



# STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

## FACTSHEET (pursuant to NAC 445A.236)

**Permittee Name:** LAKE LAS VEGAS MASTER ASSOCIATION  
2030 LAKE LAS VEGAS PKWY.  
HENDERSON, NV - 89011

**Permit Number:** NV0022691

**Location:** LAKE LAS VEGAS DAM, CLARK  
29 GRAND MEDITERRA BLVD., HENDERSON, NV - 89011  
LATITUDE: 36.1021, LONGITUDE: -114.926910  
TOWNSHIP: T21S, RANGE: R63E, SECTION: S14

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Outfall City	Outfall State	Outfall Zip	Outfall County	Latitude	Longitude	Receiving Water
001	OUTFALL 001	External Outfall		HENDERSON	NV	89011	CLARK	36.119167	-114.911389	LAS VEGAS WASH

### General:

The Permittee has applied for renewal of National Pollutant Discharge Elimination System (NPDES) Permit #NV0022691 for discharges of water from Lake Las Vegas to the Las Vegas Wash (LVW) for the purpose of lake water quality management. Lake Las Vegas is located between Lake Las Vegas Parkway and North Shore Road, which is accessed via Lake Mead Drive (State Route 564) in Henderson, Clark County, Nevada. The resort is a 2,600-acre property incorporating residential, resort and commercial development.

Lake Las Vegas is a 320-acre man-made impoundment filled with water from Lake Mead, supplied by the Basic Management, Inc (BMI) pipeline. The lake is approximately two miles in length, one mile in width, with an average depth of 33 feet. The lake is permitted to hold 10,600 acre-feet (AF). Up to 7,000 AF/yr of Lake Mead water, purchased from the City of Henderson, can be used to replenish the lake and irrigate the resort's landscaping and golf courses. In addition, Lake Las Vegas has certificated water rights to 2,029 AF of stormwater that are utilized during wet years. The resort's sewer and water utilities are provided by the City of Henderson.

The lake is formed by an earthen embankment dam, 4,800 feet in length and 150 feet high. Twin 84 inch diameter reinforced concrete pipelines divert the entire flow of the LVW under the lake, for a length of 9,450 feet. The bypass conduits discharge underneath the dam into the established LVW streambed, which conveys the water into Las Vegas Bay of Lake Mead. The bypass conduits are designed to carry up to a total of 1,200 cubic feet per second (cfs). The LVW flow, which is conveyed into Lake Mead, is comprised of the Las Vegas Valley's tertiary-treated municipal wastewater effluent, stormwater, urban runoff and groundwater seepage.

The Division of Environmental Protection does not regulate the discharges from this lake for the purposes of dam safety or flood control. These discharges are regulated under a State Engineer's dam permit. The NPDES permit requires that the cumulative flow volume from dam safety and flood control discharges be reported, as stormwater discharge, to the Division annually. Flood control discharges occur through the lake's three spillways and the 30-inch lake drain valve.

### Discharge Characteristics:

Lake Las Vegas is a private recreational lake, used for swimming, catch and release sport fishing, and non-fuel powered boating (electric, oar, or sail-powered vessels). Due to high evaporative losses and infiltration of high salinity ground water, Lake Las Vegas total dissolved solids (TDS) level increases up to four (4) times the level observed in Lake Mead water. Generally, the Lake Las Vegas TDS level increases to about 2,500 mg/L before it is diluted with BMI pipeline water from Lake Mead, which averages 600-700 mg/L of TDS.

During dry weather, discharge normally occurs from a 30-inch diameter lake drain valve located at a monitoring point, identified by the Permittee as LLV-1, at a depth of 75 feet below the lake surface. Water quality discharges are permitted from the period of November 1st through March 30th of each year when the lake water column is de-stratified and aerobic throughout (i.e., dissolved oxygen content is higher than 5.0 mg/L). Discharges up to 2,500 AF/yr (815 million gallons per year) are allowed for water quality management purposes. When discharging, the lake drain valve is maintained in the 20% open position, which corresponds to a flow of 100 cfs. The lake discharge is routed through a concrete energy dissipation structure and then merges with the entire LVW flow routed underneath the Lake Las Vegas Dam. During the current permit period,

from August 2008 through December 2013, there have been no releases of water from the lake for water quality management purposes.

The lake operations must also comply with dam safety requirements of the State Engineer's Office. Water that normally seeps through the embankment is collected in a toe drain to protect the structural integrity of the embankment fill material, and is discharged to the LVW. The dam must also be protected from high stormwater runoff events in the LVW, which can exceed the carrying capacity of the bypass conduits. During peak storm events, surcharge from the bypass conduits enters the lake via an overflow structure. To maintain freeboard requirements during peak storm events, lake water levels are normally lowered through the lake drain valve and a spillway opening maintained with an air-adjusted rubber bladder. During the period from August 2008 through December 2013 18,953 AF of stormwater was discharged from the lake to maintain required freeboard levels.

### **Receiving Water:**

The receiving water for lake discharges is the Las Vegas Wash at Lake Mead. Water quality standards for the appropriate reach of the Las Vegas Wash are specified in NAC 445A.2158. The stated beneficial uses of the LVW are livestock, irrigation, non-contact recreation, and propagation of wildlife and aquatic wildlife, excluding fish, although this does not preclude the establishment of a fishery.

### **Summary of Changes From Previous Permit:**

Discharge limitations in acre-feet have been changed to millions of gallons in order to facilitate the flow of monitoring data to NDEP Bureau of Water Pollution Control's new E-Permitting system.

Dissolved Oxygen has been removed from monitoring requirements for this segment of Las Vegas Wash. NAC 445A.2158 states that "So as not to prevent the development and restoration of marshes and wetland, aerobic conditions are established as a goal rather than a standard".

Total Dissolve Solids standard has been reduced from 3000 mg/L Daily Max to 2400 mg/L Daily Max to meet the Requirements to Maintain Existing Higher Quality (RMHQ) as stated in NAC445A.2158

The requirement to submit quarterly Discharge Monitoring Reports (DMRs) has been modified to require quarterly submission only for the permit specified discharge dates of November 1 through March 31.

Quarterly DMR submission for Stormwater discharge volume totals has been changed to an annual report submission for stormwater discharge events and stormwater discharge volume totals.

### **Proposed Effluent Limitations:**

During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge Lake Las Vegas water into the Las Vegas Wash for the purpose of water quality management.

**Discharge Limitations Table for Sample Location 001 (External Outfall) To Be Reported Monthly**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	S a m p l e Type
Flow, total	30 Day Average	M&R Million Gallons (Mgal)		Internal Monitoring Point	001	Continuous	DISCRT
pH, minimum	Daily Minimum		>= 6.5 Standard Units (SU)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
pH, maximum	Daily Maximum		<= 9.0 Standard Units (SU)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Solids, total dissolved	30 Day Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Flow, total	Daily Maximum	M&R Million Gallons (Mgal)		Internal Monitoring Point	001	Continuous	DISCRT
Nitrogen, inorganic total	Daily Maximum		<= 17 Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Nitrogen, inorganic total	30 Day Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Solids, total suspended	Daily Maximum		<= 135 Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Solids, total suspended	30 Day Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Solids, total dissolved	Daily Maximum		<= 2400 Milligrams per Liter (mg/L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
Coliform, fecal general <sup>[3]</sup>	Daily Maximum		<= 400 Most Probable Number per 100ml T (MPN/100m L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>
			<= 200 Most				

**Discharge Limitations Table for Sample Location 001 (External Outfall) To Be Reported Monthly**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	S a m p l e Type
Coliform, fecal general <sup>[3]</sup>	30 Day Average		Probable Number per 100ml T (MPN/100m L)	Internal Monitoring Point	001	See Permit <sup>[1]</sup>	COMPOS <sup>[2]</sup>

## Notes (Discharge Limitations Table):

1. Sampling for Water Quality Management discharges shall occur prior to discharge. For discharge events greater than one week in duration, samples shall be collected on a weekly basis.
2. A composite sample profile at outfall 001 shall consist of (1) sample collected one meter below lake surface, (1) sample collected at mid-water column depth, and (1) sample collected one meter above lake bottom.
3. Any discharge from a point source into the Las Vegas Wash must not exceed a log mean of 200 per 100 milliliters based on a minimum of not less than five samples taken over a 30-day period, nor may more than 10 percent of the total samples taken during any 30-day period exceed 400 per 100 milliliters.

**Discharge Limitations Table for Sample Location 001 (External Outfall) To Be Reported Quarterly**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow, total	Season To Date Total <sup>[1]</sup>	<= 815 Million Gallons (Mgal)		Internal Monitoring Point	001	Continuous	DISCRT

**Notes (Discharge Limitations Table):**

- Discharges up to 2500 acre-feet per year (815 million gallons per year) are allowed for water quality management purposes, during the period from November 1 through March 30.

**Rationale for Permit Requirements:**

Monitoring requirements for the parameters specified in the Discharge Limitations Table for Sample Location 001 have been established to ensure that discharges from this lake for water quality management purposes do not degrade the beneficial uses of the Las Vegas Wash.

**Fecal Coliform:**

Per NAC 445A.2158, any discharge from a point source into Las Vegas Wash must not exceed a log mean of 200 per 100 milliliters based on a minimum of not less than 5 samples taken over a 30-day period, nor more than 10 percent of the total samples taken during any 30-day period exceed 400 per 100 milliliters.

**Special Conditions:**

SA – Special Approvals / Conditions Table

Item #	Description
1	Water Quality Management discharges, up to 2500 acre-feet/year (815 million gallons per year) are only permitted for the period of November 1 through March 30 of each year when the lake water column is de-stratified and aerobic throughout.
2	All flow measurements shall be submitted as part of the quarterly monitoring reports. All water quality data shall be submitted annually as part of the Annual Water Quality Monitoring Report required by the Division's Bureau of Water Quality Planning, and copied to the Bureau of Water Pollution Control.
3	Reporting of stormwater releases shall be made to Nevada Division of Environmental Protection, Bureau of Water Pollution Control within 24 hours of the discharge event. The total volume of stormwater discharged shall also be submitted annually.
4	Section A.3.1.1 does not apply to this permit. Annual reporting shall be conducted as described in #2 of the Special Approvals/Conditions Table.
5	Section A.8.6 does not apply to this permit. The permitted site is not a treatment or disposal facility and therefore does not require the site to be fenced and posted.
6	Section C.8 - The parts of this section that refer to the diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities do not apply to this permit. Lake Las Vegas Dam is not a wastewater treatment or conveyance facility.
7	Section C.13 does not apply to this permit. This facility does not generate or dispose of sewage sludge.
8	Sections C.33, C.34, and C.35 do not apply to this permit. This facility is not a holding pond, Publicly Owned Treatment Works (POTW), and is not a manufacturing, commercial, mining, or silvicultural discharger.

**Flow:**

The permit allows for an annual discharge of up to 2,500 AF/yr (815 million gallons per year) for water quality management during non-storm flow events. Flood control and toe-drain discharges are not limited, but the cumulative flow shall be reported in the Quarterly Discharge Monitoring Reports. During the period from August 2008 through December 2013, there have been no lake water discharges for the purpose of water quality management.

**Corrective Action Sites:**

There are no NDEP Bureau of Corrective Actions sites located within a one-mile radius of this permitted site.

**Wellhead Protection Program:**

The permitted site is not located within a Drinking Water Protection Area or a Wellhead Protection Area established for any well sources.

**Schedule of Compliance:**

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	Within 60 days of permit issuance, the Permittee shall submit a revised Operations & Maintenance (O&M) Manual, which addresses discharges of water from Lake Las Vegas for the purposes of water quality management and sampling procedures. The O&M Manual shall also include a section discussing discharges for dam safety and flood control management. The O&M Manual shall be prepared in accordance with the Division's WTS-2 Guidance: Minimum Information Required for an Operations and Maintenance Manual. If no revisions to the original O&M Manual have been made, the Permittee shall submit a letter by the specified due date indicating such.	12/2/2014

**Deliverable Schedule:**

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly Reports	Quarterly	1/28/2015
2	Water Quality Monitoring Report	Annually	4/1/2015
3	Stormwater Discharge Volume Total	Annually	4/1/2015

**Procedures for Public Comment:**

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to surface waters 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 our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **7/28/2014**, a period of 30 days following the date of the public notice. 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 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 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.

**Proposed Determination:**

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

Prepared by: **Michele Reid**

Date: **6/11/2014**

Title: **Staff I Associate Engineer**