

Dominion Energy Services, Inc.  
5000 Dominion Boulevard, Glen Allen, VA 23060  
DominionEnergy.com



December 11, 2017

**BY: U.S. CERTIFIED MAIL, RETURN RECEIPT REQUESTED**

7016 2070 0001 1101 4173

William F. Durham  
Director, Division of Air Quality  
WVDEP  
601 57<sup>th</sup> Street  
Charleston, WV 25304

RE: **Dominion Energy Transmission, Inc.**  
**HG Well #5853**  
**Permit Determination Request**

Dear Mr. Durham:

Dominion Energy Transmission, Inc. (DETI) is submitting this request for a permit determination for the addition of a natural gas pumpjack engine at our HG Well #5853 location, a production well located near Churchville, Lewis County, West Virginia.

Based on the response from DEP dated November 28, 2017 (enclosed) for a similar unit, DETI believes a permit is not necessary for the installation and operation of a Kohler, Model CH740 engine at HG Well #5853. Information on the unit is included below:

**Engine Manufacturer and Model:** Kolher CH740, manufactured 2017  
**Manufacturer's Rated bhp:** 20.5 hp  
**Subject to NSPS Subpart JJJJ?** Yes  
**Subject to NESHAP Subpart ZZZZ?** Yes, new source  
**Fuel Type:** Pipeline Quality Natural Gas

**Potential Emissions (Based on 8,760 hours)**

Pollutant	Source	lbs/hr	tons/yr
NO <sub>x</sub>	AP-42	0.79	3.45
CO	AP-42	0.06	0.27
VOC	AP-42	0.02	0.10
SO <sub>2</sub>	AP-42	1.13E-04	4.97E-04
PM (filterable)	AP-42	1.49E-05	6.52E-05
PM10 (filterable)	AP-42	1.49E-05	6.52E-05
PM2.5 (filterable)	AP-42	1.49E-05	6.52E-05
PM (condensibles)	AP-42	1.91E-03	8.38E-03
Formaldehyde	AP-42	1.02E-02	4.46E-02
Total HAP	AP-42	0.01	0.06

The pumpjack engine is not deemed to be a stationary source per WVDEP Regulation 13 definition since there are no substantive requirements and the potential emission are below permitting thresholds. 40 CFR 60 Subpart JJJJ applies to the engine which requires DETI to purchase an engine certified to emission standards in 40 CFR 1048.101(c); therefore, no performance tests are required. The engine is EPA certified and by meeting Subpart JJJJ requirements, the engine also meets 40 CFR Part 63, Subpart ZZZZ requirements. DETI will meet the requirements of Subpart JJJJ by complying with the following requirements:

- Operating and maintaining the engine according to manufacturer's instructions
- Maintaining records of maintenance conducted in accordance with the manufacturer's instructions;
- Maintaining a copy of the engine certification.

If you require any additional information, please contact Rebekah Kiss at 804-273-3536 or via email at [Rebekah.J.Kiss@dominionenergy.com](mailto:Rebekah.J.Kiss@dominionenergy.com).

Sincerely,



Amanda B. Tornabene  
Director, Environmental Services (Air Program and Gas Infrastructure Group)

Enclosures

- Appendix A: Permit Determination for HG Well #5853
- Appendix B: Previous Review for Similar Unit

**Appendix A**  
**Permit Determination for HG Well #5853**



WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 DIVISION OF AIR QUALITY  
 601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304  
 Phone: (304) 926-0475  
 www.dep.wv.gov/daq

**PERMIT DETERMINATION FORM  
(PDF)**

FOR AGENCY USE ONLY: PLANT I.D. # \_\_\_\_\_  
 PDF # \_\_\_\_\_ PERMIT WRITER: \_\_\_\_\_

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):  
 Dominion Energy Transmission, Inc.

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):  
 HG Well #5853

3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CODE:  
 211111

4A. MAILING ADDRESS:  
 925 White Oaks Blvd., Bridgeport, WV 26330

4B. PHYSICAL ADDRESS:  
 Along Turkey Pen Rd.

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A):  
 From Junction of US Route 19 and Co. Route 3/5 (Kinchloe Run Rd.), go on Co. Route 3/5 and go 1.6 miles to Co. Route 1 (Kinchloe Run Rd). Turn right, go 2.1 miles to Co. Route 10/12 (Turkey Pen Rd.). Turn left and go 0.3 miles to the Y; bear left through the gate. Go 0.4 miles to another Y and bear left. Follow the well road 0.1 miles to the well site.

5B. NEAREST ROAD:  
 Turkey Pen Rd.

5C. NEAREST CITY OR TOWN:  
 Churchville, WV

5D. COUNTY:  
 Lewis

5E. UTM NORTHING (KM):  
 4332348

5F. UTM EASTING (KM):  
 544286.1

5G. UTM ZONE:  
 17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:  
 Rebekah Kiss

6B. TITLE:  
 Supervisor, Environmental Regulations

6C. TELEPHONE:  
 804-273-3536

6D. FAX:  
 804-273-2964

6E. E-MAIL:  
 Rebekah.J.Kiss@dominionenergy.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):  
 \_\_\_\_\_

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):  
 N/A

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST: No

8A. TYPE OF EMISSION SOURCE (CHECK ONE):  
 NEW SOURCE     ADMINISTRATIVE UPDATE  
 MODIFICATION     OTHER (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?  
 YES     NO

9. IS DEMOLITION OR PHYSICAL RENOVATION AT AN EXISTING FACILITY INVOLVED?     YES     NO

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:  
2/8/2018

10B. DATE OF ANTICIPATED START-UP:  
2/8/2018

11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B.

11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C.

12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D. FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

**13A. REGULATED AIR POLLUTANT EMISSIONS:**

⇒ FOR A NEW FACILITY, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ FOR AN EXISTING FACILITY, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM	1.93E-03	8.44E-03
PM <sub>10</sub>	1.93E-03	8.44E-03
VOCs	0.02	0.10
CO	0.06	0.27
NO <sub>x</sub>	0.79	3.45
SO <sub>2</sub>	1.13E-04	4.97E-04
Pb	N/A	N/A
HAPs (AGGREGATE AMOUNT)	0.01	0.06
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

\* ATTACH ADDITIONAL PAGES AS NEEDED

**13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.**

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112(b) OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

**14. CERTIFICATION OF DATA**

I, BRIAN SHEPPARD (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A **RESPONSIBLE OFFICIAL**\*\* (PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: \_\_\_\_\_



TITLE: VICE PRESIDENT, EASTERN PIPELINE OPERATIONS DATE: 12 / 01 / 17

\*\* THE DEFINITION OF THE PHRASE 'RESPONSIBLE OFFICIAL' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

ATTACHMENT A     ATTACHMENT B     ATTACHMENT C     ATTACHMENT D     ATTACHMENT E

RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE:

[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)



## **Attachment A**

Facility Location



Sign in



Kinchebe Run Rd

Kinchebe Creek

Butch Hughes Div

Kinchebe Run Rd

Kinchebe Creek

Kinchebe Run Rd

Butch Hughes Div

Kinchebe Creek

10012

10012

Keyren Creek Rd

10012

Google

Life Mode Map data ©2017 Google Imagery ©2017 DigitalGlobe, USDA, Farm Service Agency Terms 100 m

Map

## **Attachment B**

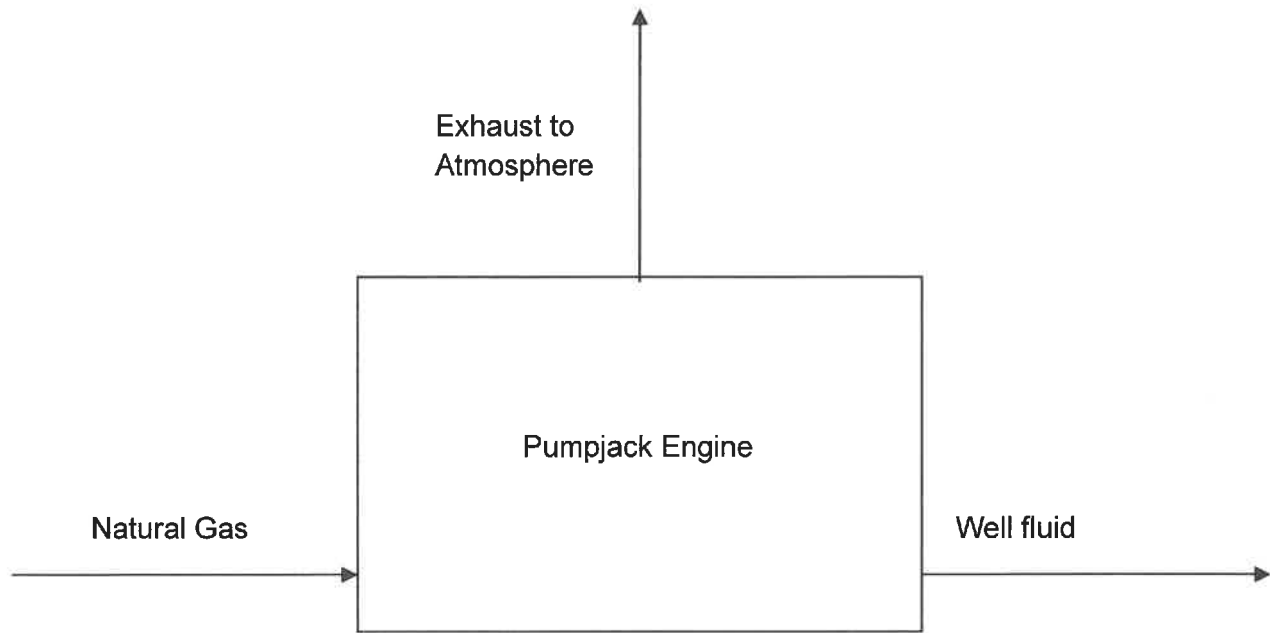
### Process Flow Diagram



Dominion Energy Transmission, Inc.

HG Wells

**Pumpjack Engine (HG Well #5853) Process Flow Diagram**



## **Attachment C**

### Process Description

## **Process Description**

HG Well #5853 is a well location located in Lewis County, West Virginia. The purpose of the facility is to remove fluid from the well as needed by running a pumpjack engine on a daily basis.

The purpose of this permit determination is for the addition of a natural gas-fired 20.5 hp pumpjack engine.

## **Attachment E**

### Supporting Calculations

Input Data: Kohler CH740 (natural gas)  
 Design Class: 4-stroke lean burn  
 Engine Power: 20.5 bhp  
 Fuel Input: 0.19 MMBtu/hr  
 Natural Gas Consumption: 193 cf/hr  
 1.69 MMcf/hr  
 Maximum Hours of Operation: 8,760 hrs/yr  
 Heating Value of Natural Gas: 1,000 Btu/cf

Emission Calculations

Pollutant	Emission Factor		Potential Emissions		
			(lb/hr)	(lb/day)	(tons/yr)
<b>Criteria Pollutants</b>					
PM (filterable)	7.71E-05	lb/MMBtu	1.49E-05	3.57E-04	6.52E-05
PM-10 (filterable)	7.71E-05	lb/MMBtu	1.49E-05	3.57E-04	6.52E-05
PM-2.5 (filterable)	7.71E-05	lb/MMBtu	1.49E-05	3.57E-04	6.52E-05
PM (condensibles)	9.91E-03	lb/MMBtu	1.91E-03	4.59E-02	8.38E-03
SO2	5.88E-04	lb/MMBtu	1.13E-04	2.72E-03	4.97E-04
CO	0.317	lb/MMBtu	0.06	1.47	0.27
NO <sub>x</sub>	4.08	lb/MMBtu	0.79	18.90	3.45
VOC	0.118	lb/MMBtu	0.02	0.55	0.10
<b>Greenhouse Gases</b>					
CO <sub>2</sub>	117.0	lb/MMBtu	22.58	541.84	98.89
CH <sub>4</sub>	2.20E-03	lb/MMBtu	0.00	0.01	0.00
N <sub>2</sub> O	2.20E-04	lb/MMBtu	0.00	0.00	0.00
CO <sub>2</sub> e	117.1	lb/MMBtu	22.60	542.40	98.99
<b>Hazardous Air Pollutants</b>					
1,1,2,2-Tetrachloroethane	4.00E-05	lb/MMBtu	7.72E-06	1.85E-04	3.38E-05
1,1,2-Trichloroethane	3.18E-05	lb/MMBtu	6.14E-06	1.47E-04	2.69E-05
1,1-Dichloroethane	2.36E-05	lb/MMBtu	4.55E-06	1.09E-04	2.00E-05
1,2-Dichloroethane	2.36E-05	lb/MMBtu	4.55E-06	1.09E-04	2.00E-05
1,3-Butadiene	2.67E-04	lb/MMBtu	5.15E-05	1.24E-03	2.26E-04
1,3-Dichloropropene	2.64E-05	lb/MMBtu	5.10E-06	1.22E-04	2.23E-05
Acetaldehyde	8.36E-03	lb/MMBtu	1.61E-03	3.87E-02	7.07E-03
Acrolein	5.14E-03	lb/MMBtu	9.92E-04	2.38E-02	4.35E-03
Benzene	4.40E-04	lb/MMBtu	8.49E-05	2.04E-03	3.72E-04
Biphenyl	2.12E-04	lb/MMBtu	4.09E-05	9.82E-04	1.79E-04
Carbon Tetrachloride	3.67E-05	lb/MMBtu	7.08E-06	1.70E-04	3.10E-05
Chlorobenzene	3.04E-05	lb/MMBtu	5.87E-06	1.41E-04	2.57E-05
Chloroform	2.85E-05	lb/MMBtu	5.50E-06	1.32E-04	2.41E-05
Ethylbenzene	3.97E-05	lb/MMBtu	7.66E-06	1.84E-04	3.36E-05
Ethylene Dibromide	4.43E-05	lb/MMBtu	8.55E-06	2.05E-04	3.74E-05
Formaldehyde	5.28E-02	lb/MMBtu	1.02E-02	2.45E-01	4.46E-02
Hexane	1.11E-03	lb/MMBtu	2.14E-04	5.14E-03	9.38E-04
Methanol	2.50E-03	lb/MMBtu	4.83E-04	1.16E-02	2.11E-03
Methylene Chloride	2.00E-05	lb/MMBtu	3.86E-06	9.26E-05	1.69E-05
Naphthalene (POM)	7.44E-05	lb/MMBtu	1.44E-05	3.45E-04	6.29E-05
Phenol	2.40E-05	lb/MMBtu	4.63E-06	1.11E-04	2.03E-05
Styrene	2.36E-05	lb/MMBtu	4.55E-06	1.09E-04	2.00E-05
Toluene	4.08E-04	lb/MMBtu	7.87E-05	1.89E-03	3.45E-04
Vinyl Chloride	1.49E-05	lb/MMBtu	2.88E-06	6.90E-05	1.26E-05
Xylene	1.84E-04	lb/MMBtu	3.55E-05	8.52E-04	1.56E-04
TOTAL HAP:			<b>0.014</b>	<b>0.333</b>	<b>0.061</b>

(1) All emission factors from AP-42, Section 3.2, Natural Gas-Fired Reciprocating Engines, Table 3.2-2, 7/00

(2) Lb/MMBtu numbers based on 40 CFR Part 98 Tables C-1 and C-2 for natural gas

For example:  $CO_2 = (53.06 \text{ kg } CO_2/MMBtu) / (0.453592 \text{ kg/lb}) = 117.0 \text{ lb/MMBtu}$

(3) Global Warming Potentials = 25 for CH<sub>4</sub> and 298 for N<sub>2</sub>O (per 40 CFR Part 98 Table A-1 to Subpart A)

For example:  $CO_2e = (117.0 \text{ lb/MMBtu}) + (0.0022 \text{ lb/MMBtu} * 25) + (0.00022 \text{ lb/MMBtu} * 298) = 117.1 \text{ lb/MMBtu}$

(4) Cf/hr rating from manufacturer.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
2017 MODEL YEAR  
CERTIFICATE OF CONFORMITY  
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION  
AND AIR QUALITY  
ANN ARBOR, MICHIGAN 48105

**Certificate Issued To:** Kohler Co.  
(U.S. Manufacturer or Importer)  
**Certificate Number:** HKHXS.7252NA-021

**Effective Date:**  
12/28/2016  
**Expiration Date:**  
12/31/2017

  
Byron J. Bunker, Division Director  
Compliance Division

**Issue Date:**  
12/28/2016  
**Revision Date:**  
N/A

**Manufacturer:** Kohler Co.  
**Engine Family:** HKHXS.7252NA  
**Useful Life :** 1000 Hours / 5 Years  
**Engine Class :** Nonhandheld-Class II  
**Fuel :** Natural Gas (CNG/LNG)  
LPG/Propane  
**Emission Standards :**  
CO ( g/kW-hr ) : 610  
**FELS :**  
NMHC + NOx ( g/kW-hr ) : 8.5HC + NOx ( g/kW-hr ) : 8.5

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547), 40 CFR Part 1054, 40 CFR Part 1068 and 40 CFR Part 60 (stationary only and combined stationary and mobile), and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued for the following small nonroad engine family, more fully described in the documentation required by 40 CFR Part 1054 and produced in the stated model year.

This certificate of conformity covers only those new small nonroad engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1054 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1054. This certificate of conformity does not cover small nonroad engines imported prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 1054, Subpart H both during and after model year production. Failure to comply with these provisions may render this certificate void *ab initio*.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and 1068, Subpart E and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 1054. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 1054, 40 CFR Part 1068.

This certificate does not cover small nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

## Operation Requirements

Fuel Consumption		Fuel Consumption, m <sup>3</sup> /hr. (cfh)	
Fuel Type	% Load	14RESAL	20RESAL
Natural Gas	100	5.4 (193)	8.0 (281)
	75	4.7 (163)	6.9 (243)
	50	3.5 (124)	4.6 (161)
	25	2.6 (93)	3.6 (127)
	Exercise	1.7 (60)	2.0 (71)
LPG	100	2.3 (81)	3.9 (136)
	75	2.1 (75)	3.1 (109)
	50	1.8 (60)	2.3 (82)
	25	1.2 (45)	1.7 (59)
	Exercise	0.8 (30)	1.0 (35)
Nominal fuel rating: Natural gas:		37 MJ/m <sup>3</sup> (1000 Btu/ft. <sup>3</sup> )	
LPG:		93 MJ/m <sup>3</sup> (2500 Btu/ft. <sup>3</sup> )	
LPG conversion factors:		8.58 ft. <sup>3</sup> = 1 lb.	
		0.535 m <sup>3</sup> = 1 kg	

# Engine

Engine Specifications	14RESAL	20RESAL
Manufacturer	Kohler	
Engine: model, type	CH740 4-Cycle	CH1000 4-Cycle
Cylinder arrangement	V-2	
Displacement, cm <sup>3</sup> (cu. in.)	725 (44)	999 (61)
Bore and stroke, mm (in.)	83 x 67 (3.27 x 2.64)	90 x 78.5 (3.54 x 3.1)
Compression ratio	9:1	8.8:1
Main bearings: quantity, type	2, Parent Material	
Rated RPM	3600	
Max. engine power at rated rpm, kW (HP)		
LPG, 60 Hz	17.6 (23.6)	23.0 (30.9)
Natural gas, 60 Hz	15.3 (20.5)	20.2 (27.1)
Cylinder head material	Aluminum	
Valve material	Steel/Stellite®	
Piston type and material	Aluminum Alloy	
Crankshaft material	Heat Treated, Ductile Iron	
Governor: type	Electronic	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type	Dry	



# **Appendix B**

## **Previous Review for Similar Unit**



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west virginia department of environmental protection

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Division of Air Quality  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
www.dep.wv.gov

November 28, 2017

Brian Sheppard  
Vice President, Eastern Pipeline Operations  
Dominion Energy Transmission, Inc.  
925 White Oaks Blvd.  
Bridgeport, WV 26330

Re: Permit Applicability Determination  
HG Well #6501  
Lewis County, WV  
Determination No. PD17-087  
Plant ID No. 041-00085

Dear Mr. Sheppard:

It has been determined that a permit will not be required for the installation and operation of one Kohler CH740 – 20.5 BHP @ 1,800 RPM natural gas fired pumpjack engine at the above referenced facility. This determination is based on information included with your Permit Determination Form (PDF) received on November 9, 2017, which indicates that the increase in emissions will not exceed two (2) lbs/hr or five (5) tons/year of total Hazardous Air Pollutants (HAPs); six (6) lbs/hour and ten (10) TPY of any regulated pollutant; or, trigger a substantive requirement of any State or Federal air quality regulation.

Please bear in mind, however, that any additional changes to the proposed facility, may require a permit under 45CSR13. Furthermore, pursuant to 45CSR13-5.14, records briefly describing the proposed change, the pollutants involved, the potential to emit for each pollutant increased or added shall be maintained by the owner or operator for at least two years and made available to the Director upon request.

Should you have any questions, please contact the undersigned engineer at (304) 926-0499 Ext. 1211.

Sincerely,

William T. Rothwell II, P.E.  
Engineer