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CNX Gas Company, LLC Oxford 11 Well Pad, ID 017-00148 New Milton, West Virginia Class II Update R13-3237A SLR Ref: 116.00894.00031



Oxford 11 Well Pad Class II Update R13-3237A

Prepared for:

CNX Gas Company, LLC PO Box 1248 Jane Lew, WV 26378

This document has been prepared by SLR International Corporation. The material and data in this permit application were prepared under the supervision and direction of the undersigned.

Nathaniel Lanham West Virginia Operations Manager

Jesse Hanshaw, P.E. Principal Engineer

ATTACHMENTS

APPLICATION FC	DR PERMIT
ATTACHMENT A	BUSINESS CERTIFICATE
ATTACHMENT B	
ATTACHMENT C	INSTALLATION AND START-UP
ATTACHMENT D	REGULATORY DISCUSSION
ATTACHMENT F	PROCESS FLOW DIAGRAM
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APPLICATION FOR PERMIT

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF AIR QUALIT 601 57 th Street, SE Charleston, WV 25304 (304) 926-0475 WWW.dep.wv.gov/dag	APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)					
PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF K	PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):					
□ CONSTRUCTION □ MODIFICATION □ RELOCATION □ CLASS I ADMINISTRATIVE UPDATE □ TEMPORARY				—		
				ED, INCLUDE TITLE V REVISION NT S TO THIS APPLICATION		
FOR TITLE V FACILITIES ONLY: Please refer to "Title (Appendix A, "Title V Permit Revision Flowchart") and						
Sec	ction l	l. General				
1. Name of applicant <i>(as registered with the WV Secreta</i> CNX Gas Company, LLC	ary of St	ate's Office):	2. Federal I	Employer ID No. (FEIN): 550738862		
3. Name of facility (if different from above):			4. The applic	cant is the:		
Oxford 11 Well Pad				OPERATOR BOTH		
5A. Applicant's mailing address: 1000 Consol Energy Drive Canonsburg, PA 15317		5B. Facility's prese Access road off S.		ddress: les River (See Coordinates)		
 6. West Virginia Business Registration. Is the applican If YES, provide a copy of the Certificate of Incorpor change amendments or other Business Registration If NO, provide a copy of the Certificate of Authority amendments or other Business Certificate as Attack 	ration/O Certifica //Author	rganization/Limi ate as Attachmen ity of L.L.C./Reg	ted Partnersl at A.	hip (one page) including any name		
7. If applicant is a subsidiary corporation, please provide	the nam	ne of parent corpo	oration:			
 8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i>? XES NO If YES, please explain: The applicant leases the site. If NO, you are not eligible for a permit for this source. 						
 Type of plant or facility (stationary source) to be con administratively updated or temporarily permitted crusher, etc.): Natural Gas Well Pad 	10. North American Industry Classification System (NAICS) code for the facility: 212111					
11A. DAQ Plant ID No. (for existing facilities only):11B. List all current 45CSR13 and 45CSR30 (Title V) permit number associated with this process (for existing facilities only):017-00148R13-3237						

12A.

 For Modifications, Administrative Updates or Teppresent location of the facility from the nearest state 		please provide directions to the					
 For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment B. 							
From the intersection of WV-Hwy. 18 and Co. Rte. 2 right on Porto Rico Rd. for 0.7 miles, then continue straig Rte. 54/1 for 2.5 miles, then turns right and becomes Cai 1.0 mile. Take access road to left and to the top of the hi	ht onto Toms Fork Road for another 0.7 n Run for 0.3 miles. Then take sharp let	miles. Take slight right onto Co.					
12B. New site address (if applicable):	12C. Nearest city or town:	12D. County:					
N/A	New Milton	Doddridge					
12.E. UTM Northing (KM): 4335.746	12F. UTM Easting (KM): 520.430	12G. UTM Zone: 17N					
 Briefly describe the proposed change(s) at the facilit This Class II Administrative Permit Update covers the new compressor will be a NSPS JJJJ, G3508BLE unit ar NESHAP standards. 	replacement of flash gas compressor (
 14A. Provide the date of anticipated installation or change If this is an After-The-Fact permit application, provide the provided happen: 	-	14B. Date of anticipated Start-Up if a permit is granted: 07/01/2015					
14C. Provide a Schedule of the planned Installation of/ application as Attachment C (if more than one unit		units proposed in this permit					
15. Provide maximum projected Operating Schedule or Hours Per Day 24 Days Per Week 7	f activity/activities outlined in this applica Weeks Per Year 52	ation:					
16. Is demolition or physical renovation at an existing factor	cility involved? 🗌 YES 🛛 🕅 NO						
17. Risk Management Plans. If this facility is subject to	112(r) of the 1990 CAAA, or will becom	e subject due to proposed					
changes (for applicability help see www.epa.gov/cepp	o), submit your Risk Management Pla	n (RMP) to U. S. EPA Region III.					
18. Regulatory Discussion. List all Federal and State a	air pollution control regulations that you l	believe are applicable to the					
proposed process (if known). A list of possible application	ble requirements is also included in Atta	achment S of this application					
(Title V Permit Revision Information). Discuss applica	bility and proposed demonstration(s) of	compliance (if known). Provide this					
information as Attachment D.							
Section II. Additional atta	achments and supporting d	ocuments.					
19. Include a check payable to WVDEP – Division of Air	Quality with the appropriate application	fee (per 45CSR22 and					
45CSR13). See attached check for \$1,300 which of	covers the NSPS and Class II fees						
20. Include a Table of Contents as the first page of you	r application package.						
	 Provide a Plot Plan, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as Attachment E (Refer to Plot Plan Guidance). 						
 Indicate the location of the nearest occupied structure 	e (e.g. church, school, business, residen	ce).					
22. Provide a Detailed Process Flow Diagram(s) show device as Attachment F.	ving each proposed or modified emission	ns unit, emission point and control					
23. Provide a Process Description as Attachment G.							
 Also describe and quantify to the extent possible and quantify the extent possible and quantify	all changes made to the facility since the	e last permit review (if applicable).					
All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.							

24. Provide Material Safety Data Sheets (MSDS) for all materials processed, used or produced as Attachment H.							
- For chemical processes, provide a	 For chemical processes, provide a MSDS for each compound emitted to the air. 						
25. Fill out the Emission Units Table and provide it as Attachment I.							
26. Fill out the Emission Points Dat	a Summary Sheet (Table 1 and T	able 2) and provide it as Attachment J.					
27. Fill out the Fugitive Emissions	Data Summary Sheet and provide	it as Attachment K.					
28. Check all applicable Emissions	Unit Data Sheets listed below:						
Bulk Liquid Transfer Operations	Haul Road Emissions	Quarry					
Chemical Processes	Hot Mix Asphalt Plant	Solid Materials Sizing, Handling and Storage					
Concrete Batch Plant	Incinerator	Facilities					
Grey Iron and Steel Foundry	Indirect Heat Exchanger	Storage Tanks					
General Emission Unit, specify: Co	ompressor Engine						
Fill out and provide the Emissions U	nit Data Sheet(s) as Attachment I						
29. Check all applicable Air Pollutio		low:					
Absorption Systems	Baghouse	Flare					
Adsorption Systems	Condenser	Mechanical Collector					
Afterburner	Electrostatic Precipi	ator					
Other Collectors, specify - Catalyti	c Converter (NSCR)						
Fill out and provide the Air Pollution	Control Device Sheet(s) as Attac	hment M.					
30. Provide all Supporting Emissio Items 28 through 31.	ns Calculations as Attachment N	or attach the calculations directly to the forms listed in					
	rate compliance with the proposed	h proposed monitoring, recordkeeping, reporting and emissions limits and operating parameters in this permit					
measures. Additionally, the DAC		ether or not the applicant chooses to propose such sures proposed by the applicant. If none of these plans ude them in the permit.					
32. Public Notice. At the time that the application is submitted, place a Class I Legal Advertisement in a newspaper of general							
circulation in the area where the	source is or will be located (See 45	CSR§13-8.3 through 45CSR§13-8.5 and <i>Example Legal</i>					
Advertisement for details). Plea	se submit the Affidavit of Publica	tion as Attachment P immediately upon receipt.					
33. Business Confidentiality Claim	s. Does this application include co	nfidential information (per 45CSR31)?					
	ES 🛛 NO						
If YES, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "Precautionary Notice – Claims of Confidentiality" guidance found in the General Instructions as Attachment Q.							
	Section III. Certification of Information						
34. Authority/Delegation of Author Check applicable Authority For		other than the responsible official signs the application.					
Authority of Corporation or Other B	Business Entity	Authority of Partnership					
Authority of Governmental Agency	, [] Authority of Limited Partnership					
Submit completed and signed Author							
All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.							

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

1

1

I, the undersigned 🖾 **Responsible Official** / 🗋 **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE <u>Lias Weak</u> (Please	use blue ink)	DATE: <u>6/10/15</u> (Please use blue ink)
35B. Printed name of signee: Craig Neal		35C. Title:
		Vice President Gas Operations
35D. E-mail: <u>craigneal@consolenergy.com</u>	36E. Phone: 724-485-4000	36F. FAX
36A. Printed name of contact person (if differe	nt from above): Jesse Hanshaw	36B. Title: Principal Engineer, SLR
36C. E-mail: jhanshaw@slrconsulting.com	36D. Phone: 304-545-8563	36E. FAX: 681-205-8969

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDE Attachment A: Business Certificate Attachment B: Map(s) Attachment C: Installation and Start Up Schedule Attachment D: Regulatory Discussion Attachment E: Plot Plan Attachment G: Process Description Attachment H: Material Safety Data Sheets (MSDS) Attachment I: Emission Units Table	 Attachment K: Fugitive Emissions Data Summary Sheet Attachment L: Emissions Unit Data Sheet(s) Attachment M: Air Pollution Control Device Sheet(s) Attachment N: Supporting Emissions Calculations Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans Attachment P: Public Notice Attachment Q: Business Confidential Claims Attachment R: Authority Forms Attachment S: Title V Permit Revision Information
Attachment J: Emission Points Data Summary Sheet	⊠ Application Fee
	permit application with the signature(s) to the DAQ, Permitting Section, at the s application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY - IF THIS IS A TITLE V SOURCE:

Forward 1 copy of the application to the Title V Permitting Group and:

☐ For Title V Administrative Amendments:

NSR permit writer should notify Title V permit writer of draft permit,

For Title V Minor Modifications:

□ Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,

NSR permit writer should notify Title V permit writer of draft permit.

- □ For Title V Significant Modifications processed in parallel with NSR Permit revision:
 - NSR permit writer should notify a Title V permit writer of draft permit,
 - □ Public notice should reference both 45CSR13 and Title V permits,
 - EPA has 45 day review period of a draft permit.

ATTACHMENT A

BUSINESS CERTIFICATE

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia



I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

CNX GAS COMPANY LLC

was duly authorized under the laws of this state to transact business in West Virginia as a foreign limited liability company on June 29, 2001.

The company is filed as a term company, for the term ending June 29, 2026.

I further certify that the company's most recent annual report, as required by West Virginia Code §31B-2-211, has been filed with our office and that a certificate of cancellation has not been filed.

i(

CERTIFICATE OF AUTHORIZATION



Given under my hand and the Great Seal of the State of West Virginia on this day of October 28, 2011

Waterie E Jermienie

Secretary of State

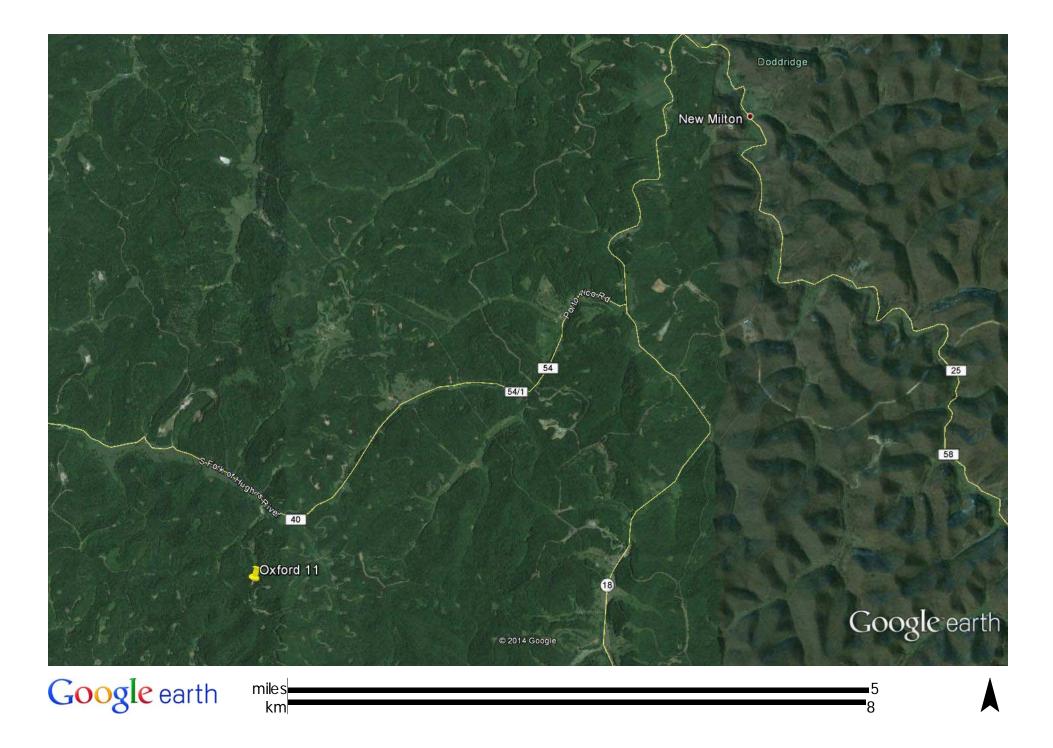
ATTACHMENT B

MAP

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia



ATTACHMENT C

INSTALLATION AND START-UP

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

INSTALLATION AND STARTUP SCHEDULE

CNX Gas Company, LLC is preparing this facility for an anticipated initial startup date of July 1, 2015.

ATTACHMENT D

REGULATORY DISCUSSION

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

APPLICABLE REGULATIONS

The engine replacement of the flash gas compressor with a newer unit encompassed by this class II administrative amendment triggers the following applicable rules and regulations:

Federal and State:

45 CSR 13 – Minor New Source Review Permitting Requirements

The emission changes associated with the requested compressor engine upgrade to a newer unit reduced the facility's emissions of NOx, CO, and VOCs. However, the new unit triggers substantive requirements under NSPS Subpart JJJJ due to its manufacturing date of 2-12-2013.

Therefore, even though emissions are reduced the existing permit will have to be modified via a Class II Administrative Update to reflect the new substantive requirements under the NSPS. This will encompass a 30 day public comment period on the application which will satisfy the third party review stipulation of the Clean Air Act Amendments.

The \$300 Class II application fee and a \$1,000 NSPS fee have been supplied with this application to satisfy processing cost in accordance with Rule 13 and 22.

40 CFR 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The natural gas fueled flash gas compressor (CE-2) is a 690 HP 4SLB G3508BLE Caterpillar unit and is considered a new unit as a result of it being constructed after 6-12-2006 and manufactured on 2-12-2013. The emission standards of Table I apply to this unit consistent with the 1 - 2 - 0.7 g/hp-hr limits for NOx / CO / VOCs respectively.

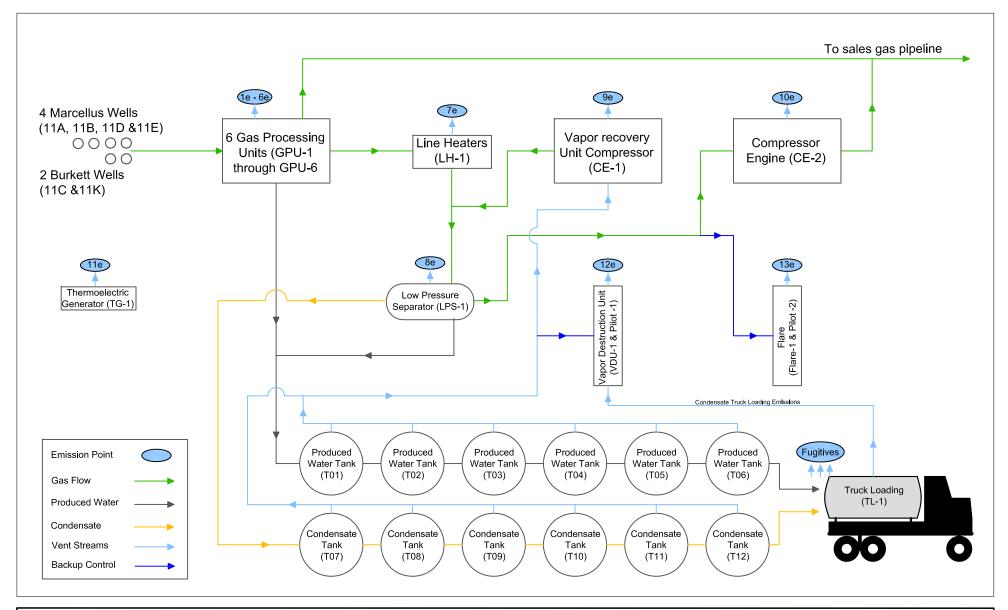
ATTACHMENT F

PROCESS FLOW DIAGRAM

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia



Process Flow Diagram CNX Gas Company, LLC Oxford 11 Well Pad New Milton, West Virginia

ATTACHMENT G

PROCESS DESCRIPTION

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

CNX Gas Company, LLC is applying for coverage under 45CSR13, Rule 13, for a Class II Administrative Update to Permit Number R13-3237 for the construction and operation of a new replacement flash gas compressor at the Oxford 11 natural gas well pad.

DESCRIPTION OF PROCESS CHANGE

The currently permitted flash gas compressor CE-2 was a 630 hp G3508 TALE unit. This compressor skid was assigned unit #1826 and although the engine was manufactured on 1-25-2007, the unit was initially ordered on 4-28-2006. Therefore the unit "Commenced Construction" on 4-28-2006 and this made classified the source as an existing unit under 40CFR63, Subpart ZZZZ.

As a result, of internal commitments made by CNX Gas to build lower emitting facilities, the compressor engine as initially ordered could not meet their internal standards. Therefore, a new unit had to be ordered. The newer unit has a manufacturing date that subjects it to 40CFR60, Subpart JJJJ emission standards and therefore the need for this Class II update. Although emissions will be reduced the new substantive requirements applicable to this engine pushes it into the Class II Administrative Update permit processing category.

The new replacement engine for CE-2 will be a G3508BLE, 690 hp unit, USA Compression #1600, which was manufactured on 2-12-2013. This new unit along with its hospital grade catalyst will reduce emissions by the following levels.

Pollutant	Tons/yr
NOx	-8.84
CO	-12.59
VOC	-1.31
Formaldehyde	-1.49

ATTACHMENT I

EMISSION UNITS TABLE

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices

that will be part of this permit application review, regardless of permitting status)

Emission Unit ID ¹	Emission Point ID ²	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type ³ and Date of Change	Control Device ⁴
CE-2	10e	Flash Gas Compressor Engine	2015	630 HP	Removed	None
CE-2	10e	Flash Gas Compressor Engine	2015	690 HP	New	OC

¹ For Emission Units (or <u>Sources</u>) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
 ² For <u>E</u>mission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
 ³ New, modification, removal
 ⁴ For <u>C</u>ontrol Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEET

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

Attachment J EMISSION POINTS DATA SUMMARY SHEET

	Table 1: Emissions Data														
Emission Point ID No. (Must match Emission	Emission Point Type ¹	Throug (Must m	n Unit Vented gh This Point hatch Emission ble & Plot Plan)	Contro (Must Emissi	ollution I Device t match fon Units Plot Plan)	for Emission Unit (chemical processes		All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs	Maximum Potential Uncontrolled Emissions ⁴		Maximum Potential Controlled Emissions ⁵		Emission Form or Phase (At exit conditions,	Est. Method Used ⁶	Emission Concentration ⁷ (ppmv or mg/m ⁴)
Units Table-& Plot Plan)		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)	& HAPS)	lb/hr	ton/yr	lb/hr	ton/yr	Solid, Liquid or Gas/Vapor)		
10e	Vertical Stack	CE-2	4-Stroke Lean Burn RICE	NA	NA	NA	NA	PM SO2 NOx CO VOC Formaldehyde CO2e	<0.01 0.01 0.76 4.16 1.66 0.43 762	0.01 0.02 3.33 20.19 7.26 1.87 3338	<0.01 0.01 0.76 0.32 0.38 0.08 762	0.01 0.02 3.33 1.41 1.67 0.34 3338	Gas/ Vapor	EE	Can Supply Upon Request

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

^C List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. **DO NOT LIST** H₂O, N₂, O₂, and Noble Gases.

Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

6 Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

ATTACHMENT L

EMISSION UNIT DATA SHEET

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

NATURAL GAS-FIRED COMPRESSOR ENGINE (RICE) EMISSION UNIT DATA SHEET

	omplete this section for an nit (Source) ID No. ¹		E-2		E-2	
	n Point ID No. ²	1	0e	1	De	
	ufacturer and Model	Caterpillar	G3508 BLE	Caterpillar C	G3508 TALE	
	er's Rated bhp/rpm	-	/1400	630/	1400	
	rce Status ³	Ν	1S	RS		
Date Installed	/Modified/Removed ⁴	20)15	2015		
	red/Reconstruction Date ⁵	2/12	/2013	1/25/	/2007	
Is this engine subj JJJJ?	ect to 40CFR60, Subpart	Y	es	Ň	lo	
	Stationary Spark Ignition 0 40CFR60, Subpart JJJJ?	Ν	ło	N	lo	
Is this engine subj ZZZZ? (yes or no)	ect to 40CFR63, Subpart	Ν	10	Ň	lo	
	Engine Type ⁷	4S	LB	4S	LB	
	APCD Type ⁸	C	Cat	No	one	
Enging	Fuel Type ⁹	R	G	Р	Q	
Engine, Fuel and	H ₂ S (gr/100 scf)	0.	25	0.25		
Combustion	Operating bhp/rpm	690/	690/1400		1400	
Data	BSFC (Btu/bhp-hr)	8,3	332	7,895		
	Fuel throughput (ft ³ /hr)	4,9	910	5,270		
	Fuel throughput (MMft ³ /yr)	43	.02	46.17		
	Operation (hrs/yr)	87	8760 8760		60	
Reference ¹⁰	Potential Emissions ¹¹	lbs/hr	tons/yr	lbs/hr	tons/yr	
MD	NO _X	0.77	3.34	2.78	12.17	
MD	СО	0.32	1.41	3.20	14.0	
MD	VOC	0.38	1.67	0.69	2.99	
AP	SO_2	0.01	0.02	0.01	0.02	
AP	PM_{10}	< 0.01	0.01	< 0.01	0.01	
MD	Formaldehyde	0.08	0.34	0.42	1.83	
MRR ¹²	Proposed Monitoring:	Hours of	operation	Hours of	operation	
	Proposed Recordkeeping:		ecords for 5 years on site.		ecords for 5 years on site.	
	Proposed Reporting:	limits o	ny emissions r opacity ations	Will report any emissions limits or opacity deviations		

Complete this section for any natural gas-fired reciprocating internal combustion engine.

Instructions for completing the Engine Emission Unit Data Sheet:

- ¹ Enter the appropriate Emission Unit (Source) identification number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the production pad. Multiple compressor engines should be designated CE-1S, CE-2S, etc. or other appropriate designation. Generator engines should be designated GE-1S, GE-2S, etc. or other appropriate designation. If more than three (3) engines exist, please use additional sheets.
- ² For Emission Points, use the following numbering system: 1E, 2E, etc. or other appropriate designation.
- ³ Enter the Source Status using the following codes: NS = Construction of New Source (installation); ES = Existing Source; MS = Modification of Existing Source; and RS = Removal of Source
- ⁴ Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
- ⁵ Enter the date that the engine was manufactured, modified or reconstructed.
- ⁶ Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart 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 and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate. *Provide a manufacturer's data sheet for all engines being registered and a manufacturer's EPA certification of conformity sheet.*
- ⁷ Enter the Engine Type designation(s) using the following codes: LB2S = Lean Burn Two Stroke, RB4S = Rich Burn Four Stroke, and LB4S =Lean Burn Four Stroke.
- ⁸ Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes: NSCR = Rich Burn & Non-Selective Catalytic Reduction, PSC = Rich Burn & Prestratified Charge, SCR = Lean Burn & Selective Catalytic Reduction, or CAT = Lean Burn & Catalytic Oxidation
- ⁹ Enter the Fuel Type using the following codes: PQ = Pipeline Quality Natural Gas, or <math>RG = Raw Natural Gas
- ¹⁰ Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*. Codes: MD = Manufacturer's Data, AP = AP-42 Factors, GR = GRI-HAPCalcTM, or OT = Other ______ (please list)
- ¹¹ 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 as Attachment O*.
- ¹² Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the operation of this engine operation and associated air pollution control device. Include operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.



Date of Manufacture	February 12, 2013	Engine Serial Number	RBK01337	Date Modified/	Reconstructed	Not An
Driver Rated HP	690	Rated Speed in RPM	1400	Combustion Ty	pe –	Spark Ignited 4 Strok
Number of Cylinders	8	Compression Ratio	8:1	Combustion Set	ting	Ultra Lean Buri
Displacement, in ³	2115	Fuel Delivery Method	Carburetor	Combustion Air	Treatment	T.C./Aftercooled
Raw Engine Emissions (Customer Su	ppplied Fuel Gas with little	to no H2S)				
Fuel Consumption	7561 LHV BTU/bhp-hr	or 8332 HH	/ BTU/bhp-hr			
Altitude	1200 ft					
Maximum Air Inlet Temp	90 F					
		g/bhp-hr ¹	lb/MMBTU ²	lb/hr	ТРҮ	
Nitrogen Oxides (NOx)		0.5		0.76	3.33	
Carbon Monoxide (CO)		3.03		4.61	20.19	
Volatile Organic Compounds (VOC or	NMNEHC excluding CH2O)	1.09		1.66	7.26	
Formaldehyde (CH2O)		0.28		0.43	1.87	
Particulate Matter (PM) Filterable+Conder	Isable		9.99E-03	5.74E-02	2.51E-01	
Sulfur Dioxide (SO2)			5.88E-04	3.38E-03	1.48E-02	
		g/bhp-hr ¹		lb/hr	Metric Tonne/yr	
		<u> </u>				
Carbon Dioxide (CO2)		501		762	3028	
Carbon Dioxide (CO2) Methane (CH4)		501 2.68		762 4.08	3028 16.20	
Methane (CH4) ¹ g/bhp-hr are based on Caterpillar S Note that g/bhp-hr values are based It is recommended to add a safety m ² Emission Factor obtained from EPA	on 100% Load Operation. argin to CO, VOC and other o 's AP-42, Fifth Edition, Volun	2.68 stomer supplied fuel gas, 1200 organic compounds to allow f	or operational flexibility	4.08 Nax Air Inlet Tempera and variability to fue	16.20 ature. I gas composition.	
Methane (CH4) ¹ g/bhp-hr are based on Caterpillar S Note that g/bhp-hr values are based It is recommended to add a safety m ² Emission Factor obtained from EPA Gas-Fired Reciprocating Engines, Tal	on 100% Load Operation. argin to CO, VOC and other o 's AP-42, Fifth Edition, Volun	2.68 stomer supplied fuel gas, 1200 organic compounds to allow f	or operational flexibility	4.08 Nax Air Inlet Tempera and variability to fue	16.20 ature. I gas composition.	
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1610 Woodstead Ct, Suite 245, The Woodlands, Texas 77380 USA Tel: 877-965-8989 Fax: 281-605-5858 info@dcl-inc.com www.dcl-inc.com

GLOBAL LEADER IN EMISSION CONTROL SOLUTIONS

То:	Chris Magee	Phone:	814-746-6942
Company:	USA Compression	Email	CMagee@usacompression.com
Date:	June 5, 2015	No. Pages:	1

Dear Chris,

We hereby guarantee that our Model DC64L2 specified below with two (2) elements installed as described below, and sized for the following engine:

Engine Data	
Engine Model	Caterpillar
	G3508B
Power	690HP
Fuel	PQNG
Exhaust Flow Rate	4460 acfm
Exhaust Temperature	981°F

Catalyst Data	
Catalyst Model	DC64L2
Туре	Oxidation- A
# of Elements	2
Cell Density	300 cpsi
Approx Dimensions	See attached drawing
Approx Pressure Drop	2.4" w.c

will perform as follows:

Exhaust Component	Engine Output g/bhp-hr	Converter Output g/bhp-hr or %
СО	3.03	93%
VOC	1.09	0.25
CH2O	0.28	0.05

for a period of 1 year or 8000 hours, whichever comes first, subject to all terms and conditions contained in the attached warranty document being respected and met.

Best Regards,

On behalf of DCL America Inc.

Lisa Barber

416-788-8021 lbarber@dcl-inc.com

Constituent	Abbrev	Mole %	Norm		
Water Vapor	H2O	0.0000	0.0000		
Methane	CH4	76.0977	76.0978	Fuel Makeup:	CNX Oxford 13 4-21-15
Ethane	C2H6	14.9153	14.9153	Unit of Measure:	English
Propane	C3H8	4.8556	4.8556		5
Isobutane	iso-C4H1O	0.6609	0.6609	Calculated Fuel Properties	
Norbutane	nor-C4H1O	1.3067	1.3067	• •	F3 0
Isopentane	iso-C5H12	0.3557	0.3557	Caterpillar Methane Number:	52.0
Norpentane	nor-C5H12	0.3555	0.3555		
Hexane	C6H14	0.8148	0.8148	Lower Heating Value (Btu/scf):	1171
Heptane	C7H16	0.0000	0.0000	Higher Heating Value (Btu/scf):	1291
Nitrogen	N2	0.4433	0.4433	WOBBE Index (Btu/scf):	1363
Carbon Dioxide	CO2	0.1889	0.1889		
Hydrogen Sulfide	H2S	0.0000	0.0000	THC: Free Inert Ratio:	162.49
Carbon Monoxide	CO	0.0000	0.0000	Total % Inerts (% N2, CO2, He):	0.63%
Hydrogen	H2	0.0000	0.0000		
Oxygen	O2	0.0055	0.0055	RPC (%) (To 905 Btu/scf Fuel):	100%
Helium	HE	0.0000	0.0000		
Neopentane	neo-C5H12	0.0000	0.0000	Compressibility Factor:	0.996
Octane	C8H18	0.0000	0.0000	Stoich A/F Ratio (Vol/Vol):	12.14
Nonane	C9H20	0.0000	0.0000	Stoich A/F Ratio (Mass/Mass):	16.43
Ethylene	C2H4	0.0000	0.0000	Specific Gravity (Relative to Air):	0.739
Propylene	C3H6	0.0000	0.0000	Specific Heat Constant (K):	1.278
TOTAL (Volume %)		99.9999	100.0000		1.270

CONDITIONS AND DEFINITIONS

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

FUEL LIQUIDS Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.



PO Drawer 190 - Clarksburg, WV 26302-0190 Telephone: 304.624.9700 - Fax: 304.622.0981 Website: www.msesinc.com/analysis

Gas Corrosion Analysis

Consol Energy

Analysis No:	1
Analysis Date:	7/10/2014
MSES Project No .:	14-043

Client:	Consol Energy	Sample Date:	7/9/2014
Sample Location:	Oxford	Sample Time:	9:50 PM
Sample Collection Source:	Inlet	Collected By:	MFM
MSES Sample Number:	N/A	Sample Pressure:	250.0
Date Received at Lab:	7/9/2014	Sample Temp. (°F):	N/A
Collection Remark:	None	Sample Container Type:	Cylinder
		MSES/CPD ID#	115
		Client ID #:	N/A
ANALYSIS REPORT	24 ³		
COMPONENTS	UNITS	ANALYTICAL METHODS	RESULTS
	PPMV	ASDTM D5504-08	<0.1
H ₂ S HYDROGEN SULFIDE			And a state of the second s
O ₂ OXYGEN	Mole %	GPA 2261-00	0.0055

(1) Fractional analysis and reporting performed following procedures outlined in GPA 2261-00: Analysis for Natural Gas and Similar Gaseous Mixtures By Gas Chromatography

(2) Physical properties and values used in calculations were acquired from GPA 2145-09: Table of Physical properties for Hydrocarbons and Other Compounds of Interest to the Natural Gas Industry

(3) Sulfur Compounds Analysis and Reporting Performed by Gas Chromatography using a Sulfur Chemiluminescence Detector Following Procedures **Outlined by ASTM Method D5504-08**



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Fractional Analysis Consol Energy

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Analysis No:	1
Analysis Date:	7/10/2014
MSES Project No.:	14-043

SAMPLE COLLECTION INFORMATION 111 -1 71

Client:	Consol Energy	Sample Date:	7/9/2014
Sample Location:	Oxford	Sample Time:	9:50 AM
Sample Collection Source:	Inlet	Collected By:	MFM
MSES Sample Number:	CE-1-7-9-14	Sample Pressure:	250.0
Date Received at Lab:	7/9/2014	Sample Temp. (°F):	N/A
Collection Remark:	N/A	Sample Container Type:	Cylinder
		MSES/CPD ID#	115
	-	Client ID #:	N/A

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ANALYSIS REPORT () State of the set of the set of the set of

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FRACTIONAL ANALYSIS			ANALYTICAL RESULTS AT BASE CONDITIONS (CALCULATED VALUES)	
COMPONENTS MOLE PERCENT GPM				
METHANE	76.0977		BTU/SCF (DRY):	1294.07
ETHANE	14.9153	3.98	BTU/SCF (SATURATED):	1272.03
PROPANE	4.8556	1.33	PRESSURE (PSIA):	14.696
I-BUTANE	0.6609	0.22	TEMPERATURE (°F)	60.00
N-BUTANE	1.3067	0.41	Z FACTOR (DRY):	0.9962
I-PENTANE	0.3557	0.13	Z FACTOR (SATURATED);	0.9958
N-PENTANE	0.3555	0.13	ETHANE + GPM	6.5778
NITROGEN	0.4433		SPECIFIC GRAVITIES	
CARBON DIOXIDE	0.1889		(CALCULATE)	VALUES)
OXYGEN	0.0055		IDEAL GRAVITY	0.7409
HEXANES (PLUS)	0.8148	0.35	REAL GRAVITY	0.7435
TOTAL	100.0000			

ANALYTICAL METHODS AND VALUES

(1) Fractional analysis and reporting performed following procedures outlined in GPA 2261-00: Analysis for Natural Gas and Similar Gaseous Mixtures By Gas Chromatography

(2) Physical properties and values used in calculations were acquired from GPA 2145-09: Table of Physical properties for Hydrocarbons and Other Compounds of Interest to the Natural Gas Industry



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Extended Gas Analysis Consol Energy

Analysis No:	1
Analysis Date:	7/10/2014
MSES Project No.:	14-043

Client:	Consol Energy	Sample Date:	7/9/2014
Sample Location:	Oxford	Sample Time:	9:50 AM MFM 250.0 N/A Cylinder
Sample Collection Source:	Inlet	Collected By:	
MSES Sample Number:	CE-1-7-9-14	Sample Pressure:	
Date Received at Lab:	7/9/2014	Sample Temp. (°F):	
Collection Remark:	N/A	Sample Container Type:	
		MSES/CPD ID#	MSES 115
		Client ID #:	N/A
ANALYSIS REPORT			
COMPONENTS	UNITS A	ANALYTICAL METHODS	RESULTS
C5H10 CYCLOPENTANE	Mole %	GPA 2186	0.0021
C ₆ H ₁₂ CYCLOHEXANE	Mole %	GPA 2186	<0.0001
C ₆ H ₁₄ n-HEXANE	Mole %	GPA 2186	0.1478
C ₆ H ₁₄ 2 METHYLPENTANE (isohexane)	Mole %	GPA 2186	0.1034
C ₆ H ₁₄ 3 METHYLPENTANE	Mole %	GPA 2186	0.0657
C ₆ H ₁₄ 2,2 DIMETHYLBUTANE (neohexane)	Mole %	GPA 2186	0.0107
C ₆ H ₁₄ 2,3 DIMETHYLBUTANE	Mole %	GPA 2186	0.0200
C7 H14 METHYLCYCLOHEXANE	Mole %	GPA 2186	0.0187
C ₇ H ₁₆ n-HEPTANE	Mole %	GPA 2186	0.0999
C ₈ H ₁₈ n-OCTANE	Mole %	GPA 2186	0.0951
C ₈ H ₁₈ 2,2,4 TRIMETHYLPENTANE (isooctane)	Mole %	GPA 2186	0.0011
C ₉ H ₂₀ n-NONANE	Mole %	GPA 2186	0.0060
C ₁₀ H ₂₂ n-DECANE	Mole %	GPA 2186	0.0029
C ₁₁ H ₂₄ UNDECANE	Mole %	GPA 2186	0.0012
C ₁₂ H ₂₆ DODECANE	Mole %	GPA 2186	<0.0001
C ₁₃ H ₂₈ TRIDECANE	Mole %	GPA 2186	<0.0001
C14 H30 TETRADECANE	Mole %	GPA 2186	<0.0001

Gas Chromatography Analysis was performed following procedures outlined in GPA 2186-02



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Aromatic Hydrocarbon Analysis

Consol Energy

Analysis No:	1
Analysis Date:	7/9/2014
MSES Project No .:	14-043

Client:	Consol Energy	Sample Date:	7/9/2014	
Sample Location:	Oxford	Sample Time:	9:50 AM	
Sample Collection Source:	Inlet	Collected By:	MFM	
MSES Sample Number:	N/A	Sample Pressure:	250.0	
Date Received at Lab:	7/9/2014	Sample Temp. (°F):	N/A	
Collection Remark:	None	Sample Container Type:	Cylinder	
		MSES/CPD ID#	115	
		Client ID #:	N/A	
		Chem iD IF.		
ANALYSIS REPORT			IVIX	
ANALYSIS REPORT COMPONENTS	UNITS	ANALYTICAL METHODS	RESULTS	
COMPONENTS	UNITS	ANALYTICAL METHODS	RESULTS	
COMPONENTS C ₆ H ₆ BENZENE	UNITS	ANALYTICAL METHODS GPA 2286-95	RESULTS <0.1	

(1) Gas chromatography analysis was performed and results calculated following procedures outlined in GPA 2286-95: Tentative Method of Extended Analysis for Natural Gas and Similar Gaseous Mixtures by Temperature Programmed Gas Chromatography

(2) Gas sampling was performed following procedures outlined in GPA 2166-05: Obtaining Natural Gas Samples for Analysis by Gas Chromatography

(3) Limit of Detection = 0.1 ppmV

MSES consultants, inc. PRODUCTS DIVISION

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Sulfur Compounds Analysis

Consol Energy

Analysis No:	1
Analysis Date:	7/10/2014
MSES Project No .:	14-043

Client:	Consol Energy	Sample Date:	7/9/2014	
Sample Location:	Oxford	Sample Time:	9:50 AM	
Sample Collection Source:	Inlet	Collected By:	MFM	
MSES Sample Number:	CE-1-7-9-14	Sample Pressure:	250.0	
Date Received at Lab:	7/9/2014	Sample Temp. (°F):	N/A	
Collection Remark:	None	Sample Container Type:	Cylinder	
		MSES/CPD ID#	115	
an at the second se		Client ID #:	N/A	
ANALYSIS REPORT	d's the		1 4 C # 4	
COMPONENTS	UNITS	ANALYTICAL METHODS	RESULTS	
H ₂ S HYDROGEN SULFIDE	PPMV	ASTM D-5504	<0.1	
COS CARBONYL SULFIDE	PPMV	ASTM D-5504	<0.1	
CS ₂ CARBON DISULFIDE	PPMV	ASTM D-5504	<0.1	
SO ₂ SULFUR DIOXIDE	PPMV	ASTM D-5504	<0.1	
CH4S METHYL MERCAPITAN	PPMV	ASTM D-5504	<0.1	
C2H6S ETHYL MERCAPITAN	PPMV	ASTM D-5504	<0,1	
(CH3)2S DIMETHYL SULFIDE	PPMV	ASTM D-5504	<0.1	
(CH ₃) ₃ CSH tert-BUTYL MERCAPTAN	PPMV	ASTM D-5504	⊲0.1	
C2H3SCH3 ETHYL METHYL SULFIDE	PPMV	ASTM D-5504	<0,1	
TOTAL SULFUR COMPOUNDS	PPMV	ASTM D-5504	⊲0.1	

(1) Sulfur Compounds Analysis and Reporting Performed by Gas Chromatography using a Sulfur Chemiluminescence Detector Following Procedures Outlined by ASTM Method D5504-08

(2) Gas sampling was performed following procedures outlined in GPA 2166-05: Obtaining Natural Gas Samples for Analysis by Gas Chromatography

(3) Limit of Detection = 0.1 ppmV

ATTACHMENT M

AIR POLLUTION CONTROL DEVICE

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

> CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

Attachment M Air Pollution Control Device Sheet

(Oxidation Catalyst)

Control Device ID No. (C2):

Equipment Information

1.	Manufacturer: DCL America Inc.2.Control Device Name: C2Model No. DC64L2Type: OC							
3.	. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency. Provided Upon Request							
4.	On a separate sheet(s) supply all data and on This is a Certified unit that has been proven e				designing this collection device.			
5.	Provide a scale diagram of the control device	showing	internal o	construction. S	ee Converter Drawing Attached			
6.	Submit a schematic and diagram with dimens but engine is listed as having a maximum flow				n was provided by manufacturer,			
7.	Guaranteed minimum collection efficiency for reduction efficiency for CO, 77% reduction Formaldehyde (CH_2O).							
8.	Attached efficiency curve and/or other efficien	ncy inforn	nation. N	A				
9.	Design inlet volume: 1634 SCFM		10. Capa	city: NA				
	No liquid flow associated with this catalytic converter and although pressure drop may be measured periodically, the inlet and outlet temperature will be measured continuously by this unit in order to assess performance with manufacturer's operating requirements. 12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment. NA 13. Description of method of handling the collected material(s) for reuse of disposal. NA							
	Gas St	tream Ch	aracteris	tics				
14.	Are halogenated organics present? Are particulates present? Are metals present?] Yes] Yes] Yes	⊠ No ⊠ No ⊠ No				
15.	Inlet Emission stream parameters:		Maxim	um	Typical			
	Pressure (mmHg):		NA					
	Heat Content (BTU/scf):		NA					
	Oxygen Content (%):		6.5-7.5	%				
	Moisture Content (%):		NA					
	Relative Humidity (%): NA							

16. Type of pollutant(s) controlled	: 🗌 SO,		☐ Odor ⊠ Other CO,	VOC & Formald	ehyde	
17. Inlet gas velocity:34.7ft/sec18. Pollutant specific gravity:						
19. Gas flow into the collector: 4460 cfm ACF @ 981°		20. Gas stream temperature: Inlet: 750-1250 °F Outlet: 981 °F				
21. Gas flow rate: Design Maximum: 1 Average Expected:	Design Maximum: 1634 ACFM Inlet: NA					
23. Emission rate of each pollutar	nt (specify) into	o and out o	of collector:			I
Pollutant	IN Pollutant		Emission	OUT Po	llutant	Control
lb/	hr gra	ains/acf	Capture Efficiency %	lb/hr	grains/acf	Efficiency %
A CO 4.6	51		100	0.32		93
B VOC 1.6	6		100	0.38		77
C Formaldehyde 0.4	3		100	0.08		82
D						
E						
24. Dimensions of stack:	Height	12 f	t.	Diameter	0.2	ft.
25. Supply a curve showing prop rating of collector. NA	osed collectio	on efficienc	cy versus gas	volume from 25	5 to 130 perce	nt of design
	Pa	rticulate D	Distribution			

26. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0-2		
2-4		
4 - 6		
6 - 8		
8 – 10		
10 - 12		
12 – 16		
16 – 20		
20 – 30		
30 - 40		
40 - 50		
50 - 60		
60 - 70		
70 – 80		
80 - 90		
90 – 100		
>100		

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): NA

28. Describe the collection material disposal system: NA

29. Have you included Other Collectores Control Device in the Emissions Points Data Summary Sheet? Yes

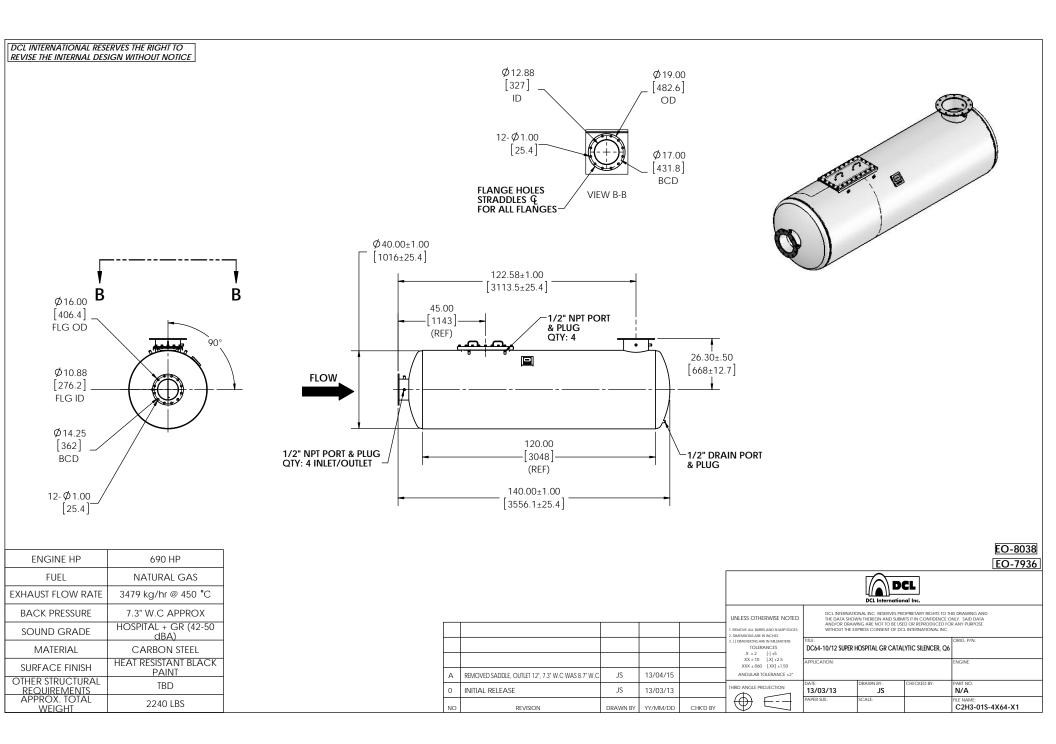
30. **Proposed Monitoring, Recordkeeping, Reporting, and Testing** Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:		RECORDKEEPING:
	catalyst temperatures will be oper operation in accordance with ations	All maintenance records will be maintained and made available upon request.
that cause an emission the Director of the WV testing compliance of	alfunctions of control equipment of exceedance will be reported to V DAQ. Additionally, the stack demonstration results will be with 40CFR60, subpart JJJJ	compliance with NSPS JJJJ emission limitations for NOx, CO, and VOCs. This shall consist of an initial test
MONITORING:	•	ocess parameters and ranges that are proposed to be trate compliance with the operation of this process
RECORDKEEPING: REPORTING:	Please describe the proposed rec	cordkeeping that will accompany the monitoring. emissions testing for this process equipment on air
TESTING:	Please describe any proposed pollution control device.	emissions testing for this process equipment on air
	aranteed Control Efficiency for ea VOCs, and 82% reduction efficience	ch air pollutant. 93% reduction efficiency for CO, 77% cy for Formaldehyde (CH $_2$ O).

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant. Same as #31

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

NA



ATTACHMENT N

SUPPORTING EMISSIONS CALCULATIONS

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

Table 7. Caterpillar G3508TALE Flash Gas Compressor Engine (CE-2) Emissions
CNX Gas LLC - Oxford 11

Pollutant	Emission Factor		PTE (lb/hr)	PTE ^(a) (tons/yr)
Criteria Pollutants				
PM/PM10/PM2.5	7.71E-05 lb/MMBtu	(2)	0.000	0.002
SO ₂	5.88E-04 lb/MMBtu	(2)	0.003	0.015
NOx	0.50 g/hp-hr	(1)	0.761	3.331
СО	0.21 g/hp-hr	(1)	0.323	1.413
VOC	0.25 g/hp-hr	(1)	0.380	1.666
Hazardous Air Pollutants				
1,1,2,2-Tetrachloroethane	4.00E-05 lb/MMBtu	(2)	2.30E-04	1.01E-03
1,1,2-Trichloroethane	3.18E-05 lb/MMBtu	(2)	1.83E-04	8.01E-04
1,3-Butadiene	2.67E-04 lb/MMBtu	(2)	1.54E-03	6.72E-03
1,3-Dichloropropene	1.27E-05 lb/MMBtu	(2)	7.30E-05	3.20E-04
2-Methylnaphthalene	3.32E-05 lb/MMBtu	(2)	1.91E-04	8.36E-04
2,2,4-Trimethylpentane	2.50E-04 lb/MMBtu	(2)	1.44E-03	6.30E-03
Acetaldehyde	8.36E-03 lb/MMBtu	(2)	4.81E-02	2.11E-01
Acrolein	5.14E-03 lb/MMBtu	(2)	2.96E-02	1.29E-01
Benzene	4.40E-04 lb/MMBtu	(2)	2.53E-03	1.11E-02
Carbon Tetrachloride	3.67E-04 lb/MMBtu	(2)	2.11E-03	9.24E-03
Chlorobenzene	3.04E-05 lb/MMBtu	(2)	1.75E-04	7.66E-04
Chloroform	2.85E-05 lb/MMBtu	(2)	1.64E-04	7.18E-04
Ethylbenzene	3.97E-05 lb/MMBtu	(2)	2.28E-04	1.00E-03
Ethylene Dibromide	4.43E-05 lb/MMBtu	(2)	2.55E-04	1.12E-03
Formaldehyde	5.04E-02 g/hp-hr	(1)	0.08	0.34
Methanol	2.50E-03 lb/MMBtu	(2)	1.44E-02	6.30E-02
Methylene Chloride	2.00E-05 lb/MMBtu	(2)	1.15E-04	5.04E-04
n-Hexane	1.11E-03 lb/MMBtu	(2)	6.38E-03	2.80E-02
Naphthalene	7.44E-05 lb/MMBtu	(2)	4.28E-04	1.87E-03
PAH (POM)	2.69E-05 lb/MMBtu	(2)	1.55E-04	6.77E-04
Styrene	2.36E-05 lb/MMBtu	(2)	1.36E-04	5.94E-04
Toluene	4.08E-04 lb/MMBtu	(2)	2.35E-03	1.03E-02
Vinyl Chloride	1.49E-05 lb/MMBtu	(2)	8.57E-05	3.75E-04
Xylenes	1.84E-04 lb/MMBtu	(2)	1.06E-03	4.63E-03
Total HAP	7.0E-02 lb/MMBtu		0.188	0.83
Greenhouse Gas Emissions				
CO ₂	570.00 g/hp-hr	(1)	867.1	3797.7
CH ₄	1.21 g/hp-hr	(1)	1.8	8.1
N ₂ O	2.2E-04 lb/MMBtu	(3)	1.27E-03	5.55E-03
CO ₂ e ^(b)			868.9	4000.9

Calculations:

(a) Annual emissions (tons/yr) = [Emission Factor (lbs/MMBtu)] x [Hours of Operation (hrs/yr)] x [BSFC (cf/hr)] x [1/Heat Content (Btu/scf)] / [1,000,000 (BTU/MMBtu)] / [2,000 lb/ton] x [Number of engines]

Annual emissions (tons/yr) = [Emission Factor (g/kW-hr)]x[Power Output (kW)] x [Hours of Operation (hrs/yr)] x [Number of engines]x[1.10231131x10^-6(ton/gram)]

Engine Power Output (kW) =	514	
Engine Power Output (hp) =	690	
Number of engines Operating at a Time =	1	
Fuel throughput=	4,910	
BSFC (Btu/hp-hr) =	8,332	(1)
Heat Content Natural Gas(Btu/scf) =	1,171.0	(4)
PTE Hours of Operation =	8,760	

(b) CO₂ equivalent = [(CO₂ emissions)*(GWP_{CO2})]+[(CH₄ emissions)*(GWP_{CH4})]+[(N₂O emissions)*(GWP_{N2O})] Global Warming Potential (GWP)

CO ₂	1	(5)
CH ₄	25	(5)
N ₂ O	298	(5)

Notes:

(1) USA Compression G3508BLE Specification Sheet

(2) AP-42, Chapter 3.2, Table 3.2-2. Natural Gas-fired Reciprocating Engines (7/00). Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines.

(3) Emission factors are from 40 CFR 98, Subpart C, C-2.

(4) CNX Oxford 1-12-15 gas analysis

(5) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 1. Annual Potential To Emit (PTE) CNX Gas LLC - Oxford 11

Criteria PTE								
Source	РМ	PM10	PM2.5	SO2	NOx	CO ²	VOC ¹	CO2e
Tanks with VDU 98% DRE (ton/yr)							11.884	-
Gas Processing Units (ton/yr)	0.196	0.196	0.196	0.015	2.576	2.164	0.142	3075.020
Line heaters (ton/yr)	0.082	0.082	0.082	0.006	1.074	0.902	0.059	1281.258
Low Pressure Separator (ton/yr)	0.016	0.016	0.016	0.001	0.215	0.180	0.012	256.252
Engines (ton/yr)	0.026	0.026	0.026	0.016	4.645	4.040	1.692	4281.283
Vapor Destruction Unit (VDU) (tons/yr)	-	-	-	0.158	5.475	29.791	11.272	9385.892
Process Flare (ton/yr)	-	-	-	2.557	8.505	46.278	65.776	14611.250
Thermoelectic Burner (ton/yr)					0.005	0.002		
Truck Loading (ton/yr)	-	-	-	-	-	-	17.811	-
Piping Fugitives (ton/yr)	-	-	-	-	-	-	32.384	352.339
Total Emissions (ton/yr)	0.32	0.32	0.32	2.75	21.18	80.73	97.38	33243.29
Total Emissions (Ib/hr)	0.07	0.07	0.07	0.63	4.84	18.43	22.23	7589.79
DAQ Notice Tons/yr	0.530	0.530	0.530	4.110	31.350	95.930	131.080	

Notes:

(1) The VOC total does not include emissions from the tanks since it has already been included within the VDU. The VDU 98 % DRE includes the total for tanks and truck loading. Additionally the process flare is estimated to run 1000 hr/yr to cover flash gas compressor maintenance and establish a maximum facility wide PTE

The maximum uncontrolled annual rate for VOC from the Low Pressure Separator is reduced by 25% to account for production decline over the first year

With respect to the VDU, the PTE is estimated as if the combustor is running all year so, when the VRU compressor is operating the facility's emissions will be decreased Lastly the fugitive piping and valve losses are subtracted from the point source facility wide total since the well pad is not a listed source category under Title V or PSD Regulations

(2) The CO PTE for the facility does not include emissions from VRU, assumes worst case VDU emissions 8760 hrs/yr HAP PTE

HAPPIE							
Source	Benzene	Toluene	Ethylbenzene	Xylene	n-Hexane	Formaldehyde	Total HAPs Listed
Gas Processing Units (ton/yr)	0.000	0.000	-	-	0.046	0.002	0.048
Line heaters (ton/yr)	0.000	0.000	-	-	0.019	0.001	0.020
Separator (ton/yr)	0.000	0.000	-	-	0.004	0.000	0.004
Process Flare (ton/yr)	0.083	0.119	0.007	0.008	5.853		5.853
Storage Tanks (ton/yr)	0.021	0.029	0.002	0.002	1.101		1.155
Engines (ton/yr)	0.015	0.012	0.001	0.005	0.028	0.385	0.445
Total Emissions (ton/yr)	0.119	0.160	0.010	0.016	7.052	0.388	7.526
Total Emissions (Ib/hr)	0.027	0.037	0.002	0.004	1.610	0.089	1.718
DAO Notice Tons/vr							10 78

DAQ Notice Tons/yr

10.78

ATTACHMENT P

PUBLIC NOTICE

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia

AIR QUALITY PERMIT NOTICE Notice of Application

Notice is given that CNX Gas Company, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a 45CSR13, Rule 13 Class II Administrative Update for an engine upgrade at Oxford 11 well pad site, off S. Fork of Hughes River near New Milton, Doddridge County, WV. The latitude and longitude coordinates are: 39.17070 and -80.76349.

The applicant estimates the following change to the site's potential to discharge the following Regulated Air Pollutants:

Pollutant	Tons/yr			
NOx	-8.84			
СО	-12.59			
VOC	-1.31			
Total Hazardous Air Pollutants	-1.49			
Formaldehyde	-1.49			

Startup of operation is planned to begin on or about the first day of August, 2015. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, until 5pm July 16, 2015.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 16th Day of June, 2015.

By: CNX Gas Company, LLC David Morris Air Quality Manager-Env. 1000 Consol Energy Drive Canonsburg, PA 15317

ATTACHMENT T

PERMIT APPLICATION FEE

Class II Update R13-3237A

Oxford 11 Well Pad ID 017-00148 New Milton, West Virginia

CNX Gas Company, LLC PO Box 1248 Jane Lew, West Virginia