

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Applicant: USG Nevada LLC
P.O. Box 10
Empire, Nevada 89405

Permit Number: NEV94003

Physical Address: San Emidio Geothermal Power Plant
San Emidio Desert, Washoe County, Nevada
Sections 16 & 21, T29N, R23E MDB&M
Latitude: 40° 23' 00" N Longitude: 119° 24' 01" W

Discharge Outfalls: Outfall 001: blow-down pipeline prior to discharge to ditch
Latitude: 40° 22' 47.9" N Longitude: 119° 24' 05.4" W
Outfall 002: 10.6-acre evaporation basin
Latitude: 40° 22' 49.7" N Longitude: 119° 24' 22.5" W

Flow: 1.08 Million Gallons per Day (MGD)

Drinking Water Protection Areas and Wellhead Protection Areas:

The facility is not located within a Drinking Water Protection Area (DWPA) around any public water supply well. There is currently no established Wellhead Protection Area (WHPA) for this location.

Corrective Actions Sites: There are no Bureau of Corrective Actions remediation sites within one mile of this facility or discharge area.

General: Permit NEV94003 was originally issued to Empire Foods LLC, in August 1994. The original permit authorized the Permittee to discharge three (3) separate wastewater streams: 1) spent wash water (from potable source) and geothermal blanch water discharged to one of two saltgrass fields for flood irrigation and evaporation; 2) geothermal water used in the dehydration plant discharged to one of two wetland areas in the San Emidio Desert; and, 3) cooling tower blow-down discharged to a 2-acre evaporation basin or to a nearby pasture for spray irrigation.

Due to economic conditions, ownership of the dehydration facility reverted to Intermountain Federal Landbank Association, and the facility discharge ceased in 2004. In April 2008, the Empire Energy generating facility was purchased by U. S. Geothermal Inc., which submitted the application for renewal of the permit in 2009. At that time, the Permittee requested that references to the geothermal discharges associated with dehydration plant (waste stream two, above) also be removed from the permit.

The 2012 modification to the permit is to allow for discharge from the power plant cooling tower blow-down only (waste stream three, above), to increase the flow rate

from 0.50 MGD to 1.08 MGD, and to change the discharge location to a blow-down ditch which discharges to a 10.6-acre evaporation basin near the power plant.

Discharge Flow and Characteristics:

The cooling tower blow-down discharge is potable water that has been re-circulated through the cooling system, thereby concentrating any contained impurities. During the period from January 2005 through September 2010, the following discharge characteristics of the cooling water blow-down fluid were reported as the data reported in the Discharge Monitoring Reports from that time period:

Parameter	Permit Limit	Average	Maximum	Minimum
Flow (MGD)	0.22	0.182	0.36	0.02
TDS (mg/l)	5000	1972.6	4100	320
pH (Standard Units)	6.5 to 9.5	8.459	8.97	5.2

Receiving Water Characteristics:

The groundwater in the vicinity of the facility and discharge area ranges from 10 to 100 feet below ground surface. It meets all primary drinking water standards except fluoride, 7.7 mg/l, and it exceeds the secondary standards for total dissolved solids, 11,035 mg/l; chloride, 5,000 mg/l; sulfate, 1,400 mg/l; iron, 0.97 mg/l; and manganese, 0.99 mg/l; and it also has elevated concentrations of magnesium, 330 mg/l. The playa groundwater is similar to the geothermal fluid for most constituents but has higher total dissolved solids content.

Proposed Discharge Limitations and Monitoring Requirements:

The discharge shall be limited and monitored by the Permittee as specified below:

Monitoring/Sampling Locations:

- Outfall 001: Discharge from the blow-down pipeline prior to discharge to the ditch;
- 001a: Flow meter on discharge pipe to blow-down ditch; and
- Outfall 002: Existing 10.6-acre evaporation basin, as far as possible from the discharge point into the cell.

Table I.A.1. Discharge Limitations, Sampling and Monitoring Requirements

Discharge Parameters and Units		Effluent Limitations		Monitoring/Sampling Location	Monitoring Frequency	Monitoring Type
		30-day avg	Daily max			
Discharge Rate ¹	MGD	1.08	1.08	001a	Continuous	Flow meter
TDS	mg/l	4000	5000	001	Monthly	Discrete
pH	S.U.	---	6.5-9.0	001	Monthly	Discrete
Profile I ²	mg/l	M&R	M&R	002	Annually	Discrete

1. Monitor continuously, and report on quarterly DMRs.
2. Collect sample and analyze for all Profile I parameters (metals shall be total recoverable) annually, and report in 4th quarter.

MGD: Million gallons per day
TDS: Total Dissolved Solids

mg/l: milligrams per liter
Profile I: all Nevada Profile I parameters

Schedule of Compliance and Special Conditions:

The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications that the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. By **MM DD, 2012**, the Permittee shall submit for review and approval an updated O & M Manual, compiled in accordance with appropriate sections of guidance document WTS-2, "*Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant*".

Rationale for Permit Requirements: Monitoring is required to verify that the discharged fluids are of similar, or better, quality than the groundwater in the area of the playa evaporation basin that the discharge will not adversely impact wildlife or the public.

Proposed Determination: The Division has made the tentative determination to issue the revised permit for a period of five (5) years.

Procedures for Public Comment: The Notice of the Division's intent to renew a permit authorizing the facility to discharge cooling tower blow-down to an evaporation basin, subject to the conditions contained within the permit is being sent to the **Reno Gazette Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline date at the Division for receipt of all comments pertaining to this public notice period is **February 20, 2012 at 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator 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 determines 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.

Prepared by: Jeryl R. Gardner, P.E.
January 2012