



FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: NEVADA DEPT OF CORRECTIONS
3955 W RUSSELL RD
LAS VEGAS, NV - 89118

Permit Number: NS0094017

Location: PIOCHE CONSERVATION CAMP WASTEWATER TREATMENT PLANT,
LINCOLN
1 HARD TIMES ROAD, PIOCHE, NV - 89043
LATITUDE: 37.954444, LONGITUDE: -114.413611
TOWNSHIP: 1 N, RANGE: 67 E, SECTION: 12

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	Internal Outfall		PIOCHE	NV	89043	LINCOLN	37.9542	-114.4149	GROUNDWATER
002	RAPID INFILTRATION BASINS	External Outfall		PIOCHE	NV	89043	LINCOLN	37.9541	-114.4130	GROUNDWATER
003	MONITORING WELL MW-1	Monitoring Well		PIOCHE	NV	89043	LINCOLN	37.9529	-114.4135	GROUNDWATER
004	LINED POND	Intake Structure		PIOCHE	NV	89043	LINCOLN	37.9545	-114.4135	LINED POND

General:

The Nevada Department of Corrections (NDOC) operates the Pioche Conservation Camp (PCC), a minimum-security men's prison camp, which is located in Hamlight Flat, approximately one and one-half miles northeast of Pioche, Nevada. PCC is designed for an inmate population of 196 inmates and is presently operating at a population of 190 (March 2016). However, permittee's request to increase the flow limit to 0.03 million gallons per day (MGD) of daily maximum has been approved, and the new flow limit is effective from the current renewal cycle.

Kitchen waste flows into an 8,000 gallon grease interceptor and then to a lift station, while all other domestic waste flows directly to the lift station. Raw sewage from the lift station is pumped to a 1.03 million gallon capacity, 0.44 acre, 12-foot deep, 60 mil high-density polyethylene (HDPE) lined pond that is divided into two sections by means of a baffle curtain to provide primary treatment and then polishing. Each compartment is equipped with a three horse power aerator. The effluent from the polishing section of the treatment pond flows into three Rapid Infiltration Basins (RIBs).

State Public Works completed a capital improvement project in 2009 to expand RIBs #1 and #2, and to replace a dry monitoring well. Subsequent inspection by the Bureau, in 2011 affirmed the project goal achievement; The other items noted by the inspection has been addressed by the permittee to the satisfaction of the compliance branch. An additional RIB, RIB #3, was constructed with an overflow to a subsurface leach field. Effluent from the polishing pond can also be diverted to an emergency holding pond that is equipped with a wind-driven mixer. The emergency pond is used when insufficient capacity is available in the RIBs; however, due to the rehabilitation of RIBs #1 and #2 use of leach field is not anticipated.

Current slight overages of the flow limits will be resolved with the reasonable increased permitted flow limit

revisions, however, occasional CBOD and TSS exceedances are expected to be resolved by the permittee upon the review and necessary changes to operations of the facility.

Discharge Characteristics:

The approved influent flow is 0.03 MGD. CBOD is reported at 41.5 mg/L well above 30 mg/L set limit as per data received in April 2016; 58 mg/L of CBOD and 98 mg/L of TSS are reported in January 2016, and DMRs for the rest of 2016 are pending. CBOD was attributed to the algae growth in the pond per permittee's communication with the bureau. These numbers and very moderate to none reduction in the total Nitrogen values from influent to the pond to the effluent indicated probable inefficient use of the treatment system and permittee is advised to review and resolve the issues. A schedule of compliance item has been added to ensure timely resolution if this issue.

Receiving Water:

The receiving water for secondary-treated effluent is the groundwater of the State via percolation in the three RIBs and leachfield. Monitoring well MW-1 is screened from 180 to 195 feet and is down gradient of the RIBs. Depth to groundwater ranges from 148 to 229 feet. General groundwater flow direction is in an easterly direction. The town's supply wells are upgradient of the RIBs and leachfield.

Summary of Changes From Previous Permit:

Influent flow limits are increased to 0.03 MGD 30-day average and 0.04 MGD daily maximum.

Dissolved Oxygen monitoring for the effluent from the pond system is added to aid as an additional data to assess and resolve the probable operational issues of the pond system.

Parameters currently monitored with 30-day average as base are removed in view of the measurement frequency set for this facility.

Nitrate monitoring is discontinued as total Nitrogen limit is deemed sufficient to ensure the effluent water quality.

Monitoring of Sludge depth and free board introduced from this permit renewal cycle.

Permit number is changed to NS0094017.

Condition to start using NetDMR system to submit all DMRs is added as a scheduled compliance item.

Proposed Effluent Limitations:

The effluent limitations are as per the limits set in the following tables.

WWTP Discharge Limitations Table for Sample Location 001 (Internal 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	<= 0.04 Million Gallons per Day (Mgal/d)		Raw Sewage Influent ^[1]	001	Continuous	METER
Flow rate	30 Day Average	<= 0.03 Million Gallons per Day (Mgal/d)		Raw Sewage Influent ^[1]	001	Continuous	METER

Notes (WWTP Discharge Limitations Table):

1. Flow meter on influent line.

WWTP Discharge Limitations Table for Sample Location 001 (Internal Outfall) To Be Reported Quarterly^[1]

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Quarterly	DISCRT
Solids, total suspended	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent ^[1]	001	Quarterly	DISCRT
BOD, carbonaceous, 05 day, 20 C	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent ^[1]	001	Quarterly	DISCRT
pH	Value		M&R Standard Units (SU)	Raw Sewage Influent	001	Quarterly	DISCRT

Notes (WWTP Discharge Limitations Table):

1. At the headworks, but prior to discharge to the treatment cells.

WWTP Discharge Limitations Table for Sample Location 002 (External Outfall) To Be Reported Quarterly^[1]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
pH, minimum	Daily Minimum		>= 6.0 Standard Units (SU)	Effluent Gross ^[1]	002	Quarterly	DISCRT
pH, maximum	Daily Maximum		<= 9.0 Standard Units (SU)	Effluent Gross ^[1]	002	Quarterly	DISCRT
Population served	Daily Maximum	M&R serv Population Served (pop)		See Footnote ^[2]	002	Quarterly	VISUAL
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross ^[1]	002	Quarterly	DISCRT
Solids, total suspended	Daily Maximum		<= 90 Milligrams per Liter (mg/L)	Effluent Gross ^[1]	002	Quarterly	DISCRT
BOD, carbonaceous, 05 day, 20 C	Daily Maximum		<= 45 Milligrams per Liter (mg/L)	Effluent Gross ^[1]	002	Quarterly	DISCRT
Oxygen, dissolved (DO)	Daily Minimum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT ^[3]

Notes (WWTP Discharge Limitations Table):

1. After secondary treatment, prior to disposal to RIBs.
2. Population count.
3. DO sampling should be done early in the day, prior to algal photosynthesis becoming prominent.

Groundwater Monitoring Wells Table for Sample Location 003 (Monitoring Well) To Be Reported Quarterly

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Depth to water level ft below landsurface ^[1]	Daily Minimum	M&R Feet (ft)		Groundwater	003	Quarterly	VISUAL ^[2]
Nitrogen, total	Daily Maximum		<= 10.0 Milligrams per Liter (mg/L)	Groundwater	003	Quarterly	DISCRT
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	003	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	003	Quarterly	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Depth to Groundwater, feet.
2. Field measurement.

Ponds / Rapid Infiltration Basins for Sample Location 004 (Intake Structure) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Freeboard	Daily Minimum		>= 2 Feet (ft)	Effluent Gross ^[1]	004	Monthly	VISUAL

Notes (Ponds / Rapid Infiltration Basins):

- Freeboard as noted on the side of the pond.

Ponds / Rapid Infiltration Basins for Sample Location 004 (Intake Structure) To Be Reported Biannually (Every Two Years)^{[1][2]}

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Sludge/Solids, depth ^[3]	Arithmetic Mean	M&R Feet (ft)		See Footnote ^[4]	004	Once Every 2 Years ^[5]	VISUAL

Notes (Ponds / Rapid Infiltration Basins):

1. The Permittee shall use a method approved by NDEP to determine the sludge depth in its ponds. The plan for monitoring the sludge depths shall be submitted with O&M Manual.
2. When sludge depths average 20-percent of the total depth of the pond(s), the Permittee shall submit to NDEP a plan to remove the sludge within two years.
3. The Permittee shall report the total depth of the pond and the depth of sludge.
4. The Permittee shall test the sludge depths at various spots in the pond that have been approved by NDEP.
5. The Permittee shall sample the sludge depths during the 3rd quarter.

Proposed Water Quality-Based Effluent Limitations:

Effluent from the treatment ponds:

pH range : 6-9

TSS: 90 mg/L daily maximum

CBOD: 45 mg/L daily maximum.

Dissolved Oxygen(DO): M&R

Monitoring Well:

Total Nitrogen: <= 10 mg/L

Rationale for Permit Requirements:

The Division’s rationale for the proposed monitoring conditions is as follows:

- Flow: Flow increase is approved based on the revised design parameters and design capacity of the pond system (12 feet deep and 1.03 million Gallon Volume, available aerator capacity , and influent characters were checked against the potential treatment levels achievable) as well as the historic usage data of this facility. Per capita wastewater flow estimates as revised for the calculations of design parameters are: 145 GPD per inmates (#200) and 25 GPD per staff (#22). Flow is monitored to ensure that the design capacity of the treatment system is not exceeded.
- CBOD: The Division requires the monitoring of influent and effluent Carbonaceous Biochemical Oxygen Demand (CBOD or Inhibited BOD), as an indication of treatment performance in the cells. The Division’s secondary-treatment CBOD standards for ponds is 45 mg/L daily maximum value.
- TSS: The Division’s secondary-treatment standard for Total Suspended Solids (TSS) in pond system effluent is 90 mg/L.
- Total Nitrogen: Nitrogen monitoring is needed to ensure the treatment system is not degrading the groundwater of the State.

•pH: The Division requires the pond effluent to meet a pH limitation of between 6.0 and 9.0 standard units.

DO: DO monitoring in the effluent from the pond system is introduced to gather data to ensure the proper functioning of the treatment system in turn to help identify the cause and mitigation of factors that were causing the general exceedances of various parameters currently being monitored. Dissolved Oxygen levels in the effluent (≤ 2 mg/L) is expected to serve as an indicator for potential odor issues, and the treatment system mal-functioning.

Measurement frequency of Quarterly made the reporting of 30-day average values of the monitoring parameters redundant, and as such are discontinued from this renewal cycle. These parameters will continue to be measured and reported quarterly on daily maximum basis.

Monitoring of sludge depth and free board are considered essential for early detection and prevention of treatment system. Monitoring of these two parameters is consistent per current conventions of NDEP with other similar permitted sites.

Special Conditions:

SA – Special Approvals / Conditions Table

Item #	Description
1	Within 1 year of permit issuance, all DMRs shall be submitted electronically through the Nevada NetDMR website: https://netdmr.ndep.nv.gov/netdmr/public/home.htm
2	Following the current permit identification conventions of NDEP/BWPC, the permit shall now on be referred to as NS0094017.

Reasonable Potential Analysis and Antidegradation Review:

Currently there are occasional exceedances in the reported monitoring parameters, and permittee is expected to review the operations and general function of their facility and resolve the issues. Given the depth of the groundwater at this area (@ 140 feet below surface) no further degradation of the groundwater of the State is expected at this time.

Flow:

0.03 MGD - 30 day ave.

0.04 MGD - daily max.

Corrective Action Sites:

There are no Bureau of Corrective Actions (BCA) remediation sites located within a one-mile radius of the proposed facility.

Wellhead Protection Program:

The facility is within 2000 feet of a United States Geological Survey (USGS) water supply well, however based on the depth of groundwater below the surface at this facility, no hydrological interference due to discharges to RIBs is anticipated. A Wellhead Protection Area has not been established for this area.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	By June 01, 2017, the Permittee shall submit two (2) copies of an updated Operations & Maintenance (O&M) Manual prepared by a Professional Engineer (NV licensed), complete with revised design parameters, for review and approval by the Division.	6/1/2017
2	The current permit is conditioned upon the permittee achieving compliance with all the limits set as per current renewal terms by the 3rd quarter DMR submission for the year 2017.	10/28/2017

Deliverable Schedule:

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

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	4/28/2017
2	Annual Report	Annually	1/28/2018

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 **Lincoln County Record, 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. **2/19/2017**, 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: **Sharada Maligireddy**

Date: **1/13/2017**

Title: **Staff Engineer**