



REGION 8

DENVER, CO 80202

**PetroShale (US), Inc. – Various Well Pads and Facilities
Partial Compliance Evaluation (PCE)
On-Site Clean Air Act (CAA) Inspections**

Inspection Date(s): October 20, 23 and 24, 2024

Inspection Report Date: December 19, 2024

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Tribal Representatives: Dwight Bruce, MHA Energy

Company Representatives: None

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Inspection Report Reviewed By: Scott Patefield, Manager, Enforcement and Compliance Assurance Division, Air and Toxics Enforcement Branch

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)

40 C.F.R Part 60, Subpart OOOOb – Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After December 6, 2022 (NSPS OOOOb)

Compliance Assistance

None

Enforcement History

None

Areas of Concern

1. The EPA detected hydrocarbon emissions from the storage tanks co-located with the following well pads:
 - Primus 3H/4H (West) Pad
 - Tahu - Riverview CTB Facility
 - Horse Camp West Pad

See Table 1 below for more details regarding inspected locations for all well pads and Table 2 for inspection observation details. 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 October 20, 23, and 24, 2024, at multiple PetroShale (US), Inc. (PetroShale) facilities located on the FBIR. PetroShale is a wholly-owned subsidiary of Lucero Energy Corp. that operates under the PetroShale name.

The EPA inspectors evaluated each 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 regulations.

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 another OGI camera, if available, 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 well pad details for each inspected well pad. The well pad information located in Table 1 is from the North Dakota Industrial Commission (NDIC) well index located online at <https://www.dmr.nd.gov/oilgas/>.

Table 1: Inspection and Facility Details of Facilities Inspected						
Date	Arrival Time	Departure Time	Well Pad Name	API Number	Latitude	Longitude
10/20/2024	14:17	14:30	Primus 3H/4H (West) Pad	3305307774 3305307775 3305310070 3305310072 3305310073 3305310227	47.991668	-102.74835
10/20/2024	14:40	14:45	Primus 8H Pad	3305307650	47.991647	-102.74087
10/20/2024	14:48	14:53	Primus 12/13H (East) Pad	3305307780 3305307868	47.990736	-102.73826
10/20/2024	15:02	15:16	Tahu - Riverview CTB Facility	3305309618 3305309619 3305309620 3305309622 3305309623	47.958060	-102.72972
10/23/2024	15:44	15:50	Horse Camp 4-104-11H Pad	3302503328 3302503329	47.744616	-102.53933
10/23/2024	15:53	16:09	Horse Camp West Pad	3302501236 3302501237 3302503507 3302503508	47.745092	-102.55379
10/24/2024	10:15	10:18	Bear Chase Pad	3305302870 3305308677 3305308678 3305308679	47.788922	-102.76122

Observations and Regulatory Applicability

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

Table 2 at the end of this report summarizes inspection observations and findings related to storage tank 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 PetroShale, 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 the Primus 3H/4H (West) Pad, the Tahu - Riverview CTB Facility, and the Horse Camp West Pad. See Area of Concern #1 above.

NSPS OOOOa Applicability

Based on PetroShale’s NSPS OOOOa annual reporting, the EPA believes that storage vessels and associated emissions control equipment at the Horse Camp West Pad are potentially subject to requirements for storage vessel affected facilities in NSPS OOOOa.

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 Horse Camp West Pad. See Area of Concern #1 above.

NSPS OOOOb Applicability

Based on PetroShale’s most recent NSPS OOOOa annual reporting, which provided notice of future NSPS OOOOb applicability at certain PetroShale facilities, the EPA believes that storage vessels and associated emissions control equipment at the Primus 3H/4H (West) Pad and the Tahu - Riverview CTB Facility are potentially subject to requirements for storage vessel affected facilities in NSPS OOOOb.

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

Per § 60.5411b(a)(2), owners and operators must “design the closed vent system to capture and route all gases, vapors, and fumes to a process or a control device that meets the requirements specified in § 60.5412b(a) through (d)...” Furthermore, § 60.5411b(a)(3) requires that the closed vent system be designed and operated “with no identifiable emissions.” The EPA, using an OGI camera, observed emissions from the closed vent system at the Primus 3H/4H (West) Pad and the Tahu - Riverview CTB Facility. See Area of Concern #1 above.

Table 2: Inspection Details: Storage Tank Observations				
Well Pad Name	Number of Storage Tanks	AVO (Audio, visual, olfactory) Observations	Emissions Description	Media File Name
Primus 3H/4H (West) Pad	20	None	Continuous emissions from thief hatch on Tank 3H3108 (Oil).	MOV_3507.mp4 MOV_3508.mp4
Tahu - Riverview CTB Facility	12	None	Two points of emission were observed: One was intermittent emissions from the oil tank located closer to the flares. The second was a continuous, large plume from a p/v vent on produced water tanks.	MOV_3510.mp4 MOV_3511.mp4
Horse Camp West Pad	16	None	Continuous emissions from the top of the tank.	MOV_3550.mp4

APPENDIX A: Photograph and Video Log

Media File	Description	Well Pad Name
MOV_3507.mp4* MOV_3508.mp4*	Continuous emissions from thief hatch on Tank 3H3108 (Oil).	Primus 3H/4H (West) Pad
MOV_3510.mp4* MOV_3511.mp4*	Two points of emission were observed: One was intermittent emissions from the oil tank located closer to the flares. The second was a continuous, large plume from a p/v vent on produced water tanks.	Tahu - Riverview CTB Facility
MOV_3550.mp4*	Continuous emissions from the top of the tank.	Horse Camp West Pad
entrysign-20241020-142931.jpg	Entry Sign	Primus 3H/4H (West) Pad
entrysign-20241020-194102.jpg	Entry Sign	Primus 8H Pad
entrysign-20241020-144952.jpg	Entry Sign	Primus 12/13H (East) Pad
entrysign-20241020-150355.jpg	Entry Sign	Tahu - Riverview CTB Facility
entrysign-20241023-204524.jpg	Entry Sign	Horse Camp 4-104-11H Pad
entrysign-20241023-155604.jpg	Entry Sign	Horse Camp West Pad
entrysign-20241024-151600.jpg	Entry Sign	Bear Chase Pad

*In addition to recording metadata through the OGI camera's system, EPA collected metadata for the media files recorded during the inspections, including the date, time, and location of the recorded media, in the Survey123 ArcGIS application at the time of the inspections. Due to a technical issue experienced with the OGI camera's metadata captured for the .mp4-type files, the Survey123 metadata was used as the primary reference for verifying inspection media file data.