

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8 NATIONAL
POLLUTANT DISCHARGE ELIMINATION SYSTEM STATEMENT OF BASIS**

PERMITTEE: Wind River Energy Commission

FACILITY NAME AND MAILING ADDRESS: Sheldon Dome Field
708 13th St., Unit 110
Golden, CO 80401

PERMIT NUMBER: WY-0024953

RESPONSIBLE OFFICIAL: Roger Knight, Commissioner
Wind River Energy Commission
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FACILITY CONTACT: Kathryn Schuller, Asset Manager-
Sheldon Field
708 13th St., Unit 110
Golden, CO 80401
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PERMIT TYPE: Minor Industrial – Permit Renewal
Indian Country
SIC 1311- Crude Petroleum &
Natural Gas

FACILITY LOCATION: NE4, SW4, Sec. 22, T5N, R2W
Outfall: Latitude: 43.408192
Longitude: -108.986133

1 INTRODUCTION

This statement of basis (SoB) is for the issuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Permit) to the Wind River Energy Commission (WREC) for the Sheldon Dome Field (Facility). The Permit establishes discharge limitations for any discharge of wastewater from the Facility through Outfall 001 to a tributary that flows to Dry (Pasup) Creek. The SoB explains the nature of the discharges, EPA's decisions for limiting the pollutants in the wastewater, and the regulatory and technical basis for these decisions.

The Facility is located on the Wind River Indian Reservation. EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, located within Region 8 states and implements federal environmental laws in Indian country consistent with the [EPA Policy for the Administration of Environmental Programs on Indian Reservations](#) and the federal government's general trust responsibility to federally recognized Indian Tribes.

2 MAJOR CHANGES FROM PREVIOUS PERMIT

Major changes from the previous permit include the following:

- The addition of a whole effluent toxicity (WET) effluent limit and increased monitoring frequency with provisions for monitoring reductions (see Section 6.2.8 of the SoB);
- The addition of Per- and Polyfluoroalkyl Substances (PFAS) requirements (see Section 14.1.1 of the SoB);
- Additional monitoring requirement for organic compounds benzene, ethylbenzene, toluene, and xylene (see Section 6.2.7 of the SoB), and aluminum (see Section 6.2.6);
- Addition of a Chemical Disclosure requirement (see Section 9.1 of the SoB);
- Addition of monitoring requirement for hardness in the receiving water. See the "Metals- Tribal Antidegradation Requirements" discussion in Section 6.2 of the SoB;
- Addition of a Notification of Newly Drilled Wells Contributing to Permitted Produced Water Discharge requirement (see Section 9.2 of the SoB); and
- Addition of compliance responsibilities and general requirements related to any inspections and operations/maintenance activities performed to comply with conditions of the Permit (see Section 17 of the SoB).

3 BACKGROUND INFORMATION

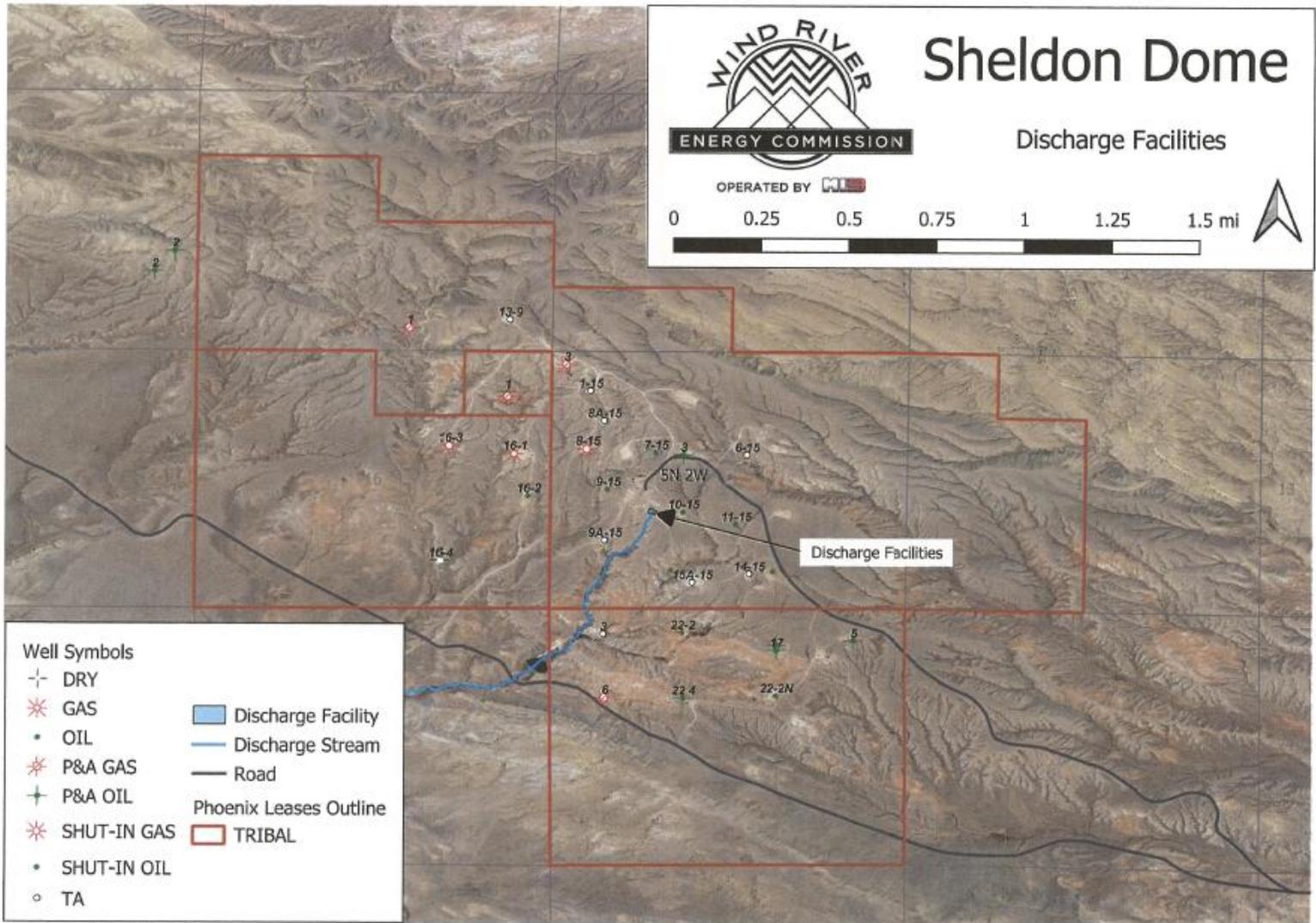
The Environmental Protection Agency (EPA) directly implements the Clean Water Act (CWA) NPDES on Indian country lands within the State of Wyoming. This Facility is located on the Wind River Indian Reservation and is thus in "Indian country" as defined at 18 U.S.C. 1151. The EPA has not approved the Eastern Shoshone or Northern Arapaho Tribes (Tribes) or the State of Wyoming to implement the CWA NPDES program in Indian country.

The Facility was previously owned by Phoenix Production Company but is now owned by WREC. This Permit authorizes the discharge of produced water from Outfall 001 for the

Facility located in Fremont County, Wyoming. Refer to Figures 1, 2 and 3 (below) for visual representations of the location and outfall.

Based on the permit application, the Facility’s average flow contributed from the oil and gas operations to Outfall 001 is 0.281 million gallons per day (mgd). Based on the diagram of the wells provided in the permit application (Figure 1, below) the Facility has 12 producing wells that are not dry, temporarily abandoned (TA) or plugged/abandoned (P&A). From the total 12 wells, nine wells produced mainly oil and three produced mainly gas. Produced water from these wells is discharged via Outfall 001 after treatment.

Figure 1. WREC Sheldon Dome Field Location Map and Discharge Point



EPA understood the above “Well Symbols” key in Figure 1 to mean the following:

- P&A = plug and abandonment well (meaning a well that has reached the end of its productive life and is being permanently sealed off by placing cement plugs at various depths in the wellbore to prevent any further fluid flow and protect the environment; essentially, decommissioning the well.)

- *TA = temporarily abandoned*
- *Shut-in = a well that has been intentionally closed off, preventing the extraction of oil or gas, effectively stopping its production (temporary shut off of production).*

Figure 2. WREC Sheldon Dome Field – Outfall 001 and Surrounding Area

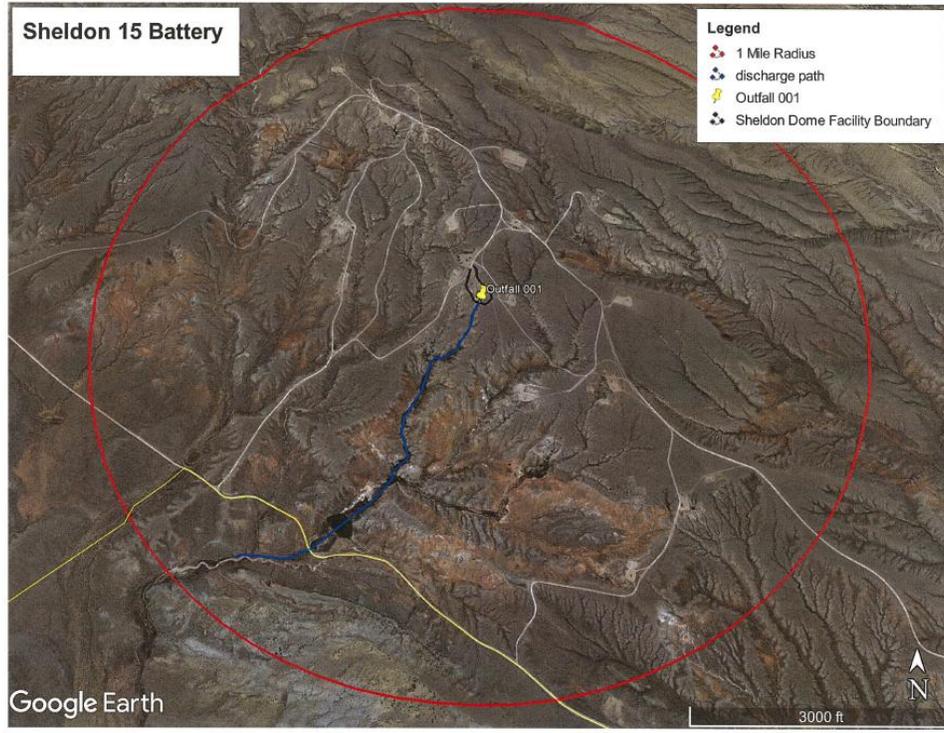


Figure 3. Close-ups of Outfall 001

(Mapped location: Latitude: 43.408192, Longitude: -108.986133, using Google Maps)



The background information provided in the following sections was obtained from the WREC application for the Permit, previous EPA inspection information (performed on July 25, 2019), previously permitted activities, and historical discussions/information related to the Facility.

3.1 Facility Process Description

The Facility provides separation treatment for the produced oil and gas generated from Facility wells. Based on information provided by the Facility during a 2019 EPA inspection, the Facility has previously produced approximately 70 barrels of oil, and 1,500 barrels of produced water per day. However, based on discharge monitoring data submitted by the Facility, discharge volumes range from daily maximums of 0.0112 mgd to 0.297 mgd which indicates that the daily production can be variable.

Figure 4. WREC – Sheldon Dome Field Process Flow Diagram

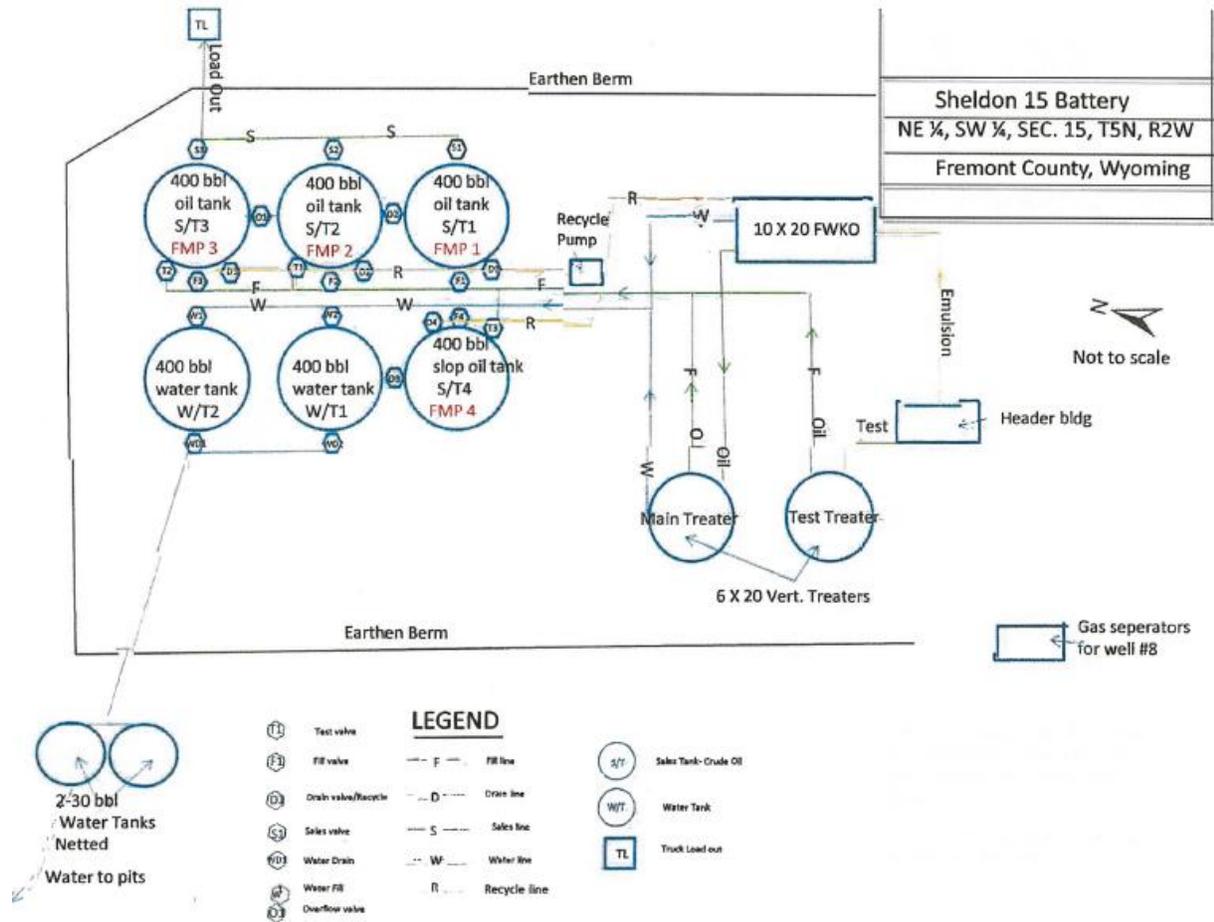
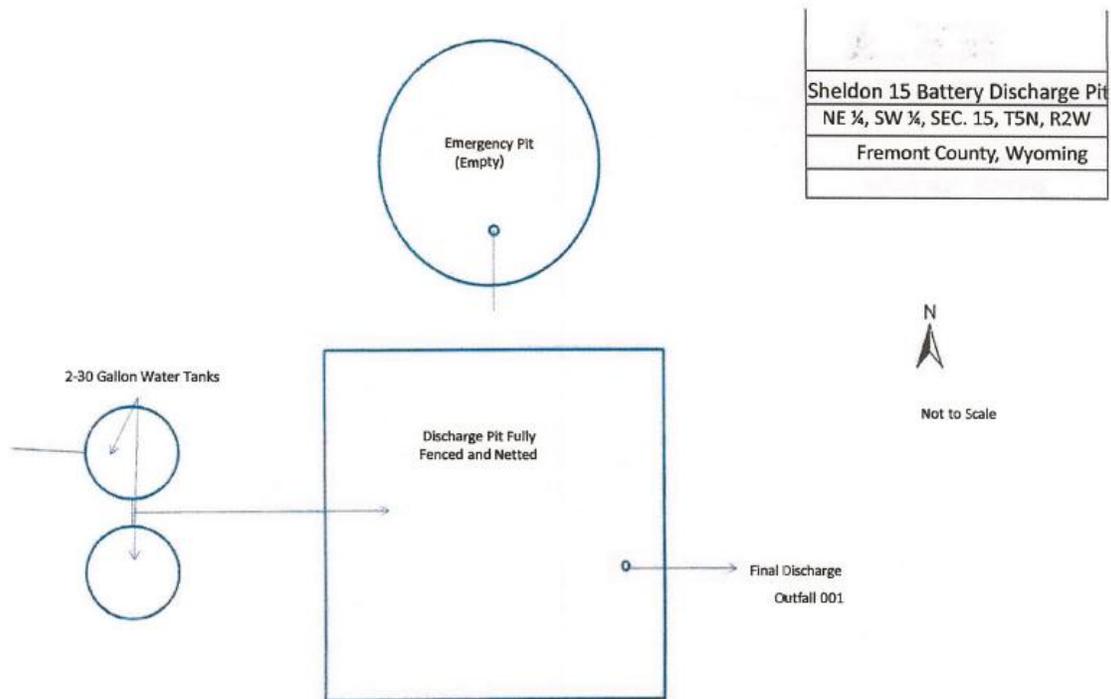


Figure 5. WREC – Sheldon Dome Field Outfall 001 Discharge Flow Diagram



3.2 Treatment Process

Based on previously permitted operation information, application information and previous discussions with the Facility, the Facility has operated as follows:

Description of Separation Process and Discharge:

Overall Summary of Process: Generally, oil, water, and gas has been separated in pressure vessels and skim tanks by gravity, heat and emulsion breaking chemicals. Final treatment of generated liquids occurred in a skim tank and two skim ponds to gravity separate residue oils that are skimmed with a vacuum truck and returned for sale. Produced water generated from this process was then sent to pits that ultimately discharged from Outfall 001. More detailed descriptions of this process are included below.

Extraction: When the formation fluid has been brought to the surface, it can contain a spectrum of substances including oil, natural gas, produced water, sand, silt, and any additives used to enhance extraction or maintenance practices. Processes have been used for the separation of gaseous components, removal of solids and water, and the breaking up of oil-water emulsions.

Produced oil and gas fluid generated from Facility wells has historically been pumped to a header building where an emulsion chemical was added before the fluid flowed into a free water knockout tank (FWKO) for oil and water separation. Oil from the FWKO was pumped to two heater treaters and then pumped to three oil sales tanks. The produced water from the FWKO and heater treaters was transferred to two 400-barrel produced water tanks used to

skim trace amounts of oil from the produced water. The produced water then flowed into two 30-barrel open-topped netted tanks before discharging into an earthen settling pit (previously referred to as Detention Pond 3 or Pit 3).

Produced Water Containing Well Treatment/Stimulation Fluids Discharged via Outfall 001:

Produced water was discharged from Pit 3 through Outfall 001. Any fluids collected in Pits 1 and 2 would also discharge into Pit 3 through a T-siphon between Pit 2 and 3. Flow from Outfall 001 discharged into a tributary of Dry (Pasup) Creek, which is a tributary to Wind River.

Well maintenance: Production wells periodically require maintenance. Historically, two procedures have been performed at the Facility to improve the flow of fluid: 1) removing scaling and 2) inhibiting corrosion.

- Daily Chemical Program: The Facility has previously implemented a daily chemical treatment program which involved a slow drip of demulsifier and emulsion breaker into the treatment system at the battery header, battery tester, and battery knock out to treat produced water after it has been brought to the surface. The emulsion breaker was introduced into the system through a continuous chemical pump over a 24-hour period. Some wells would receive daily chemical treatments to minimize scaling and corrosion.
- Bimonthly Chemical Program: The Facility has also previously implemented bimonthly downhole well maintenance on some oil production wells using a mixture of corrosion inhibitor, scale inhibitor, and barrels of produced water in the back of a vacuum truck. The chemical mixture was put downhole and, due to the nature of pumping wells, the pressure sink that was created would push formation fluid and maintenance chemicals into the wellbore rather than into the formation. A chemical mixture would therefore be produced back up the wellbore and to the treatment system with minimal mixing into the producing formation. Previous conversations with the Facility have indicated that it took approximately two days for all the chemical mixture to come back to the surface. A water clarifier was also used in the past but previous information provided by the Facility has indicated that it may not be used any longer.
- Maintenance Chemicals: Based on previous discussions with the Facility operators prior to sale to WREC, Baker Hughes provided estimated treatment rates for the following chemicals (full chemical names not available):
 - DMO 8048 at 150 ppm
 - SCW 4057 at 6 ppm
 - BPC 67015 at 15 ppm

Monitoring Samples: For past monitoring, a contracted company had been hired to collect the compliance monitoring samples at Outfall 001 and Facility representatives would collect the samples for WET monitoring.

Applicable Effluent Limitation Guideline (ELG) - discussed in more detail in Section 6.1 of the SoB):

- Subpart E - Agricultural and Wildlife Water Use Subcategory 40 CFR 435 (also identified in the permit application)

3.3 Chemicals Used

As described above, the Facility's general process is that oil, water and gas are separated in pressure vessels and skim tanks by gravity, heat and emulsion breaking chemicals. Final treatment consists of a skim tank and two skim ponds to gravity separate residue oils that are skimmed with a vacuum truck and returned for sale.

4 PERMIT HISTORY

According to EPA records maintained for the Facility, this renewal is at least the 4th issuance of an NPDES permit for this Facility. However, the previous owner of the Facility was the Phoenix Production Company, permitted under NPDES ID WY-0024953. This is the first NPDES permit issued to the Facility under the ownership of the WREC and will be permitted under the NPDES ID WY-0024953.

4.1 Environmental Appeals Board (EAB) Actions

On March 12, 2015, EPA issued five NPDES permits to oil and gas facilities operating on the Wind River Indian Reservation in Wyoming, which is home to the Eastern Shoshone Tribe and the Northern Arapaho Tribe. These included NPDES Permit WY-0024953, which was issued to Phoenix Production Company for its Sheldon Dome Field facility effective May 1, 2015 to March 31, 2020.

On April 14, 2015, the Natural Resources Defense Council (NRDC) filed with the Environmental Appeals Board (EAB) a petition for review of three of the five permits. On that same day, Public Employees for Environmental Responsibility (PEER) filed a petition for review of all five permits. On April 29, 2015, Phoenix Production Company filed a petition for review of the permits issued to its Rolff Lake Unit and Sheldon Dome Field facilities. On April 30, 2015, Wesco Operating Inc. filed a petition for review of the permit issued to its Winkleman Dome facility.

On May 8, 2015, the EAB issued an order consolidating the four permit appeals (listed above), establishing a new briefing schedule, and giving EPA Region 8 and the four petitioners until June 2, 2015, to respond to an offer from the EAB for Alternative Dispute Resolution (ADR). All parties, as well as the Tribes, subsequently filed a joint notification indicating their intent to engage in ADR. On June 18, 2015, the EAB stayed the briefing schedule for proceeding, and the parties entered into ADR. As a result of ADR, EPA agreed to propose modifications to certain provisions in three challenged permits to settle the four appeals, including Sheldon Dome Field. Those modifications were finalized in a permit modification for Sheldon Dome Field that became effective September 1, 2016.

4.2 Discharge Monitoring Report (DMR) Data

Table 1 below provides a summary of DMR data submitted into the EPA Integrated Compliance Information System (ICIS) database over the course of the previous permit term for the Facility. Exceedances of permitted limitations are in **bold** and data has been highlighted in **light gray** if it was for the timeframe before May 1, 2018, prior to final permit effluent limits going into effect (i.e., three years after the previous permit effective date - May 1, 2015). Cells are left blank if no data was provided. The previous permit also contained a requirement for a toxic pollutants screen that included monitoring of pollutants listed in 40 CFR Part 122, Appendix D, however, no data was submitted to EPA during the previous permit term for those pollutants.

Table 1. Summary of the DMR Data Submitted During the Previous Permit Term (1/1/2015 to 9/5/2025) for Outfall 001 from ICIS database (date accessed 9/5/2025)

DMR Date	Specific Conductivity (µS/cm)	TDS (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Sulfide (as H ₂ S), mg/L	Total Radium 226 (pCi/L)	Oil and Grease-Visual	Oil and Grease-Visual (mg/L)	pH max. (s.u.)		Total Mercury (µg/L)	Flow (mgd)-30 Day AVG	Flow (mgd)-Daily MAX	Pass/Fail Static 48Hr Acute Daphnia Magna Effluent Gross	Pass/Fail Static Renewal 96Hr Acute Pimephales Promelas Effluent Gross
									Min	Max					
FINAL Effluent Limits-previous permit	Daily Max	Daily Max	Daily Max	Daily Max	30-day Avg	Daily Max	Max	Max	Min	Max	Monitor Only - Daily Max	Monitor Only	Monitor Only	Monitor Only (pass=0; fail=1)	Monitor Only (pass=0; fail=1)
	7500	5000	2000	2500	200	60	Absent	10	6.5	9					
FINAL effluent limits listed above do not apply to these data sets, a/	06/30/2015														
	12/31/2015														
	06/30/2016														
	12/31/2016	5130	3869	454	1776		31.7	0	5.96	7.2	7.8	0.299	0.0303		
	06/30/2017	6470	3810	424	1470		24	0	9.2		8	0.0299	0.0303		
	12/31/2017	5010	3840	435	1730		24	0	7.93	7.5	7.5	0	0.0305	0.0305	0
06/30/2018	5120	3857	432	2600		24.5	0	9.85	6.9	8.1		0.0296	0.0297	0	0

FINAL effluent limits listed apply to these data sets.	12/31/2018	7040	4260	440	1568		31.3	0	8.62	6.8	7.8	0	0.0159	0.297	1	1	
	06/30/2019	4279	3772	425	2097		29.9	0	5.93	7.1	7.5	0	0.029	0.0293	0	0	
	12/31/2019	5500	3625	497	1905	138	36.3	0	8.33	7.3	7.6		0.0274	0.02919			
	06/30/2020	4690	3677	493	1778	55	33.7	0	7.52	7	7.5		0.0237	0.0269	0	0	
	12/31/2020	4900	3798	482	1992	84.5	34	0	5.27	7.1	7.6	0	0.0112	0.0112	0	0	
	06/30/2021	4040	3099	833	1775	75	34	0	9.1	7.1	8		0.814	0.027	0	0	
	12/31/2021	4010	40	387	1908	40	27	0	8.76	7.1	7.1		0.7655	0.026544		0	
	06/30/2022	3920	3190	280	1540	88	27.4	0		7.7	7.7		0.0265	0.0265		0	
	12/31/2022	4080	320	304	1760	104	28.6	0		7.6	7.6		0.261	0.261	0	0	
	06/30/2023	4210	3380	293	1580	38	29	0		7.4	7.4		0.0225	0.0264			
	12/31/2023	4170	3450	304	1680	42	25.9	0		8.4	8.4		0.027	0.027	0	0	
	06/30/2024																
	12/31/2024																
Data evaluation-only for data to which FINAL limits (above) apply	Average:	4663	3039	431	1849	74	30	0	7.92	7.3	7.7	0.0	0.2	0.1	0.1	0.1	
	Max:	7040	4260	833	2600	138	36.3	0	9.85	8.4	8.4	0	0.814	0.297	1	1	
	Min:	3920	40	280	1540	38	24.5	0	5.27	6.8	7.1	0	0.0112	0.0112	0	0	
	Exceedances:	0	0	0	1	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A

a/ May 1, 2018, when FINAL permit effluent limits went into effect (three years after previous permit effective date - May 1, 2015)

5 DESCRIPTION OF RECEIVING WATER

Based on the permit application, historical permit information, and mapping performed with EPA's Stream Connectivity Analysis Tool, the discharge from Outfall 001 at the Facility is a continuous discharge and will enter an unnamed draw (i.e., tributary of Dry (Pasup) Creek) which flows approximately 4.4 miles southwest to an intermittent stream, Dry Creek. From this confluence, Dry Creek travels to a juncture with the Wind River (approximately 18 total stream miles from the Facility to Wind River).

Figure 6. Facility Receiving Water: Overall Flow Path From the Facility to Wind River



Figure 7. Facility Receiving Water: Close-up View of Flow Path From the Facility to Dry (Pasup) Creek



In Appendix A of the Tribes' water quality requirements (see Section 6.2 of the SoB for additional background related to these requirements), the Tribes established designated uses for the Wind River Drainage and classified this segment, which includes Dry Creek, as Class 3B. Class 3B waters are defined in the Tribal water quality requirements as waters, other than those designated as Class 1 (i.e., Outstanding Tribal Resource Waters), that are intermittent, ephemeral or isolated waters and, because of natural habitat conditions, do not support or have the potential to support fish. This class also includes certain perennial waters which lack the natural water quality to support fish (e.g., geothermal areas). Class 3B waters are known to support or have the potential to support populations of indigenous aquatic life other than fish that the Tribes have determined deserve special water quality protection measures. This use includes waters that support riparian and/or wetland areas that have plants that are culturally and/or spiritually important.

Historically, in previous permitting actions, Class 3B waters have been considered intermittent streams with sufficient hydrology to normally support and sustain communities of aquatic life including invertebrates, amphibians, or other flora and fauna which inhabit waters of the Wind River Indian Reservation at some stage of their life cycles. In general, Class 3B waters were also characterized by frequent linear wetland occurrences or impoundments within or adjacent to the stream channel over its entire length. Such characteristics could be the primary indicator used in identifying Class 3B waters. Uses designated in Class 3B waters for previous permitting actions have included aquatic life other than fish, primary contact recreation, wildlife, industrial, agricultural, cultural/traditional and aesthetic uses.

Inspections

The last EPA inspection of the Facility was performed on July 25, 2019. The inspection noted operation and maintenance findings, ongoing whole effluent toxicity (WET) issues, reporting issues with DMRs, and limit exceedance notification issues.

Applicable Technology and Water Quality Considerations

Permit limitations for the Facility are derived through evaluating applicable treatment technology standards and narrative/numeric Tribal water quality requirements. The applicable treatment technology standards for the Facility are found in 40 CFR Part 435, Oil and Gas Extraction Point Source Category Subpart E – Agricultural and Wildlife Water Use Subcategory.

Treatment technology standards establish a level of effluent quality that must be met by all facilities covered by the applicable category. The level of effluent quality established by the treatment standards may not be sufficient, however, to protect all water uses. As required by the CWA, EPA must conduct an evaluation of the numeric water quality requirements and the assimilative capacity for the receiving stream. The results of this evaluation are used to establish permit limits to ensure the receiving stream quality and its existing and designated uses are protected. An evaluation of the narrative tribal water quality requirements that may

be applicable to this Facility is also performed to further protect the characteristics and water quality of the receiving stream.

6 PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

Applicable Effluent Guidelines and Standards

The Facility is an onshore facility located in the continental United States and west of the 98th meridian. The Facility is engaged in the production, drilling, well completion, and well treatment in the oil and gas extraction industry and the produced water discharged from the Facility has a use in agriculture or wildlife propagation when discharged. Therefore, the Facility meets the applicability of Subpart E - Agricultural and Wildlife Water Use Subcategory at 40 CFR 435.50. Consistent with previous permit coverage for this Facility, the Permit limitations are derived through evaluating applicable treatment technology standards and the EPA's recommended water quality criteria. The applicable treatment technology standards include the requirements of 40 CFR Part 435, Subpart E (also identified in the permit application), as well as recommended concentrations for livestock and wildlife, based on the report "*The Water Quality for Wyoming Livestock & Wildlife, A Review of the Literature Pertaining to Health Effects of Inorganic Contaminants*" (the 2007 Report) published in 2007 by the University of Wyoming Department of Veterinary Sciences, University of Wyoming Department of Renewable Resources, Wyoming Game and Fish Department, and Wyoming Department of Environmental Quality.

Subpart E authorizes discharge of produced water for which the produced water has a use in agricultural or wildlife propagation. The effluent guideline defines "use in agricultural or wildlife propagation" to mean "that the produced water is of good enough quality to be used for wildlife or livestock watering or other agricultural uses and that the produced water is actually put to such use during periods of discharge." 40 CFR § 435.51(c).

The actual effluent limitation from Subpart E is found in 40 CFR § 435.52, which states:

- (a) There shall be no discharge of waste pollutants into navigable waters from any source (other than produced water) associated with production, field exploration, drilling, well completion, or well treatment (i.e., drilling muds, drill cuttings, and produced sands).
- (b) Produced water discharges shall not exceed the following daily maximum limitation:

Effluent characteristics: Effluent limitation (mg/l).

Oil and Grease: 35.

Based on beneficial uses documentation and a water management plan previously submitted by grazing lessees to and approved (March 2010) by the Wind River Environmental Quality Commission, the produced water has a use in livestock and wildlife propagation after discharge into the receiving waters. Previous permit records contain two letters (dated January 20, 2010, and February 4, 2010) representing five ranchers that documented the beneficial use of the discharged water to their livestock.

Additionally, the 2007 Report includes a review of the health effects of inorganic contaminants to livestock and wildlife. EPA evaluated this document to determine the impacts of these contaminants on the beneficial use of produced water, as contemplated in Subpart E.

The previous permit contained an oil and grease limit of 10 mg/L with a visual monitoring requirement for oil sheen, based off of more stringent considerations for a Water Quality-Based Effluent Limit (WQBEL), see the Narrative Water Quality Requirements discussion in Section 6.2.4 of the SoB. If a sheen is observed during the visual monitoring the Permittee is required to immediately collect a grab sample for oil and grease monitoring. In alignment with the previous permit, the oil and grease WQBEL of 10 mg/L with a visual monitoring requirement for oil sheen will be maintained in this Permit. The daily maximum limit of 10 mg/L is more stringent than the daily maximum limitation in Subpart E of 35 mg/L.

Additional TBELs

Under the applicable technology requirements for the Agricultural and Wildlife Water Use Subcategory of Part 435, discharges of produced water must be of good enough quality to be used for wildlife or livestock watering or other agricultural uses. EPA's previous permit limitations for total dissolved solids (TDS), chloride, sulfate, and radium-226 were based on similar requirements for livestock protection imposed by the State of Wyoming on oil and gas production facilities' discharges to surface waters of the State, outside the Wind River Indian Reservation in the State of Wyoming. Additionally, the EPA relied on a report titled "Water Quality for Wyoming Livestock & Wildlife, A Review of the Literature Pertaining to Health Effects of Inorganic Contaminants" published in 2007 by the University of Wyoming Department of Veterinary Sciences, University of Wyoming Department of Renewable Resources, Wyoming Game and Fish Department, and Wyoming Department of Environmental Quality (the 2007 Report). The 2007 Report includes a review of the health effects of inorganic contaminants to livestock and wildlife. EPA evaluated this document and several others to determine the impacts of these contaminants on the beneficial use of produced water, as contemplated in Subpart E.

For this permit renewal, the EPA reviewed the permit limits for sulfate, fluoride, Radium-226, TDS, specific conductance, and chloride to ensure that these limits ensure that the discharge from the Facility is of good enough quality for livestock and wildlife watering.

6.1.1 Sulfate

In the 2007 Report, the summary for sulfur (chemical symbol "S") and rationale for short (days to weeks) and chronic (months) exposure contained the following statements:

"Assuming normal feedstuff S concentration, acute death may occur in ruminants at concentrations greater than 2,000 mg/L, especially if not allowed time to acclimate."

"Assuming normal feedstuff S concentrations, keeping water SO₄ [sulfate] concentrations less than 1,800 mg/L should minimize the possibility of acute death in cattle. Concentrations less than 1,000 mg/L should not result in any easily measured loss in performance."

EPA's review of scientific literature also indicated that sulfate in livestock water may cause adverse health effects (such as encephalitis) in cattle. The literature showed the highest risk of adverse effects from sulfur exposure occurs during the summer months when livestock drink larger quantities of water. During cooler periods, there is lower risk of adverse effects because cattle drink less water. Based on this literature, the EPA established an initial sulfate exposure threshold of 1,800 mg/L in the permit signed March 12, 2015, to protect livestock from adverse effects. This initial threshold was established by assuming that the source of water for the livestock on Range 38 was exclusively from the produced water discharge from this Facility, and this water was consumed throughout the year.

However, new information on livestock management practices occurring on the Wind River Indian Reservation was provided by the Eastern Shoshone Tribe on January 26, 2016, and Northern Arapaho Tribe on January 25, 2016, as a part of the EAB settlement (see Section 4.1 of the SoB). This information was contained in a letter to the Eastern Shoshone Tribe from the Bureau of Indian Affairs (BIA) on January 21, 2016, which the Eastern Shoshone subsequently shared with EPA. The supplemental information from BIA indicated the livestock that have access to the produced water discharge are managed in a manner where additional fresh water sources with a much lower sulfate concentration are available for the livestock during the entire grazing season. The BIA letter identified multiple sources of fresh water on Range 38 that are available to livestock. These sources include several perennial streams, two wells, several springs, and larger water bodies including the Little Wind River and the Wyoming Canal. BIA stated that the cattle use all of the available water sources within the Range Unit, not just the produced water.

BIA also indicated that the cattle are usually present in lowland areas near the produced water discharges only during the coolest parts of the permitted nine-month grazing period, which extends from May through January. Typically, the cattle are present from approximately May 1 to June 15, and then from September until the end of the roundup in mid-Fall. During the hottest periods of the year from late June to September, the cattle are moved to higher elevations away from the produced water discharges. In addition to domestic cattle, BIA also noted the presence of up to 1,000 feral horses on Range Unit #38. These horses range freely and have access to all of the feed habitat and water resources available to

the domestic cattle grazed on the range. As such, their sulfate intake and exposure rates would be similar. EPA reviewed available scientific literature on horses and sulfate including the 2007 Report and a 2005 report from the National Research Council of the National Academies titled “Mineral Tolerance of Animals: Second Revised Edition” published by The National Academies Press- Washington, DC (the NRC Report), and determined that the risk analyses for horses and cattle are very similar.

The additional information from BIA thus makes clear that livestock on Range 38 are not relying solely on the discharge from this facility for drinking water, that they have access to multiple sources of fresh water, and that they are not drinking the discharge water during the hottest months of the year. As a result, the risk of adverse effects to the cattle and horses from sulfur exposure, particularly during the hottest months of the year, is minimized. This previously submitted information supports maintaining a daily maximum sulfate limit of 2,500 mg/L, and EPA maintains the previous determination that this limit is protective of the “good enough quality” threshold for livestock use established under 40 CFR Part 435 Subpart E based upon the information provided to EPA by the Eastern Shoshone Tribe and the Northern Arapaho Tribe. This also aligns with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB).

6.1.2 Fluoride

The 2007 Report recommends less than 2 mg/L fluoride for cattle consumption. The authors of the 2007 Report reviewed a variety of scientific literature pertaining to fluoride intake in livestock. The authors concluded, where fluoride concentrations in forage are less than 10 ppm, a water concentration of 3.75 mg/L fluoride would cause osteo-dental fluorosis in cattle. As a result, the 2007 Report recommended that water for cattle contain less than 2 mg/L fluoride. By extension, based on EPA’s evaluation of information from the NRC Report, these waters should also be safe for sheep, cervids, and horses.

In considering the 2 mg/L fluoride recommendation, EPA also reviewed a 2009 report from Agriculture and Agri-food Canada titled “Livestock Water Quality: A Field Guide for Cattle, Horses, Poultry and Swine” (2009 Report). The 2009 Report also recommends a maximum fluoride concentration of 2 mg/L in livestock water. This recommendation is based on research indicating that a fluoride concentration of 2 mg/L in water leads to approximately 64-80 mg/day of fluoride ingestion through water intake. In areas with similar fluoride forage content to the U.S. West (i.e., 10-20 ppm), the 2009 Report indicates that cattle will ingest an additional 220-280 mg/day fluoride from forage intake. At these levels, total fluoride ingestion will be between 284-360 mg/day, which falls below the level identified in the 2009 Report as excessive. In both the 2007 Report and the 2009 Report, the primary effect of fluoride ingestion at 2 mg/L in water is tooth mottling, but the 2009 Report also indicates other potential effects of low-level exposure including skeleton deposition, neonatal fluoride exposure via milk, impaired feed intake, stunted growth, and reduced milk yield.

During the previous permit term, fluoride monitoring was required as part of the toxic pollutant screen but the previous permittee failed to monitor. Without such monitoring data, EPA cannot assess the potential impacts of fluoride discharges to the quality of the water for the purposes of livestock to determine if an effluent limit should be implemented.

Additionally, the 2007 Report recommends identifying, quantifying, and evaluating produced water that is above 500 mg/L TDS for the individual constituents contributing to TDS, such as fluoride (see Section 6.1.4 of the SoB). Therefore, monitoring will be required for fluoride to determine the quantity of fluoride present in the discharge and to determine whether an effluent limit should be implemented in future permits.

6.1.3 Radium-226

Throughout the United States, geologic formations that contain oil and gas deposits also typically contain naturally occurring radionuclides, which are referred to as naturally occurring radioactive materials. Because the oil and gas extraction process concentrates these naturally occurring radionuclides and exposes them to the surface environment and human contact, these wastes are classified as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM). Produced waters often contain levels of radium and its decay products that are concentrated. In fact, 20 to 100 percent of the facilities in every state reported some TENORM in oil and gas heater/treaters per EPA's TENORM: Oil and Gas Production Wastes webpage (<https://www.epa.gov/radiation/tenorm-oil-and-gas-production-wastes>). Based on an evaluation of the permit application and DMR data submitted during the previous permit term, it was confirmed that total alpha, total beta, total radium, and radium 226 are present in the discharge. Radium 226 has properties that allow it to bioaccumulate within living organisms such as mammals and wildlife (e.g., in bones and tissues) if consumed. Based on these considerations and in alignment with previous permit limitations, the daily maximum TBEL for total radium 226 of 60 pCi/L will be maintained in this Permit.

6.1.4 Total Dissolved Solids (TDS)

EPA's previous permit included a TDS daily maximum limitation of 5,000 mg/L. An evaluation of data from the previous permit term indicated that TDS concentrations in the discharge ranged from 40 mg/L to 4,260 mg/L (See data in Table 1 of the SoB). Based on the 2007 Report, "Several early studies suggest no significant effects in sheep at TDS concentrations up to 13,000 mg/L or cattle and swine up to 5,000 mg/L, and the NRC661 accepted larger concentrations as tolerable "for older ruminants and horses"." However, the 2007 Report also indicated that lower levels of TDS have potentially resulted in negative effects and did not recommend relying upon TDS alone to evaluate water quality for livestock and wildlife. Based on these considerations, the previous permit's TBEL daily maximum limitation for TDS of 5,000 mg/L will be maintained in this Permit.

Additionally, the 2007 Report recommends identifying, quantifying, and evaluating produced water that is above 500 mg/L TDS for the individual constituents contributing to TDS. By monitoring for and limiting these constituent parameters, in addition to TDS, EPA ensures compliance with the "good enough quality" provision in Subpart E. Because 13 of 15 daily

maximum TDS concentrations measured during the previous permit term were greater than 500 mg/L, with an average daily max of 3,039 mg/L, monitoring and/or limitations will be required in this Permit for the following TDS constituents: chloride (Section 6.1.6 of SoB), fluoride (Section 6.1.2 of SoB) and sulfate (Section 6.1.1 of SoB).

6.1.5 Specific Conductance

Per the R. Ayers, and D. Westcot (1985) "Water Quality for Agriculture" Food and Agriculture Organization of the United Nations, Irrigation and Drainage Paper, No. 29, Rev. 1., electrical conductivity values below 8,000 $\mu\text{S}/\text{cm}$ are generally considered satisfactory for all livestock. Significant changes in conductivity can be used as an indicator to demonstrate water quality changes in the discharge. The monitoring data reported in the previous permit term ranged from 3,920 to 7,040 $\mu\text{S}/\text{cm}$ (see Table 1 of the SoB). Therefore, based on these considerations and in alignment with previous permit limitations, the TBEL for specific conductance of 7,500 $\mu\text{S}/\text{cm}$ will be retained in this Permit as protective for this pollutant parameter.

6.1.6 Chloride

For levels of TDS above 500 mg/L, the 2007 Report recommended the individual constituents contributing to TDS should be identified, quantified, and evaluated. An evaluation of data from the previous permit term indicated that the discharge TDS ranged from 40 mg/L to 4260 mg/L (See data in Table 1 of the SoB). Since TDS is dominated by salts and minerals (primarily sodium and calcium-based), chloride is a pollutant of concern in produced water and could be harmful to livestock and crops at high concentrations.

Additionally, the previous permit's chloride limitations were based on the desired level of water quality for the receiving water as indicated by the clarifications provided by the Eastern Shoshone Tribe on January 26, 2016, and Northern Arapaho Tribe on January 25, 2016. In their letters, the Tribes explained that the aquatic life numeric water quality requirement for chloride should not apply to waters dominated by effluent discharges from oil and gas operations. However, both Tribes also expressed an interest in ensuring that discharges from these facilities be of good enough quality to protect wildlife and livestock water, and other agricultural uses; and both indicated 2,000 mg/L chloride would protect such uses. The EPA agreed that a single daily maximum limit of 2,000 mg/L chloride will ensure that the discharge is "of good enough quality" for wildlife and livestock watering, which is the threshold required by 40 CFR Part 435, Subpart E. The chloride limit, 2,000 mg/L, is identical to the daily maximum limit used in previous permit and will be retained in this Permit. This also aligns with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB).

6.1.7 Summary of TBELs/ Requirements:

The following table outlines pollutant requirements that have been established pursuant to 40 CFR Part 435, Subpart E based on the discussion above:

Table 2. 40 CFR Part 435, Subpart E Pollutants

Pollutant	Daily Max	30-day average
Specific Conductance, $\mu\text{S}/\text{cm}$	7,500	N/A
Fluoride, mg/L	Report only	N/A
Total Radium 226, pCi/L	60	N/A
Sulfate, mg/L	2,500	N/A
Total Dissolved Solids, mg/L	5,000	N/A
Chloride, mg/L	2,000	N/A

6.2 Water Quality-Based Effluent Limitations (WQBELs)

The Facility discharges to an unnamed draw, a tributary of Dry Creek, within the Wind River Reservation. At the time of Permit development, the Wind River Indian Reservation did not have EPA-approved water quality standards. However, the Tribes have previously adopted surface water quality requirements that apply to waters within the exterior boundaries of the Reservation. Based on an October 29, 2007 Memorandum, provided to the EPA by the Wind River Environmental Quality Commission, the Eastern Shoshone and Northern Arapaho Tribes adopted draft Tribal water quality standards (TWQS) as presented by the Wind River Environmental Quality Commission. Additionally, EPA also received a copy of Tribal legal Resolution No. 2007-9377, signed by the Tribes, which was “A resolution declaring the adoption of draft tribal water quality standards, as prepared by the Wind River Environmental Quality Commission (WREQC), as permitted under the provisions of tribal resolution #6206, Dated June 7, 1988.” Section 101(a)(2) of the CWA states, “[I]t is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water to be achieved by July 1, 1983.” To achieve this Congressional goal in the absence of federally-approved Tribal water quality standards (WQS) on the Reservation, EPA considers the beneficial uses of the receiving waters to include aquatic life, human health, and recreation. EPA relied on CWA § 301(b)(1)(C) and principles of Tribal sovereignty in establishing WQBELs based on EPA’s Section 304(a) recommended water quality criteria (WQC) and criteria in Tribal water quality requirements to protect the uses of the Tribe’s receiving water(s). The Tribes’ water quality requirements include the following narrative provisions indicating that the beneficial uses for most Tribal waters include industrial and agricultural water supply.

- “Unless otherwise demonstrated, all Reservation surface waters have the natural water quality potential for use as an industrial water supply.”
- “Unless otherwise demonstrated, all Reservation surface waters have the natural water quality potential for use as an agricultural water supply.”

Although the Tribes have not submitted final water quality standards and EPA has not approved these water quality requirements as water quality standards, the Tribes have indicated that they expect dischargers on the Reservation to comply with their adopted rules. These are referred to in this SoB as “water quality requirements” since they are not water

quality standards under CWA Section 303(c). Additionally, EPA aligned applicable WQBELs with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB). Therefore, EPA is considering the Tribes' water quality requirements when determining reasonable potential (RP) and evaluating the need for any water quality-based effluent limitations.

Numeric Water Quality Requirements:

To ensure that any potential Permit effluent limitations based on the Tribes' adopted water quality requirements are fully protective of the designated aquatic life uses, a comparison of the Tribes' water quality requirements with the EPA's published recommended CWA Section 304(a) aquatic life WQC was performed.

Metals - Tribal Antidegradation Requirements:

The Tribes' water quality requirements for antidegradation contain numeric values for Tier 1 designated waters to maintain current water quality levels. These numeric values include specific levels for metals; however, there is no indication as to what the associated hardness values are related to these numeric metals values. As indicated in EPA's 2002 National Recommended Water Quality Criteria, freshwater aquatic life criteria for certain metals should be expressed as a function of hardness because hardness can affect the toxicities of these metals. Additionally, hardness is used as a surrogate for a number of water quality characteristics which affect the toxicity of metals, and increasing hardness has the effect of decreasing the toxicity of metals. Therefore, water quality criteria to protect aquatic life is typically calculated at different concentrations of hardness measured in milligrams per liter (mg/L) as calcium carbonate (CaCO_3). The Tribes' own water quality requirements also include water quality criteria (e.g., Appendix B of the Tribe's water quality requirements) which provide numeric water quality values for many of these same metals listed in their antidegradation section (e.g., cadmium, copper, lead, manganese, nickel, silver, and zinc); however, the footnote associated with these water quality criteria metals indicates they are "hardness dependant criteria" and that "Criteria for each case must be calculated" using the referenced formulas that are hardness dependant. For many of EPA's metals-specific aquatic life criteria, similar calculations are used which rely on hardness data to calculate numeric criteria values.

Because metal toxicity in water can be greatly impacted by hardness and because it was unclear whether site specific hardness variation in receiving waters is meant to be accounted for in some of the Tribes' antidegradation numeric metals values, EPA evaluated available hardness data in the basin/ecoregion where the Facility is located to determine metals values for relevant RP calculations. EPA used the equations found within the Tribes' water quality criteria as well as EPA's metal-specific recommended aquatic life criteria to develop these hardness-dependant numeric values.

At the time of Permit development, there was no previous permit requirement for hardness monitoring for the Dry (Pasup) Creek receiving water. Therefore, in order to

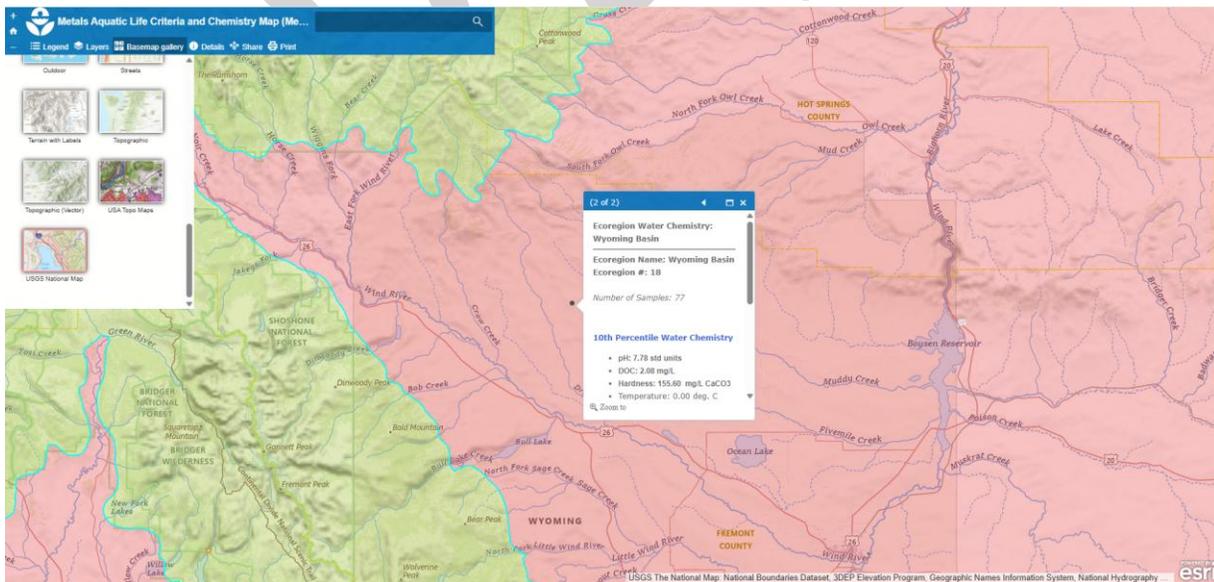
establish applicable numeric values that include consideration of area-specific hardness, information was pulled from the data available in EPA’s **Metals Aquatic Life Criteria and Chemistry Map**, or MetALiCC-MAP (v 1.0). This tool was developed by EPA to support states, Tribes and stakeholders in determining protective aquatic life ambient water quality criteria for metals, particularly when water chemistry data needed to calculate criteria are limited or not available. To develop this tool the EPA compiled, analyzed and applied publicly-available national water chemistry data presented in the US Geological Survey (USGS) National Water Information System (NWIS) database. This tool is available at: <https://www.epa.gov/wqc/aquatic-life-criteria-and-methods-toxics#guide>, or <https://epa.maps.arcgis.com/apps/View/index.html?appid=8c7cb6950ffa4a74b73465bfa0b3191c>.

Based on the information for Wyoming Basin Ecoregion 18 (shown in Figure 8 below), within which the Facility is located, the following data related to hardness were identified:

- 10th percentile hardness (as CaCO₃): 155.6 mg/L
- 20th percentile hardness (as CaCO₃): 196.8 mg/L
- 25th percentile hardness (as CaCO₃): 203 mg/L

This data was retrieved from the MetALiCC-MAP (v 1.0) tool, accessed on 12/14/2025. The 10th percentile hardness (as CaCO₃) of 155.6 mg/L was chosen for calculating metals hardness values to determine RP as toxicity will increase with lower hardness, so this was determined to be the most protective.

Figure 8. Wyoming Basin Ecoregion 18 MetALiCC-MAP (v 1.0)- Mapping Near the Facility



Due to lack of specific receiving water hardness data for the Facility (i.e., Dry Creek data), a requirement for monitoring hardness in the receiving water has been added to this Permit for future site-specific RP permitting decisions.

Applicable Numeric Water Quality Requirements/Criteria:

The criteria used in evaluation of RP for setting Permit effluent limitations, including the values calculated for metals using the hardness data identified above, are listed in Table 3.

Table 3. Applicable Water Quality Criteria

Pollutant		More Stringent of EPA Recommended WQC and Tribal Water Quality Requirements	
		Aquatic Life	
		Acute (µg/L)	Chronic (µg/L)
Aluminum, Total	a/	750	87
Arsenic, Total	a/, b/	340	150
Cadmium, Total	d/	3.09	0.33
Chloride	a/, b/, c/	860,000	230,000
Chromium (III)	d/	818.37	106.45
Chromium (VI), Hexavalent	a/, b/	16	11
Copper, Total	d/	20.4	13.1
Iron, Total	a/, b/	--	1,000
Lead, Total	d/	104.15	4.06
Manganese, Total	d/	4,369	1,859
Mercury, Total	a/, b/	1.4	0.77
Nickel, Total	d/	681	76
Oil and Grease	a/	Narrative	
pH	a/, b/	6.5 to 9.0	
Selenium, Total	a/	20	5
Silver, Total	d/	7.33	--
Sulfate	b/, c/	--	<3,000,000
Sulfide, as H ₂ S	a/, b/, c/	--	2
Zinc, Total	d/	170	172

a/ Tribal water quality requirements, including narrative water quality criteria, numeric water quality criteria, and the Antidegradation Tier 1 surface water criteria for acute and chronic aquatic life.

b/ EPA Recommended Aquatic Life WQC

c/ The numeric value provided for this parameter reflects the more stringent of EPA WQC and Tribal water quality requirements, however, the final Permit limits implemented in this Permit for this parameter were also reviewed with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB) and were adjusted accordingly.

d/ Criterion is hardness dependent. Table values adjusted for hardness using the hardness value of 155 mg/L as obtained for the Wyoming Basin from the EPA's **Metals Aquatic Life Criteria**

and **Chemistry Map**, or MetALiCC-MAP (v 1.0), as described in the “Metals- Tribal Antidegradation Requirements” discussion above.

Narrative Water Quality Requirements:

The narrative water quality requirements for the Wind River Indian Reservation were evaluated to determine if permit limits were necessary to protect the characteristics and uses of the receiving stream. The Tribes have adopted narrative requirements for toxic pollutants, settleable solids and floating and suspended solids. The following are the Tribes’ narrative requirements:

Section 13 - Toxic Pollutants. Except for those substances referenced in Section 21 (e) and (f) of these regulations, toxic pollutants attributable to or influenced by human activities shall not be present in any Reservation surface water in concentrations or combinations which constitute pollution as defined herein.

Section 15 - Settleable Solids. In all Reservation waters, substances attributable to or influenced by human activities that will settle to form sludge, bank, or bottom deposits shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife.

Section 16 - Floating and Suspended Solids. In all Reservation surface waters, floating and suspended solids attributable to or influenced by human activities shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife.

Reasonable Potential (RP) Evaluation for Water Quality Based Effluent Limitations

Effluent Monitoring and Toxic Pollutants Screening Data

The permit application provided data for pollutants believed to be present as well as: biochemical oxygen demand, chemical oxygen demand, total organic carbon, ammonia, temperature, pH and actual flow. The EPA also reviewed DMR data submitted into the EPA ICIS database over the course of the previous permit term for the Facility. See Section 4.1 of the SoB, Table 1. Summary of the DMR Data Covering the Previous Permit Term (1/1/2015 to 9/5/2025) for Outfall 001 from ICIS database (date accessed 9/5/2025).

Table 4. Permit Application Data

Parameter	Units	Max	No. of Samples
BOD ₅	mg/L	110	1
COD	mg/L	103	1
TOC	mg/L	7.1	1

TSS	mg/L	68	1
Ammonia (as N)	mg/L	1.68	1
Flow (daily max)	mgd	0.0296	12
Flow (monthly max)	mgd	0.0296	
Flow (long term average-daily)	mgd	0.0281	
pH (daily max/monthly max)	s.u.	8.1/8.1	12
pH (daily min/monthly min)	s.u.	6.8/6.8	
Temperature (winter)	°C	Not provided	0
Temperature (summer)	°C	Not provided	0
Bromide	mg/L	1.1	1
Fluoride	mg/L	2.0	1
Nitrogen, Total	mg/L	2.6	1
Oil and Grease	mg/L	5.31	1
Phosphorus	mg/L	0.111	1
Alpha, Total	pCi/L	45.9	1
Beta, Total	pCi/L	112	1
Radium, Total	pCi/L	25.8	1
Radium 226, Total	pCi/L	16.7	1
Sulfate (as SO ₄)	mg/L	1,210	1
Sulfide (as H ₂ S)	mg/L	74	1
Sulfite (as SO ₃)	mg/L	25	1
Aluminum, Total	mg/L	2.39	1
Barium, Total	mg/L	0.10	1
Boron, Total	mg/L	1.91	1
Iron, Total	mg/L	1.86	1
Magnesium, Total	mg/L	66	1
Manganese, Total	mg/L	0.122	1
Titanium, Total	mg/L	0.024	1
Arsenic, Total	mg/L	0.006	1
Mercury, Total	mg/L	ND	1
Copper, Total	mg/L	ND	1
Selenium, Total	mg/L	0.002	1
Zinc, Total	mg/L	0.02	1
Benzene	µg/L	572	1
Ethylbenzene	µg/L	122	1
Toluene	µg/L	608	1
Xylene	Noted: as "Believed Present" because it is a natural component of produced hydrocarbon		
Naphthalene	µg/L	13	1

Reasonable Potential (RP) Analysis

Quantitative RP Analysis

EPA conducted an RP analysis in accordance with 40 CFR 122.44(d)(1) for pollutants of concern in the discharge to determine whether they may cause or contribute to an exceedance of applicable Tribal water quality requirements or EPA’s recommended water quality criteria. EPA also compared effluent data to previous permit limits, after consideration of pollutant variability in the discharge and available dilution in the receiving water (as applicable). Using the Region 8 RP Tool, which assesses RP from effluent data with statistical procedures consistent with EPA’s Technical Support Document for Water Quality Based Toxics Control, March 1991, EPA evaluated quantitative RP. A confidence interval of 95% was used for all RP calculations.

When evaluating RP for the available Facility data, EPA evaluated only those parameters listed below (see Table 5). For all other parameters listed in Table 3, there was insufficient data to perform an RP evaluation and additional monitoring requirements will be included in the Permit to collect sufficient data to evaluate RP for future permits. For any parameter that had an established effluent limit in the previous permit for which data was insufficient to evaluate RP, EPA kept the WQBEL that appeared in the prior iteration of this Permit.

Table 5. Reasonable Potential Evaluation

Parameter	Water quality criteria, Tribal water quality requirements and/or previous permitted WQBELs		Maximum Reported Effluent Concentration	Reasonable Potential?	
	Acute	Chronic		Acute	Chronic
Sulfide (as H ₂ S), mg/L	N/A	200	138	-	Yes
Mercury, µg/L, a/	1.4	0.77	0	No	No
Oil & Grease, mg/L	10		9.85	Yes	
pH, s.u., b/	6.5 - 9.0		8.4 (maximum) 6.8 (minimum)	Yes	

a/ Previous permit did not contain a limitation for this parameter. The more stringent of EPA WQC and Tribal water quality requirements for acute and chronic was used for this evaluation.

b/ Determination based on RP to exceed upper limit of pH range.

The results of the quantitative evaluation identified sulfide (as H₂S), oil and grease and pH as having RP to cause or contribute to exceedances of the water quality criteria, Tribal water quality requirements and/or previous permitted WQBELs.

Based on the data evaluated, there was not RP to cause or contribute to exceedances of the WQC, Tribal water quality requirements and/or previous permitted WQBEL for mercury. Therefore, no limits will be included in the Permit for mercury. However, due to the nature of

the discharge, monitoring for mercury in alignment with the previous permit requirement related to Mercury Minimization Plan trigger levels, shall be maintained (see Section 6.2.3).

Parameter Specific Qualitative RP Analysis/Justifications:

6.2.1 Chloride

The chloride limitations of this Permit are based on the desired level of water quality for the receiving water as indicated by the clarifications provided by the Eastern Shoshone Tribe on January 26, 2016, and Northern Arapaho Tribe on January 25, 2016. In their letters, the Tribes explained that the aquatic life numeric criteria for chloride should not apply to waters dominated by effluent discharges from oil and gas operations. Therefore, a WQBEL for chloride was not assessed; however, a TBEL for chloride will continue to be implemented in this Permit (see Section 6.1.6 of the SoB for additional information regarding the Permit's chloride TBEL). This also aligns with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB).

6.2.2 Sulfide (as H₂S)

Sulfide (as H₂S) can be toxic to aquatic life. The sulfide as H₂S limitation of 200 mg/L for the 30-day average is based on the desired level of water quality for the receiving water as indicated by the clarifications in the letters provided by the Eastern Shoshone Tribe on January 26, 2016, and Northern Arapaho Tribe on January 25, 2016. The Tribes clarified their interpretation of the "zone of passage requirement" for chronic criteria, indicating that the limitation on water quality mixing zones for chronic criteria is not intended to apply to effluent dominated streams, such as the tributary to Pasup (Dry)Creek. As a result, EPA has finalized a modified sulfide as H₂S effluent limitation that is based on a zone of non-attainment (mixing zone) that allows for the natural dissipation of hydrogen sulfide from the produced water. The extent of the zone is for a maximum length of approximately 1 mile, or at the point at which the receiving water crosses under Sheldon Dome Road. This location is the first non-effluent dominated stream downstream from the discharge and therefore provides a mixing zone that accords with the Tribes' interpretation of their zone of passage requirements for chronic criteria. Additionally, an evaluation of the data provided by the Permittee indicates RP to cause or contribute to exceedances of the WQC, Tribal water quality requirements and/or previous permitted WQBELs. This also aligns with the historical EAB Actions related to this Facility (see Section 4.1 of the SoB).

6.2.3 Mercury

Based on the data evaluated for five samples submitted during the previous permit term, there was not RP to cause or contribute to exceedances of the WQC, Tribal water quality requirements and/or previous permitted limits for mercury. However, a monitoring requirement will be maintained as the Permit will continue the requirement from the previous permit to develop and implement a Mercury Minimization Plan if a trigger level is detected at

the chronic water quality criteria level of 0.77 µg/L (see Section 11 of the SoB for additional information on the Mercury Minimization Plan requirement).

6.2.4 Oil & Grease; Settleable Solids; and Floating and Suspended Solids

The previous permit contained an oil and grease limitation based on narrative requirements in the Tribal water quality requirements for floating, suspended and settleable solids (see the Section 6.2 discussion on “Narrative Water Quality Requirements”). An evaluation of the data provided by the Permittee indicates RP to cause or contribute to exceedances of the WQC, narrative Tribal water quality requirements and/or previous permitted WQBELs. Therefore, the Permit will include the oil and grease limit of *“The concentration of Oil and Grease in any single sample shall not exceed 10 mg/L, nor should the discharge contain a visible oil film or sheen, nor should there be any discharge of floating debris, scum, or other floating materials.”*

6.2.5 pH

The previous permit contained a pH limitation based on the Tribal water quality requirements and EPA aquatic life WQC. An evaluation of the data provided by the Permittee indicates RP to cause or contribute to exceedances of the WQC, Tribal water quality requirements and/or previous permitted WQBELs. Therefore, the pH limit of 6.5-9.0 s.u. will be retained in this Permit.

6.2.6 Additional Toxic Pollutant Monitoring Requirements

Included in the Permit is additional effluent monitoring to screen for toxic pollutants (Section 5.3 of the Permit). The requirement to monitor for these pollutants of concern is to develop a dataset to evaluate the RP for these pollutants to impact the receiving streams into which the Facility discharges and to comply with the Tribal narrative water quality requirement for toxic pollutants. The previous permit also included this requirement. There was insufficient data collected during the previous permit term so this monitoring requirement will be maintained in this Permit (see Section 7 of the SoB).

A semi-annual aluminum monitoring requirement has also been added to this Permit. Based on 40 CFR Part 122, Appendix D, Table IV, aluminum is identified as a conventional/nonconventional pollutant required to be tested by existing dischargers if expected to be present. The permit application provided data for an aluminum result of 2.39 mg/L (2,390 µg/L), which is significantly higher than Tribal water quality requirements for acute (750 µg/L) and chronic (87 µg/L) criteria, as provided in Table 3 of the SoB. Based on these considerations, semi-annual aluminum monitoring will be required to determine whether there is a need to develop an effluent limit in future permits.

6.2.7 Other Effluent Limitations:

The permit application data submitted included one analysis for some volatile and semi-volatile organic compounds based on whether the Permittee believes that the parameters are present in the discharge. The data presented in Table 6 (below) indicates the effluent data from these single samples contains measurable concentrations of benzene, ethyl benzene, and toluene.

There are no aquatic life Tribal water quality requirements for these compounds; however, EPA's recommended WQC for human health protection contains numeric criteria. There was not sufficient data to evaluate RP with respect to EPA's recommended WQC for human health protection to determine if effluent limitations should be established; however, due to high concentrations indicated in the application, an increased monitoring requirement is being included in the Permit for benzene, ethyl benzene, and toluene. The monitoring data will be used to determine whether there is RP to develop an effluent limit in future permits.

Based on the information provided in the renewal application, xylene is "Believed Present" because it is a natural component of produced hydrocarbon. Additionally, the *Interaction Profile for: Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)* by the U.S. Department of Health and Human Services Public Health Service Agency for Toxic Substances and Disease Registry, May 2004, indicates that benzene, toluene, ethylbenzene, and xylenes frequently co-occur at hazardous waste sites. The chemicals are used as solvents in products such as paints and coatings, and are constituents of petroleum products, particularly gasoline, jet fuels, and kerosene. Therefore, a monitoring requirement to evaluate the presence/concentration of xylene is also being added to this Permit to determine what concentration may be present in the effluent due to the high concentrations of benzene, toluene, and ethylbenzene, which xylene commonly occurs with. The monitoring data will be used to determine whether there is a need to develop an effluent limit in future permits.

Table 6. Effluent Organic Compounds Detected and EPA Water Quality Criteria Comparison

Parameter	Effluent Concentration (µg/L)	WQC (Human Health) Water + Organism (µg/L)	WQC (Human Health) Organism only (µg/L)
Benzene	572	0.58-2.1	16-58
Ethyl Benzene	122	68	130
Toluene	608	57	520
Xylene	No data	N/A	N/A

6.2.8 Whole Effluent Toxicity (WET):

Many toxic pollutants have cumulative effects on aquatic organisms that cannot be detected by individual chemical testing. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. Because these tests measure the aggregate toxicity of the whole effluent, this approach is called whole

effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

During the previous permit term, the Facility failed WET monitoring and underwent a toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE). The TIE/TRE conducted by the Facility appeared to show that the toxicity was related to the type and quantity of scale and corrosion chemicals used. However, the Facility was unable to consistently control the chemical usage or obtain consistent passing WET results (see Table 7 below).

Table 7. Sheldon Dome TIE/TRE and WET Testing History

Date	Species	Result	Notes
Initial August 2018 Test Failure(s): 8/20/2018 and additional re-testing	Pimephales Promelas	Fail	Facility WET test sample - Due to WET test monitoring/retesting failures in 2018, the facility's monitoring was increased to accelerated monthly sampling and required to conduct a TIE/TRE in accordance with their permit requirements.
2/27/2020	Pimephales Promelas	Pass/Fail	TIE/TRE plan- initial testing: No chemicals tested
3/27/2020	Pimephales Promelas	Pass	TIE/TRE plan- initial testing: Scale spike added
3/27/2020	Pimephales Promelas	Pass	TIE/TRE plan- initial testing: No spike added
March- June 2020	Field Shutdown/Wells Shut In		No testing
7/7/2020	Pimephales Promelas	Pass	TIE/TRE plan- initial testing: Corrosion Inhib. spike added
7/7/2020	Pimephales Promelas	Pass	TIE/TRE plan- initial testing: No spike (Scale inhib. already in effluent sample)
8/10/2020	Pimephales Promelas	Pass	Successful TIE/TRE tested scale and corrosion chemicals used - Facility passed 10 tests and was preliminarily approved to be returned to quarterly sampling upon restart of operations (wells shut down in August 2021- February 2022, with restart in March 2022), and conditioned upon confirmation (after restarting) that process operations (including chemicals used moving forward), remained consist with conditions under which passing tests occurred.
10/20/2020	Pimephales Promelas	Pass	
11/11/2020	Pimephales Promelas	Pass	
December 16, 2020	Pimephales Promelas	Pass	
January 19, 2021	Pimephales Promelas	Pass	
February 10, 2021	Pimephales Promelas	Pass	
March 25, 2021	Pimephales Promelas	Pass	
April 29, 2021	Pimephales Promelas	Pass	
May 27, 2021	Pimephales Promelas	Pass	
June 24, 2021	Pimephales Promelas	Pass	
August 2021- February 2022	Field Shutdown/Wells Shut In		The Facility was unable to confirm that the chemical concentrations used in process operations after restarting in March 2022 were the same as the 10 previous (TIE/TRE) passing tests (i.e., conditions under which approval to reduce monitoring requirements was based on) or whether they represented actual "working" conditions moving forward. Since the facility was unable to confirm working conditions, monthly sampling was continued until at least 10 consecutive passing samples were obtained. As of the last sample WET test results received by the Facility,
24-Mar-22	Pimephales Promelas	Pass	
28-Apr-22	Pimephales Promelas	Pass	
20-May-22	Pimephales Promelas	Pass	
22-Jun-22	Pimephales Promelas	Pass	
3-Aug-22	Pimephales Promelas	Fail	
15-Sep-22	Pimephales Promelas	Fail	
20-Oct-22	Pimephales Promelas	Pass	
19-Nov-22	Pimephales Promelas	Fail	
21-Dec-22	Pimephales Promelas	Pass	
28-Jan-23	Pimephales Promelas	Fail	
1-Mar-23	Pimephales Promelas	Fail	

27-Mar-23	Pimephales Promelas	Pass	the Facility was not unable to show consistent passing results.
24-Apr-23	Pimephales Promelas	Pass	
24-May-23	Pimephales Promelas	Pass	
7-Jul-23	Pimephales Promelas	Pass	
15-Aug-23	Pimephales Promelas	Fail	
26-Sep-23	Pimephales Promelas	Pass	
1-Nov-23	Pimephales Promelas	Pass	
30-Nov-23	Pimephales Promelas	Pass	
29-Dec-23	Pimephales Promelas	Pass	

Due to this history of WET testing failures and evaluation of the previous WET results after the Facility restarted operation in March 2022, EPA has determined that RP exists to violate the Tribal narrative water quality requirement for toxic pollutants. The Tribal narrative requirements state:

“Section 13. Toxic Pollutants. Except for those substances referenced in Sections 21(e) and (f) of these regulations, toxic pollutants attributable to or influenced by human activities shall not be present in any Reservation surface water in concentrations or combinations which constitute pollution as defined herein.”

The Tribal water quality requirements define pollution as:

“Pollution” means human-made or human-induced alteration of the chemical, physical, biological and radiological integrity of water.”

Additionally, Section 101(a)(3) of the CWA states, “it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.” Therefore, an acute WET limitation requiring an LC₅₀ >100% effluent (i.e., the statistical acute toxicity test endpoint has an LC50 greater than 100% effluent) will be implemented in this Permit, to comply with the Tribal narrative water quality requirements and the CWA. Acute testing will initially be required on a monthly basis after the effective date of the Permit, as was previously required by the Facility on the accelerated testing schedule, until the Permittee demonstrates no test failures for either species (*Daphnia magna*, *Pimephales promelas*) tested for one quarter. After completion of one quarter of passing monthly WET test samples, the Facility may submit a request to reduce to quarterly monitoring. If quarterly monitoring is approved, the Facility will monitor for WET on a quarterly basis until the Permittee demonstrates no test failures for either species (*Daphnia magna*, *Pimephales promelas*) tested for four consecutive quarters. Upon successful completion of four consecutive quarterly tests demonstrating no acute toxicity in the discharge, the Facility may submit a request to reduce the monitoring requirement to annual monitoring. Thereafter, monitoring may be conducted at least annually if approved.

If the Facility receives approval for an annual monitoring frequency, WET tests shall be coordinated with the Toxic Pollutants Screen required in Section 5.3 of the Permit to ensure that the acute static-renewal toxicity tests are staggered with the Toxic Pollutants Screens to ensure a more even coverage during the permit term. To the extent practicable, these static-renewal toxicity tests should also be timed to provide results that represent seasonal variation

in the discharge. This monitoring provision was implemented in the previous permit and will be maintained in this Permit to provide greater coordination between toxicity monitoring provisions that are being required in this Permit. By coordinating the WET monitoring and Toxic Pollutants Screen, the two monitoring provisions will ensure that EPA has regular monitoring data about potential toxicants and toxic effects present in the discharge across time.

Additional WET Provisions:

For the purposes of this Permit, the use of *Daphnia magna* will be maintained from the previous permit as a toxicity indicator testing organism in lieu of *Ceriodaphnia dubia* due to its higher tolerance for the naturally occurring high TDS levels within the produced water from the wells. Specific WET requirements are outlined in the Special Conditions section of the Permit (see Section 5 of the Permit).

Additionally, in alignment with the previous permit, the Permittee or a laboratory performing the toxicity tests on behalf of the Permittee is allowed to utilize the sample preparation procedure described in Section 9.1.7 of the Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Fifth Edition, October 2002. U.S. EPA (acute test method) to remove sulfide (as H₂S) from the discharge sample. This procedure may only be performed in the laboratory testing facility. The dissolved oxygen (DO) concentration in the samples should be near saturation prior to laboratory analysis. Aeration may be used to bring the dissolved oxygen and other gases into equilibrium with air, minimize oxygen demand, and stabilize the pH. In accordance with the Technical Support Document for Water Quality-based Toxics Control EPA/505/2-90-001 March 1991, the permit conditions provide for toxics control using chemical specific criteria and Whole Effluent Toxicity testing. Limitations for sulfide (as H₂S) are established utilizing a zone of non-attainment (mixing zone) which protect against toxic effects at the edge of the mixing zone. The WET requirements for acute toxicity are applied at the end of the pipe without a mixing zone and as a result the WET tests are likely to fail due to the levels of sulfide (as H₂S) present. Since the Permit contains a water quality-based effluent limit for sulfide (as H₂S), the added provision allows the WET tests to be performed with potential toxicity due to sulfide (as H₂S) removed using the procedure in Section 9.1.7 of the acute test method. This approach will ensure that any WET tests performed will control toxicity from other pollutants which may be present in the discharge that would be masked by the level of sulfide (as H₂S) in the discharge.

6.3 Final Effluent Limitations

Based on the previous TBEL and WQBEL discussions in this SoB, applicable TBELs, WQBELs and monitoring requirements selected for implementation in this Permit are summarized in Table 8 (below).

Table 8. Final Effluent Limitations/Reporting for Outfall 001 and Receiving Water (001R)

Effluent Characteristic	30-Day Average Effluent Limitations <u>a/</u>	Daily Maximum Effluent Limitations <u>a/</u>	Limit Basis <u>b/</u>
Flow, mgd, c/	report only	report only	N/A
Specific Conductance, $\mu\text{S}/\text{cm}$	N/A	7,500	TBEL/PP
Total Dissolved Solids, mg/L	N/A	5,000	TBEL/PP
Chloride, mg/L	N/A	2,000	TBEL/PP
Sulfate, mg/L	N/A	2,500	TBEL/PP
Sulfide (as H_2S), mg/L	200	N/A	WQBEL/PP
Total Radium 226, pCi/L	N/A	60	TBEL/PP
Fluoride, mg/L	N/A	report only	N/A
Benzene, $\mu\text{g}/\text{L}$	N/A	report only	N/A
Ethyl benzene, $\mu\text{g}/\text{L}$	N/A	report only	N/A
Toluene, $\mu\text{g}/\text{L}$	N/A	report only	N/A
Xylene, $\mu\text{g}/\text{L}$	N/A	report only	N/A
Total Aluminum, mg/L	N/A	report only	N/A
Mercury, $\mu\text{g}/\text{L}$, e/	N/A	report only	N/A
pH, s.u.	Must always remain in the range of 6.5 to 9.0		WQBEL/PP
Whole Effluent Toxicity at 25°C, Acute, <i>Daphnia magna</i>	Pass for acute toxicity (Limitation = no acute toxicity: LC50 >100%)		WQBEL
Whole Effluent Toxicity at 25°C, Acute, <i>Pimephales promelas</i>	Pass for acute toxicity (Limitation = no acute toxicity: LC50 >100%)		WQBEL
Oil and grease, narrative limit	The concentration of oil and grease in any single sample shall not exceed 10 mg/L, nor should the discharge contain a visible oil film or sheen, nor should there be any discharge of floating debris, scum, or other floating materials. d/		WQBEL/PP
Per- and Polyfluoroalkyl Substances (PFAS), ng/L	N/A	report only	N/A
Toxic Pollutants Screen (See Permit Section 5.3)	2-3 times/5 years		N/A
Hardness, mg/L- Receiving Water, f/	N/A	report only	N/A

a/ See Section 1 of the Permit for definition of terms.

b/ WQBEL = Limitation based on water quality-based effluent limit; TBEL = Limitation based on technology based effluent limit; PP = Limitation based on previous permit

- c/ Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.
- d/ If a visible sheen or floating oil is detected in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.
- e/ If the mercury trigger level of 0.77 µg/L is detected during the life of the Permit, the Permittee is required to develop and implement the Mercury Minimization Plan (MMP), as described in Section 11 of the SoB.
- f/ This monitoring requirement applies to the receiving water (i.e., Dry Creek). The sample is to be taken at a point along Dry Creek upstream of where the discharge enters Dry creek. The location of the sample collection is to be recorded in the sample monitoring record. This monitoring data will be used to evaluate RP for metals for future permitting actions (see “Metals- Tribal Antidegradation Requirements” discussion in Section 6.2 of the SoB).

7 Toxic Pollutants Screen

Similar to the previous permit and in alignment with permitting requirements for similar EPA Region 8 permitted produced water facilities on the Wind River Reservation, this Permit requires the Permittee to monitor for the constituents listed below in the toxic pollutants screen up to three times during the life of the Permit. One monitoring event will be during the first year after the effective date of this Permit, and the second monitoring event during the third year after the effective date of this Permit. A third monitoring event will be required only if the Permittee undertakes a hydraulic fracturing job for a well that sends produced water to this Facility. In that instance, the Permittee must complete a third toxic pollutants screen within one week of returning the hydraulically fractured well to production. Each of the toxic pollutants screen datasets shall be submitted to the EPA at the time of the DMR submittal for that reporting period in which the screening results were obtained. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this Permit.

Pollutants to Be Screened:

Table 9. All Volatile Organic Compounds, Base/Neutral, and Acid Organic Compounds Listed in 40 CFR Part 122, Appendix D, Table II (see below)

40 CFR Part 122, Appendix D, Table II			
Volatiles	Acid Compounds	Base/Neutral	
acrolein	2-chlorophenol	acenaphthene	di-n-octyl phthalate
acrylonitrile	2,4-dichlorophenol	acenaphthylene	1,2-diphenylhydrazine (as azobenzene)
benzene	2,4-dimethylphenol	anthracene	fluoranthene

bromoform	4,6-dinitro-o-cresol	benzidine	fluorene
carbon tetrachloride	2,4-dinitrophenol	benzo(a)anthracene	hexachlorobenzene
chlorobenzene	2-nitrophenol	benzo(a)pyrene	hexachlorobutadiene
chlorodibromomethane	4-nitrophenol	3,4-benzofluoranthene	hexachlorocyclopentadiene
chloroethane	p-chloro-m-cresol	benzo(ghi)perylene	hexachloroethane
2-chloroethylvinyl ether	pentachlorophenol	benzo(k)fluoranthene	indeno(1,2,3-cd)pyrene
chloroform	phenol	bis(2-chloroethoxy)methane	isophorone
dichlorobromomethane	2,4,6-trichlorophenol	bis(2-chloroethyl)ether	naphthalene
1,1-dichloroethane		bis(2-chloroisopropyl)ether	nitrobenzene
1,2-dichloroethane		bis (2-ethylhexyl)phthalate	N-nitrosodimethylamine
1,1-dichloroethylene		4-bromophenyl phenyl ether	N-nitrosodi-n-propylamine
1,2-dichloropropane		butylbenzyl phthalate	N-nitrosodiphenylamine
1,3-dichloropropylene		2-chloronaphthalene	phenanthrene
ethylbenzene		4-chlorophenyl phenyl ether	Pyrene
methyl bromide		chrysene	1,2,4-trichlorobenzene
methyl chloride		dibenzo(a,h)anthracene	
methylene chloride		1,2-dichlorobenzene	
1,1,2,2-tetrachloroethane		1,3-dichlorobenzene	
tetrachloroethylene		1,4-dichlorobenzene	
toluene		3,3'-dichlorobenzidine	
1,2-trans-dichloroethylene		diethyl phthalate	
1,1,1-trichloroethane		dimethyl phthalate	
1,1,2-trichloroethane		di-n-butyl phthalate	
trichloroethylene		2,4-dinitrotoluene	
vinyl chloride		2,6-dinitrotoluene	

Table 10. All metals listed in 40 CFR Part 122, Appendix D, Table III, and additional parameters to be monitored, as listed in 40 CFR Part 122, Appendix D, Table IV (see below)

40 CFR Part 122, Appendix D, Table III	40 CFR Part 122, Appendix D, Table IV
Other Toxic Pollutants (Metals & Cyanide) and Total Phenols	Conventional and Nonconventional Pollutants Required To Be Tested by Existing Dischargers if Expected to be Present
Antimony, Total	Iron, Total
Arsenic, Total	Manganese, Total
Beryllium, Total	
Cadmium, Total	
Chromium, Total	
Copper, Total	
Lead, Total	
Mercury, Total	
Nickel, Total	
Selenium, Total	
Silver, Total	
Thallium, Total	
Zinc, Total	
Cyanide, Total	
Phenols, Total	

8 Chemical Inventory Reporting Requirement

Similar to the previous permit, this Permit contains a requirement for chemical inventory reporting. The Permittee shall maintain an inventory of the quantities and concentrations of the specific chemicals used to formulate well treatment and workover fluids. Unless these fluids are segregated, the Permittee shall submit the following information with the DMR, to the extent such information is obtainable after making reasonable inquiries to suppliers: all chemical additives in the well treatment or workover fluid, their trade names, purposes, supplier, CAS number, concentrations and amounts. The type of operation that generated the well treatment or well workover fluids shall also be reported. To the extent a Safety Data Sheet (SDS) contains the information required above, it may be submitted for purposes of complying with this provision. For purposes of this provision, well treatment and workover fluids will be considered segregated if the Permittee takes steps to recover a volume of fluid equivalent to the volume of the well treatment or workover fluid used in the job.

“Well treatment fluids” means any fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled.

“Well workover fluids” means salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair or abandonment procedures.”

The Chemical Inventory Reporting Requirement provides actual practices for well treatment and workover that occur at the Facility. The Facility can segregate fluids used in well treatment and workover. This Permit requires reporting of the chemical quantities, etc. used in well treatment and workover only when those fluids are not segregated and are actually discharged with the produced water.

9 Notifications

9.1 Chemical Disclosure

As part of the Permit development process, the EPA had previously requested information on chemical disclosures for chemicals used by the Facility in oil and gas production and treatment. That information was incorporated into the SoB and used in the development of this Permit and the previous permit. The EPA may request additional chemical disclosures during this permit term in order to evaluate and develop future permitting requirements. Upon the effective date of this Permit, the Permittee must submit notification of changes to the chemical additives it uses in oil and gas production and treatment over the course of the permit term to EPA per the Planned Changes provision in Sections 9.1 and 9.1.1 of the Permit. This provision is consistent with EPA Region 8 requirements and practices for similar types of permitted facilities.

9.2 Notification of New Wells Contributing to Permitted Discharge

As of the effective date of the Permit, the Permittee shall notify the EPA upon becoming aware of/when planning for the drilling of any new wells (outside of those provided in the permit application, as identified in Figure 1 of the SoB) with flow output that will contribute to the Facility discharge from permitted Outfall 001. This notification is to be provided to the EPA as outlined in Section 9.1 Planned Changes of the Permit and must include, at a minimum, the following:

- 1) the number of new wells;
- 2) anticipated location(s)- including a map/diagram of the location(s);
- 3) description of anticipated type of well activity;
- 4) anticipated type of water (e.g., produced water, ground water, etc.) contributing to the discharge from Outfall 001; and
- 5) anticipated volume each new well will be contributing to the discharge from Outfall 001.

This information will be collected to evaluate future permitting actions and is in alignment with reporting requirements outlined in 40 CFR 122.41(l)(1)(ii) for planned changes. These require that the Permittee give notice as soon as possible of any planned physical alterations or additions to the permitted facility when:

“The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements for toxic pollutants under [§ 122.42\(a\)\(1\)](#).”

This Permit requirement is included in Special Conditions (Section 5.9) of the Permit.

10 Method Detection Limits

Monitoring methods must be sufficiently sensitive to meet the Method Detection Limits specified in Table 11 below:

Table 11. Required Method Detection Limits

Parameter	Required Detection Limits and Required Units
Arsenic, Total	1 µg/L
Aluminum, Total Recoverable	50 µg/L
Antimony, Total Recoverable	50 µg/L
Beryllium, Total Recoverable	1 µg/L
Cadmium, Total Recoverable	0.1 µg/L
Chromium, Total Recoverable	5 µg/L
Chloride	5 mg/L
Copper, Total Recoverable	5 µg/L
Lead, Total Recoverable	1 µg/L
Magnesium, Total Recoverable	30 µg/L
Manganese, Total Recoverable	2 µg/L
Nickel, Total Recoverable	1 µg/L
Radium 226, Total Recoverable	0.2 pCi/L
Selenium, Total Recoverable	2 µg/L
Silver, Total Recoverable	5 µg/L
Sulfide/Hydrogen Sulfide (S=, HS-)	100 µg/L
Thallium, Total Recoverable	50 µg/L
Zinc, Total Recoverable	2 µg/L
Hardness, Total	10 mg/L as CaCO ₃
Uranium, Total Recoverable	5 µg/L
Gross Alpha and Beta Radiation	0.2 pCi/L
Dissolved Oxygen	1 mg/L

Calcium	10 mg/L
Fluoride	1 mg/L
Volatile Organic Compounds	5 µg/L
Acid & Base/Neutral Organic Compounds	10 µg/L
Chemical Oxygen Demand	3 mg/L

11 Mercury Minimization Plan (MMP)

Section 301(a) of the CWA prohibits the discharge of any pollutant, including mercury, from a point source into waters of the United States except in compliance with Section 402 of the CWA. CWA Section 402 establishes the NPDES program, under which EPA is authorized to issue permits that allow the discharge of pollutants into waters of the United States. These permits must contain (1) technology-based effluent limitations, which represent the degree of control that can be achieved by point sources using various levels of pollution control technology and (2) WQBELs, when necessary to ensure that the receiving waters achieve applicable water quality requirements.

Most WQBELs are expressed as numeric limits on the amounts of specified pollutants that may be discharged. However, WQBELs may also be expressed in narrative form such as Best Management Practices (BMPs) or pollutant minimization measures when it is infeasible to calculate a numeric limit (40 CFR § 122.44(k)(3)). In addition, BMPs may be imposed in the form of NPDES permit conditions to supplement numeric effluent limitations when the permitting authority determines that such requirements are necessary to carry out the purposes and intent of the CWA (40 CFR § 122.44(k)(4)).

On January 8, 2001, the EPA announced the availability of its recommended CWA Section 304(a) water quality criterion for methylmercury. This water quality criterion, 0.3 milligram (mg) methylmercury per kilogram (kg) fish tissue wet weight, describes the concentration of methylmercury in freshwater and estuarine fish and shellfish tissue that should not be exceeded. EPA recommended that the criterion be used as guidance by states, territories, and authorized Tribes in establishing or updating water quality standards for waters of the United States. The EPA Office of Science and Technology completed the "Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion – Final" in April 2010 (Methylmercury Guidance).

According to the Methylmercury Guidance, where a water column translation is not available and the permit writer determines that a numeric limit is infeasible to calculate, the permit writer should include the following permit conditions:

1. A trigger level established at the chronic water quality criteria of 0.77 µg/L and a requirement to develop and implement a Mercury Minimization Plan (MMP) if that trigger level is detected;
2. Require the Permittee to implement a MMP tailored to the facility's potential to discharge mercury. This MMP may be used as a trigger level, reduction goal or used to supplement an enforceable numeric limit to further manage mercury discharges;
3. Require effluent monitoring using a sufficiently sensitive EPA-approved method to determine if the MMP is effective. (EPA Clean Sampling Method 1669 and Analytical Method 1631); and
4. Include a reopener clause to modify the permit conditions if the MMP is not found to be effective or if a water column of the fish tissue criterion is developed.

The Permit will carry forward requirements from the Facility's previous permit in alignment with the above EPA guidance. This includes the following:

The Permittee is required to develop and implement an MMP tailored to the Facility's potential to discharge mercury. At a minimum, the MMP shall include the following:

- Evaluation of existing best management plans or spill prevention and containment control plans;
- Identification and evaluation of current and potential mercury sources;
- Monitoring to confirm current or potential mercury sources;
- Identification of potential methods for reducing or eliminating mercury, including material substitution, material recovery, spill control and collection, waste recycling, process modifications, good housekeeping and disposal practices;
- Implementation of appropriate minimization measures identified in the MMP; and
- Effluent monitoring using sufficiently sensitive analytical methods to verify the effectiveness of the MMP.

12 Antidegradation

In the Tribes' water quality requirement, designated uses were established for the Dry (Pasup) Creek receiving water as Class 3B (as outlined in Section 5, Description of Receiving Waters, of this SoB). Class 3B waters are defined in the Tribal water quality requirements as waters, other than those designated as Class 1 (i.e., Outstanding Tribal Resource Waters), that are intermittent, ephemeral or isolated waters and because of natural habitat conditions, do not support or have the potential to support fish, or certain perennial waters which lack the natural water quality to support fish (e.g., geothermal areas). Class 3B waters are known to support or have the potential to support populations of indigenous aquatic life other than fish that the Tribes have determined deserve special water quality protection measures. This use includes waters that support riparian and/or wetland areas that have plants that are culturally and/or spiritually important. This use classification would fall under Tier 1 of the Tribal water quality requirement antidegradation designations.

Based on the Tribal water quality requirements for antidegradation, Tier 1 is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution. Tier 1 protections would consist of:

(1) Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as explicitly provided for in the Tribal water quality requirements.

(2) Whenever the natural conditions of a water body are of a lower quality than the assigned criteria, the natural conditions constitute the water quality criteria. Where water quality criteria are not met because of natural conditions, human actions are not allowed to further lower the water quality, except where explicitly allowed in the Tribal water quality requirements.

In addition to the above classification, Section 8 of the Tribal water quality requirements for antidegradation outline requirements for new discharges of produced water to ephemeral drainages which require submission and evaluation of an Anti-Degradation Analysis (ADA) along with potential supplemental antidegradation plan submission and/or monitoring requirements. However, this Facility is an existing facility with an existing discharging outfall (i.e., not a new discharger), so these requirements are not applicable.

The limits in this Permit have been developed based on previously established permit requirements, evaluation of CWA Section 304(a) recommended WQC, Tribal water quality requirements, and historical EAB Actions related to this Facility (see Section 4.1 of the SoB). EPA does not anticipate the Facility to exceed the applicable Section 304(a) WQC or the Tribes' water quality requirements, in alignment with historical EAB Actions related to this Facility (see Section 4.1 of the SoB), associated with the permitted limits. Therefore, any discharges meeting the permit limits will be protective of the Tribes' receiving stream Class 3B designated uses and applicable Tier 1 antidegradation criteria.

13 Anti-Backsliding

Federal regulations at 40 CFR § 122.44(l)(1) require that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the Permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR § 122.62.

This Permit complies with anti-backsliding regulatory requirements. All effluent limitations, standards, and conditions in the Permit are either equal to or more stringent than those in the previous permit.

14 MONITORING REQUIREMENTS

14.1 Self-Monitoring Requirements

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, as required in 40 CFR § 122.41(j), unless another method is required under 40 CFR subchapters N or O.

14.1.1 Per- and Polyfluoroalkyl Substances (PFAS)

EPA's PFAS Strategic Roadmap directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources."

PFAS monitoring is being required in the Permit based on the April 28, 2022 EPA memorandum, "Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority." This is consistent with EPA's commitments in the October 2021 "PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024 (PFAS Strategic Roadmap)" to restrict PFAS discharges to water bodies. In addition to evaluating the potential for PFAS discharges to waterbodies, the monitoring will inform future permitting actions.

PFAS chemicals are often used in the fluids used to extract oil and gas. The chemicals, which are extremely water-repellent, are used to make the chemical mixture more stable and more efficiently flush oil and gas out of the ground at high pressure.

Based on recommendations in the April 28, 2022 EPA memorandum, "Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority," in the absence of a final 40 CFR § 136 method, the Permit requires that EPA Method 1633A. (in accordance with 40 CFR 122.21(e)(3)(ii) and 40 CFR 122.44(i)(1)(iv)(B)) shall be used. Monitoring will include each of the 40 PFAS parameters detectable by Method 1633A and the monitoring frequency will be quarterly to ensure that there are adequate data to assess the presence and concentration of PFAS in discharges. Method 1633A may become approved under 40 CFR § 136 during the life of the Permit. All PFAS monitoring data, including individual PFAS pollutants, must be reported on DMRs, in accordance with 122.41(l)(4)(i).

If the results of the initial eight (8) quarterly PFAS monitoring samples using Method 1633A show there are non-detectable levels of PFAS, the Permittee may submit a request to EPA for a waiver from further testing without having to follow public notice procedures.

Should PFAS positive results occur in any effluent samples for any of the 40 PFAS parameters detectable by Method 1633A, the Permittee must perform the steps indicated in Section 5.8 of the Permit, which include notification to EPA, additional monitoring, and

development and implementation of a PFAS source identification and reduction plan (PFAS Plan).

This provision is consistent with EPA Region 8 requirements for similar types of permitted facilities.

14.1.2 Monitoring Type and Frequency Requirements

Sample Types:

Grab samples are required for most pollutants because the quality of discharge is assumed to be relatively consistent (minus any new chemical additives). Additionally, grab samples are generally appropriate to provide information about instantaneous concentrations of pollutants at a specific time, allow collection of a variable sample volume, corroborate composite samples, and monitor parameters not amenable to compositing. Instantaneous measurements of flow are typical of most facilities to measure volumes during a specific period of time.

Sample Frequencies:

Flow, Specific Conductance, and pH: Monthly samples are required for flow, specific conductance, and pH because these can be conducted using low-cost handheld meters/measuring devices; however, monitoring methods must still be CWA-approved.

Oil and Grease (visual): Weekly oil and grease (visual monitoring) is required due to the ease of observing the effluent for a leak/spill/treatment upset.

Fluoride, Aluminum, Benzene, Ethyl Benzene, Xylene and Toluene: Fluoride, aluminum, benzene, ethyl benzene, xylene, and toluene are required to be sampled semi-annually. This is to obtain at least ten (10) samples to determine whether it is appropriate to develop limitations for these parameters in future permits (e.g., RP analysis at the next permit issuance).

Hardness: This monitoring requirement applies to the receiving water (i.e., Dry Creek). The sample is to be taken at a point along Dry Creek upstream of where the discharge enters Dry Creek. This monitoring data will be used to evaluate RP for metals for future permitting actions (see Section 6.2). Hardness will be required to be sampled semi-annually. This is to obtain at least ten (10) samples to use for determining whether it is appropriate to develop metals limitations for in future permits (e.g., RP analysis at the next permit issuance).

Mercury: A monitoring requirement for mercury has been maintained in the Permit with a frequency in alignment with previous permit requirements (i.e., three times after effective date of Permit) to detect a trigger level associated with the Mercury Minimization Plan requirements (see Section 11 of the SoB).

Chloride, Sulfate, Sulfide, Total Radium 226, and Oil and Grease (10 mg/L limit): Chloride, sulfate, sulfide, total radium 226, and oil and grease (10 mg/L limit) will remain at a frequency in alignment with the previously permitted requirement of quarterly. This is consistent with other NPDES oil and gas permits issued in Region 8.

TDS: TDS will remain at the previously permitted frequency of semi-annual monitoring requirement. TDS in oil and gas operations change over time due to factors like production, water quality fluctuations, and geological conditions. TDS levels in produced water can vary significantly, affecting equipment and fluid performance, but the quality of the produced water is not stable and can change systemically or erratically over long periods. Different geological formations and the use of different waters for stimulation operations also influence the TDS of produced water. However, based on the DMR monitoring data collected for the Facility (see Table 1 of the SoB), the TDS stayed relatively consistent (with only a couple of data points showing significantly lower values) and there were no exceedances of the permitted limit for TDS. Therefore, the data indicate relative consistency in TDS levels and maintaining a semi-annual frequency has been deemed appropriate to obtain representative data.

WET: Monthly WET monitoring will be required initially for this Permit, in alignment with previously conducted accelerated testing which occurred as a result of previous WET test failures, with provisions for reductions in monitoring frequency if passing WET tests are achieved (see Section 6.2.8 of the SoB).

PFAS: PFAS monitoring is required quarterly in line with the April 28, 2022 EPA memorandum, "Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations where EPA is the Pretreatment Control Authority."

Sampling and test procedures for pollutants listed in this part shall be in accordance with guidelines promulgated by the Administrator in 40 CFR Part 136, as required in 40 CFR § 122.41(j). At a minimum, EPA Method 1633A shall be used (unless EPA approves an applicable alternative 40 CFR Part 136 method for PFAS) and analysis shall be for the 40 PFAS parameters included in the method. The constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be reported on the DMR that no discharge or overflow occurred.

Table 12. Monitoring requirements for Outfall 001 and Receiving Water (001R)

Effluent Characteristic	Monitoring Frequency	Sample Type a/	Data Value Reported on DMR b/
Flow, mgd, <u>c/</u>	Monthly	Instantaneous	Daily Max.
Specific Conductance, $\mu\text{S/cm}$	Monthly	Grab	Daily Max.

Effluent Characteristic	Monitoring Frequency	Sample Type a/	Data Value Reported on DMR b/
Total Dissolved Solids, mg/L	Semi-Annually	Grab	Daily Max.
Chloride, mg/L	Quarterly	Grab	Daily Max.
Sulfate, mg/L	Quarterly	Grab	Daily Max.
Sulfide (as H ₂ S), mg/L, d/	Quarterly	Grab	30-Day Avg.
Total Radium 226, pCi/L	Quarterly	Grab	Daily Max.
Fluoride, mg/L	Semi-Annually	Grab	Daily Max.
Benzene, µg/L	Semi-Annually	Grab	Daily Max.
Ethyl benzene, µg/L	Semi-Annually	Grab	Daily Max.
Toluene, µg/L	Semi-Annually	Grab	Daily Max.
Xylene, µg/L	Semi-Annually	Grab	Daily Max.
Total Aluminum, mg/L	Semi-Annually	Grab	Daily Max.
Mercury, µg/L	Three times after effective date of Permit, e/	Grab	Daily Max.
pH, s.u.	Monthly	Grab	Minimum Maximum
Whole Effluent Toxicity at 25°C, Acute, <i>Daphnia magna</i>	Monthly f/	Grab	Pass/Fail
Whole Effluent Toxicity at 25°C, Acute, <i>Pimephales promelas</i>	Monthly f/	Grab	Pass/Fail
Oil and grease, narrative limit	Weekly, g/	Visual	Yes/No
Oil and grease, 10 mg/L limit	Quarterly	Grab	Maximum
Per- and Polyfluoroalkyl Substances (PFAS), ng/L, h/	Quarterly	Grab	Per- and Polyfluoroalkyl Substances (PFAS), ng/L, h/
Toxic Pollutants Screen (See Permit Section 5.3)	2-3 times/ 5 years	Grab	Daily Max.
Hardness, mg/L - Receiving Water (001R), i/	Semi-Annually	Grab	Daily Max.

a/ See Section 1 of the Permit for definition of terms.

b/ Refer to the Permit for requirements regarding how to report data on the DMR.

c/ Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate in million gallons per day (mgd) during the reporting period and the maximum flow rate observed, in mgd, shall be reported.

- d/ The analysis for sulfide (as H₂S) shall be done with an approved procedure that has a method detection level of no greater than 0.10 mg/L (100 µg/L). In the calculation of average sulfide (as H₂S) concentrations, those analytical results that are less than 0.10 mg/L shall be considered to be zero. If all individual analytical results that would be used in the calculations are less than 0.10 mg/L, then “less than 0.10 mg/L” shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value.
- e/ Monitoring periods shall be during the 1st, 3rd and 5th years after the effective date of this Permit. Based on current approved analytical mercury method, Method 1631, Revision E, the method detection limit (MDL) for mercury is 0.0002 µg/L. If the mercury trigger level of 0.77 µg/L is detected during the life of the Permit, the Permittee is required to develop and implement the Mercury Minimization Plan (MMP), as described in Section 11 of the SoB.
- f/ After completion of one quarter of passing monthly WET test samples, the facility may submit a request to reduce to quarterly monitoring. If quarterly monitoring is approved, the facility will monitor for WET on a quarterly basis until the Permittee demonstrates no test failures for either species (*Daphnia magna*, *Pimephales promelas*) tested for four consecutive quarters. Upon successful completion of four consecutive quarterly tests demonstrating no acute toxicity in the discharge, the facility may submit a request to reduce the monitoring requirement to annual monitoring. Thereafter, monitoring may be conducted at least annually if approved. See Section 6.2.8 of the SoB for additional information on the WET requirements.
- g/ A weekly visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately and analyzed in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.
- h/ Use EPA Method 1633A unless EPA approves an applicable alternative 40 CFR Part 136 method. Analysis shall be for the 40 PFAS parameters included in the method. If the results of the initial eight (8) quarterly PFAS monitoring samples using Method 1633A show non-detectable levels of PFAS, the Permittee may submit a request for a waiver from further testing for approval of the appropriate EPA delegated representative. Submit waiver requests to:
U.S. EPA, Region 8 (8WD-CWW)
Attention: Wastewater Section Chief
1595 Wynkoop Street
Denver, Colorado 80202-1129.
- See also Section 14.1.1 of the SoB for additional details related to PFAS requirements.
- i/ This monitoring requirement applies to the receiving water (i.e., Dry Creek). The sample is to be taken at a point along Dry Creek upstream of where the discharge enters Dry creek. The location of the sample collection is to be recorded in the sample monitoring record. This monitoring data will be used to evaluate RP for metals for future permitting actions (see Section 6.2).

15 SPECIAL CONDITIONS

The Permit will incorporate a WET limitation (see Section 6.2.8 of the SoB) as well as WET requirements outlined in Section 5, Special Conditions, of the Permit. Additionally, Section 5, Special Conditions, of the Permit will also contain the requirements for:

- Toxic Pollutants Screen (see Section 7 of the SoB);
- Chemical Inventory Reporting Requirement (see Section 8 of the SoB);
- Chemical Disclosure (see Section 9.1 of the SoB),
- Method Detection Limits; (see Section 10 of the SoB);
- a Mercury Minimization Plan (MMP) (see Section 11 of the SoB); and
- a Per- and Polyfluoroalkyl Substances (PFAS) Notification and Plan (see Section 14.1.1 of the SoB); and
- a Notification of New Wells Contributing to Permitted Discharge (see Section 9.2 of SoB).

16 REPORTING REQUIREMENTS

Reporting requirements are based on requirements in 40 CFR §§ 122.44, 122.48, and Parts 3 and 127. A discharge monitoring report (DMR) frequency of semi-annually was chosen in alignment with the Facility's previous reporting frequency, and since monitoring for most pollutant parameters will be completed for reporting within a semi-annual frequency. This is also consistent with the reporting frequencies for recent Region 8 permits for similar facilities.

17 COMPLIANCE RESPONSIBILITIES AND GENERAL REQUIREMENTS

17.1 Inspections

The Permittee shall maintain a log in either paper or electronic format recording information obtained during inspections for activities necessary to achieve compliance with the conditions of the Permit. The minimum information for the log is outlined in Section 6.2 of the Permit.

17.2 Operation and Maintenance

40 CFR § 122.41(e) requires Permittees to properly operate and maintain at all times, all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit.

Operation and maintenance requirements have been established in Section 6.3 of the Permit to help ensure compliance with the provisions of 40 CFR § 122.41(e).

18 ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the

Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, “listed” species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical (“critical habitat”). See 16 U.S.C. § 1536(a)(2), 50 CFR Part 402. When a Federal agency’s action “may affect” a protected species, that agency is required to consult with the FWS (formal or informal) (50 CFR § 402.14(a)).

The U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) website (<https://ecos.fws.gov/ipac/>) was accessed on 11/13/2025 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species for the area near the Facility. The IPaC Trust Resource Report findings are provided below. The designated area utilized (see Figure 9 below) was identified in the IPaC search and covers 10.3 square miles over the entire Facility discharge site and the immediate outfall discharge area of the receiving water.

Figure 9. IPaC Mapped Area for the Facility Discharge

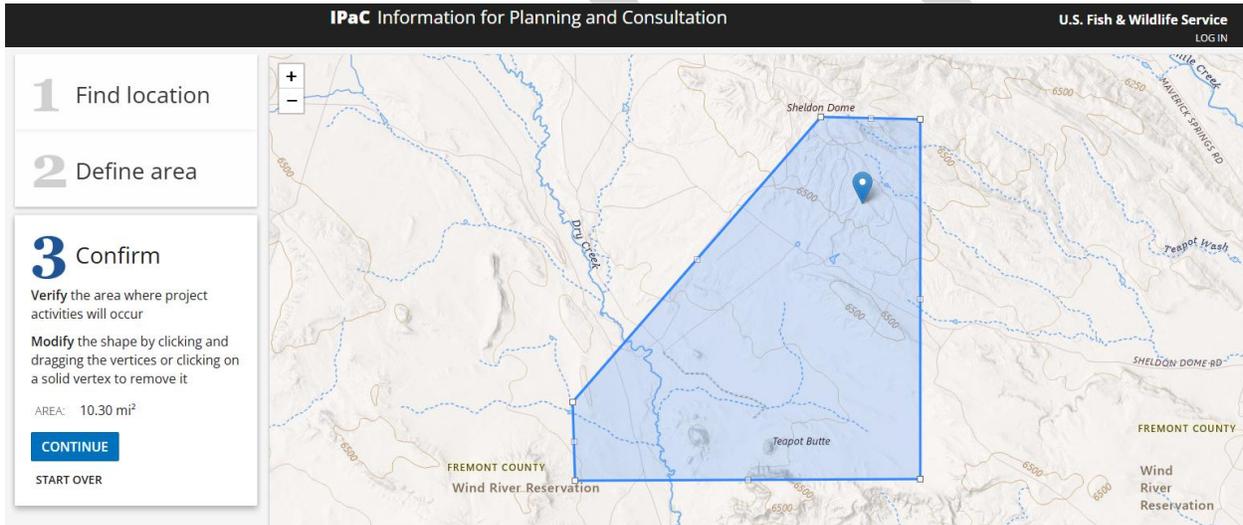


Table 13. IPaC Federally listed Threatened and Endangered Species

Species	Scientific Name	Species Status	Designated Critical Habitat
Grizzly Bear	<i>Ursus arctos horribilis</i>	Threatened	“There is proposed critical habitat for this species.” Based on the IPAC generated species list information, there are no critical habitats within the project (e.g., Facility) area.
Monarch Butterfly	<i>Danaus plexippus</i>	Proposed Threatened	“There is proposed critical habitat for this species. Your location does not overlap the

Species	Scientific Name	Species Status	Designated Critical Habitat
			critical habitat.” Based on the IPAC generated species list information, there are no critical habitats within the project (e.g., Facility) area.
Suckley's Cuckoo Bumble Bee	<i>Bombus suckleyi</i>	Proposed Endangered	No critical habitat has been designated for this species. Based on the IPAC generated species list information, there are no critical habitats within the project (e.g., Facility) area.
Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	No critical habitat has been designated for this species. Based on the IPAC generated species list information, there are no critical habitats within the project (e.g., Facility) area.

18.1 Biological Evaluation

The justification to support the determination for the species is as follows.

Based on the IPaC information generated, there are no critical habitats within the project (e.g., Facility) mapped area for the above listed species. Additionally, this Permit does not directly permit habitat disturbing activities and no changes in physical habitat/habitat modifications from permitted discharge activities will occur.

The Suckley's Cuckoo Bumble Bee, Ute Ladies'-tresses, and Monarch Butterfly are also all terrestrial species that do not eat aquatic animals and are therefore not aquatic dependent species that may have limited contact with anticipated Facility discharge. If transient species are present (e.g., Suckley's Cuckoo Bumble Bee, Ute Ladies'-tresses, and Monarch Butterfly), they may use receiving waters for short periods of time during the year. Therefore, EPA's determination for these species is "May Affect but Not Likely to Adversely Affect" based on the Designated Critical Habitat information in Table 13 and the consideration that these are all primarily terrestrial species.

For the Grizzly Bear: Based on the IPaC information, Grizzly Bear diets are highly variable among individuals, seasons, and years, and between ecosystems. They opportunistically seek and consume whatever plant and animal foods are available to them. Grizzly bears will

consume almost any food available including living or dead mammals or fish, insects, worms, plants, human-related foods, and garbage. This species is therefore a primarily terrestrial species that does not solely eat aquatic animals and is not a primarily aquatic dependent species. As a primarily terrestrial species, Grizzly Bears may have limited contact with anticipated discharge areas and may use receiving waters for a short period of time during the year. Under these conditions and considering that there is no designated critical habitat area for this species within the project (e.g., Facility) area, the EPA has determined the impact for this species is "May Affect, but Not Likely to Adversely Affect" for the anticipated permitted discharge area.

Overall, based on the IPaC information, considerations listed above, and the unofficial consultation determination with the Wyoming FWS field office representative on **DATE**, EPA has determined the permitting action "May Affect, but Not Likely to Adversely Affect" the species listed as threatened or endangered in the action area by the FWS under the Endangered Species Act nor their critical habitat.

Before going to public notice, a copy of the draft Permit and this Statement of Basis was sent to the FWS requesting concurrence with EPA's finding that reissuance of this NPDES Permit "May Affect, but Not Likely to Adversely Affect" the species listed as threatened or endangered in the action area by the FWS under the Endangered Species Act nor their critical habitat.

19 NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The first step in this analysis is to consider whether the undertaking has the potential to affect historic properties, if any are present. See 36 CFR § 800.3(a)(1). Permit renewals where there is no new construction are generally not the type of action with the potential to cause effects on historic properties. With this Permit issuance, there is no new construction and it would generally not be the type of action with the potential to cause effects on historic properties.

20 401 CERTIFICATION CONDITIONS

At the time of the Permit reissuance, EPA was the Clean Water Act (CWA) Section 401 certifying authority for the Permit, because the Tribes had not received authorization to implement Section 303(c) of the CWA. EPA will seek public comments on the Section 401 certification prior to issuing the certification and finalizing the Permit.

21 MISCELLANEOUS

The effective date of the Permit and the Permit expiration date will be determined upon issuance of the Permit. The intention is to issue the Permit for a period not to exceed 5 years.

Permit drafted by Alysia Tien, U.S. EPA, 303-312-7021, FY2024-2026

ADDENDUM

AGENCY CONSULTATIONS

On [Month Day, Year], the FWS [concurred/disagreed] with EPA's preliminary conclusion that the Permit reissuance is not likely to adversely affect listed species.

On [Month Day, Year], the Tribes' Tribal Historic Preservation Office was notified of the permit action, including EPA's preliminary determination that the Permit reissuance will not impact any historic properties.

NEIGHBORING JURISDICTION

The EPA conducted a neighboring jurisdiction analysis of water resources located downstream from the Facility and outside the external boundaries of the Wind River Reservation, in accordance with 40 CFR § 121.13. On [Month Day, Year], the EPA permit signatory made a negative "may affect" determination for the authorized discharges from the Facility in the neighboring jurisdiction of Wyoming. The EPA documented the factors considered in this determination in the administrative record for this Permit.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis, including the CWA Section 401 certification, were public noticed on EPA's website on [Month Day, Year]. The comment(s) received and the response(s) are provided below/No comments were received.

Comment:

The commenter noted that ...

Response:

The following language was added to the final Permit./No changes were made to the final Permit: