



FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: Department of Energy
National Nuclear Security Administration
Nevada Field Office
232 Energy Way
North Las Vegas, NV 89030

Permit Number: NEV96021

Location: Nevada National Security Site
Nye County, Nevada

1. General:

The Permittee, the National Nuclear Security Administration/Nevada Field Office (NNSA/NFO), owns, and operates, through their Management and Operating contractor, the Nevada National Security Site (NNSS), located approximately sixty-five miles northwest of Las Vegas, Nevada in Nye County, Nevada.

This permit authorizes the Permittee to discharge industrial wastewater from the portal of E-Tunnel, through the discharge pipeline, into five evaporation/infiltration basins located on the NNSS. This system is collectively referred to as the E-Tunnel Discharge System (ETDS). The five evaporation/infiltration basins are named "Pond 4," "Pond 5," "Pond 6A," "Pond 6B," and "Pond 6C." These sequential, earthen dammed basins release the industrial wastewater through evaporation or infiltration into the alluvial soils beneath them. This permit only authorizes the Permittee to allow infiltration of industrial wastewater from one or more of the basins into the unsaturated zone below them. It does not allow the Permittee to discharge from any of the basins to the surface of the surrounding watershed.

This permit requires the Permittee to convey the E-Tunnel industrial wastewater without loss from the E-Tunnel portal to the evaporation/infiltration basins. If successfully conveyed without loss, then the Nevada Division of Environmental Protection (NDEP) deems the quality of the industrial wastewater infiltrating from the basins equivalent to the water quality at the ETDS discharge point, known as the Tunnel Discharge Monitoring Station (TDMS).

This permit requires monthly inspections of the ETDS to ensure the system is functioning as permitted. Monthly monitoring of the flow rate, specific conductance, and pH of the discharged industrial wastewater, and precipitation recorded by the nearest rain gauge or meteorological station is required. Annual monitoring for radiological and non-radiological parameters of the discharged industrial wastewater is required. The permit also requires the Permittee to maintain Well ER 12-1 to monitor groundwater near the ETDS.

2. Sampling Locations for Evaporation/Infiltration Basins:

Effluent samples and measurements taken in compliance with the monitoring requirements specified in Sections 2.0 and 4.0 of this permit are to be taken at the sample locations listed in the Table below.

Sample Location	Location Description	Northing (meters) UTM NAD 83	Easting (meters) UTM NAD 83	Latitude	Longitude
001	Tunnel Discharge Monitoring Station [TDMS]	N 4,116,053.00	E 571,485.60	37.188196 N	116.194605 W
002	Well ER 12-1	N 4,115,690.34	E 572,333.05	37.184862 N	116.185093 W

3. Proposed Discharge Limitation Tables for Evaporation/Infiltration Basins and Well ER-12:

The tables below describe the discharge limitations and monitoring requirements for each sample location that shall be taken either monthly, annually, or every 24 months to ensure permit compliance (NAC 445A.243).

**Monthly Discharge Limitation Table for Sample Location 001
 (Tunnel Discharge Monitoring Station [TDMS])**

Parameter	Limit	Reporting Frequency	Sample Type
Flow (g/day)	M&R ¹	Quarterly	Field Measurements
Specific Conductance (microsiemens/cm)	≤ 1500	Quarterly	Field Measurements
pH (SU)	6.0-9.0	Quarterly	Field Measurements

¹Monitoring and Reporting

**Annual Discharge Limitation Table for Sample Location 001
 (Tunnel Discharge Monitoring Station [TDMS])**

Parameter	Notification Limit pCi/L ¹	Reporting Frequency	Sample Type
Adjusted Gross Alpha (pCi/L)	N/A	Annual	Grab
Gross Beta (pCi/L)	N/A	Annual	Grab
Tritium (pCi/L)	500,000 ²	Annual	Grab

¹ picocuries per liter

² Exceedance requires immediate notification to NDEP due to the reversal of the historic downward trend. Exceedance also requires immediate investigation into the cause of the trend reversal.

Biennial Monitoring Requirements for Sample Location 002 (Well ER 12-1)

Limitations & Monitoring Requirements			
Parameter	Limit	Reporting Frequency	Sample Type
Specific Conductance (microsiemens/cm)	≤ 1500	Every 24 months	Field Measurement
pH (SU)	6.0-9.0	Every 24 months	Field Measurement
Adjusted Gross Alpha (pCi/L)	15	Every 24 months	Grab
Gross Beta (pCi/L)	50	Every 24 months	Grab
Tritium (pCi/L)	20,000	Every 24 months	Grab
Beryllium (mg/L)	0.004	Every 24 months	Grab
Cadmium (mg/L)	0.005	Every 24 months	Grab
Chromium (mg/L)	0.10	Every 24 months	Grab
Lead (mg/L)	0.015	Every 24 months	Grab
Mercury (mg/L)	0.002	Every 24 months	Grab
Total Nitrate and Nitrite (mg/L)	10	Every 24 months	Grab

4. Previous Discharge Characteristics:

- A. The reported monthly monitoring measurements at the TDMS of the ETDS from October 2021 to September 2022 were as follows:

Month	Specific Conductance (μS/cm)	pH (SU)	Daily Flow Rate (L/day)
October 2021	356	7.3	42,600
November 2021	357	7.3	41,000
December 2021	369	7.4	40,900
January 2022	363	7.4	41,900
February 2022	353	7.4	42,200
March 2022	357	7.4	41,200
April 2022	359	7.4	42,000
May 2022	353	7.3	42,000
June 2022	360	7.2	41,500
July 2022	361	7.1	41,000
August 2022	364	7.1	41,000
September 2022	363	7.1	41,200

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B. The reported annual sample results of the effluent water collected directly from the TDMS from 2016 through 2021 were as follows:

Parameter (Units)	Permissible Limit	10/18/2016	10/23/2017	10/09/2018	09/11/2019	10/14/2020	10/13/2021
Gross Alpha (pCi/L)	N/A	11.7	11.3	15.3	14.1	9.2	8.5
Adjusted Gross Alpha (pCi/L)	35.1	N/A	9.7	11.8	10.7	5.8	5.5
Gross Beta (pCi/L)	101	18.7	25.3	23.0	21.7	25.7	19.1
Tritium (pCi/L)	1,000,000	331,000	313,000	277,000	268,000	281,000	253,000
Cadmium (mg/L)	0.045	0.005 U ¹	0.005 U	0.005 U	0.005 U	0.0002 U	0.0002 U
Chloride (mg/L)	360	9.8	8.8	8.8	8.7	8.4	8.4
Chromium (mg/L)	0.09	0.01 U	0.01 U	0.005 U	0.01 U	0.006 U	0.006 U
Copper (mg/L)	1.2	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0.003 U
Fluoride (mg/L)	3.6	0.14	0.17	0.20	0.19	0.19	0.25
Iron (mg/L)	5.0	1.6	2.9 J ²	2.2	0.8	1.4	0.92
Lead (mg/L)	0.014	0.003 U	0.003 U	0.001	0.003	0.0009	0.0007
Magnesium (mg/L)	135	0.9	1.1 J	0.9	0.8	0.7	0.69
Manganese (mg/L)	0.25	0.018	0.034	0.025	0.010	0.016	0.010
Mercury (mg/L)	0.0018	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0001 U	0.00007 J
Nitrate Nitrogen (mg/L)	9.0	0.24	0.32	0.33	0.29	0.29	0.27
Selenium (mg/L)	0.045	0.005 U	0.005 U	0.005 U	0.005 U	0.0007 U	0.0007 U
Sulfate (mg/L)	450	17.0	16.0	16.0	16.0	14.0	14.0
Zinc (mg/L)	4.5	0.03	0.03	0.03	0.01	0.015 J	0.010 J

¹ "U" means not detected above minimum detection limit (result listed is the minimum detection limit)

² "J" means estimated concentration (result between the minimum detection limit and the reporting limit)

C. The results of the latest biennial sampling event of Well ER 12-1 that occurred in August 2020 / January 2021 were as follows:

Parameter (Units)	Permissible Limit	National Drinking Water Standard	August 2020
pH (SU)	6.0 to 9.0	6.5 to 8.5	7.4
Specific Conductance (µS/cm)	1,500	Monitor Only	992
Gross Alpha (pCi/L)	N/A	N/A	90.8/117*
Adjusted Gross Alpha (pCi/L)	15	15	-24/6.0*
Gross Beta (pCi/L)	50	50	7.3
Tritium (pCi/L)	20,000	20,000	-54 U ¹
Cadmium (mg/L)	0.005	0.005	0.00015 U
Chloride (mg/L)	250	250	14
Chromium (mg/L)	0.09	0.10	0.0062 U
Copper (mg/L)	1.2	1.3	0.0082 J ²
Fluoride (mg/L)	3.6	4.0	0.25
Iron (mg/L)	5.0	0.3	3.3
Lead (mg/L)	0.014	0.015	0.0066
Magnesium (mg/L)	135	150	57
Manganese (mg/L)	0.25	0.05	0.29/0.28*
Mercury (mg/L)	0.0018	0.002	0.00006 U
Nitrate Nitrogen (mg/L)	9.0	10	0.2 U
Selenium (mg/L)	0.045	0.05	0.00067 U
Sulfate (mg/L)	450	500	340
Zinc (mg/L)	4.5	5.0	0.33

¹ "U" means not detected above minimum detection limit (result listed is the minimum detection limit)

² "J" means estimated concentration (result between the minimum detection limit and the reporting limit)

*Due to the manganese result exceeding the Permissible Limit, Well ER 12-1 was resampled on January 29 and 30, 2021. The second number are the results reported for the 2021 resample.

5. Summary of Changes from Previous Permit:

- Permit language and format has been updated to be consistent with other groundwater discharge permits issued by the Bureau of Water Pollution Control.
- Quarterly Monitoring Reports (QMRs) are now called Discharge Monitoring Reports (DMRs).
- Added Designations for:
 - Tunnel Discharge Monitoring Station (TDMS);
 - E-Tunnel Waste-water Disposal System (ETDS);
 - Sample Location 001; and
 - Sample Location 002.

- Added sample location latitude and longitude data in Table 1 of this permit.
- Table 1-A has been replaced with Table 2.
- Table 1-B has been replaced with Tables 2, 3, and 4.
- Adjusted parameters being monitored at the TDMS and Well ER 12-1 per regulation.
- Added a “Rain Event” section requiring an inspection if the precipitation gauge or station records more than an inch of rain within a 24-hour time period.
- Retention of Records.
- Added the following sections/additional, specific requirements pertaining to:
 - NDEP’s authorization to revise permit requirements, if and when warranted;
 - Laboratory analysis;
 - Submission of information by the Permittee;
 - Any modification or addition of an evaporation/infiltration basin;
 - Minor permit modifications;
 - Scope of ownership; and
 - Adverse occurrences at the ETDS.
- The “Definition” section has been updated.

6. Rationale for Permit Requirements:

Required by Federal and State Regulations.

7. Schedule of Compliance Table:

Item #	Description	Due Date
1	The Permittee shall submit two copies of an updated O&M (Operations and Maintenance) Manual for review by the NDEP within 120 days of permit issuance. The O&M Manual shall be prepared by a Nevada Registered Professional Engineer or other Division approved qualified person.	April 28, 2023

8. Deliverable Schedule for Reports, Plans, and Other Submittals:

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	April 28, 2023
2	Annual DMRs	Annually	January 28, 2024

9. Procedures for Public Comment:

The Notice of the Nevada Division of Environmental Protection's intent to issue a permit authorizing the facility to discharge to waters of the U.S. subject to the conditions contained within the permit, is being published electronically. The notice is being posted on the NDEP website and emailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until **February 9, 2023 at 5:00 P.M.**, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

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A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person, or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

The draft renewal permit and the renewal application will be available for public review and comment for a period of thirty (30) days beginning January 10, 2023 and ending February 9, 2023. All interested parties may review the documents during standard business hours at:

Bureau of Federal Facilities
Nevada Division of Environmental Protection
375 E. Warm Springs Road Suite #200
Las Vegas, Nevada 89119
tel. (702) 668-3900

Proposed Determination:

The NDEP has made the tentative determination to re-issue the proposed 5-year permit.

Prepared by: **Christine D. Andres**
Date: **January 10, 2023**
Title: **Chief, Federal Facilities**