DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N557640319

FACILITY: ANR Pipeline Co. - Goodwell Compressor Station		**SRN / ID:** N5576
LOCATION: 6759 East Five Mile Rd., WHITE CLOUD		**DISTRICT:** Grand Rapids
CITY: WHITE CLOUD		**COUNTY:** NEWAYGO
CONTACT: Brad Stermer , Sr. Environmental Specialist		**ACTIVITY DATE:** 06/05/2017
STAFF: Chris Robinson	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY '017 on-site inspection to determine the facility's compliance status with MI-ROP-N5576-2015 and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

AQD staff Chris Robinson (CR) conducted a scheduled on-site announced inspection on Tuesday June 5, 2017 at the ANR Pipeline Company - Goodwell Compressor Station (Goodwell) located at 6759 East Five Mile Road, White Cloud, MI. Goodwell is typically remotely operated and therefore unmanned. Prior notification is necessary for entry. CR arrived at approximately 9:40 am. No odors or visible emissions were detected upon arrival.

CR met with Mr. Brad Stermer, Sr. Environmental Specialist, and Mechanics Jim Vanassche and Wade Weber. CR presented proper AQD identification and a business card. CR also announced intent to conduct an inspection of the facility to determine compliance status with respect to their ROP No. MI-ROP-N5576-2015 and any other applicable air rules and regulations.

Facility Description

The Goodwell gas compressor station is owned and operated by ANR Pipeline Company and used for natural gas storage and transmission, via pipeline and natural underground reservoirs. Goodwells's function is to maintain pipeline pressure for transporting natural gas to storage wells for temporary storage and for transporting natural gas to other storage facilities and local distribution facilities.

Goodwell consists of a natural gas compressor station and underground storage field located in White Cloud, Michigan. The compressor station consists of two gas compressors/turbines, an emergency generator and a boiler; see Table 1 below for descriptions of each emission unit.

Table 1: Emission Unit Summary

Emission Unit ID	Installation Date	Description	ROP Flexible Group
EUGDSTurbine 6	2007	7,865 hp natural gas-fired combustion turbine (Solar Taurus 60-7800S) with low NOx burner.	FGTurbines6-7
EUGDSTurbine 7			
EUEmgGen		400 kw spark ignition 4-stroke lean burn emergency generator.	N/A
BOILER	2006	Sigma thermal Boiler (1.71 MMBtu/hr)	

Regulatory Requirements

Goodwell is located in Newaygo County, which is designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants. Goodwell is considered a major source of NOx because the potential to emit (PTE) exceeds 100 tpy, and a minor source of HAP's, because the PTE of any single HAP is less than 10 tpy and combined HAPs is less than 25 tpy. None of the emission units are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, PSD of Air Quality of Act 451, because at the time of New Source Review permitting the PTE of nitrogen oxides was less than 250 tons per year.

The emergency Generator is subject to 40 CFR Part 63, Subparts A and ZZZZ and the turbines are subject to 40 CFR Part 60, Subparts A and KKKK.

Compliance Evaluation

The facility continuously monitors and records fuel consumption and operating hours (**Attachment A**) for both

turbines and manually records operating hours for the emergency generator, which are summarized in Table 2 below. All the engines located at Goodwell are monitored and operated from the control room at the Woolfolk Compressor Station located in Big Rapids, MI. Per discussions with Mr. Stermer and CR's observations, records are maintained for 5 years. The facility submitted semi-annual reports and annual certifications as required and on time. No issues or problems were reported. None of the turbines were operating at the time of this inspection nor expected to operate in the near future due to low demand.

Table 2: 2016 & 2017 Engine Operating and Fuel usage summary

Year	Month	EUGDSTurbine 6		EUGDSTurbine 7		EUEmgGen
		Operating Hours	Fuel Usage (MMSCF)	Operating Hours	Fuel Usage (MMSCF)	Operating Hours
2016	Jan	210.50	13.913	107.75	8.1424	**
	Feb	457.50	29.0284	340.00	24.8796	**
	March	0.17	0.0085	0.17	0.0117	**
	April	*	*	*	*	**
	May	0.17	0.0085	0.17	0.0117	1.1
	June	*	*	*	*	1.2
	July	*	*	*	*	1.1
	Aug	*	*	*	*	1.1
	Sept	*	*	*	*	1.4
	Oct	*	*	*	*	1.1
	Nov	*	*	*	*	1.2
	Dec	158.00	10.0393	135.25	8.8341	3.9
2017	Jan	577.50	37.333	308.75	15.162	1.3
	Feb	411.25	26.6883	45.50	3.0354	0.6
	March	279.67	18.8026	61.75	3.8260	4.5
	April	*	*	*	*	2.2

*Not operating
** Records not Requested nor Provided

ROP Emission Unit EUEmgGen
The natural gas-fired emergency generator (EUEmgGen) is subject to 40 CFR Part 63, Subparts A and ZZZZ. AQD is not delegated the regulatory authority for this area source MACT. However, required hour meter and operating logs were readily accessible. Generator logs were provided by the facility and are included in **Attachment B**. Metered hours through the date of this inspection was 155.2 hours. Stack dimensions were not explicitly measured, however visually appeared to meet permit requirements of 10" maximum dimension and a height of 28.5-feet above ground. The emergency generator was not operating during this inspection.

ROP Flexible Group FGTurbines6-7
The facility operates two natural gas-fired turbines (EUGDSTurbine6 and EUGDSTurbine7) which are subject to the New Source Performance Standards for Stationary Combustion Turbines with peak load heat input capacity greater than 10 MMBtu/hour constructed after February 18, 2005 promulgated in 40 CFR Part 60, Subparts A and KKKK.

I. Emission Limits

Pollutant	Emission Limit	Time Period/Operating Scenerio	Equipment
NOx	25 ppmv at 15% O2	Test Protocol *	EUGDSTurbine6
NOx	25 ppmv at 15% O2	Test Protocol *	EUGDSTurbine7
NOx	150 ppmv at 15% O2	4-hour average	EUGDSTurbine6
NOx	150 ppmv at 15% O2	4-hour average	EUGDSTurbine7

**Test protocol will specify averaging time period.*
***These alternate limits apply if the permittee uses continuous monitoring, pursuant to 40 CRF 60.4340(b)(2)(ii) to determine compliance with the NOx limits established under 40 CFR 60.4320(a) and during periods o operation when the ambient temperature is below 0 °F.*

Compliance Method for NOx Emission Limits--
Continuous compliance with the NOx ppm emission limits shall be based upon subsequent stack testing pursuant to 40 CFR 60.4400 (SC 2.6) or by continuously monitoring combustion parameters, pursuant to 40 CFF 60.4355. (SC 2.7)

The facility opted to comply with the 25 ppmv limit for each unit based on periodic stack testing. The last test conducted February 11, 2016, indicated a NOx concentration of 10.95 ppmvd for EUGDSTurbine6 and 15.49 ppmvd for EUGDSTurbine7. The February 11, 2016 Test Plan and a report of the final test results were submitted to AQD as required. Based on discussions with Mr. Stermer, the next test will likely take place ir January or February of 2018.

II. Material Limits
The facility only burns "Pipeline Quality" gas, therefore meeting the 0.06lb SO_2/MMBtu heat limit specified in the permit. As documentation, a current FERC Gas Tariff has been provided to AQD and discussed further below (VI. Monitoring/Recordkeeping).

IV. Design/Equipment Parameters
The turbines are equipped with low-NOx burners and cannot operate without the SoLoNOx mode. Neither turbine was operating during this inspection, however CR re-confirmed with Mr. Stermer the statement made ir the previous inspection report (CA_N557628278), that the turbines cannot operate below 85% speed and are typically operated at approximately 100% speed.

V. Testing/Sampling
Periodic NOx testing has indicated that NOx concentrations have always been <75% of the limit. Therefore, the facility tests once every two years as allowed in the permit. The last test was conducted on February 11, 2016 and the next test will likely take place in January or February of 2018.

VI. Monitoring/Recordkeeping
The facility has chosen to conduct periodic testing for compliance rather than continuously monitor appropriate parameters to determine Low-NOx mode status for each turbine. Historical periodic testing results have been acceptable.

Special Conditions VI.2, VI.4, VI.5 and VI.6 all pertain to the sulfur content of the fuel. As discussed above, the facility meets the 0.06lb SO2/MMBtu heat content by burning only "Pipeline Quality" natural gas. Mr. Stermer provided AQD with a current FERC Gas Tariff, which is included in **Attachment C**. The Tariff includes all information required in these conditions and because the facility has demonstrated that the potential sulfur emissions do not exceed the 0.06lb SO2/MMBtu heat content, the facility is not required to monitor sulfur conten of the fuel.

As required in Special Conditons VI.3 and VI.7, the facility monitors the gas producer speed for each turbine on a continuous basis to determine compliance with the 150 ppmv (at 15% O_2) emission limit specified in Specia Conditions I.3 and I.4. Hourly records were provided to AQD and are included in **Attachment D**.

VIII. Stack Vent Restrictions
Stack dimensions were not explicitly measured, however, visually appeared to meet permit requirements of 36 inch maximum dimension with a height of 63-feet above ground for each turbine.

Other (Non-ROP)
The facility has a natural gas-fired 1.71 MMBtu/hr Sigma Thermal boiler. This boiler appears to be exempt from NSR permitting and not regulated by 40 CFR Part 63, Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Area Source Boilers since the rule does not apply to natural gas-fired boilers.

Conclusion
Based on observations made during this inspection and a records review, Goodwell appears to be in compliance with ROP MI-ROP-N5576-2015 and any other applicable air rules and regulations.

Attachments
A - Monthly Operating Hours and Fuel Usage
B - Emergency Generator Logs
C - FERC Gas Tarriff
D - Gas Producer Speed Records

NAME _____ DATE 6/21/2017 SUPERVISOR _____