17.87**

Estimated Exhaust Emissions Based On PLQNG, 1500 FASL Elevation and an average Ambient Temperature of 65 Degrees F

For Emissions Permits, please contact Ajax for emissions data based on specific site conditions

Ajax Engine Model	Emissions (Gm / Bhph)					BSFC	RPM	BHP	BMEP	Exhaust Stack						No. Of Cyl's	Bore	Stroke
	NOx	CO	NMHC	VOC	H2CO					Dia. (in.)	Height (in.)	Temp (Deg.F)	Flow (acfm)	Flow (lb/m)	Velocity (ft/m)			
DPC-230	4.4	2.4	0.9	0.6	0.3	8700	360	221	55.0	12	190	440	1730	71	2203	2	13.25	16
DPC-230 LE	2.0	2.2	0.7	0.5	0.3	8100	360	221	55.0	12	190	400	1670	72	2126	2	13.25	16
DPC-280	11.4	1.3	0.6	0.5	0.3	8200	400	269	60.3	12	190	470	2030	80	2585	2	13.25	16
DPC-280 LE	2.0	1.4	0.6	0.5	0.3	7800	400	269	60.3	12	190	450	1990	81	2534	2	13.25	16
DPC-300	4.1	1.9	1.0	0.6	0.3	8700	360	288	56.0	13.25	260	435	2210	91	2308	2	15	16
DPC-300 LE	2.0	1.6	0.7	0.5	0.3	8200	360	288	56.0	13.25	260	435	2230	92	2329	2	15	16
DPC-360	6.3	1.4	0.9	0.6	0.3	8400	400	346	60.5	13.25	260	480	2630	103	2747	2	15	16
DPC-360 LE	2.0	1.1	0.6	0.5	0.3	7900	400	346	60.5	13.25	260	480	2690	105	2809	2	15	16
DPC-450 LE	2.7	1.2	0.6	0.5	0.3	7800	400	432	64.6	17.25	190	500	3220	124	1984	3	13.25	16
DPC-540	8.6	1.3	0.8	0.6	0.3	8300	400	540	63.0	17.25	303	465	3890	155	2397	3	15	16
DPC-540 LE	2.0	1.0	0.6	0.5	0.3	7800	400	540	63.0	17.25	303	465	3970	158	2446	3	15	16
DPC-600	13.0	1.2	0.7	0.5	0.3	8200	400	576	67.2	17.25	303	515	4110	155	2532	3	15	16
DPC-600 LE	6.5	0.9	0.6	0.5	0.3	7800	400	576	67.2	17.25	303	515	4190	158	2582	3	15	16
DPC-720	9.5	1.3	0.7	0.5	0.3	8300	400	720	63.0	17.25	241	465	5190	207	3198	4	15	16
DPC-720 LE	2.0	1.0	0.6	0.5	0.3	7800	400	720	63.0	17.25	241	465	5300	211	3266	4	15	16
DPC-800	13.0	1.2	0.7	0.5	0.3	8200	400	768	67.2	17.25	241	515	5480	207	3377	4	15	16
DPC-800 LE	6.5	1.0	0.6	0.5	0.3	7800	400	768	67.2	17.25	241	515	5590	211	3444	4	15	16
DPC-2201	10.0	1.3	0.6	0.5	0.3	8000	440	148	60.4	12	190	490	1160	45	1477	1	13.25	16
DPC-2201 LE	2.0	1.4	0.6	0.5	0.3	7800	440	148	60.4	12	190	490	1200	47	1528	1	13.25	16
DPC-2202	10.0	1.3	0.6	0.5	0.3	8000	440	296	60.4	12	190	470	2280	90	2903	2	13.25	16
DPC-2202 LE	2.0	1.4	0.6	0.5	0.3	7800	440	296	60.4	12	190	470	2350	93	2992	2	13.25	16
DPC-2801	5.5	1.4	0.8	0.5	0.3	8200	440	192	61.1	13.25	256	460	1450	58	1514	1	15	16
DPC-2801 LE	2.0	1.2	0.6	0.5	0.3	7800	440	192	61.1	13.25	256	460	1490	60	1556	1	15	16
DPC-2802	5.5	1.3	0.8	0.5	0.3	8200	440	422	67.2	13.25	260	465	2910	116	3039	2	15	16
DPC-2802 LE	2.0	1.2	0.6	0.5	0.3	7800	440	384	61.1	13.25	260	465	3000	119	3133	2	15	16
DPC-2802 LE*	2.0	1.2	0.6	0.5	0.3	7800	440	384	61.1	14.13	260	465	3000	119	2757	2	15	16
DPC-2803	12.0	1.2	0.8	0.5	0.3	8000	440	634	67.3	17.25	303	465	4380	174	2699	3	15	16
DPC-2803 LE	2.0	1.2	0.6	0.5	0.3	7800	440	600	63.7	17.25	241	515	4740	179	2921	3	15	16
DPC-2804	12.0	1.2	0.8	0.5	0.3	8000	440	845	67.2	17.25	241	465	5840	233	3598	4	15	16
DPC-2804 LE	2.0	1.2	0.6	0.5	0.3	7800	440	800	63.7	17.25	241	515	6320	239	3894	4	15	16
DPC-3401 LE	2.0	1.1	0.6	0.5	0.3	7800	440	232	61.0	13.25	256	460	1800	72	1880	1	16.5	16
DPC-3402 LE	2.0	1.1	0.6	0.5	0.3	7800	440	465	61.2	13.25	260	465	3630	145	3791	2	16.5	16
DPC-3403 LE	2.0	1.1	0.6	0.5	0.3	7800	440	726	63.7	17.25	241	515	5740	217	3537	3	16.5	16
DPC-3404 LE	2.0	1.1	0.6	0.5	0.3	7800	440	970	63.8	17.25	241	515	7650	289	4714	4	16.5	16

Date: March 2011, Site Altitude = 0 - 1500 FASL, Site Fuel Composition = Pipeline Quality Natural Gas (PLQNG)
Ambient Temp For Defining Maximum Load = 100 Deg F, Ambient Temp For Defining Exhaust Emissions = 65 Deg F
The above emissions and performance data is contingent on: 1.) Engine must be maintained in good working order. 2.) Engine modifications or upgrades from the original factory configuration must meet Ajax specifications and installation guidelines. 3.) Engine operating parameters must be consistent with those specified in the Ajax manual. NOx = Nitrogen Oxide, CO = Carbon Monoxide, NMHC = Non-Methane Hydrocarbons reported as Propane
VOC = non-methane, non-ethane and non-Formaldehyde reported as propane, H2CO = Formaldehyde
FASL=Feet Above Sea Level, ACFM=Actual Cubic Feet Per Minute, BMEP=Brake Mean Effective Pressure, BSFC=Brake Specific Fuel Consumption (Btu/Bhp-Hr)
Pipe Line Quality Natural Gas (PLQNG): Nitrogen = 0.72%, Carbon Dioxide = 1.14%, Methane = 92.84%, Ethane = 4.1%, Propane = 1.2%
* = DPC-2802LE Tilt Muffler Package
For additional info, please contact Applications Engineering at (405) 670-4121, Cameron Compression Systems, 2101 SE 18th Street, Oklahoma City, OK 73129

GAS ANALYTICAL SERVICES

C6+ Gas Analysis Report

Gas Analytical

Report Date: Jun 10, 2016 1:47p

Client:	DIVERSIFIED RESOURCES INC	Date Sampled:	Jun 9, 2016
Client Code:	259	Analysis Date:	Jun 10, 2016 3:34p
Site:	Antonelli	Collected By:	Jeff Gach
Field No:	9998	Date Effective:	Jun 1, 2016 12:00a
Meter:		Sample Pressure (PSI):	140.0
Source Laboratory	Clarksburg (Bridgeport), WV	Sample Temp (°F):	107
Lab File No:	**X_CH1-12220.CHR**	Field H2O:	No Test
Sample Type:	Spot	Field H2S:	No Test
Reviewed By:			
Analysis Status:	good		

Component	Mol %	Gal/MSCF
Methane	91.3300	
Ethane	5.6047	1.4899
Propane	1.1211	0.3082
I-Butane	0.2630	0.0859
N-Butane	0.2976	0.0937
I-Pentane	0.1444	0.0527
N-Pentane	0.0814	0.0295
Nitrogen	0.8289	
Oxygen	<MDL	
Carbon Dioxide	0.0854	
Hexanes+	0.2435	0.1000
TOTAL	100.0000	2.1598

Analytical Results at Base Conditions (Real)	
BTU/SCF (Dry):	1,094.4570 BTU/ft³
BTU/SCF (Saturated):	1,076.2443 BTU/ft³
PSIA:	14.696 PSI
Temperature (°F):	60.0 °F
Z Factor (Dry):	0.99755
Z Factor (Saturated):	0.99717

Analytical Results at Contract Conditions (Real)	
BTU/SCF (Dry):	1,094.4632 BTU/ft³
BTU/SCF (Saturated):	1,076.2924 BTU/ft³
PSIA:	14.730 PSI
Temperature (°F):	60.0 °F
Z Factor (Dry):	0.99754
Z Factor (Saturated):	0.99717

Calculated Specific Gravities			
Ideal Gravity:	0.6152	Real Gravity:	0.6164
Molecular Wt:	17.8167	lb/lbmol	

Gross Heating Values are Based on:
GPA 2145-09, 2172
Compressibility is Calculated using AGA-8.

Source	Date	Notes
Gas Analytical	Jun 10, 2016	RUSH results to JGach@divresinc.com and DAdamo@divresinc.com

<MDL = Less than Method Detection Limits, NG = Not Given, NT = Not Tested

ATTACHMENT S

Facility-wide Emission Summary Sheet(s)

ATTACHMENT S – FACILITY-WIDE CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		GHG (CO_2e)	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
3E	1.76	7.73	1.06	4.64	0.71	3.09	<0.01	<0.01	0.03	0.15	0.166	0.726	490	2,174
2E	0.05	0.20	0.02	0.09	1.29	5.66								
Note: There were no changes to emissions for 2E. They are the same as permitted.														
TOTAL	1.81	7.93	1.08	4.73	2.00	8.75	<0.01	<0.01	0.03	0.15	0.166	0.726	490	2,174

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT S – FACILITY-WIDE HAP CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		Hexane		Total HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
3E	0.265	1.16	<0.01	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.30	1.32
2E			0.11	0.47	0.28	1.21					0.04	0.18		
Note: There were no changes to emissions for 2E. They are the same as permitted.														
TOTAL	0.265	1.16	0.11	0.50	0.28	1.22	<0.01	<0.01	<0.01	<0.01	0.04	0.19	0.30	1.32

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT T

Public Notice

The Inter-Mountain Legals Print Ad Proof

ADNo: 72184 Customer Number:
Customer Name: Company: DIVERSIFIED OIL &GA
Address: ROBERT R. HUTSON P.O. BOX 67
City/St/Zip: LUMBERPORT ,WV 26386
Phone: (724) 397-5333 Solicitor: JH
Category: 10 Class: 1000 Rate: LE-0 Start: 6-25-2016 Stop: 6-25-2016
Lines: 36 Inches: 3.50 Words: 209

Credit Card: Visa ##############9955 Expire:
Order Number:
Cost: 52.92 Extra Charges: 2.00 Adjustments: .00
Payments: 54.92 Discount: .00
Balance: .00

June 23th 2016
Air Quality Permit Notice
Notice of Application

Notice is given that, Diversified Oil & Gas LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, For a G35-C General Permit Class II Administrative Update for its Antonelli Natural Gas Compression Station located at County Road 93, Moatsville, West Virginia 26405 in Barbour County, West Virginia. (Lat. 39.21933, Long. -79.88191)

The applicant estimates the following potential decreases to discharge for following Regulated Air Pollutants will be:
-11.68 tons of Nitrogen Oxides per year
-19.77 tons of Carbon Monoxide per year
-0.90 tons of Volatile Organics per year
-2.07 tons of Formaldehyde per year

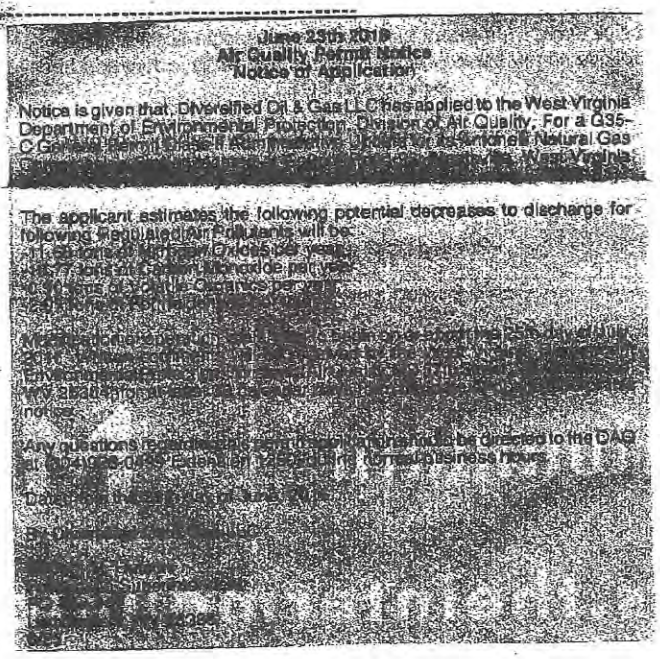
Modification of operation is planned to begin on or about the 25th day of July, 2016. Written comments will be received by the West Virginia Department Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304)926-0499 Extension 1250, during normal business hours.

Dated this the 25th day of June, 2016.

By Diversified Oil & Gas LLC

Robert R. Hutson
Production Superintendent
PO Box 167
Lumberport, WV 26386
6/25



State of West Virginia, County of Randolph, ss.

I, Heather Henline, General Manager of THE INTER-MOUNTAIN, a newspaper published at Elkins, in said county, do hereby certify that the annexed advertisement was published on the following dates:

6/25

20 16 as required by law.

Given under my hand this 30th day of June 20. 16

Heather Henline

General Manager

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
LORI D. SMITH
THE INTER-MOUNTAIN
520 RAILROAD AVE., PO BOX 1328
ELKINS, WV 26241
My commission expires November 02, 2020

Printer's Fee: $ 54.92

Subscribed and sworn to before me this 30th day of June, 20, 16

Lori D. Smith

Notary Public

My Commission Expires the 2nd day of November, 20, 20