

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(Pursuant to NAC 445A.236)

Permittee Name: Town of Round Mountain
P.O. Box 1369
Round Mountain, NV 89045-1369

Permit Number: NEV87032

Location: Hadley Wastewater Treatment Facility (HWWTF)
1100 Big Creek Road
Round Mountain, Nye County
Latitude: 38° 42' 08" N, Longitude: 117° 09' 15" W
Township 10N, Range 43E, NW¼ of NE¼ of Section 28

Wellhead Protection Area: The HWWTF includes three Hypalon[®]-lined treatment ponds, unlined storage reservoir and three rapid infiltration basins (RIBs). The HWWTF is located within the 6,000 ft, Drinking Water Protection Area (DWPA) 4, of three non-transient non-community supply wells owned and operated by the Smoky Valley Mine. Also located nearby are two public (municipal) supply wells owned and operated by the Town of Round Mountain. The HWWTF is located within the 3,000 and 6,000 ft, DWPA 3 & 4, respectively, for these two municipal supply wells. For each of the five supply wells, the individual wellhead capture zone has not been delineated (modeled) and input into the NDEP i-Map application.

General: NDEP received an application to renew this discharge permit on 02/15/07. The HWWTF was constructed in 1989 to serve the Hadley subdivision, which has 831 residents (pop. estimate as of 7/1/07). The three treatment ponds operate in partial-mix, serial-flow pattern. Secondary-treated pond effluent is then stored in a 15-AF unlined reservoir until it is discharged. This reservoir typically discharges effluent annually spring through fall to one of three RIBs. A sludge survey of ponds #1-3 on 3/27/08 indicated an overall sludge buildup depth of 42%. NDEP WTS-6 guidance recommends treatment pond cleanout upon the sludge level reaching 20% of the overall operating depth. The facility's Action Plan, received on 9/25/08, indicated that the facility will commence sludge removal in ponds #1-3 along with liner inspection to address effluent and groundwater permit limit exceedances. According to the facility's engineer, Wickenden Engineering, sludge removal in ponds #2-3 will commence in fall 2008, followed by the primary pond sometime next year. During pond cleaning, the sludge will temporarily be stored and dried in three smaller, lined treatment basins, which predate the existing HWWTF. If the engineer's Action Plan does not adequately address effluent and groundwater exceedances, the Division may request further facility improvements including additional nitrogen removal. For rural pond systems, such measures may incorporate crop irrigation with effluent, e.g., alfalfa, pasture grass. Nevada communities presently irrigating crops with treated pond effluent include Wells, Caliente and Willowcreek GID (Lyon County).

Flow: Influent flow, calculated at the main lift station, averaged 0.073 MGD or 88 GPD/resident.

The design capacity of this system is rated at 0.16 MGD. Presently, flow is 46% of capacity, but based on effluent monitoring, effluent limitations are not consistently met at the present flow.

Receiving Water Characteristics: An up gradient well, HWWT-3, is a supply well for the subdivision located one mile west of the HWWTF. At this location, the background nitrate-nitrogen level was below detection limit with a groundwater depth of 109 ft below ground surface (bgs). The down gradient monitoring well, HWWT-4, was installed in 2005 and is located 250 ft north of RIB #3. Presently, the nitrate-nitrogen level in HWWT-4 is 12.2 mg/l with a peak value of 16 mg/l since the well's installation. This nitrate-nitrogen level exceeds the State standard of 10 mg/l. Down gradient nitrate-nitrogen level response is based on effluent discharge events from the storage reservoir. Depth to groundwater at HWWT-4 is 85 ft bgs. Presumed groundwater flow gradient is NNW away from the RIBs.

DMR Review:

- *CBOD:* Influent is domestic in origin and averaged 162 mg/l. Effluent averaged 53 mg/l. The inspection findings indicate that the inability of this system to consistently meet its existing CBOD limit of 30 / 45 mg/l was due in part to accumulated sludge buildup, which reduces effective treatment capacity and creates oxygen demand in the three treatment ponds.
- *TSS:* Influent averaged 156 mg/l. Effluent averaged 126 mg/l. The inability of this system to consistently meet its TSS limit of 90 mg/l may be due to reduced solids settling ability and also nutrient release (e.g., nitrogen/phosphorus) from sludge buildup, which can accelerate algae blooms.
- *TN:* In response to elevated nitrate-nitrogen levels in HWWT-4, the facility has been sampling total nitrogen (TN) in the effluent. Effluent TN averaged 24 mg/l. A one-time influent sample of TN was 70 mg/l. To attempt partial removal of nitrogen during ice-free weather (e.g., spring through fall), a portable trash pump re-circulates a portion of the effluent from the storage reservoir into the influent pond (#1). This procedure accomplishes partial biological nutrient removal (BNR) by the contact of partially nitrified effluent with raw sewage in the primary pond (pond #1). This test-trial of pond recirculation commenced in '07, but monitoring results still indicate that sludge removal is necessary.

Proposed Effluent Limitations and Special Conditions:

Table 1: Discharge Limitations

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD (Influent)	0.16		Continuous	Lift Station Calculation
CBOD, mg/L (Influent)	Monitor & Report		Quarterly	Discrete
CBOD, mg/L (Effluent)	45		Monthly	Discrete

TSS, mg/L (Influent)	Monitor & Report	Quarterly	Discrete
TSS, mg/L (Effluent)	90	Monthly	Discrete
Total Nitrogen as N, mg/L (Effluent)	10.0	Quarterly	Discrete
pH, Std. Units (Effluent)	Between 6.0 & 9.0	Monthly	Discrete

Table 2: Groundwater Monitoring (HWWT-4)

PARAMETER	GROUNDWATER LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
TDS, mg/L	Monitor & Report	Quarterly	Discrete
Chlorides, mg/L	Monitor & Report	Quarterly	Discrete
Nitrate as N, mg/L	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N, mg/L	10.0	Quarterly	Discrete
Depth to Groundwater, ft	Monitor & Report	Quarterly	Field Measurement

1. A groundwater sample shall be taken after purging at least three (3) well volumes of groundwater from the monitoring well.

Schedule of Compliance: The most updated copy of an HWWTF Operations and Maintenance (O&M) Manual provided by this facility was stamped Phase I – Preliminary (DRAFT) by SEA, Inc. Consulting Engineers (October, 1987). For this permit renewal, the facility shall update this O&M Manual and submit a copy to NDEP to incorporate operational changes and procedures made since the last 20 years.

- Within ninety (90) days of the permit issuance date, the facility shall submit a revised (updated) O&M Manual prepared in accordance with guidance document WTS-2. This document shall be wet-stamped by a Nevada registered engineer (Nevada P.E.).

Procedures for Public Comment: The Notice of the Division's intent to issue this discharge permit for the Round Mountain WWTF, subject to the conditions contained within the permit is being sent to the **Tonopah Times-Bonanza & Goldfield News** and **Las Vegas Review-Journal** newspapers for publication. The notice is also being posted on the Division's website for public notices and e-mailed to interested parties on the Division's Public Notice receipt notification 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 publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **Monday, January 19, 2009, by 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.

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

Prepared by: Mark A. Kaminski, P.E., Technical Services Branch
Staff Engineer III
Bureau of Water Pollution Control

Date: December 9, 2008