

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET
May 2025

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NPDES Permit No.: NN0028193

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I. STATUS OF PERMIT

EPA Region 9 has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act (CWA), which requires point source dischargers to obtain an NPDES permit that limits pollutants that are discharged to waters of the United States. NTEC (the “permittee”) has applied for renewal of their National Pollutant Discharge Elimination System (NPDES) permit which authorizes the discharge of treated effluent from the Navajo Coal Mine to the Chaco River located in Navajo Nation. NTEC submitted an application on October 26, 2022. A revised application was submitted on October 27, 2023. EPA developed this fact sheet based on

information provided in the permit application and effluent discharge data, as well as applicable laws and regulations.

Navajo Nation is a federally recognized Indian Tribe. U.S. EPA Region 9 administers the NPDES permitting program within Navajo Nation. The NPDES permit incorporates both federal and EPA-approved Tribal water quality requirements.

Discharges from the Facility were authorized under NPDES permit NN0028193 which expired on April 30, 2023¹, but which EPA administratively continued after determining the permittee's application was complete. Under EPA's NPDES regulations at 40 CFR § 122.6, the term of an administratively extended permit continues until the issuance of a new permit.

EPA used the NPDES Permit Rating Worksheet to determine if the facility is a major facility. Major facility means any NPDES facility or activity classified as such by the Regional Administrator (40 CFR § 122.2). Non-POTW discharges are classified as major facilities on the basis of the number of points accumulated using the NPDES Permit Rating Worksheet. The facility did not meet the criteria of a major facility and has therefore been classified as a minor facility.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Changes in permit (2025 – 2030)	Reason for change
Covered Outfalls	42 covered outfalls (4 new outfalls added).	Permittee submitted a renewal application with a request to add four outfalls to the permit.
Whole Effluent Toxicity Monitoring	Monitor discharge.	Required to determine if the discharge has the reasonable potential to exceed narrative NNSWQS.
Priority Pollutants Scan	Monitor discharge.	Required to determine if the discharge has the reasonable potential to exceed numeric NNSWQS for certain pollutants not monitored in prior permit.
Nutrient Monitoring	Monitor discharge.	Required to ensure discharge is in compliance with narrative NNSWQS.
Hardness Monitoring	Monitor discharge.	Required to determine if the discharge has the reasonable potential to exceed numeric NNSQWS.
Selenium and Mercury Tissue Study	Required study.	Required to ensure compliance with 2015 USFWS Biological Opinion.

III. GENERAL DESCRIPTION OF FACILITY

The Navajo Mine is located in Fruitland, San Juan County, New Mexico, within the northeastern portion of the Navajo Nation. The Navajo Mine lease area is divided into six areas (1, 2, 3, 4 North, 4 South, and 5).

¹ The two previous permit issuance dates were 2008 and 2018, with a permit modification in 2020.

As reflected in the permit application, NTEC is conducting mining or reclamation activities in Area 1, Area 2, Area 3, Area 4 North, and Area 4 South to facilitate coal delivery to the Four Corners Power Plant (FCPP). The United States Department of Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) has issued a Surface Mining Control and Reclamation Act (SMCRA) permit to NTEC for Navajo Mine (No. NM-0003I) and for Pinabete Mine (No. NM-0042B). The SMCRA permits authorize NTEC to conduct surface coal mining and reclamation activities needed to meet its contractual coal supply obligations to the FCPP through 2031.

Between 1971 and January 2008, NTEC utilized coal combustion by-products (CCBs) from FCPP as mine backfill in mined out pits and ramps in Area 1 and Area 2. NTEC has not accepted any CCBs from FCPP since January 2008. The historic CCB reclamation activity was in accordance with the Navajo Mine Lease and the terms of the Navajo Mine SMCRA permit (OSM Permit No. NM-0003H). CCB placement areas have been capped with approximately 10 feet (3 meters) of low permeability material, such as backfill rich in smectitic clays. NTEC does not have any current agreements or plans to place CCB materials in the mine backfill for future reclamation within the Navajo Mine Lease. Arizona Public Service manages and is responsible for the disposal of all CCB material generated by the FCPP.

Stormwater discharges associated with industrial activities from the Navajo Mine have been authorized under EPA's Multi-Sector General Permit (no. AZR051299).

IV. DESCRIPTION OF RECEIVING WATER

The discharge points are all to waterbodies within the external boundaries of the Navajo Nation and are subject to the water quality standards established by the Navajo Nation and approved by USEPA.

This permit will authorize discharge from 42 outfalls in the Chinde Wash-Chaco River watershed (Hydrologic Unit Code 140801062007). There are 38 outfalls being renewed and 4 new outfalls, all of which discharge to the Chaco River which is a tributary to the San Juan River.

The Chaco River has not been identified as impaired and therefore has not been listed on the CWA Section 303(d) List of Water Quality Limited Segments. Additionally, no EPA approved TMDLs are applicable to the discharge.

V. DESCRIPTION OF DISCHARGE

The Navajo Coal Mine operations include three categories of activities covered under the Clean Water Act regulations governing discharges from coal mining (40 CFR Part 434): Alkaline Mine Drainage, Coal Preparation Plants and Coal Preparation Plant Associated Areas, and Western Alkaline Coal Mining.

- **Alkaline Mine Drainage:** Includes mine drainage from an active mining area, which, before any treatment has a pH equal to or greater than 6 and a total iron concentration of less than 10 mg/L. 40 CFR 434.11(c).

- **Coal Preparation Plant and Coal Preparation Plant Associated Areas:** Includes discharges from coal preparation plants and coal preparation plant associated areas, as defined in 40 CFR 434.11(e) and (f), including discharges which are pumped, siphoned, or drained from the coal preparation plant water circuit and coal storage, refuse storage, and ancillary areas related to the cleaning and beneficiation of coal of any rank. 40 CFR 434.20.
- **Western Alkaline Coal Mining:** Includes drainage at western coal mining operations from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas where the discharge, before any treatment, meets all the following requirements: pH is equal to or greater than 6.0; dissolved iron concentration is less than 10 mg/L; and net alkalinity is greater than zero. 40 CFR 434.81.

This permit renewal includes four new outfalls with the Western Alkaline Coal Mining classification. Three of the new outfalls will discharge from the North Barber, Lowe, and North Hosteen Watersheds that were previously mined and currently undergoing reclamation. These outfalls are identified as 10-1, 13-1, and 6-1. These watersheds overlap with existing watersheds that drain to existing and approved outfalls with the Western Alkaline Coal Mining classification.

The fourth new outfall (Outfall 24) is located in Area 3. Outfall 24 will receive water upstream of the mine through the remediation and reroute of the North Fork of the Cottonwood Arroyo to its original location. The stream is currently diverted around mining through a man-made freshwater diversion. NTEC will reroute the tributary back to its original location. The rerouted stream will initially transport freshwater from upstream of any mine disturbance, through reclaimed mining areas and into the Cottonwood Arroyo. A series of seven impoundments will be built as sediment basins for seven micro-watersheds feeding the rerouted stream. These impoundments are designed to hold a 100yr-6hr precipitation event and will capture runoff from the micro watersheds until reclaimed soils stabilize and vegetation is established. The impoundments will act as a buffer for drainage entering the rerouted stream. An eighth impoundment will be utilized as a final sediment basin for the stream prior to entering the Cottonwood Arroyo. This impoundment is designed for a 25yr-6hr precipitation event. As the drainage stabilizes, the impoundment will lose its capacity, and the rerouted stream will flow through the pond and outfall into the Cottonwood Arroyo. The discharge from the four new outfalls is associated with the reclamation of original mining activities in Area 2 and 3 and therefore is subject to BPT, BCT, BAT ELGs, discussed further below. All outfalls are listed in Attachment C of the permit.

Discharges covered by the existing NPDES permit have historically been rare. There have been eleven NPDES discharge events at Navajo Coal Mine since the issuance of the original NPDES permit in March 1977. This includes one precipitation event in the last permit term (2022) that resulted in a discharge from five outfalls (4-7, 4-8, 4-9, 4-10, and 13). The permittee also reported discharges that occurred between 2002 and 2013. Those discharges are summarized in Attachment B.

Tables 1-5 below show data collected during the 2022 discharge event based on the permittee's NPDES renewal application and supplemental data as well as data reported on discharge monitoring reports. Pollutants believed to be absent or not detected in the effluent are not included. Because this discharge event was due to a precipitation event greater than a 10-year,

24-hour precipitation event, the effluent limits and monitoring requirements in Table A-4-b of the 2020 modified permit applied. More information is available on Enforcement and Compliance History Online (ECHO) website at <https://echo.epa.gov>.

Table 1. Effluent Data for Outfall 13 from 2018 to 2023

Parameter ⁽¹⁾	Units	2018-2023 Table A-4-b Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Total Discharge Volume	Gallons	(1)	(1)	N/A	39,102	1
Total Suspended Solids (TSS)	mg/L	(1)	(1)	N/A	23	1
Iron, total	mg/L	(1)	(1)	N/A	0.55	1
Temperature	°C	(1)	(1)	N/A	18.7	1
pH	Standard Units	6.0 to 9.0		N/A	7.5	1
Arsenic, total	mg/L	(1)	(1)	N/A	0.0006	1
Lead, total	mg/L	(1)	(1)	N/A	0.0006	1
Selenium, total	mg/L	(1)	(1)	N/A	0.005	1
Total Dissolved Solids (TDS)	mg/L	(1)	(1)	N/A	531	1
Mercury, total	mg/L	(1)	(1)	N/A	0.00001	1
Sulfate	mg/L	(1)	(1)	N/A	307	1
Aluminum, total	mg/L	(1)	(1)	N/A	1.03	1
Boron	mg/L	(1)	(1)	N/A	0.28	1
Nitrate+nitrite	mg/L	(1)	(1)	N/A	0.46	1
Fluoride	mg/L	(1)	(1)	N/A	0.8	1
Manganese, total	mg/L	(1)	(1)	N/A	0.023	1

(1) No effluent limits were established but monitoring and reporting were required. In some cases the permittee supplied monitoring data on pollutants that were not required to be monitored for in the permit. That monitoring information has also been included in the table above.

Table 2. Effluent Data for Outfall 4-7 from 2018 to 2023

Parameter ⁽¹⁾	Units	2018-2023 Table A-4-b Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Total Discharge Volume	Gallons	(1)	(1)	N/A	521,360	1
Total Suspended Solids (TSS)	mg/L	(1)	(1)	N/A	41	1
Iron, total	mg/L	(1)	(1)	N/A	2.32	1
Temperature	°C	(1)	(1)	N/A	17.4	1
pH	Standard Units	6.0 to 9.0		N/A	7.9	1
Arsenic, total	mg/L	(1)	(1)	N/A	0.0017	1
Lead, total	mg/L	(1)	(1)	N/A	0.0023	1
Selenium, total	mg/L	(1)	(1)	N/A	0.002	1
Total Dissolved Solids (TDS)	mg/L	(1)	(1)	N/A	396	1
Mercury, total	mg/L	(1)	(1)	N/A	0.00002	1
Sulfate	mg/L	(1)	(1)	N/A	205	1
Aluminum, total	mg/L	(1)	(1)	N/A	4.05	1
Manganese, total	mg/L	(1)	(1)	N/A	0.040	1

(1) No effluent limits were established but monitoring and reporting were required. In some cases the permittee supplied monitoring data on pollutants that were not required to be monitored for in the permit. That monitoring information has also been included in the table above.

Table 3. Effluent Data for Outfall 4-8 from 2018 to 2023

Parameter ⁽¹⁾	Units	2018-2023 Table A-4-b Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Total Discharge Volume	Gallons	(1)	(1)	N/A	244,388	1
Total Suspended Solids (TSS)	mg/L	(1)	(1)	N/A	99	1
Iron, total	mg/L	(1)	(1)	N/A	4.07	1
Temperature	°C	(1)	(1)	N/A	17.0	1
pH	Standard Units	6.0 to 9.0		N/A	8.0	1
Arsenic, total	mg/L	(1)	(1)	N/A	0.0022	1
Lead, total	mg/L	(1)	(1)	N/A	0.0050	1
Selenium, total	mg/L	(1)	(1)	N/A	0.002	1
Cadmium, total	mg/L	(1)	(1)	N/A	0.00005	1
Mercury, total	mg/L	(1)	(1)	N/A	0.00003	1
Sulfate	mg/L	(1)	(1)	N/A	158	1
Aluminum, total	mg/L	(1)	(1)	N/A	6.11	1
Boron	mg/L	(1)	(1)	N/A	0.05	1
Manganese, total	mg/L	(1)	(1)	N/A	0.098	1

(1) No effluent limits were established but monitoring and reporting were required. In some cases the permittee supplied monitoring data on pollutants that were not required to be monitored for in the permit. That monitoring information has also been included in the table above.

Table 4. Effluent Data for Outfall 4-9 from 2018 to 2023

Parameter ⁽¹⁾	Units	2018-2023 Table A-4-b Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Total Discharge Volume	Gallons	(1)	(1)	N/A	2,069,148	1
Total Suspended Solids (TSS)	mg/L	(1)	(1)	N/A	633	1
Iron, total	mg/L	(1)	(1)	N/A	70	1
Temperature	°C	(1)	(1)	N/A	10.0	1
pH	Standard Units	6.0 to 9.0		N/A	8.4	1
Arsenic, total	mg/L	(1)	(1)	N/A	0.0112	1
Cadmium, total	mg/L	(1)	(1)	N/A	0.0008	1
Lead, total	mg/L	(1)	(1)	N/A	0.0606	1
Selenium, total	mg/L	(1)	(1)	N/A	0.002	1
Total Dissolved Solids (TDS)	mg/L	(1)	(1)	N/A	2380	1
Mercury, total	mg/L	(1)	(1)	N/A	0.00013	1
Sulfate	mg/L	(1)	(1)	N/A	53	1
Aluminum, total	mg/L	(1)	(1)	N/A	82.9	1
Boron	mg/L	(1)	(1)	N/A	0.09	1
Manganese, total	mg/L	(1)	(1)	N/A	0.528	1

(1) No effluent limits were established but monitoring and reporting were required. In some cases the permittee supplied monitoring data on pollutants that were not required to be monitored for in the permit. That monitoring information has also been included in the table above.

Table 5. Effluent Data for Outfall 4-10 from 2018 to 2023

Parameter ⁽¹⁾	Units	2018-2023 Table A-4-b Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Total Discharge Volume	Gallons	(1)	(1)	N/A	3,160,745	1
Total Suspended Solids (TSS)	mg/L	(1)	(1)	N/A	94	1
Iron, total	mg/L	(1)	(1)	N/A	10.3	1
Temperature	°C	(1)	(1)	N/A	12.4	1
pH	Standard Units	6.0 to 9.0		N/A	7.9	1
Arsenic, total	mg/L	(1)	(1)	N/A	0.0039	1
Cadmium, total	mg/L	(1)	(1)	N/A	0.0001	1
Lead, total	mg/L	(1)	(1)	N/A	0.0106	1
Selenium, total	mg/L	(1)	(1)	N/A	0.002	1
Total Dissolved Solids (TDS)	mg/L	(1)	(1)	N/A	644	1
Mercury, total	mg/L	(1)	(1)	N/A	0.00004	1
Sulfate	mg/L	(1)	(1)	N/A	210	1
Aluminum, total	mg/L	(1)	(1)	N/A	11.7	1
Boron	mg/L	(1)	(1)	N/A	0.07	1
Manganese, total	mg/L	(1)	(1)	N/A	0.073	1

(1) No effluent limits were established but monitoring and reporting were required. In some cases the permittee supplied monitoring data on pollutants that were not required to be monitored for in the permit. That monitoring information has also been included in the table above.

VI. DETERMINATION OF EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (i.e., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (i.e., “water quality-based effluent limits”). EPA has established the most stringent of applicable technology-based or water quality-based standards in the permit, as described below.

EPA evaluated the effluent monitoring data and applicable technology-based or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are uncertain or are not reasonably expected to be discharged in concentrations that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in

the permit. Where monitoring is required, data will be re-evaluated and the permit may be reopened to incorporate effluent limitations as necessary.

A. Applicable Technology-Based Effluent Limitations

Effluent Limitation Guidelines (ELGs)

EPA has established national standards based on the performance of treatment and control technologies for wastewater discharges to surface waters for certain industrial categories. Effluent limitation guidelines (ELGs) represent the greatest pollutant reductions that are economically achievable for an industry and are based on Best Practicable Control Technology (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT) and New Source Performance Standards (NSPS) (Sections 304(b)(1), 304(b)(4), and 304(b)(2) of the CWA, respectively).

The discharge of wastewater from coal mines is subject to 40 CFR Part 434: Coal Mining Limitations and Performance Standards and is defined by Standard Industrial Classification (SIC) Code 1221 (bituminous coal and lignite surface mining). Navajo Coal Mine includes separate sources that are subject to ELGs in different subcategories of Part 434. The current permit contains limitations for discharges from the following outfall subcategories: a) Alkaline Mine Drainage, b) Coal Preparation Plants and Coal Preparation Plant Associated Areas, and c) Western Alkaline Coal Mining. The permit also includes New Source Performance Standards (NSPS) for each outfall subcategory associated with the expansion of mining activities that was previously designated as a “new source coal mine” under 40 CFR 434.11(j)(1) and 40 CFR 122.2. On March 28, 2013, EPA determined that the expansion of mining activities into the Pinabete Mine permit boundary and portions of Area 3 just north of the Pinabete Mine boundary is a “new source coal mine” under 40 CFR 434.11(j)(1) and 40 CFR 122.2. The “new source coal mine” area was defined and analyzed in the 2015 Environmental Impact Statement for the Four Corners Power Plant and Navajo Mine Energy Project. Original outfalls identified below are outfalls that are associated with mining activities that were established before 1984 and otherwise do not meet the definition of a “new source coal mine” and are subject to BPT, BCT, BAT ELGs (40 CFR 434.11(j)(1)).

In accordance with the applicable ELGs, technology-based effluent limitations are included in the permit for the pollutants listed below based on nationally promulgated effluent limitation guidelines. These ELGs represent the degree of effluent reduction attainable by the application of these standards. These requirements are described below.

1. Alkaline Mine Drainage – Outfall 013 and 019.

The permit sets discharge limits for these outfalls in accordance with the requirements of “Subpart D – Alkaline Mine Drainage” for BPT, BCT, and BAT regulations that apply to such discharges. The permit sets the following discharge limits:

Effluent Parameter	Units	Daily Average	Daily Maximum
Iron, total	mg/l	3.5	7.0

Total Suspended Solids (TSS)	mg/l	35	70
pH	Std. Units	No less than 6.0 or greater than 9.0	

These requirements are consistent with those of the previous permit.

2. Alkaline Mine Drainage - NSPS Outfalls.

Outfalls:	020	4-2	4-7	4-12	4-18
	021	4-3	4-8	4-13	4-19
	022	4-4	4-9	4-15	4-20
	023	4-5	4-10	4-16	4-21
	4-1	4-6	4-11	4-17	4-22

These outfalls were determined to be “new source coal mine” activity under 40 CFR §434.11(j)(1)(ii)(C) and are therefore subject to NSPS under “Subpart D – Alkaline Mine Drainage.” The permit sets discharge limits for these outfalls for:

Effluent Parameter	Units	Daily Average	Daily Maximum
Iron, total	mg/l	3.0	6.0
Total Suspended Solids (TSS)	mg/l	35	70
pH	Std. Units	No less than 6.0 or greater than 9.0	

These requirements are consistent with those of the previous permit.

3. Coal Preparation Plants and Coal Preparation Plant Associated Areas, NSPS Outfall 4-14.

This outfall was determined to be a “new source coal mine” activity under 40 CFR §434.11(j)(1)(ii)(C) and is therefore subject to NSPS under “Subpart B – Coal Preparation Plants and Coal Preparation Plant Associated Areas.” The permit sets discharge limits for this outfall to be:

Effluent Parameter	Units	Daily Average	Daily Maximum
Iron, total	mg/l	3.0	6.0
Manganese, total	mg/l	2.0	4.0
Total Suspended Solids (TSS)	mg/l	35	70
pH	Std. Units	No less than 6.0 or greater than 9.0	

4. Western Alkaline Coal Mining - Original Outfalls 004, 006, 007, 008, 009, 010, 011, 017, 018, 11-1, 024, 13-1, 10-1, 6-1.

These outfalls meet the definition of Subpart H – Western Alkaline Coal Mining, which applies to alkaline mine drainage at western coal mining operations from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and re-graded areas. (40 CFR §434.81(a)). In accordance with the requirements established in Subpart H, the Applicant has:

- 1) Submitted a site-specific Sediment Control Plan to USEPA incorporating the minimum requirements of 40 CFR §434.82;
- 2) Demonstrated that implementation of the Sediment Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined undisturbed conditions.

As part of its NPDES permit application package to EPA, NTEC submitted a copy of the revised Sediment Control Plan (dated 2023). USEPA, with assistance from OSMRE, approved the original Sediment Control Plan consistent with the requirements of Subpart H. USEPA Region 9 and OSMRE entered into a Memorandum of Understanding on December 19, 2003: “Process for Obtaining A NPDES Permit Under Subpart H – Western Alkaline Coal Mining Category.” Working through the process outlined in the MOU, OSMRE conducted a technical review of the Sediment Control Plan submitted by the Applicant in 2023. OSMRE and USEPA concluded that the Sediment Control Plan was submitted in accordance with the requirements of 40 CFR Part 434, and that the Sediment Control Plan met all minimum requirements to demonstrate that the average annual sediment yields will not be greater than the sediment yield levels from pre-mined, undisturbed conditions. OSMRE approved the revised Sediment Control Plan in a letter dated November 8, 2023.

In accordance with Subpart H, the permit requires that the approved Sediment Control Plan be incorporated into the permit as an effluent limit, and requires that the Applicant design, implement, and maintain the Best Management Practices (BMPs) in the manner specified in the Sediment Control Plan. See Part 1.B.3 of the Permit.

As existing outfalls defined in this permit as “alkaline mine drainage” are reclaimed, the Sediment Control Plan may be updated to incorporate additional outfalls. A revised Plan must be submitted to USEPA and approved by USEPA before it becomes effective. The revised plan will also be reviewed by OSMRE prior to USEPA approving the revisions. Revisions to the Sediment Control Plan must meet all requirements contained at 40 CFR §434.82, and 100% of the drainage areas to an outfall must meet the definition of Subpart H to be considered for coverage under Subpart H (Western Alkaline Coal Mining). USEPA’s approval of an updated Sediment Control Plan and reclassification of an existing outfall from “alkaline mine drainage” to Subpart H requirements will be considered a minor modification to the permit.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations (WQBELs) are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR § 122.44(d)(1)).

1. Applicable Standards and Designated Uses

The Navajo Nation has developed Surface Water Quality Standards (NNSWQS) for different stream segments, depending on the designated uses and level of protection required. EPA-approved NNSWQS (2007 and 2015) were used to analyze the need for and to develop water quality-based effluent limitations.

Table 206.1 of the NNSWQS defines the designated uses of the Chaco River (perennial and intermittent reaches) to be:

- **PrHC** - Primary Human Contact
- **ScHC** - Secondary Human Contact
- **AgWS** - Agriculture Water Supply
- **FC** – Fish Consumption
- **A&W** - Aquatic & Wildlife
- **LW** - Livestock Watering

2. Reasonable Potential Analysis

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

EPA evaluated the discharge data and supplemental information supplied by the permittee in the renewal application. EPA also considered how frequently the facility has discharged since the first permit was issued in 1977. For example, the permittee discharged only one time during the permit term, during a 2022 precipitation event. EPA notes that the 2022 discharge event was due to a large storm that resulted in a single discharge from five outfalls within the alkaline mine drainage category. This event was only the eleventh time the Navajo Coal Mine has discharged since it began operating in 1977. The 2022 discharge event was the only time the permittee was required to monitor for constituents of concern and is therefore the only pollutant specific data EPA has about the effluent.

Using this limited data set, EPA conducted a reasonable potential analysis and determined that for some pollutants there is reasonable potential for the discharge to cause or contribute to an excursion above numeric NNSWQS criteria (See Attachment A – Reasonable Potential Analyses for more information). EPA is requiring that the Permittee develop and implement additional BMPs and conduct additional monitoring as described below. See 40 C.F.R. § 122.44(k). EPA is not imposing numeric limits at this time given uncertainties associated with the limited data set.

To ensure that receiving waters are not impacted by the historically infrequent discharges, EPA is requiring the permittee to develop and implement Best Management Practices (BMPs) as part of a broader Pollution Prevention Plan that specifies control measures to reduce pollutant levels prior to discharge. See Permit Part III. In addition, EPA is requiring the permittee to conduct

additional monitoring to provide additional data that will better characterize the quantity and quality of the effluent. The Permittee is required to monitor for 126 priority pollutants (including heavy metals), hardness, nutrients, and whole effluent toxicity. These new monitoring requirements are in conjunction with the current monitoring requirements for coal mining effluent constituents of concern (TSS, iron, and pH). This monitoring data may be used to develop numeric limits, if necessary to protect receiving waters. Based on EPA's evaluation of the monitoring data, the permit may be re-opened to incorporate numeric or other effluent limits. More information on monitoring requirements, BMPs, and the Pollution Prevention Plan can be found in Section IX.C below.

Hardness Monitoring

The NNSWQS establish water quality criteria for the protection of aquatic wildlife from acute and chronic exposure to certain metals that are hardness dependent. The permit requires total hardness (unfiltered sample) monitoring (to determine the hardness of the discharge for calculating water quality standards for metals). Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Nutrient Monitoring

The NNSWQS states: "All Waters of the Navajo Nation shall be free from pollutants in amounts or combinations that, for any duration: Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses." Therefore, the permit contains monitoring for total phosphorus and total nitrogen. EPA will evaluate the data and may re-open the permit to incorporate effluent limitations as necessary.

Whole Effluent Toxicity Monitoring

The NNSWQS states: "All Waters of the Navajo Nation shall be free from pollutants in amounts or combinations that, for any duration: Cause injury to, or toxic to, or otherwise adversely affect habitation, growth or propagation of aquatic life and wildlife." Therefore, the permit contains monitoring for whole effluent toxicity. EPA will evaluate the data and may re-open the permit to incorporate effluent limitations as necessary.

3. Implementation of Best Management Practices for Alkaline Mine Drainage and Coal Preparation and Associated Areas

Pursuant to 40 CFR § 122.44(k)(4), EPA may impose Best Management Practices (BMPs) which are "reasonably necessary to achieve effluent limitations and standards or to carry out the purposes of the Act." The Permit requires that the Permittee develop and implement BMPs designed to prevent and/or reduce pollutant levels in discharges from entering receiving waters. Specifically, the Permit requires the Permittee to implement BMPs to address discharges associated with two outfall categories – Alkaline Mine Drainage and Coal Preparation and Associated Areas. See Permit Part III. A. 3. This is a new permit requirement and was added to address discharges with reasonable potential to cause or contribute to exceedances of applicable water quality standards as indicated by EPA's analysis of the 2022 monitoring results described in Section B.1. of this factsheet and Attachment A. The Permit also requires the Permittee to update the Facility-wide Pollution Prevention Plan ("Plan") within 90 days and to submit the plan to EPA.

The Permittee has described the following BMPs are typically used on the mine site: mulching on reclaimed mine lands, silt fences, straw wattles/bales, diversion ditches and riprap in drainages to collect sediment and prevent erosion. The permittee also stated that it does not currently use flocculants but may consider using them in the future.² The permit allows the permittee to use flocculants and includes a requirement to notify EPA prior to use. Potential application of flocculants is one component of various BMPs described in the Pollutant Prevention Plan.

D. Anti-Backsliding

Section 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulation.

Here, the permit does not establish any effluent limits less stringent than those in the previous permit and does not allow backsliding.

E. Antidegradation Policy

EPA's antidegradation policy under CWA § 303(d)(4) and 40 CFR § 131.12 and NNSWQS require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. The receiving water at issue here is not listed as an impaired waterbody requiring a total maximum daily load for any pollutants under CWA Section 303(d) and 40 CFR § 130.7(a)

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that applicable water quality standards are met. The permit does not include a mixing zone therefore these limits will apply at the end of pipe without consideration of dilution in the receiving water. No effluent limits are less stringent than the previous permit.

Therefore, due to the low levels of toxic pollutants present in the effluent, infrequency of discharge, and technology-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

VII. NARRATIVE WATER QUALITY-BASED LIMITS

Section 203 of the NNSWQS contains narrative water quality standards applicable to the receiving water. The permit incorporates narrative water quality-based limits for the discharge in Part I, section A.3 based on applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequencies specified. Additionally,

² NTEC Comment letter to EPA, dated April 21, 2025.

monitoring may be required for pollutants or parameters where numeric effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the permit. All monitoring data shall be electronically reported via DMR forms on EPA's Central Data Exchange (CDX) and submitted as specified in the permit.

B. Priority Toxic Pollutants Scan

A Priority Toxic Pollutants scan shall be conducted annually (provided the Facility has a discharge) to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee must conduct the priority pollutants scan concurrently with whole effluent toxicity testing. Permit Attachment D provides a complete list of Priority Toxic Pollutants, including identifying the volatile compounds that should be collected via grab sample procedures. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the sufficiently sensitive methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the permit or by EPA. A complete list of Priority Toxic Pollutants is provided at 40 CFR § 131.36.

C. Whole Effluent Toxicity (WET) Requirements

The CWA requires that all waters be suitable for aquatic life, which includes the protection and propagation of fish, shellfish, and wildlife. As evidence that CWA requirements protecting aquatic life from chronic and acute toxicity are met in surface waters receiving the NPDES discharge, samples are collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods. These aquatic toxicity test results are used to determine if the NPDES effluent causes toxicity to aquatic organisms. Toxicity testing is important because for scores of individual chemicals and compounds, chemical-specific environmentally protective levels for toxicity to aquatic life have not been developed or set as water quality standards. In due course, some such chemicals and compounds can eventually make their way into effluents and their receiving surface waters. When this happens, toxicity tests of effluents can demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling a water quality problem for aquatic life.

EPA's WET methods are systematically designed to expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to both an NPDES effluent sample and a control sample. During the toxicity test, the test organism may show a difference in biological response, such as; eggs not fertilized, early life stages that grow too slowly or abnormally, or death. At the end of a toxicity test, the different biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., means, standard deviations, coefficients of variation). The effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate

model) chosen by the permitting authority and specified in the NPDES permit. The chosen statistical approach is compatible with both the experimental design of the WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic, in relation to the permit's toxicity limit for the effluent. EPA's WET methods are specified under 40 CFR § 136 and/or in applicable water quality standards.

In the permit, EPA requires the permittee to analyze WET test data using the Test of Significant Toxicity (TST) statistical approach. This statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-003, 2010; TST Technical Document) and Denton DL, Diamond J, and Zheng L. 2011. Test of significant toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. *Environ Toxicol Chem* 30:1117-1126. This statistical approach supports important choices made within a toxicity laboratory which favor quality data and EPA's intended levels for statistical power when true toxicity is statistically determined to be unacceptably high (≥ 25 Percent Effect (PE)), or acceptably low (< 10 PE). Example choices are practices supporting healthy test organisms, increasing the minimum recommended replication component of the WET method's experimental design (if needed), technician training, etc. TST results do not often differ from other EPA-recommended statistical approaches using hypothesis testing (Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. *Environ Toxicol Chem* 32:1101-1108.). The TST maintains EPA's desired low false positive rate for WET methods—the probability of declaring toxicity when true toxicity is acceptably low $\leq 5\%$ —when quality toxicity laboratories conduct toxicity tests (TST Technical Document; Fox JF, Denton DL, Diamond J, and Stuber R. 2019.). Note: The false positive rate is a long-run property for the toxicity laboratory conducting a WET method. A low false positive rate is indicted by a low long-run toxicity laboratory control coefficient of variation for the test species/WET method, using a minimum of 30 to 50 toxicity tests.

For NPDES samples for toxicity testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends at the first time of sample use (initiation of toxicity test). 40 CFR § 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA.

In accordance with 40 CFR § 122.44(d)(1), reasonable potential for chronic toxicity has not been determined because chronic toxicity tests have not been previously conducted for the discharge and there are no known toxic parameters in the effluent. No chronic toxicity WQBELs are required for the permitted discharge (40 CFR § 122.44(d)(1)). However, monitoring and reporting for both the median monthly and maximum daily effluent results for the parameter of chronic toxicity are required, so that effluent toxicity can be assessed in relation to CWA requirements for the permitted discharges (See Part I, Table 2 in NPDES permit).

In accordance with 40 CFR § 122.44(d)(1)(ii), in setting the permit's levels for chronic toxicity and conditions for discharge, EPA is using a test species/chronic short-term WET method and a discharge Instream Waste Concentration (IWC) representing conservative assumptions for effluent dilution necessary to protect receiving water quality. The IWC is a discharge-specific term based on the permit's authorized mixing zone or initial dilution. Generally, the dilution

model result “S” from Visual Plumes/Cormix is used. S is the volumetric dilution factor, i.e. 1 volume effluent is diluted with S – 1 volumes surface water) = $[(V_e + V_a) / V_e]$. Following the mass balance equation, if the dilution ratio $D = Q_s / Q_e$, then $[(Q_e + Q_s) / Q_e] = 1 + D = S$.

For this discharge, $S = 1$ (i.e., no authorized dilution). The discharge-specific IWC = 1 to 1 dilution (1:1, 1/1) = 100% effluent. The IWC made by the toxicity laboratory is mixed as 1 part solute (i.e., effluent) to 0 parts dilutant (1: (1 – 1)) for a total of 1 part.

The TST’s null hypothesis for chronic toxicity (H_0) is: In-stream Waste Concentration (IWC) mean response (% effluent) ≤ 0.75 Control mean response. The TST’s alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. For this permit, results obtained from a single chronic toxicity test are analyzed using the TST statistical approach, where the required chronic toxicity IWC for all discharge points (outfalls) is 100% effluent.

A species sensitivity screening for chronic toxicity is required in the permit to determine the most sensitive species at the IWC.

IX. SPECIAL CONDITIONS

A. Monitoring for Pollutants of Concern

USEPA has established additional monitoring beyond what is required by the Coal Mining ELGs for several parameters due to concerns raised during the comment period of previous iterations of this permit. Specifically, comments were raised about potential impacts from the disposal of CCBs generated at FCPP and used as backfill in Areas I and II. As noted previously in this document, NTEC has not accepted any CCBs since 2008 and does not have any current or future plans to place CCB materials as backfill for future reclamation within the Navajo Coal Mine Lease. USEPA has provided a full response to these concerns in the Response to Comments document provided with the previous 2008 permit.

USEPA does not currently have data that indicates discharges from Navajo Coal Mine are contributing to an increase of pollutant concentrations in the Chaco River downstream of the mine. Therefore, USEPA will continue the required effluent monitoring, imposed as permit conditions to the 2008 renewal, at each of the discharge outfalls for the following pollutants: arsenic, boron, cadmium, lead, mercury, selenium, sulfate, and total dissolved solids. Consistent with the 2015 Final Biological Opinion for the Four Corners Power Plant and Navajo Mine Energy Project and the Reasonable and Prudent Measures and Terms and Conditions required therein, USEPA will require that all monitoring of the above referenced pollutants be conducted using USEPA approved “sufficiently sensitive” methods. See 40 CFR Section 136.

USEPA has included a reopener provision in the permit. If monitoring indicates that the discharge is causing or contributing to an excursion above applicable water quality criteria, USEPA may reopen the permit to establish numeric or other effluent limits for those parameters.

B. Mercury and Selenium Monitoring Study and Summary Report

This permit requires the permittee to propose and complete a monitoring study of mercury and selenium levels in discharged water, including information about the frequency, magnitude

(volume) and duration of discharges. The permittee shall use sufficiently sensitive EPA-approved analytical methods for measuring mercury and selenium concentrations. This study shall also include monitoring of water and, to the extent feasible, fish tissue or fish eggs/ovaries at upstream or downstream waters. The permittee is required to complete this study within the first three years of the permit term and provide a summary report in the fourth year of permit term. In this summary report, the permittee shall consider any applicable fish tissue criterion for mercury or fish egg/ovary criterion for selenium or translated water column criteria as part of its assessment of monitoring results. This mercury and selenium study and report are consistent with implementation of Reasonable and Prudent Measures of USFWS Biological Opinion (2015).

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat. A federal agency must consult with the relevant Service, either U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service, if it determines that an endangered or threatened species is present in the area affected by the federal action and that the implementation of such action will likely affect the species. ESA §7(a)(3); 16 U.S.C. § 1536(a)(3). When a particular action involves more than one Federal agency, the ESA's consultation and conference responsibilities may be fulfilled through a lead agency. 50 CFR part 402.07.

This reissuance of a NPDES permit for the Navajo Coal Mine is a subset of the broader Four Corners Power Plant and Navajo Mine Energy Project (FCPPNMEP) for which the Office of Surface Mining Reclamation and Enforcement (OSMRE) is the lead agency for the purposes of ESA consultation and conference responsibilities. In 2014 and 2015, the OSMRE engaged in coordination and consultation with USFWS regarding the FCPPNMEP pursuant to section 7 of the ESA, after which USFWS prepared a Biological Opinion (BiOP) dated April 8, 2015. The scope of the OSMRE ESA coordination and consultation includes the NPDES permits that EPA issues for the Navajo Coal Mine and considered that the Navajo Coal Mine would be operational for a period of at least 25 years, between 2016-2041. Therefore, the 2015 USFWS BiOP encompasses this NPDES permit action, and EPA is relying in part on the OSMRE ESA coordination and consultation and resulting USFWS BiOP in analyzing the impacts of EPA's action on species protected under the ESA.

Potentially Affected Species

On February 20, 2025, EPA obtained a USFWS Information for Planning and Consultation (IPaC) report that identified threatened and endangered species with the potential to occur in the Action Area (EPA Species List). The EPA Species List identified six threatened or endangered species with the potential to occur in the Action Area, as well as critical habitat in the Action Area for the two fish listed:

Mammals

New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*): Endangered

Birds

Southwestern Willow flycatcher (*Empidonax traillii extimus*): Endangered

Yellow-billed Cuckoo (*Coccyzus americanus*): Threatened

Fish

Colorado Pikeminnow (*Ptychocheilus lucius*) Endangered,

Razorback Sucker (*Xyrauchen texanus*) Endangered

Plants

Mancos Milk-vetch (*Astragalus humillimus*) Endangered

Mesa Verde Cactus (*Sclerocactus mesae-verdae*) Threatened

Each of these species, and any relevant critical habitat, were evaluated in the OSMRE ESA coordination and consultation and USFWS BiOP, which considers a larger, but overlapping action area that covers both the Four Corners Power Plant and Navajo Mine Energy Project and covers a much larger list of species.

The EPA Species List also identified one proposed threatened species, and one proposed endangered species:

Insects

Monarch Butterfly (*Danaus plexipuss*) Proposed Threatened

Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) Proposed Endangered

These two proposed species were not evaluated in the OSMRE ESA coordination and consultation and USFWS BiOP because they were proposed after the OSMRE ESA consultation was completed. The Monarch Butterfly was proposed threatened on December 12, 2024, and the Suckley's Cuckoo Bumble Bee was proposed endangered on December 17, 2024.

Analysis of Potential Impacts to Threatened and Endangered Species

As explained above, EPA is relying on the OSMRE ESA coordination and consultation and resulting USFWS BiOP to fulfill its ESA consultation and conference responsibilities for the six species on the EPA Species List that were also included as part of the OSMRE consultation process: the New Mexico Meadow Jumping Mouse, Mancos Milk-vetch, the Mesa Verde Cactus, Colorado Pikeminnow and its critical habitat, Razorback Sucker and its critical habitat, Southwestern Willow Flycatcher, and the Yellow-billed Cuckoo. OSMRE determined that the proposed action would have no effect on the New Mexico Meadow Jumping Mouse. OSMRE determined that the proposed action may affect, but is unlikely to adversely affect the Mancos Milk-vetch, and the Mesa Verde Cactus. USFWS concurred with these determinations. OSMRE determined that the proposed action was likely to adversely affect the Colorado Pikeminnow and its critical habitat, the Razorback Sucker and its critical habitat, the Southwestern Willow Flycatcher, and the Yellow-billed Cuckoo and engaged in formal consultation with USFWS regarding these species. During formal consultation, USFWS found that the federal action will not jeopardize the continued existence of these species and will not adversely modify or destroy

their respective designated critical habitats in the San Juan Basin. The USFWS BiOP includes non-discretionary Terms and Conditions and an incidental take statement. See USFWS Biological Opinion at Terms and Conditions 5(a)-(f) (page 152). EPA will rely on the information developed under these provisions in the USFWS BiOP to minimize impacts on federal threatened and endangered species from this permitting action.

EPA conducted its own ESA evaluation and analysis for the two proposed species that were not included in the OSMRE consultation and USFWS BiOP. Proposed species do not have the same legal protection as listed species. However, a federal agency must confer with USFWS on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed. EPA determined that the reissuance of this NDPES will not jeopardize the continued existence of the Monarch Butterfly and the Suckley's Cuckoo Bumble Bee.

B. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. EPA is a signatory party to a 2014 Programmatic Agreement (PA) that addressed potential adverse effects to historic properties from the Navajo Coal mine during the lifetime of the mining project. Under 36 CFR § 800.14(b), a PA can govern the resolution of adverse effects from a complex action that has multiple undertakings included as a part of the Section 106 review. The NHPA consultation that led to the creation of the PA was led by OSMRE and included the Navajo Nation Tribal Historic Preservation Officer and several other federal agencies with related permitting and authorizations required for the expanded mining project. The consultation took a comprehensive approach to resolve potential adverse effects from the open pit surface coal mining and related activities, reclamation activities, mining infrastructure, and other elements. Recently, EPA consulted with OSMRE (which under the PA continues to be the lead agency responsible for ensuring compliance with Section 106 of the NHPA) regarding the NTEC application for a renewal of the NPDES permit. OSMRE confirmed with EPA that the renewal of the NTEC NPDES permit is an action covered by the existing PA that would not require additional actions for NHPA compliance.

C. Water Quality Certification Requirements (40 CFR §§ 124.53 and 124.54)

The permittee is required to seek CWA Section 401 Certification (including paying applicable fees) from the Navajo Nation. This Certification ensures that the permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Tribal law. EPA cannot issue the permit until the certifying State, Territory, or Tribe has granted certification under 40 CFR § 124.53 or waived its right to certify.

D. Government-to-Government Consultation

EPA's Policy on Consultation and Coordination with Indian Tribes³ states that consultation could be appropriate when actions and decisions may affect Tribal interests. EPA offered the Navajo Nation the opportunity to consult on EPA's issuance of the permit on May 1, 2023. The Navajo Nation did not respond to the offer to initiate Government-to-Government consultation.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR §§ 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity, the need for numeric effluent limits, or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Clean Water Act Section 402(k)

The permittee is authorized to discharge from the identified facility at the outfall location(s) specified below, in accordance with the effluent limits, monitoring requirements, and other conditions set forth in the permit. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process. Any discharges not expressly authorized in the Permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, State, or local authorities after issuance of the Permit via any means, including during an inspection.

Any wastestream or pollutant loading greater than or different than what the Permittee has proposed to discharge is not authorized by this Permit. The Permittee's discharge is based on the chemical-specific data and the facility's design flow as described in the permit application, as well as other information provided to EPA during the permitting process.

To obtain authorization for a new or changed discharge, the Permittee must first submit a request to EPA and EPA must approve that request. This will allow EPA to analyze whether additional controls or limitations are necessary. Permit modification or reissuance may be required before the discharge would be authorized.

C. Standard Provisions

The permit requires the permittee to comply with EPA Region 9 Standard Federal NPDES Permit Conditions.

³ EPA Policy on Consultation and Coordination with Indian Tribes
https://www.epa.gov/system/files/documents/2023-12/epa-policy-on-consultation-with-indian-tribes-2023_0.pdf

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR § 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR § 124.10)

Notice of the draft permit was placed on the EPA website, with 30 days provided for interested parties to respond in writing to EPA. The draft permit and fact sheet was posted on the EPA website for the duration of the public comment period. After the closing of the public comment period, EPA responded to all significant comments.

C. Public Hearing (40 CFR § 124.12)

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision. No public hearing request was received during the 30-day public comment period.

XIII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this proposal may be directed to:

Gary Sheth
Sheth.Gary@epa.gov
(415) 972-3516

EPA Region 9
75 Hawthorne Street (WTR 2-3)
San Francisco, California 94105

XIV. REFERENCES

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Navajo Nation. 2007 *Water Quality Standards*, Effective March 26, 2009

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Navajo Nation Environmental Protection Agency. Clean Water Act Section 401 certification Signed March 14, 2025.

NTEC letter to EPA with updated permit application and revised Sediment Control Plan, dated October 30, 2023.

OSMRE 2023. Approval of Modification of Sediment Control Plan and revised SMCRA Permit for Navajo Mine dated November 8, 2023.

OSMRE and EPA. 2003. Memorandum of Understanding: Process for Obtaining A NPDES Permit Under Subpart H - Western Alkaline Mine Drainage Category, EPA Region 9 and OSMRE, dated December 19, 2003.

OSMRE. *Four Corners Power Plant and Navajo Mine Energy Project (FCPPNMEP) Biological Assessment*. August 8, 2014.

USFWS. *Biological Opinion of USFWS for FCPPNMEP*. April 8, 2015

USFWS. IPaC Species List for Project 2025-0059033 from New Mexico Ecological Services Field Offices. February 20, 2025.

XV. ATTACHMENTS

A. REASONABLE POTENTIAL ANALYSES

This attachment provides EPA's reasonable potential analyses pursuant to 40 CFR 122.44(d)(1) for the Navajo Coal Mine permit (NN0028193). The reasonable potential analyses used applicable numeric water quality standards and pollutant concentrations in discharges occurring in 2022 at five different outfalls as described above in Section VI. B. of this fact sheet.

Applicable Standards and Designated Uses

The Navajo Nation has developed Surface Water Quality Standards (NNSWQS) for different stream segments, depending on the designated uses and level of protection required. EPA used the NNSWQS (which were approved by EPA in 2007 and 2015) to analyze the need for and to develop water quality-based effluent limitations in this permit.

Table 206.1 of the NNSWQS defines the designated uses of the Chaco River (perennial and intermittent reaches) to be:

- **PrHC** - Primary Human Contact
- **ScHC** - Secondary Human Contact
- **AgWS** - Agriculture Water Supply
- **FC** - Fish Consumption
- **A&W** - Aquatic & Wildlife
- **LW** - Livestock Watering

Existing Data on Toxic Pollutants and Reasonable Potential Analysis

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

For pollutants with effluent data available and numeric NNSWQS, EPA conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* (EPA's TSD) (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. As presented below, EPA evaluated effluent monitoring data to determine the maximum pollutant concentration (per outfall) and applied a multiplier value to obtain the projected maximum effluent concentration which was then compared to the applicable water quality standard value. The RP analyses below use a coefficient of variation of 0.6 and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values.

Given there was only one discharge event and one monitoring result (n=1) associated with the event, the multiplier value is high (13.2). This combination of n=1 and a high multiplier value acknowledges the high degree of variability in one single effluent monitoring result. (If there are more monitoring results per outfall then n would increase and the multiplier value correspondingly decreases (e.g., if n=9 then the multiplier value is 3.2).) See TSD, sections 3.3, 5.5.2, and Table 3-1.

EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

$$\text{Projected maximum concentration} = C_e \times \text{reasonable potential multiplier factor.}$$

Where, “C_e” is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

The tables below contain a summary of EPA’s reasonable potential statistical analysis.

Table 1. Summary of EPA’s Reasonable Potential Statistical Analysis For Outfall 13:

Parameter ⁽¹⁾⁽²⁾	Maximum Observed Concentration ^{(3) (4)}	n	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion ⁽³⁾	Statistical Reasonable Potential?	Max. Observed Concentration Exceeds Most Stringent WQC?
Arsenic, total	0.0006 mg/L	1	13.2	0.008 mg/L	0.03 mg/L (FBC)	N	N
Lead, total	0.0006 mg/L (0.000474 mg/L dissolved)	1	13.2	0.0063 mg/L (dissolved)	0.00252 mg/L (dissolved) (A&W Chronic)	Y	N
Selenium, total	0.005 mg/L	1	13.2	0.066 mg/L	0.002 mg/L (A&W Chronic)	Y	Y
Mercury, total	0.00001 mg/L (0.0000085 mg/L dissolved)	1	13.2	0.0001122 mg/L (dissolved)	0.000012 mg/L (dissolved) (A&W Chronic)	Y	N
Aluminum, total	1.03 mg/L	1	13.2	13.596 mg/L	0.087 mg/L (acid soluble) (A&W Chronic)	Y ⁽⁵⁾	Y ⁽⁵⁾
Boron	0.28 mg/L	1	13.2	3.70 mg/L	2.0 mg/L (AgWS)	Y	N
Nitrate + Nitrite	0.46 mg/L	1	13.2	6.07 mg/L	100 mg/L (LW)	N	N
Fluoride	0.8 mg/L	1	13.2	10.56 mg/L	2 mg/L (LW)	Y	N
Manganese, total	0.023 mg/L	1	13.2	0.304 mg/L	10 mg/L (AgWS)	N	N

- (1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected and with applicable NNSWQS are included in this analysis. Some pollutants detected in the effluent and listed in Tables 1-5 do not have applicable NNSWQS.
- (2) Effluent data was collected by the Permittee in 2022.
- (3) A hardness of 100 mg/L was assumed to determine the most stringent water quality criterion in the NNSWQS and to make metal conversions between total and dissolved.
- (4) Metal conversion factors between total and dissolved were used from Nationally Recommended Water Quality Criteria for Priority Toxic Pollutants, U.S. EPA, 1999, Appendix A.
- (5) There is not an EPA recommended conversion factor for converting total to acid-soluble aluminum.

Table 2. Summary of EPA's Reasonable Potential Statistical Analysis For Outfall 4-7:

Parameter⁽¹⁾⁽²⁾	Maximum Observed Concentration⁽³⁾⁽⁴⁾	<i>n</i>	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion⁽³⁾	Statistical Reasonable Potential?	Max. Observed Concentration Exceeds Most Stringent WQC?
Arsenic, total	0.0017 mg/L	1	13.2	0.0224 mg/L	0.03 mg/L (FBC)	N	N
Lead, total	0.0023 mg/L (0.00182 mg/L dissolved)	1	13.2	0.0240 mg/L (dissolved)	.00252 mg/L (dissolved) (A&W Chronic)	Y	N
Selenium, total	0.002 mg/L	1	13.2	0.0264 mg/L	0.002 mg/L (A&W Chronic)	Y	N
Mercury, total	0.00002 mg/L (0.000017 mg/L dissolved)	1	13.2	0.00022 mg/L (dissolved)	0.000012 mg/L (dissolved) (A&W Chronic)	Y	Y
Aluminum, total	4.05 mg/L	1	13.2	53.5 mg/L	0.087 mg/L (acid soluble) (A&W Chronic)	Y ⁽⁵⁾	Y ⁽⁵⁾
Manganese, total	0.040 mg/L	1	13.2	0.528 mg/L	10 mg/L (AgWS)	N	N

- (1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected and with applicable NNSWQS are included in this analysis. Some pollutants detected in the effluent and listed in Tables 1-5 do not have applicable NNSWQS.
- (2) Effluent data was collected by permittee in 2022.
- (3) A hardness of 100 mg/L was assumed to determine the most stringent water quality criterion in the NNSWQS and to make metal conversions between total and dissolved.
- (4) Metal conversion factors between total and dissolved were used from Nationally Recommended Water Quality Criteria for Priority Toxic Pollutants, U.S. EPA, 1999, Appendix A.
- (5) There is not an EPA recommended conversion factor for converting total to acid-soluble aluminum.

Table 3. Summary of EPA's Reasonable Potential Statistical Analysis For Outfall 4-8:

Parameter⁽¹⁾⁽²⁾	Maximum Observed Concentration^{(3) (4)}	<i>n</i>	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion ⁽³⁾	Statistical Reasonable Potential?	Max. Observed Concentration Exceeds Most Stringent WQC?
Arsenic, total	0.0022 mg/L	1	13.2	0.02904 mg/L	0.03 mg/L (FBC)	N	N
Lead, total	0.0050 mg/L (0.0040 mg/L dissolved)	1	13.2	0.0522 mg/L (dissolved)	0.00252 mg/L (dissolved) (A&W Chronic)	Y	Y
Selenium, total	0.002 mg/L	1	13.2	0.0264 mg/L	0.002 mg/L (A&W Chronic)	Y	N
Mercury, total	0.00003 mg/L (0.0000255 mg/L dissolved)	1	13.2	0.0003366 mg/L (dissolved)	0.000012 mg/L (dissolved) (A&W Chronic)	Y	Y
Aluminum, total	6.11 mg/L	1	13.2	80.7 mg/L	0.087 mg/L (acid soluble) (A&W Chronic)	Y ⁽⁵⁾	Y ⁽⁵⁾
Boron	0.05 mg/L	1	13.2	0.66 mg/L	2.0 mg/L (AgWS)	N	N
Cadmium, total	0.00005 mg/L (0.00004545 mg/L dissolved)	1	13.2	0.00060 mg/L	0.00025 mg/L (A&W Chronic)	Y	N
Manganese, total	0.098 mg/L	1	13.2	1.294 mg/L	10 mg/L (AgWS)	N	N

- (1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected and with applicable NNSWQS are included in this analysis. Some pollutants detected in the effluent and listed in Tables 1-5 do not have applicable NNSWQS.
- (2) Effluent data was collected by permittee in 2022.
- (3) A hardness of 100 mg/L was assumed to determine the most stringent water quality criterion in the NNSWQS and to make metal conversions between total and dissolved.
- (4) Metal conversion factors between total and dissolved were used from Nationally Recommended Water Quality Criteria for Priority Toxic Pollutants, U.S. EPA, 1999, Appendix A.
- (5) There is not an EPA recommended conversion factor for converting total to acid-soluble aluminum.

Table 4. Summary of EPA's Reasonable Potential Statistical Analysis For Outfall 4-9:

Parameter⁽¹⁾⁽²⁾	Maximum Observed Concentration^{(3) (4)}	<i>n</i>	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion ⁽³⁾	Statistical Reasonable Potential?	Max. Observed Concentration Exceeds Most Stringent WQC?
Arsenic, total	0.0112 mg/L	1	13.2	0.14784 mg/L	0.03 mg/L (FBC)	Y	N
Lead, total	0.0606 mg/L (0.0479 mg/L dissolved)	1	13.2	0.6327 mg/L (dissolved)	0.00252 mg/L (dissolved) (A&W Chronic)	Y	Y
Selenium, total	0.002 mg/L	1	13.2	0.0264 mg/L	0.002 mg/L (A&W Chronic)	Y	N
Mercury, total	0.00013 mg/L (0.00011 mg/L dissolved)	1	13.2	0.00146 mg/L (dissolved)	0.000012 mg/L (dissolved) (A&W Chronic)	Y	Y
Aluminum, total	82.9 mg/L	1	13.2	1094 mg/L	0.087 mg/L (acid soluble) (A&W Chronic)	Y ⁽⁵⁾	Y ⁽⁵⁾
Boron	0.09 mg/L	1	13.2	1.188 mg/L	2.0 mg/L (AgWS)	N	N
Cadmium, total	0.0008 mg/L (0.00073 mg/L dissolved)	1	13.2	0.0096 mg/L	0.00025 mg/L (A&W Chronic)	Y	Y
Manganese, total	0.528 mg/L	1	13.2	6.97 mg/L	10 mg/L (AgWS)	N	N

(1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected and with applicable NNSWQS are included in this analysis. Some pollutants detected in the effluent and listed in Tables 1-5 do not have applicable NNSWQS.

(2) Effluent data was collected by permittee in 2022.

(3) A hardness of 100 mg/L was assumed to determine the most stringent water quality criterion in the NNSWQS and to make metal conversions between total and dissolved.

(4) Metal conversion factors between total and dissolved were used from Nationally Recommended Water Quality Criteria for Priority Toxic Pollutants, U.S. EPA, 1999, Appendix A.

(5) There is not an EPA recommended conversion factor for converting total to acid-soluble aluminum.

Table 5. Summary of EPA's Reasonable Potential Statistical Analysis For Outfall 4-10:

Parameter ⁽¹⁾⁽²⁾	Maximum Observed Concentration ^{(3) (4)}	<i>n</i>	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion ⁽³⁾	Statistical Reasonable Potential?	Max. Observed Concentration Exceeds Most Stringent WQC?
Arsenic, total	0.0039 mg/L	1	13.2	0.0515 mg/L	0.03 mg/L (FBC)	Y	N
Lead, total	0.0106 mg/L (0.0084 mg/L dissolved)	1	13.2	0.1107 mg/L (dissolved)	0.00252 mg/L (dissolved) (A&W Chronic)	Y	Y
Selenium, total	0.002 mg/L	1	13.2	0.0264 mg/L	0.002 mg/L (A&W Chronic)	Y	N
Mercury, total	0.00004 mg/L (0.000034 mg/L dissolved)	1	13.2	0.00045 mg/L (dissolved)	0.000012 mg/L (dissolved) (A&W Chronic)	Y	Y
Aluminum, total	11.7 mg/L	1	13.2	154.4 mg/L	0.087 mg/L (acid soluble) (A&W Chronic)	Y ⁽⁵⁾	Y ⁽⁵⁾
Boron	0.07 mg/L	1	13.2	0.92 mg/L	2.0 mg/L (AgWS)	N	N
Cadmium, total	0.0001 mg/L (0.00009 mg/L dissolved)	1	13.2	0.0012 mg/L	0.00025 mg/L (A&W Chronic)	Y	N
Manganese, total	0.073 mg/L	1	13.2	0.96 mg/L	10 mg/L (AgWS)	N	N

(1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected and with applicable NNSWQS are included in this analysis. Some pollutants detected in the effluent and listed in Tables 1-5 do not have applicable NNSWQS.

(2) Effluent data was collected by permittee in 2022.

(3) A hardness of 100 mg/L was assumed to determine the most stringent water quality criterion in the NNSWQS and to make metal conversions between total and dissolved.

(4) Metal conversion factors between total and dissolved were used from Nationally Recommended Water Quality Criteria for Priority Toxic Pollutants, U.S. EPA, 1999, Appendix A.

(5) There is not an EPA recommended conversion factor for converting total to acid-soluble aluminum.

Conclusion

EPA has concluded that there is statistical reasonable potential for each pollutant marked with a 'Y' in the 'Statistical Reasonable Potential?' column above to cause or contribute to an exceedance of an applicable water quality standard. These conclusions were made based on following the statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* (EPA's TSD, 1991). Pollutants were assessed separately per outfall

to account for the distance and effluent variation between outfalls. Therefore the determination of which pollutants have reasonable potential varies by outfall (see Attachment A, Tables 1-5 above).

B. HISTORIC DISCHARGES AT NAVAJO MINE SITE

Table 1. Documented discharges at Navajo Mine from 2002 to 2013

Year	Number of Discharges and location (i.e. which outfall?)	Cause of Discharge	Annual Volume Discharged (mgd/gpm X duration) OR acre-feet or Cubic feet, etc.	Discharge monitoring results.
2002	Discharge via overflow and pumping between 9/10-9/14, 2002 at Outfall 008	Precipitation event of magnitude of greater than 10-year 24 hour event (1.67 inches over 14 hours).	Volume not calculated. Pump capacity not reported.	9/11/2002 sample exceeded TSS (total) and Iron (total) 9/13 sample had no exceedance 9/14 sample exceeded TSS (total) ⁴
2006	Discharge event exact date/ location not recorded	Unknown cause	No report recorded	No monitoring data available
2007	Discharge event due to overflow between 7/25-7/27, 2007 at Outfall 008	Precipitation event of magnitude greater than 10-year 24 hour even (1.6 and 1.7 inches in 2 hours at two gauges)	Volume not calculated.	7/26/2007 and 7/27/2007 samples both had no exceedance
2010	Discharge reported on 2/19 2010 at Outfall 002 into Morgan Lake. ⁵	Release due to accidental starting of a pump by contractor which was shut off immediately when it was discovered the	Volume estimated at most to be 5000 gallons. Most of the discharge entered Cell A via sheet flow the intended	No sample of the discharge could be collected, but samples from Cell #5 and canal to Morgan lake

⁴ Discharger measured ambient upstream and downstream TSS and iron samples which were orders of magnitude higher than the limits.

⁵ Outfall 002 no longer exists as it was terminated as a discharge location prior to the permit issued in 2018.

Year	Number of Discharges and location (i.e. which outfall?)	Cause of Discharge	Annual Volume Discharged (mgd/gpm X duration) OR acre-feet or Cubic feet, etc.	Discharge monitoring results.
			end point of the pumped water.	and APS Hot pond showed exceedance of the TSS (total) limit ⁶
2013	Discharges reported at Outfall 008, 011, 013 between 9/13 and 9/15, 2013. Other possible discharges (unpermitted) between Outfalls 006 and 007 observed on 9/27/2013.	Release due to intense localized precipitation events including recorded precipitation of 0.56 inches and 1.29 inches in the span of 60 to 100 minutes with most falling in interval of 20 minutes.	Exact volumes were not estimated. NTEC estimated the discharges occurred for less than 12 hours at Outfall 011, about 24 hours at Outfall 013 and around 72 hours at Outfall 008. Flows of 5 to 0.5 cubic feet per second (CFS) measured at Outfall 008 and less than 1 CFS at Outfall 13. No information on the duration of discharge between 006 and 007 was available.	No samples were collected at Outfall 011. Discharge at Outfall 011 had ceased by the time sampling was possible, no data was collected. Outfall 008 had no exceedances at 9/13, 9/14, 9/15, 2013. Outfall 013 exceedance of TSS (total) and Iron (total) on 9/13/2013 at 008. ⁷

Table 1. above illustrates that discharges have been rare at the Navajo Mine site. Data on the total volume discharged was not available, but during those rare discharge events, TSS and Iron

⁶ The exceedance was of TSS of 142 mg/L versus a permit limit of 70 mg/L. However TSS values in the Chaco River and San Juan River eventual downstream waters from Morgan Lake outfall are recorded as high as 300 times the value recorded from Pond #5.

⁷ TSS values of 300 times and Iron values of 30-50 times the permit limit were recorded upstream and downstream of Outfall 008 by the permittee on 9/13/2013.

levels occasionally exceeded permit limits. The permittee also monitored both upstream and downstream of the discharges during the discharge events and the results indicate ambient concentrations were up to 300 times the TSS limit and up to 50 times the iron limit. The permit retains effluent limits for TSS and iron.