

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

- I. Permittee Name:** Clark County Water Reclamation District
5857 E. Flamingo Road
Las Vegas, NV 89122
- II. Permit Number:** NV0021261 – Renewal
- III. Location:** 4300 S. Hollywood Blvd. and 5857 E. Flamingo Road
Las Vegas, NV 89122 Las Vegas, NV 89122
Outfall 001 Outfall 002
- IV. General:** The Permittee has applied for a National Pollutant Discharge Elimination System (NPDES) permit renewal to extend the authorization to discharge to the Las Vegas Wash.

The discharge is from a 150 million gallons per day (MGD) tertiary wastewater treatment facility located at 5857 E. Flamingo Road, Las Vegas NV 89122. Treatment at the plant consists of preliminary treatment, primary sedimentation, advanced activated sludge, secondary clarification, filtration and ultraviolet disinfection. The facility utilizes Biological Nutrient Removal (BNR) in the activated sludge process. This process provides for significant phosphorus removal, as well as conversion of ammonia to nitrates (nitrification) and partial removal of nitrogen (denitrification). Supplemental phosphorus removal can also be achieved by chemical coagulation prior to filtration. Filtration is accomplished at two separate facilities and discharged through separate outfalls, Outfall 001 – AWT, Advanced Wastewater Treatment Plant and Outfall 002 – Central Plant. Filtered effluent is disinfected by ultraviolet light disinfection, and discharged to the Las Vegas Wash. A portion of the treated effluent flow is disinfected with sodium hypochlorite and distributed for reuse. Solids removed from sedimentation and activated sludge processes are thickened and dewatered for final disposal in a landfill.

This also includes the addition of 60 MGD ultra filter membranes and ozone disinfection facilities to replace existing gravity media filters and UV disinfection facilities. A 30 MGD facility will be constructed at the AWT Plant and another 30 MGD facility at the Central Plant. Upgrading these existing facilities with newer technologies will help CCWRD continue to meet treatment requirements now and in the future.

The majority of the flow into the plant is from domestic wastewater. There is a small percentage of flow from industry in the service area and there is a pretreatment program which regularly samples the effluent from the industrial dischargers. The pretreatment program is authorized through the United States Environmental Protection Agency (USEPA).

The existing permit was issued on July 31, 2006, and expires on July 31, 2011. Since the permit effective date, the plant has consistently been in compliance with the permit. The proposed permit is based on a completed permit application submitted by the Permittee, plant monitoring data and ambient water quality data.

- V. Discharge Characteristics :** Discharges from both outfalls have the following characteristics:

<u>Parameter</u>	<u>Long-Term Average</u>
Flow	95 MGD
Uninhibited BOD ₅	<2 mg/L
pH	7.2 SU
Chlorine Residual	<0.1 mg/L
Total Dissolved Solids	1190 mg/L
TSS	<5 mg/L
Ammonia as N	<0.08 mg/L
Nitrate as N	16 mg/L
Total Kjeldahl Nitrogen	<1 mg/L
Phosphorus as P	≤0.10 mg/L
Orthophosphorus as P	0.04 mg/L
Dissolved Oxygen	5.5 mg/L
Fecal Coliforms	6.0 MPN/100 ml

VI. Receiving Water: The receiving water for Outfalls 001 and 002 is the Las Vegas Wash. The standards applicable to the Las Vegas Wash are attached to this fact sheet as Attachment A. Pursuant to NAC 445A.198, the designated beneficial uses for the appropriate reach of Las Vegas Wash are:

- Irrigation
- Watering of livestock
- Recreation not involving contact with the water
- Maintenance of a freshwater marsh
- Propagation of wildlife
- Propagation of aquatic life, excluding fish. This does not preclude the establishment of a fishery.

VII. Summary of Permit Changes:

The main changes from the previous permit are:

Item	Change
Waste load allocations for phosphorus and ammonia	The previous permit authorized three entities—the City of Henderson, the City of Las Vegas, and the Clark County Water Reclamation District—to reallocate individual waste load allocations among themselves, as long as the total remained unchanged. The current permit adds the City of North Las Vegas to the list of entities. The total will remain unchanged. See section X, below.

There are no other significant changes from the previous permit.

However, the Permittee has been upgrading the facility and intends to make additional improvements:

Item	Change
New filtering and disinfection facilities	Completed the addition of 16 dual media filters and 60 MGD of low pressure UV disinfection
New treatment facilities	Completed the addition of 40 MGD of activated sludge capacity with biological nutrient removal (BNR)
New membrane filtration	Constructing a 30 MGD membrane filtration facility to improve filtration capability
New ozone facility	Constructing a 30 MGD ozone disinfection facility to improve disinfection capability and remove compounds of emerging concern

VIII. Proposed Effluent Limitations: The Permittee is required to meet the following permit limits. Note: The load limits are calculated using the 30 day average flow and the permit limit expressed as a concentration. If higher flows are allowed in future permits, the load limits will increase accordingly.

TABLE I.1 (Outfall 001 and 002)

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS³</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average²	7 Day Average²	30-Day Average (lbs/day)	Sample Location	Measurement Frequency	Sample Type⁽³⁾
Flow – 001 & 002	150 MGD ⁴	Monitor and Report: MGD	NA	INF, 001, 002	Continuous	Flow meter
BOD₅ (uninhibited)	30 mg/L	45 mg/L	37,530	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS³</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average²	7 Day Average²	30-Day Average (lbs/day)	Sample Location	Measurement Frequency	Sample Type⁽³⁾
Total Suspended Solids	30 mg/L	45 mg/L	37,530	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
BOD₅ (uninhibited) &TSS	The Permittee shall demonstrate that the 30 day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
PH	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19.		NA	001, 002	Daily	Discrete
Fecal Coliform¹	Log mean 200 cfu or mpn/100ml	See footnote 1	NA	001, 002	Daily	Discrete
Total Residual Chlorine	NA	0.1 mg/L- except as allowed in Part I.A.19.	NA	001, 002	Daily	Discrete
Ozone Residual	NA	Monitor and Report	NA	001, 002	Daily	Discrete
Total Phosphorus as P: mg/L	See Part I.A.2*			001, 002	Daily	Composite
Total Ammonia as N: mg/L	See Part I.A.2*			001, 002	Daily	Composite
Total Inorganic Nitrogen as N: mg/L	See Part I.A.3*			001, 002	Weekly	Composite
Total Dissolved	See Part I.A.4*			001, 002	Weekly	Composite

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS³</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average ²	7 Day Average ²	30-Day Average (lbs/day)	Sample Location	Measurement Frequency	Sample Type ⁽³⁾
Solids: mg/L						
Priority Pollutants	Monitor and Report, See Attachment A			001, 002	Per Part I.A.18.d.	Discrete or Composite
WET testing	See Part I.A.17.*			001, 002	Monthly	Composite
Receiving Water	Monitor and Report			See Part I.A.21	See Part I.A.21	Discrete
Temperature	Monitor and Report		NA	001, 002	Weekly	Discrete
Dissolved Oxygen: mg/L	Monitor and Report		NA	001, 002	Weekly	Discrete
Orthophosphorus as P: mg/L	Monitor and Report			001, 002	Daily	Composite
Nitrate + Nitrite as N: mg/L	Monitor and Report			001, 002	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/L	Monitor and Report			001, 002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For monitor and report parameters, the Permittee shall report the maximum value, consistent with the measurement frequency, instead of the 7 day average.
3. Composite samples may be either physical or mathematical composites.
4. The 150 MGD limit applies to the sum of the Permittee's discharges through Outfalls 001, and 002.

* Table I.1 is the same as the permit, however discussion for the marked items can be seen below.

Attachment A: This attachment to the permit is the list of Priority Pollutants which are required to be sampled under the pretreatment permit requirements.

IX. Proposed Technology Based Effluent Limitations: Federal regulations at 40 CFR section 133 require publicly owned treatment works to achieve specified limits in discharged BOD, suspended solids, and pH. The permit includes these limits. No changes are proposed from existing requirements.

X. Proposed Water Quality-Based Effluent Limitations: The Nevada water quality standards require that point source discharges not cause a violation of any applicable water quality standards in the receiving water nor interfere with the attainment or maintenance of beneficial uses. The following requirements are included in the permit to ensure that the discharge does not cause water quality standards violations. In addition, the permit requires monitoring and reporting of constituents which are present in the discharge and the subject of ambient water quality standards. No changes are proposed from existing requirements.

Total Dissolved Solids: The permit includes the goal of not more than a 400 mg/L increase in Total Dissolved Solids (TDS) over the drinking water supply, a goal established by the Colorado River Salinity Forum. The Permittee has implemented the salinity public education required by the permit. This activity is a continuing requirement of the proposed permit. No changes are proposed from existing requirements.

Phosphorus and Ammonia: Total Maximum Daily Load (TMDLs) were developed for Total Ammonia as N and Phosphorus as P in 1989. This permit includes language which allows waste load allocations trading between the City of Las Vegas, Clark County Water Reclamation District, City of Henderson and the City of North Las Vegas (hereafter Dischargers). The Dischargers are authorized to discharge the waste loads listed in WLA Table for Total Phosphorus as P and Total Ammonia as N to the Las Vegas Wash. The WLA applies to the combined loading from all Outfalls. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Individual Waste Load Allocations (Σ IWLA)** defined below for the facilities.

Waste Load Allocation Table

Constituent	City of Las Vegas IWLA*	Clark County Water Reclamation District IWLA	City of Henderson IWLA	City of North Las Vegas IWLA*	Σ IWLA
Total Phosphorus as P	85 lbs/day	174 lbs/day	40 lbs/day	35 lbs/day	334 lbs/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
Total	247	505 lbs/day	116 lbs/day	102 lbs/day	970 lbs/day, Note:

Ammonia as N	lbs/day			This WLA only applies April 1 - September 30; no limit applies the rest of the year.
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*City of Las Vegas shall be allocated the sum of its own IWLA plus the IWLA of City of North Las Vegas until City of North Las Vegas begins discharging. Startup plan for initiation of discharge shall be submitted in accordance with special allocation procedure identified in section I.A.2.b or section I.A.2.c of the permit.

Fecal Coliform: Water quality standards for Las Vegas Wash specify fecal coliform requirements to be imposed on discharges into the wash. Water quality standards for Lake Mead include fecal coliform standards. These standards have been imposed as effluent limits on discharges into the Wash and Lake Mead. No changes are proposed from existing requirements.

Total Residual Chlorine: Water quality standards for Las Vegas Wash prohibit the discharge of toxic substances in toxic amounts. The Permittee dechlorinates the effluent to remove free chlorine. An excess of the dechlorinating agent is used to ensure that no free chlorine remains. The effluent limit of 0.1 mg/L Total Residual Chlorine is included in the permit as an indicator that no free chlorine is present in the effluent. No changes are proposed from existing requirements.

Whole Effluent Toxicity Testing (Acute): Acute whole effluent toxicity requirement have been imposed to prevent discharges of toxic substances in toxic amounts. No changes are proposed from existing requirements.

XI. Special Conditions: In addition to the technology based effluent limitations and the water quality based effluent limitations, the permit includes standard conditions required by 40 CFR section 122.41, including requirements on duty to comply, duty to reapply, need to halt or reduce activity not a defense, duty to mitigate, proper operation and maintenance, permit actions, property rights, duty to provide information, inspection and entry, monitoring and records, signatory requirement, reporting requirements (including planned change, anticipated noncompliance, transfers, monitoring reports, compliance schedules, 24 hour reporting, and other non-compliance), bypass requirements, and upset requirements. In addition, the permit includes the following special conditions. No changes are proposed from existing requirements.

Total inorganic nitrogen and pH: The Dischargers are required to determine whether Las Vegas Wash complies with its RMHQ criterion for total inorganic nitrogen, and for its beneficial use standard for pH. If the Permittee and other dischargers determine that the wash has exceeded these criteria, they must consider whether reasonable changes would result in compliance, and report to the Division.

Chronic WET Testing: The Permittee previously conducted a chronic whole effluent toxicity testing study and determined that there was no chronic whole effluent toxicity present in the effluent. The permit requires additional chronic WET testing to ensure that chronic toxicity does not appear. No changes are proposed from existing requirements.

Biosolids: The permit includes requirements on the disposal or reuse of biosolids. No changes are proposed

from existing requirements.

Pretreatment: The permit includes requirements for a pretreatment program, which the Permittee has established. No changes are proposed from existing requirements.

Miscellaneous: The permit includes miscellaneous requirements for odors, fencing, fees, operator qualifications, etc. No changes are proposed from existing requirements.

Effluent Monitoring: The permit includes extensive effluent monitoring requirements for all substances subject to effluent limitations or included in ambient water quality standards.

XII. Reasonable Potential Analysis and Antidegradation Review. An analysis was performed to determine whether there were any pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) that are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. No reasonable potential was found.

XIII. Flow: 150 MGD

XIV. Quantities: At the 30 day average flow allowed by this permit, the discharge will consist of the following loadings:

	Outfall 001	Outfall 002
BOD₅	37,530 lbs/day	37,530 lbs/day
Total Suspended Solids	37,530 lbs/day	37,530 lbs/day

XV. Procedures for Public Comment

The Notice of the Division's intent to reissue 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. July 05, 2011 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.650.

XVI. Proposed Determination

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

Prepared by: Alan Tinney/Janine Hartley
June 1, 2011