



REGION 8

DENVER, CO 80202

**EOG Resources - Various Well Pads and Facilities
Partial Compliance Evaluation (PCE)
On-Site Clean Air Act (CAA) Inspections**

Inspection Date(s): November 5-8, 2023

Inspection Report Date: January 11, 2024

EPA Representatives: [REDACTED] US EPA Region 8, Clean Air Act Inspector
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Tribal Representatives: [REDACTED] MHA Energy
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Company Representatives: None

Inspection Report Prepared By: [REDACTED] US EPA Region 8, Clean Air Act Inspector
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Inspection Report Reviewed By: [REDACTED] Manager, Enforcement and Compliance Assurance
Division, Air and Toxics Enforcement Branch
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Applicable Rules: 40 C.F.R Part 49, Subpart K: Federal Implementation Plan for Oil and Natural Gas Well Production Facilities; Fort Berthold Indian Reservation (Mandan, Hidatsa and Arikara Nation), North Dakota (Fort Berthold FIP)

40 C.F.R Part 60, Subpart OOOOa: Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015 (NSPS OOOOa)

Compliance Assistance

None

Enforcement History

EOG Resources, Inc. (EOG) was issued an administrative complaint and consent agreement for constructing major stationary sources located in Fort Berthold Reservation without first obtaining a PSD permit (Court Docket Number CAA-08-2011-0023) in 2012.

Areas of Concern

1. The EPA detected hydrocarbon emissions from the storage tanks at well pads co-located with the following wells:
 - Liberty LR 14-23H
 - Clarks Creek 41-0805H
2. The EPA detected hydrocarbon emissions from an unlit flare co-located with the following wells or compressor sites:
 - Parshall 16-32H
 - Liberty 103-13H
 - Liberty LR 14-23H
 - Liberty CDP Compressor Site (Pecan Pipeline)
 - Liberty LR 12-11H
 - Liberty 8-01H
 - Clarks Creek SEC 7 SES 6 OPF Compressor Site
 - Parshall 28-2928H
3. The EPA detected unburned hydrocarbon (UBHC) emissions from operating utility flares co-located with the following wells:
 - Vanhook 47-3626H
 - Parshall 11-28H
4. The EPA detected visible emissions from operating utility flares co-located with the following wells:
 - Liberty LR 47-1416H
 - Liberty 106-0107H

See Table 1 below for more details regarding inspected locations and Tables 2 and 3 for inspection observation details for all pads. A log of images and videos captured during the inspections is provided in Appendix A.

General Inspection Information

Unannounced well pad inspections were conducted jointly by U.S. EPA and Fort Berthold Indian Reservation (FBIR) Tribal inspectors on November 5-8, 2023, at multiple EOG facilities located on the FBIR.

The EPA evaluated each EOG well site listed in Table 1 using audio, visual, and olfactory (AVO) inspection methods including the use of an optical gas imaging (OGI) camera and EPA Reference Method 22. At each facility, inspectors scanned the crude and/or water storage tanks, closed vent system and flares onsite for any detectable emissions. Specifically, inspectors scanned storage tank covers and closed vent systems for hydrocarbon emissions to determine compliance with the Clean Air Act, including the Fort Berthold FIP and NSPS OOOOa.

Each well pad inspection followed the approach below:

1. Record the entry sign of the well pad when available. Survey the entire well pad with OGI camera.

2. Record the number and type of site process equipment such as well heads, tanks, and emission control devices.
3. Record AVO indications of emissions from the storage tanks, closed vent system to the control devices and control devices.
4. Using the OGI camera, survey each process in infrared modes (auto, manual, and/or high-sensitivity modes). Record any uncontrolled emissions with the OGI camera and describe the frequency and magnitude of emissions in the field notebook.
5. Observe control devices (enclosed combustor or utility flare) for visible emissions. If there is visible emissions present, conduct Method 22 and record the observations.
6. Using two OGI cameras, confirm any observations of uncontrolled emissions with another inspector.
7. If there are operators present onsite, share any Areas of Concern.

Table 1 lists general inspection and facility details for each inspected facility. The well pad information located in the Table 1 is from the North Dakota Industrial Commission (NDIC) well index located online at <https://www.dmr.nd.gov/oilgas/>.

Date	Arrival Time	Departure Time	Well Name	API Number	Latitude	Longitude
11/5/2023	17:22	17:26	Riverview 26-3031H	3305307203	47.96225	-102.76687
11/5/2023	17:32	17:38	HAWKEYE 100-2501H	3305304005	47.96252	-102.77461
11/6/2023	7:53	8:49	Parshall 16-32H	3306100968	47.93518	-102.21654
11/6/2023	9:00	9:07	Fertile 50-0509H	3306102485	47.93266	-102.22230
11/6/2023	9:17	9:22	Liberty 103-13H	3306101321	47.90477	-102.27777
11/6/2023	9:26	9:36	Liberty LR 53-1416H	3306104654	47.89646	-102.28847
11/6/2023	9:37	10:00	LR 14-23H	3306101529	47.88843	-102.29084
11/6/2023	10:00	10:05	Liberty CDP Compressor Site	-	47.89021	-102.28891
11/6/2023	10:06	10:15	Liberty LR 47-1416H	3306104040	47.90372	-102.28818
11/6/2023	10:24	10:30	Liberty LR 107-1109H	3306102281	47.91229	-102.28803
11/6/2023	10:30	10:38	Liberty LR 12-11H	3306101608	47.91496	-102.28678
11/6/2023	10:46	10:59	Liberty LR 106-0107H	3306102138	47.93381	-102.26962
11/6/2023	10:59	11:09	Vanhook 47-3626H	3306103640	47.93556	-102.27147
11/6/2023	11:13	11:17	Liberty 8-01H	3306101138	47.93371	-102.27746
11/6/2023	11:27	11:31	Vanhook 13-35H	3306101162	47.93523	-102.28133
11/8/2023	10:27	10:37	Clarks Creek 41-0805H	3305307918	47.90773	-102.73270
11/8/2023	11:02	11:04	Clarks Creek 65-07H	3305308455	47.90664	-102.75231
11/8/2023	11:10	11:31	Clarks Creek SEC 7 SES6 OPF	-	47.90618	-102.75488
11/8/2023	11:35	11:40	Clarks Creek 10-0805H	3305303514	47.90680	-102.74666
11/8/2023	14:35	14:39	Parshall 78-20H	3306102923	47.96414	-102.21932
11/8/2023	14:42	14:51	Parshall 28-2928H	3306103178	47.96193	-102.22457
11/8/2023	14:55	14:59	Parshall 86-29H	3306103181	47.96193	-102.22457
11/8/2023	15:02	15:10	Parshall 11-28H	3306100751	47.96196	-102.21374
11/8/2023	15:11	15:15	Parshall 67-2117H	3306103044	47.96455	-102.20679
11/8/2023	15:16	15:20	Parshall 82-2827H	3306103165	47.96194	-102.20308

Observations and Regulatory Applicability

Fort Berthold FIP and NSPS OOOOa regulations which are potentially relevant to the Areas of Concern observed during inspections are summarized in this section.

Tables 2 and 3 at the end of this report summarize inspection observations and findings. Table 2 includes well head counts and storage tank observations. Table 3 includes details of control devices and related observations. See Appendix A for a log of images and videos taken during the inspections.

Fort Berthold FIP Applicability

Based on drilling information reported to the NDIC well index by EOG, the facilities listed in Table 1 were completed after the August 12, 2007, applicability date (per 40 C.F.R. § 49.4161) and are producing from the Bakken Pool (per 40 C.F.R. § 49.4163(a)(1)) and are thus subject to the Fort Berthold FIP.

Closed Vent System Equipment Requirements [§ 49.4165(b)]

Per § 49.4165(b)(1), “Each closed-vent system must route all produced natural gas and natural gas emissions from production and storage operations to the natural gas sales pipeline or the control devices...” The EPA, using an OGI camera, detected natural gas emissions from production and storage tanks at two out of twenty-five facilities evaluated. See Area of Concern #1 above.

Utility Flare Requirements [§ 49.4165(c)]

Per § 49.4165(c)(6)(vi), “The owner or operators must ensure that each enclosed combustor and utility flare is maintained in a leak-free condition.” The EPA, using an OGI camera, detected emissions from an unlit flare at eight out of twenty-five facilities evaluated. See Area of Concern #2 above.

Per § 49.4165(c)(1), “For each enclosed combustor or utility flare, the owner or operator must follow the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.” The EPA noted UBHC emissions indicating poor air pollution control practices from lit flares at two out of twenty-five facilities evaluated. See Area of Concern #3 above.

Per § 49.4165(c)(6)(vii), “The owner or operator must ensure that each enclosed combustor and utility flare is operated with no visible smoke emissions.” Per 49.4166(g)(3) and EPA Reference Method 22, the EPA noted black smoke emissions at two out of twenty-five facilities evaluated. See Area of Concern #4 above.

NSPS OOOOa Applicability

Based on well production information reported by EOG to the NDIC and the date of construction, reconstruction, or modification of the storage vessels, the EPA believes that storage vessels and associated emissions control equipment at fifteen of the twenty-five oil and natural gas production facilities identified in Table 1 are subject to requirements for storage vessel affected facilities in NSPS OOOOa:

- Riverview 26-3031H
- Hawkeye 100-2501H
- Fertile 50-0509H
- Liberty LR 53-1416H
- Liberty LR 47-1416H
- Liberty LR 107-1109H

- Liberty LR 12-11H
- Liberty 106-0107H
- Van Hook 47-3626H
- Clarks Creek 41-0805H
- Clarks Creek 65-07H
- Clarks Creek SEC 7 SES 6 OPF
- Parshall 78-20H
- Parshall 28-2928H
- Parshall 86-29H

Closed Vent System Equipment Requirements [§ 60.5411a(c)]

Per § 60.5411a(c)(1), owners and operators must “Design the closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel to a control device that meets the requirements specified in § 60.5412(c) and (d), or to a process.” The EPA, using an OGI camera, observed emissions from the closed vent system at the Clarks Creek 41-0805H facility. See Area of Concern #1 above.

Control Device Requirements [§§ 60.5412a(d) and 60.5413a(e)]

Per § 60.5412a(d)(1)(ii), owners and operators must, for each combustion control device, “install and operate a continuous burning pilot flame.” The EPA observed unlit pilot flames at the Liberty LR 12-11H, Clarks Creek SEC 7 SES 6 OPF Compressor Site, and Parshall 28-2928H facilities. See Area of Concern #2 above.

Per § 60.5413(a)(e)(8), owners and operators must, “Operate each control device following the manufacturer’s written operating instructions, procedures and maintenance schedules to ensure good air pollution control practices for minimizing emissions.” The EPA noted UBHC emissions indicating poor air pollution control practices from a lit flare at the Vanhook 47-3626H facility. See Area of Concern #3 above.

Per § 60.5412a(d)(1)(iii), owners and operators must, “Operate the combustion control device with no visible emissions, except for periods not to exceed a total of 1 minute during any 15-minute period.” The EPA observed black smoke continuously for more than five minutes (per Method 22) at the Liberty LR 47-1416H and Liberty 106-0107H facilities. See Area of Concern #4 above.

Table 2: Inspection Details: Storage Tank Observations						
Well Name	Number of Storage Tanks	AVO (Audio, visual, olfactory) Observations	Emissions Description	Media File Name		
Riverview 26-3031H	26	None	None	None		
HAWKEYE 100-2501H	18	None	None	None		
Parshall 16-32H	3	None	None	None		
Fertile 50-0509H	11	None	None	None		
Liberty 103-13H	6	None	None	None		
Liberty LR 53-1416H	8	Odor detected	None	None		
Liberty LR 14-23H	13	Odor detected	Continuous emissions from weighted seal stuck in the open position	MOV_3368		
Liberty CDP Compressor Site	1	None	None	None		
Liberty LR 47-1416H	10	None	None	None		
Liberty LR 107-1109H	10	None	None	None		
Liberty LR 12-11H	3	None	None	None		
Liberty 106-0107H	14	None	None	None		
Van Hook 47-3626H	10	None	None	None		
Liberty 8-01H	5	None	None	MOV_3374		
Vanhook 13-35H	6	None	None	None		
Clarks Creek 41-0805H	14	None	Continuous emissions from a tank located in the back row (2nd from the right).	MOV_3416		
Clarks Creek 65-07H	6	None	None	None		
Clarks Creek SEC 7 SES6 OPF	24	None	None	None		
Clarks Creek 10-0805H	10	None	None	None		
Parshall 78-20H	14	None	None	None		
Parshall 28-2928H	10	None	None	None		
Parshall 86-29H	10	None	None	None		
Parshall 11-28H	10	None	None	None		
Parshall 67-2117H	6	None	None	None		
Parshall 82-2827H	6	None	None	None		

Table 3: Inspection Details: Control Devices and AVO/OGI Observations

Well Name	Number of Control Device	Control Device Type	Visible Pilot Flame (Y/N)	Active Flaring (Y/N)	Method 22 Observations	Emission Description	Media File Name	Slope to K/O Drum	Notes
Riverview 26-3031H	3	Air Assisted (AA), AA, High Pressure (HP) 2-prong	Yes, Yes, No	Yes, No, No	None	None	None	Downward	
HAWKEYE 100-2501H	1	High-Capacity (HC)	Yes	Yes	None	None	DSCN0033.JPG, DSCN0034.JPG, DSCN0035.JPG, DSCN0036.JPG	Upward	Improper slope to the K/O drum
Parshall 16-32H	1	HC-AA	No	No	None	Continuous emission from unlit flare	DC_3365, MOV_3366	Downward	
Fertile 50-0509H	2	HC, AA	Yes, Yes	No, No	None	None	None	Downward	
Liberty 103-13H	1	Pilot (Model:SPL-2)	No	No	None	Continuous emission from unlit flare	MOV_3367	Downward	
Liberty LR 53-1416H	2	HP 2-prong, AA	Yes, Yes	No, No	None	None	None	Downward	
Liberty LR 14-23H	3	HP 2-prong, AA, HC-AA	Yes, Yes, No	No, No, No	None	Continuous emission from unlit flare (High Capacity-2 prong)	MOV_3369	Downward	
Liberty CDP Compressor Site	1	AA	No	No	None	Continuous emission from unlit flare	MOV_3370	Downward	Spoke to EOG operator while on-site.
Liberty LR 47-1416H	1	HC	Yes	Yes	Yes	Continuous visible emissions for >5 minute per Method 22.	None	Downward	Odor detected onsite
Liberty LR 107-1109H	2	HP 2-prong, AA	Yes, Yes	No, No	None	None	None	Downward	
Liberty LR 12-11H	1	HC-AA	No	No	None	Continuous emissions from unlit flare. Detected odor	MOV_3371	Downward	Odor detected onsite

Liberty 106-0107H	1	HC-AA	Yes	Yes	None	Continuous visible emissions for >5 minute per Method 22.	None	Downward	
Van Hook 47-3626H	1	HC-AA	Yes	Yes	None	Unburned hydrocarbon from the flare detected by OGI camera.	MOV_3372	Downward	Odor detected onsite
Liberty 8-01H	1	HC-AA	No	No	None	Continuous emission from unlit flare.	MOV_3373	Downward	
Van Hook 13-35H	1	HC-AA	Yes	No	None	None	None	Downward	
Clarks Creek 41-0805H	3	HC, HP 2-prong, AA	Yes, Yes, Yes	No, No, No	None	None	None	Downward	
Clarks Creek 65-07H	1	AA	Yes	No	None	None		Downward	
Clarks Creek SEC 7 SES6 OPF	2	AA, HC	No, No	No, No	None	Continuous emissions from unlit High-Capacity flare and Air Assist.	MOV_3423, MOV_3424	Downward	Inspectors discussed unlit flares with EOG operator while on site
Clarks Creek 10-0805H	1	HC	Yes	Yes	None	None		Downward	
Parshall 78-20H	1	HC	Yes	No	None	None		Downward	
Parshall 28-2928H	1	HC	No	No	None	Continuous emissions from unlit flare. Due to extremely high wind speeds, OGI video may not show the full extent of the venting. Odor was detected.	MOV_3435, DC_3437, DC_3438	Downward	In the control panel, "pilot failure" alarm message was in red.
Parshall 86-29H	1	HC	Yes	No	None	None		Downward	

Parshall 11-28H	1	HC	Yes	No	None	Continuous unburned hydrocarbon trail. Pilot is lit but the gas is not being combusted in flame. Odor was detected on site.	MOV_3441	Upward	
Parshall 67-2117H	1	HC	Yes	No	None	None		Downward	
Parshall 82-2827H	1	HC	Yes	No	None	None		Downward	

APPENDIX A: Photograph and Video Log

Media File	Description	Well Name
DC_3360.JPG	Entry Sign Photo	Riverview 26-3031H
DC_3361.JPG	Entry Sign Photo	HAWKEYE 100-2501H
DSCN0037.JPG	Entry Sign Photo	Parshall 16-32H
DSCN0038.JPG	Entry Sign Photo	Fertile 50-0509H
DSCN0039.JPG	Entry Sign Photo	Liberty 103-13H
DSCN0040.JPG	Entry Sign Photo	Liberty LR 53-1416H
DSCN0041.JPG	Entry Sign Photo	Liberty LR 14-23H
DSCN0042.JPG	Entry Sign Photo	Liberty CDP Compressor Site
DSCN0043.JPG	Entry Sign Photo	Liberty LR 47-1416H
DSCN0044.JPG	Entry Sign Photo	Liberty LR 107-1109H
DSCN0045.JPG, DSCN0046.JPG	Entry Sign Photos	Liberty LR 12-11H
DSCN0047.JPG	Entry Sign Photo	Liberty 106-0107H
DSCN0048.JPG	Entry Sign Photo	Van Hook 47-3626H
DSCN0049.JPG	Entry Sign Photo	Liberty 8-01H
DSCN0051.JPG	Entry Sign Photo	Van Hook 13-35H
DC_3415.JPG	Entry Sign Photo	Clarks Creek 41-0805H
DC_3421.JPG	Entry Sign Photo	Clarks Creek 65-07H
DC_3426.JPG	Entry Sign Photo	Clarks Creek SEC 7 SES6 OPF
DC_3427.JPG	Entry Sign Photo	Clarks Creek 10-0805H
DC_3432.JPG	Entry Sign Photo	Parshall 78-20H
DC_3433.JPG	Entry Sign Photo	Parshall 28-2928H
DC_3439.JPG	Entry Sign Photo	Parshall 86-29H
DC_3440.JPG	Entry Sign Photo	Parshall 11-28H
DC_3442.JPG	Entry Sign Photo	Parshall 67-2117H
DC_3444.JPG	Entry Sign Photo	Parshall 82-2827H
MOV_3368.MP4	Continuous emissions from weighted seal stuck in the open position.	Liberty LR 14-23H
MOV_3374.MP4	Tank level was documented with OGI camera.	Liberty 8-01H
MOV_3416.MP4	Continuous emissions from a tank located in the back row (2nd from the right).	Clarks Creek 41-0805H

DSCN0033.JPG, DSCN0034.JPG, DSCN0035.JPG, DSCN0036.JPG	Improper slope to the K/O drum.	HAWKEYE 100-2501H
DC_3365.JPG, MOV_3366.MP4	Continuous emission from unlit flare.	Parshall 16-32H
MOV_3367.MP4	Continuous emission from unlit flare.	Liberty 103-13H
MOV_3369.MP4	Continuous emission from unlit flare (HC-2 prong).	Liberty LR 14-23H
MOV_3370.MP4	Continuous emission from unlit flare.	Liberty CDP Compressor Site
MOV_3371.MP4	Continuous emissions from unlit flare.	Liberty LR 12-11H
MOV_3372.MP4	Unburned HC from the flare detected.	Van Hook 47-3626H
MOV_3373.MP4	Continuous emission from unlit flare.	Liberty 8-01H
MOV_3423.MP4, MOV_3424.MP4	Continuous emissions from unlit HC flare and Air Assist.	Clarks Creek SEC 7 SES6 OPF
MOV_3435.MP4, DC_3437.JPG, DC_3438.JPG	Continuous emissions from unlit flare. Due to extremely high wind speeds, OGI video may not show the full extent of the venting.	Parshall 28-2928H
MOV_3441.MP4	Continuous unburned hydrocarbon trail. Pilot is lit but the gas is not being combusted in flame.	Parshall 11-28H