



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

**Permittee Name:** CITY OF BOULDER CITY  
401 CALIFORNIA AVE  
BOULDER CITY, NV - 890052600

**Permit Number:** NS0097022

**Location:** BOULDER CITY WASTEWATER TREATMENT PLANT, CLARK  
1400 QUAIL ROAD, BOULDER CITY, NV - 89005  
LATITUDE: 35.940720, LONGITUDE: -114.8524  
TOWNSHIP: 23 S, RANGE: 64 E, SECTION: 19 &20

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Outfall City	Outfall State	Outfall Zip	Outfall County	Latitude	Longitude	Receiving Water
001	INFLUENT	Influent Structure		BOULDER CITY	NV	89005	CLARK	35.941060	-114.8559	GROUNDWATER
002	EFFLUENT	External Outfall		BOULDER CITY	NV	89005	CLARK	35.936210	-114.8564	GROUNDWATER
003	DISPOSAL CHANNELS	External Outfall		BOULDER CITY	NV	89005	CLARK	35.933980	-114.8587	GROUNDWATER
004	QUARRY 187, LLC REUSE	External Outfall		BOULDER CITY	NV	89005	CLARK	35.930840	-114.9243	GROUNDWATER
005	I-11 BOULDER CITY BYPASS PROJECT REUSE	External Outfall		BOULDER CITY	NV	89005	CLARK	35.935060	-114.8586	GROUNDWATER
006	FUTURE REUSE SITES	External Outfall		BOULDER CITY	NV	89005	CLARK	35.933980	-114.8587	GROUNDWATER

**General:**

Boulder City submitted an application with the Nevada Division of Environmental Protection to renew its discharge permit NS0097022. Boulder City's Wastewater Treatment Facility (WWTF) serves approximately 15,400 Boulder City residents. The influent is generated from approximately 5,500 domestic and commercial connections. There are no reported industrial facilities in Boulder City, which exempts this facility from industrial pre-treatment requirements.

Influent is collected at three lift stations and is delivered to the facility by the east and west interceptor lines. The flow in each 18-inch concrete interceptor line is measured with an ultrasonic flow meter. The facility's headworks consist of a comminutor channel with a manually cleaned barscreen installed in the bypass channel. Influent is split between two parallel trains of aerated treatment lagoons. Each train consists of a complete mix lagoon, aerated by four surface aerators, and followed by five partially-mixed lagoons (PML) in series. Each PML is aerated by two surface aerators. Four of the five PMLs are in use at any time, with the fifth removed from service for sludge removal. These basins are designed to store 5.6-feet of sludge. Sludge will be managed by drying in asphalt-lined basins previously used as part of the treatment facility, and will ultimately be disposed of at a landfill. Prior to disposal, the effluent is disinfected with sodium

hypochlorite in a chlorine contact basin.

Treated effluent can be discharged to twin percolation trenches or used for dust control and construction water. Currently, all of the treated effluent is used by Quarry 187, LLC (Permit NS0093013) for a sand and gravel operation and the I-11 Boulder City Bypass Project (Permit NS2015507) for dust control and construction water. Each percolation trench is approximately five feet in width and extends unfenced into the desert for approximately 1.7 miles. The trenches originate on the WWTF site but extend onto the Boulder City Conservation Easement for desert tortoise habitat. Effluent flow to each outfall is measured via flow meter.

### **Discharge Characteristics:**

Boulder City's WWTF had the following water quality results that were submitted with its 2015 Discharge Monitoring Reports (DMRs):

Flow: Flows throughout 2015 were consistent with 30-day average flows ranging from 1.2 to 1.4 million gallons per day (mgd) and maximum daily flows up to 1.7 mgd. Although the current discharge permit shows flow limits of 1.4 for the 30-day average and 2.0 mgd for maximum daily flows, the actual capacity as stated in their Operations and Maintenance Manual is 2.5 mgd with a maximum daily flow of 3.5 mgd. Based upon these new limits, Boulder City is treating at about 50-percent of the capacity.

Carbonaceous Biochemical Oxygen Demand: Influent CBOD values ranged between 150 - 200 mg/L, which is medium-strength wastewater. After treatment, the treated effluent values were less than 10 mg/L, which shows good treatment efficiency and is well below the permitted limit of 30 mg/L.

Total Suspended Solids: Influent TSS values for 2015 ranged between 200 - 280 mg/L. After treatment, the effluent values were less than 30 mg/L. The TSS removal efficiency was always above the permitted value of 85-percent.

Fecal Coliform and pH values were also within the permitted limits.

### **Receiving Water:**

The receiving water is groundwater of the State via percolation.

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

The following changes have been made to this permit from the previous permit:

Some monitoring reporting parameters have been removed from this permit. Boulder City will no longer be required to report CBOD and TSS removal efficiencies. Removing this reporting parameter makes this permit consistent with other pond treatment systems within the State. Also, the maximum day TSS for the treated effluent has been raised from 65 mg/L to 90 mg/L, which also makes this reporting parameter consistent with other pond systems in the State.

A new outfall (Outfall 005) has been designated for the I-11 Boulder City Bypass Project.

The flows have been changed in this permit to reflect Boulder City's current treatment capacity. The 30-day average flow has been increased from 1.4 mgd to 2.5 mgd, and the maximum day flows have increased from 2.0 mgd to 3.5 mgd. Boulder City's registered engineer submitted the engineering details in the Operations and Maintenance Manual. Boulder City then submitted a letter with its permit renewal requesting these new increased capacity values for the permit.

Boulder City will have one year from the issuance of this permit to sign up to submit quarterly DMRs electronically using Net-DMR. The Bureau of Water Pollution Control's (BWPC) Nevada-NetDMR system is a web-based site that allows electronic submission of DMRs. Nevada-NetDMR enables a Permittee the ability to enter and electronically submit DMR data. By using Nevada-NetDMR, Permittees will save time, see a reduction in its paperwork burden, and data will automatically error-check and validate the information prior to submission. The system also allows electronic submittal of attachments and supplemental documentation and provides instant confirmation of submission.

Due to the permit naming conventions at the Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control, the permit number has been changed from NEV97022 to NS0097022. This change does not reflect a change in the type of permit being issued.

**Proposed Effluent Limitations:**

The Permittee is authorized to discharge in accordance with the limitations, requirements and conditions of this permit. The discharge shall be limited, sampled and monitored by the Permittee as specified below:

**WWTP Discharge Limitations Table for Sample Location 001 (Influent Structure) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
BOD, carbonaceous, 05 day, 20 C	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Weekly	COMPOS
BOD, carbonaceous, 05 day, 20 C	30 Day Average		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Weekly	COMPOS
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Raw Sewage Influent	001	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Raw Sewage Influent	001	Continuous	METER
Solids, total suspended	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Weekly	COMPOS
Solids, total suspended	30 Day Average		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Weekly	COMPOS

**WWTP Discharge Limitations Table for Sample Location 002 (External Outfall) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
pH, maximum	Monthly Maximum		<= 9.0 Standard Units (SU)	Effluent Gross	002	Weekly	DISCRT
pH, minimum	Monthly Minimum		>= 6.0 Standard Units (SU)	Effluent Gross	002	Weekly	DISCRT
Coliform, fecal general	Monthly Maximum		<= 240 Colony Forming Units per 100ml T (CFU/100mL) <sup>[1]</sup>	Effluent Gross	002	Weekly	DISCRT
Coliform, fecal general	30 Day Average		<= 23 Colony Forming Units per 100ml T (CFU/100mL) <sup>[1]</sup>	Effluent Gross	002	Weekly	DISCRT
Solids, total suspended	Monthly Maximum		<= 90 Milligrams per Liter (mg/L)	Effluent Gross	002	Weekly	COMPOS
Solids, total suspended	30 Day Average		<= 45 Milligrams per Liter (mg/L)	Effluent Gross	002	Weekly	COMPOS
BOD, carbonaceous, 05 day, 20 C	Monthly Maximum		<= 45 Milligrams per Liter (mg/L)	Effluent Gross	002	Weekly	COMPOS
BOD, carbonaceous, 05 day, 20 C	30 Day Average		<= 30 Milligrams per Liter (mg/L)	Effluent Gross	002	Weekly	COMPOS
Flow rate	Daily Maximum	<= 3.5 Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Flow rate	30 Day Average	<= 2.5 Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER

Notes (WWTP Discharge Limitations Table):

1. CFU or MPN/100 ml.

### WWTP Discharge Limitations Table for Sample Location 002 (External Outfall) To Be Reported Annually<sup>[1][2]</sup>

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Zinc, total (as Zn)	Value		<= 5 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Thallium, total (as Tl)	Value		<= 0.002 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Silver, total (as Ag)	Value		<= 0.1 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Selenium, total (as Se)	Value		<= 0.05 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Nickel, total (as Ni)	Value		<= 0.1 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Mercury, total (as Hg)	Value		<= 0.002 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Lead, total (as Pb)	Value		<= 0.015 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Copper, total (as Cu)	Value		<= 1 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Chromium, total (as Cr)	Value		<= 0.1 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Cadmium, total (as Cd)	Value		<= 0.005 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT

**WWTP Discharge Limitations Table for Sample Location 002 (External Outfall) To Be Reported Annually<sup>[1][2]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Beryllium, total (as Be)	Value		<= 0.004 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Arsenic, total (as As)	Value		<= 0.1 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Antimony, total (as Sb)	Value		<= 0.006 Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT

## Notes (WWTP Discharge Limitations Table):

1. Priority Pollutant Metals
2. The priority pollutant metals shall be sampled in the 4th quarter of each year of the permit and the results submitted with the 4th quarter DMRs.

**WWTP Discharge Limitations Table for Sample Location 003 (Disposal Channels Outfall) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		End of Chlorine Contact Chamber	003	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		End of Chlorine Contact Chamber	003	Continuous	METER

**Re-use Discharge Limitations Table for Sample Location 004 (Quarry 187, Lic Outfall) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	004	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	004	Continuous	METER

**Re-use Discharge Limitations Table for Sample Location 005 (I-11 Project Outfall) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	005	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	005	Continuous	METER

**Re-use Discharge Limitations Table for Sample Location 006 (Future Reuse Sites) To Be Reported Monthly**

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	006	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Prior to Reuse	006	Continuous	METER

**Rationale for Permit Requirements:**

Monitoring is required to ensure that groundwaters of the State of Nevada are not degraded. Monitoring is also required to assess the level of treatment being provided, and to determine compliance with discharge permit limits. The Permittee is in substantial compliance with its current discharge permit.

**Fecal Coliform:**

23 CFU or MPN/100 mL - 30-day average

240 CFU or MPN/100 mL - Daily maximum

**Special Conditions:**

SA – Special Approvals / Conditions Table

There are no Special Approval / Condition items
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**Flow:**

2.5 mgd - 30-day average

3.5 mgd - daily maximum

**Corrective Action Sites:**

There are no Bureau of Corrective Actions sites within a one-mile radius of the WWTF.

**Wellhead Protection Program:**

Boulder City's WWTF is not within a Drinking Water Protection Area nor is the facility within an established Wellhead Protection Area.

**Schedule of Compliance:**

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee shall submit two copies to NDEP for review of an updated copy of an Operations & Maintenance (O&M) Manual prepared in accordance with the NDEP's WTS-2 Guidance: <i>Minimum Information Required for an Operations and Maintenance Manual</i> .	10/1/2016
2	All Discharge Monitoring Reports (DMRs) shall be submitted electronically through the Nevada NetDMR website: <a href="https://netdmr.ndep.nv.gov/netdmr/public/home.htm">https://netdmr.ndep.nv.gov/netdmr/public/home.htm</a> .	7/1/2017

**Deliverable Schedule:**

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

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	10/28/2016
2	Annual Report	Annually	1/28/2017

**Procedures for Public Comment:**

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal and the Boulder City News** 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. **5/31/2016**, 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: **Steve McGoff, P.E.**

Date: **9/26/2013**

Title: **Professional Engineer**