

**NEVADA DIVISION OF ENVIRONMENTAL PROTECTION**

**FACT SHEET**  
(pursuant to NAC 445A.236)

**Permittee Name:** Siena Golf Club  
10575 Siena Monte Avenue  
Las Vegas, Nevada 89135

**Location:** Siena Golf Club  
10575 Siena Monte Avenue  
Las Vegas, Nevada 89135 - Clark County

Sec. 24: Part all Quarters	Township 21 South	Range 59 East	Mt Diablo Base & Meridian	
FEATURE	LAT (d m s)	LON (d m s)	LAT (decimal °)	LON (decimal °)
Siena Golf Course Pump Station	36° 06' 32" N	115° 19' 35" W	36.1088889°	-115.3263889°

**Permit Number:** NEV2002519

**General:** The Siena Golf Club will receive tertiary treated, disinfected effluent for reuse irrigation supplied by the Desert Breeze Water Resource Center (DBWRC) [NEV2001509] of the Clark County Water Reclamation District (CCWRD). The DBWRC reclaim bacteriological water quality supplied to the Siena Golf Club meet NAC 445A.276 reuse Category A requirements for human contact with effluent. The course was constructed for reuse irrigation. The DBWRC reclaim (reuse) water will be blended in Siena Lake #9 with potable water provided and managed by the Las Vegas Valley Water District to provide the course with the required volume of water. The relative percentages of potable and reclaimed water will vary with the seasonal irrigation demand. All six Siena lakes have ultra violet, ozonation disinfection and aeration systems installed which provide a minimum of twenty turnovers of each lake in a 24 hour period to maintain lake clarity and water quality. A total of approximately 147 acres are irrigated on the golf course with the reclaimed and potable water blend supply. The water blend will be used for spray irrigation of 74.5 acres of turf grasses on the tees, greens, fairways and roughs with the remaining water supply balance used for drip irrigation of landscape trees and shrubs.

**Receiving Water Characteristics:** Groundwater in the vicinity of the course is approximately 700-800 feet below ground surface with groundwater flow direction to the east-southeast. The deep aquifer meets drinking water standards. Due to the depth to groundwater, monitoring wells at the course will not be required.

**Description of the Location of the Discharge:** This golf course has 18 greens, with tees, fairways and roughs and the adjacent course landscaping. The clubhouse is located at 10575 Siena Monte Avenue, in Las Vegas, Clark County, Nevada, and is situated above and overlooking Lake #1 West and Lake #1 East and the connecting waterfall water features in between. The pump station at Lake # 9 supplies irrigation water to the course irrigation system.

**Flow:** The reclaimed effluent permitted 30-day average flow is 1.20 MGD and the maximum daily flow is 2.20 MGD which is the maximum anticipated amount for the hot summer months. The annual average usage will be approximately 1.20 MGD per month, due to lower usage in the cooler months. Flows are measured at the Siena Golf Course reclaimed and potable water metering vaults using six inch magnetic flow meters prior to entering Siena Lake #9 and blending for course irrigation use. Initially, the blend of reclaimed and potable water will be about 50-50.

**Discharge Limitations:** The DBWRC will be providing the course with a high quality disinfected reclaim water to the golf course. The DBWRC reclaim water supply made available for reuse has a total nitrogen concentration ranging from 11 to 18 mg/l and is disinfected by ultraviolet and chlorine processes. The Total Coliform limitation is set at 2.2 CFU or MPN/100 ml, 30-day average, the NAC 445A.276 bacteriological water quality requirement for reuse Category A. Therefore, in accordance with NAC 445A.2762, control of public access is not required; however, to the fullest extent possible, irrigation is to be accomplished in a manner so that human contact with spray irrigation does not occur.

**TABLE I.1: Discharge Limitations**

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS <sup>1</sup>	
	30-Day Average	Monthly Maximum	Measurement Frequency	Sample Type
All concentration units are mg/L unless otherwise indicated.				
Flow (MGD):	1.20	2.20 <sup>2</sup>	Continuous	Flow meter
Total Coliform <sup>3</sup> (cfu or mpn/100ml)	2.2	23	Weekly <sup>3</sup>	Discrete
Ammonia as N <sup>3</sup> :	Monitor and Report		Monthly <sup>3</sup>	Composite
Total Kjeldahl Nitrogen as N <sup>3</sup> :	Monitor and Report		Monthly <sup>3</sup>	Composite
Total Oxidized Nitrogen as N <sup>3</sup> : (Nitrate + Nitrite)	Monitor and Report		Monthly <sup>3</sup>	Composite
Total Nitrogen as N <sup>3,4</sup> :	Monitor and Report		Monthly <sup>3,4</sup>	Calculate
Nitrogen Application Rate (lb/ac/year) <sup>5,6</sup>	220, 392 <sup>5</sup> See permit Part I.B.4		4th Quarter <sup>6</sup>	Calculate
Annual Application Volume (AF per Year) <sup>6</sup>	700		Cummulative <sup>6</sup>	Flow meter

mg/L: Milligrams per Liter: ppm ml: milliliter	lbs/ac/year: Pounds per acre per year AF: Acre Feet [volume]	cfu: Colony Forming Unit mpn: Most Probable Number	M & R: Monitor and Report MGD: Million Gallons per Day
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1. See Part I.D. of permit for additional information on sampling, testing, reporting, monitoring and definitions related to requirements.
2. Limit represents the effluent portion of blend irrigation water applied during the highest usage month and is limited to the anticipated maximum available daily effluent use plus a nominal 10% allowance (2.0 MGD + 10%).
3. Sample results to be obtained from NEV2001509 and reported by Permittee. Bacteriological quality (Coliform) limitation is set to meet NAC 445A.276 reuse Category A requirement for human contact with effluent reclaim water.
4. Total Nitrogen as N can be reported as the sum of Total Oxidized Nitrogen and Total Kjeldahl Nitrogen
5. Upon Division approval of revised EMP per permit schedule of compliance Part I.C.1.c. (220 is approved upon permit issue).
6. Submit with 4th Quarter DMR along with results required by Part I.B.4 of permit.

The quality of the effluent used by the Permittee may be reported as calculated values based upon the blend of treated effluent and Las Vegas Valley Water District (LVVWD) water.

Monitoring requirements may be satisfied by data collected by the Desert Breeze Water Resource Center [NEV2001509] and the LVVWD. Discharge Monitoring Reports are to be submitted by the Permittee. Copies of backup data or water quality calculation summaries are to be maintained at the golf course reuse site.

### **Schedule of Compliance**

The Permittee shall implement and comply with the provisions of the following schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which 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. The Permittee shall submit first time use cross-connection control inspection documentation as required by permit Part I.B.13 within 14 days of acceptance by local water purveyor. Effluent use is not authorized without Division approval of first time use cross-control documentation. The Permittee shall submit current cross-connection control inspection documentation as required by permit Part I.B.13 annually with the fourth quarter DMR.
- c. The Permittee, or designated representative, shall adequately address all comments and concerns relating to the Division's review of the EMP submitted in accordance with permit Part I.B.1. **The Permittee shall not reuse treated effluent prior to having an approved Final EMP per NAC 445A.275.** Any revision to the approved EMP shall be prepared by a qualified professional and submitted to the Compliance Coordinator by **June 30, 2009.**
- d. **All compliance deliverables shall be submitted to the compliance coordinator identified in Part I.D.2.b of the permit and to Mr. Nadir Sous, NDEP-LV, 2030 East Flamingo Road, Suite 230, Las Vegas, Nevada 89119.**

**Rationale for Permit Requirements:** Reclaimed water monitoring is required to assess the level of treatment being provided by the DBWRC, to assess the quality of blended water delivered to the course by the LVVWD, to assess the management of recycled water usage, and to protect the local groundwater quality. Total Coliform and nitrogen species are required for monitoring the quality of reclaim water being applied, and for protection of human health and the environment.

**Determination:** The Division has made the determination to issue (renew) the proposed permit for a five-year (5) period.

**Procedures for Public Comment:**

The Notice of the Division's intent to issue the permit authorizing the facility to discharge to the groundwater of the State of Nevada subject to the conditions contained within the permit is being sent to the **Las Vegas Review-Journal** for publication. The notice is being mailed to interested persons on the NDP-BWPC mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of the publication of the public notice. All comments must be received by 5:00 pm local time on April 20, 2009. The comment period can be extended at the discretion of the Administrator.

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 determined to be appropriate. All public hearings must be conducted to 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: E. Samuel Stegeman, P.E.  
January 2009

