

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LAHONTAN REGION

14440 Civic Drive, Suite 200
Victorville, CA 92392
Phone 760-241-8583 • Fax 760-241-7308
<http://www.waterboards.ca.gov>

ORDER R6V-2013-0038
NPDES NO. CA0102822
WDID NO. 6B360109001

WASTE DISCHARGE REQUIREMENTS FOR THE VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY REGIONAL WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY

The following Discharger and discharge point is subject to waste discharge requirements set forth in this Order:

Table 1. Discharger Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

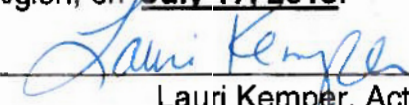
Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced secondary treated municipal wastewater	34° 37' 01" N	117° 21'12" W	Mojave River

Table 3. Administrative Information

This Order was adopted on:	July 17, 2013
This Order shall become effective on:	September 5, 2013
This Order shall expire on:	September 5, 2018
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than:	March 9, 2018

I, Lauri Kemper, Acting Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on **July 17, 2013**.


Lauri Kemper, Acting Executive Officer

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I. FACILITY INFORMATION

The following facility is subject to the waste discharge requirements (WDRs) set forth in this Order:

Table 4. Facility Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title, and Phone	Logan Olds, General Manager, (760) 948-9849 x110
Mailing Address	15776 Main Street, Suite 3, Hesperia, CA 92345
Type of Facility	Publically Owned Treatment Works (POTW)
Facility Permitted Flow	14 million gallons per day (MGD)
Facility Design Flow	18 MGD

II. FINDINGS

The California Regional Water Quality Control Board, Lahontan Region (hereinafter Lahontan Regional Water Board), finds:

- A. Legal Authorities.** This Order serves as WDR’s pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit for point source discharges from this facility to surface waters.
- B. Background and Rationale for Requirements.** The Lahontan Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. In addition, Attachments A through E and G are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Notification of Interested Parties.** The Lahontan Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR’s for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

- E. Consideration of Public Comment.** The Lahontan Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that this Order supersedes Order No. R6V-2008-0004 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Lahontan Regional Water Board from taking enforcement action for past violations of the previous Order. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Discharger shall comply with the analogous portions of the previous Order, which shall remain in effect for all purposes during the pendency of the stay.

III. DISCHARGE PROHIBITIONS

- A.** The average annual flow, as measured at Monitoring Location EFF-001, described in the MRP, shall not exceed 14.0 MGD in any calendar year.
- B.** Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- C.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- D.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- E.** The discharge of waste, as defined in section 4.1 of the Basin Plan, that causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation Objective, is prohibited.
- F.** The discharge of waste that causes violation in the receiving water of any numeric water quality objective contained in the Basin Plan is prohibited.
- G.** Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated in the receiving water, the discharge of waste that causes further degradation or pollution is prohibited.
- H.** The discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

- a.** The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E:

Table 5. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) (BOD ₅)	mg/L	10	15	30	--	--
	lbs/day ¹	1,170	1,750	3,500	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids (TSS)	mg/L	10	15	30	--	--
	lbs/day ¹	1,170	1,750	3,500	--	--
Priority Pollutants						
Bis(2-ethylhexyl)Phthalate	µg/L	1.8	--	3.6	--	--
	lbs/day ¹	0.21	--	0.42	--	--
Chlorodibromomethane	µg/L	0.41	--	0.97	--	--
	lbs/day ¹	0.048	--	0.11	--	--
Cyanide, Total Recoverable	µg/L	3.6	--	9.6	--	--
	lbs/day ¹	0.42	--	1.1	--	--
Dichlorobromomethane	µg/L	0.56	--	0.87	--	--
	lbs/day ¹	0.065	--	0.10	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	0.54	--	1.6	--	--
	lbs/day ¹	63	--	187	--	--
Chlorine, Total Residual	mg/L	0.002 ²	--	0.003	--	--
	lbs/day ¹	0.234 ²	--	0.350	--	--
Nitrogen, Total	mg/L	10.3	--	12.3	--	--
	lbs/day ¹	1,203	--	1,436	--	--
Total Dissolved Solids	mg/L	460 ³	--	580	--	--
	lbs/day ¹	53,710 ³	--	67,721	--	--

¹ Based on a Mojave River discharge flow of 14 MGD.

² Effluent limitation is the median of all daily samples any 6-month period.

³ To be applied as an annual average effluent limitation (AAEL).

b. Percent Removal: The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.

c. Dissolved Oxygen. Effluent concentrations of dissolved oxygen shall, at a minimum, contain:

- i. 4.0 mg/L as daily minimum;
- ii. 5.0 mg/L as an average calendar weekly minimum; and
- iii. 6.5 mg/L as an average calendar monthly average.

- d. Fecal Coliform Organisms.** Effluent at all times shall be adequately disinfected, oxidized, coagulated, clarified, and filtered. The number of fecal coliform bacteria shall not exceed either of the following:

 - i. A log mean of 20 per mL for any 30-day period; and,
 - ii. 40 per 100 mL in more than 10 percent of all of the samples collected in any 30-day period.
- e. Total Coliform Organisms.** Effluent at all times shall be adequately disinfected, oxidized, coagulated clarified, and filtered. The number of total coliform bacteria shall not exceed any of the following:

 - i. A median most probable number (MPN) of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed;
 - ii. 23 MPN/100 mL in more than one sample in any 30-day period; and,
 - iii. 240 MPN/100 mL at any time (instantaneous maximum).
- f. Turbidity.** Effluent shall be filtered and shall not exceed any of the following:

 - i. An average of 2 nephelometric turbidity units (NTU) within a 24-hour period;
 - ii. 5 NTU more than 5 percent of the time in a 24-hour period;
 - iii. 10 NTU at any time (instantaneous maximum).
- g. Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

 - i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.
- h. Chronic Toxicity.** The discharge shall not contain chronic toxicity at a level that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect of growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests measured in samples from Discharge Point No. 001 (at Monitoring Location EFF-001) as described in the MRP.

2. Interim Effluent Limitations – Discharge Point No. 001

The Discharger shall maintain compliance with the following interim effluent limitations for dissolved oxygen at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E. The interim effluent limitations for dissolved oxygen shall be effective from the effective date of this Order through **September 5, 2017**. The final effluent limitations for dissolved oxygen contained in section IV.A.1.c of this Order shall be effective on **September 5, 2017**.

a. Dissolved Oxygen. Effluent concentrations of dissolved oxygen shall, at a minimum, contain:

- i. 4.0 mg/L as daily minimum; and
- ii. 5.0 mg/L as an average calendar weekly minimum.

B. Land Discharge Specifications

Land discharge specifications for percolation ponds and biosolids drying units are included under Order No. R6V-2012-0058.

C. Reclamation Specifications

1. The Discharger shall operate and maintain the disinfection system to achieve equivalency to Title 22 disinfected tertiary recycled water for the treatment of recycled water for distribution. Equivalency to Title 22 disinfection shall include compliance with turbidity and bacteria effluent limitations established in section IV.A.1.d and the UV Disinfection Operational Provisions for Recycled Water Treatment specified in section IV.C.1.a below.

a. UV Disinfection Operational Provisions for Recycled Water Treatment

- i. The UV disinfection system shall be operated to deliver a minimum UV dose of 100 mJ/cm² at all times.
- ii. The following equation shall be used in the automatic UV disinfection control system for calculating UV dose:

$$S = e^{-0.5876} \times e^{0.0456 \times UVT} \times P^{0.9574}$$

Where:

UVTs at or above 52 percent. At UVT values above 72.7 percent (or $A_{254} = 0.138$ cm), the value should be used as the default value in the RED calculation.

S = Measured UV sensor value (mW/cm²).

So = UV intensity at 100 percent lamp power (new lamps) with clean sleeves (0.32 kW/lamp), typically expressed as a function of UVT (mW/cm²).

P = Measured ballast power setting, kW per lamp.

RED = RED calculated with the UV dose-monitoring equation (mJ/cm²).

A_{254} = UV absorbance at 254 nm (cm⁻¹).

Q = Flow rate per lamp, calculated as gallon per minute (GPM) divided by the number of lamps in one bank. At flow rates below 8.2 GPM/lamp, 8.2 GPM/lamp should be used as the default value in the RED calculation.

B = Number of operating banks.

- iii. The UV disinfection system reactor is limited to the following operational parameter ranges:
 - a) Operating in the 320 Watt mode only.
 - b) UVT at or above 52 percent.
 - c) Flow up to 16 MGD under normal operating conditions with proper redundant disinfection capacity.
- iv. On-line monitoring of flow, UVT, and UV intensity must be provided at all times.
- v. UV intensity sensors, flow meters and UVT monitors must be properly calibrated to ensure proper disinfection.
- vi. The online UVT meter shall be cleaned and calibrated to ensure accurate readings. At a minimum, the UVT meter shall be cleaned and calibrated consistent with manufacturer recommended frequencies.
- vii. The online UVT intensity sensors shall be cleaned and calibrated to ensure accurate readings. At a minimum, the UVT intensity sensors shall be cleaned and calibrated consistent with manufacturer recommended frequencies or as otherwise specified herein.
- viii. The Facility shall have a minimum of one reference UV intensity sensor on-site at all times. Measurements made by each duty UV intensity sensor shall be checked at least monthly using a reference UV intensity sensor. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is greater than 1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard.
- ix. The UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
- x. If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2 percent or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer.

- xi. Flow meters measuring the flow through the UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.
- xii. The Discharger shall develop and operate in accordance with an approved operations plan, which clearly specifies the operational limits and responses required for critical conditions and alarms. A copy of this Disinfection Operations Plan shall be submitted to the Regional Water Board within 30 days of the effective date of this Order. Within 30-days of receipt, the Discharger shall make any modifications specified by the Regional Water Board and resubmit the revised Disinfection Operations Plan. Any modifications to this Operations Plan not specified by the Regional Water Board shall be approved by the Regional Water Board prior to implementation.
- xiii. A copy of the effective Disinfection Operations Plan should be maintained at onsite and readily available to operations personnel and regulatory agencies. A quick reference plant operations data sheet should be posted at the treatment plant and include the following information:
 - a) The alarm set points for turbidity, high and low flow, UV dose and transmittance, and UV lamp operation hours.
 - b) The values of turbidity, flow, UV dose, transmittance (UVT), UV lamp operation hours when flow must be diverted to waste.
 - c) The required frequency of calibration for all meters measuring turbidity, UV intensity, flow, and UV transmittance.
 - d) The required frequency of mechanical cleaning/wiping and equipment inspection.
 - e) The UV lamp age tracking procedures and replacement intervals.
- xiv. The Wedeco TAK 55HP UV system must be operated with a built-in automatic reliability feature that must be triggered when the system is below the target UV doses of 100 mJ/cm^2 at all times. If measured UV dose goes below the minimum UV dose, the UV reactor in question must alarm and startup the next available UV lamp bank or redundant channel.
- xv. Conditions that should divert flow include: inability to meet the minimum UV dose, high flow, low UV intensity, low transmittance, intensity sensor failure, multiple lamp failure, or reactor failure.
- xvi. Equivalent replacements or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance.

2. Additional reclamation specifications for Westwinds Golf Course are included under Order No. R6V-2003-0028 and for the High Desert Power Project under Order No. R6V-2003-0028A1.

The Discharger has requested Master Recycled Water Requirements that are not yet adopted and are not included in this Order.

D. Subregional Plant Specifications

Specifications for the Apple Valley Subregional Treatment Plant are included under Order No. R6V-2013-0004.

Specifications for the Hesperia Subregional Treatment Plant are included under Order No. R6V-2013-0005.

E. Collection System Specifications

Specifications for the VVWRA trunk sewer collection system are included under Order No. 2006-003-DWQ and any future revisions thereto.

F. Industrial Stormwater Specifications

Specifications for stormwater discharges are included under Order 97-03-DWQ and any future revisions thereto.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the Mojave River:

1. This discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Lahontan Regional Water Board or the State Water Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Clean Water Act or amendments thereto, the Lahontan Regional Water Board may revise and modify this Order in accordance with such more stringent standards.
2. Ammonia: The neutral, unionized ammonia species (NH_3) is highly toxic to freshwater fish. The fraction of toxic NH_3 to total ammonia species ($\text{NH}_4^+ + \text{NH}_3$) is a function of temperature and pH. Tables 3-1 to 3-4 from the Basin Plan, were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in these tables. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas available on page 3-4 of the Basin Plan.

- 3. Bacteria, Coliform:** Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 mL, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 mL. The USEPA recommends that the log mean should ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. [Reference: Ambient water Quality Criteria for Bacteria – 1986, EPA 440/5-84-002, page 2] However, a log mean concentration exceeding 20/100 mL for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.
- 4. Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.
- 5. Chemical Constituents:** Waters designated as MUN shall not contain concentrations of chemical constituents in excess of the primary maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in Title 22, chapter 15, article 1, section 64400 et. seq of the California Code of Regulations. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes). Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
- 6. Chlorine, Total Residual:** For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L. Median values shall be based on daily measurements taken within any six-month period.
- 7. Color:** Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
- 8. Dissolved Oxygen:** The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. The minimum dissolved oxygen concentration shall not be less than 4.0 mg/L as a daily minimum, 5.0 as a 7-day mean, and 6.5 as a 30-day mean.
- 9. Floating Materials:** Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.

- 10. Oil and Grease:** Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.
- 11. Nondegradation of Aquatic Communities and Populations:** All waters shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All waters shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.
- 12. Pesticides:** According to the Basin Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, pesticides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code § 12753). Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life. Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Title 22 of the California Code of Regulations.
- 13. pH:** Changes in normal ambient pH levels shall not exceed 0.5 pH units. The pH shall not be depressed below 6.5 nor raised above 8.5. Compliance with the pH objective for these waters will be determined on a case-by-case basis.
- 14. Radioactivity:** Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations.
- 15. Sediment:** The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.
- 16. Settleable Materials:** Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.

- 17. Suspended Materials:** Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
- 18. Taste and Odor:** Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.
- 19. Temperature:** The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature shall not be altered by more than five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered [Note: The Basin Plan does not specify which reaches of the Mojave River have a COLD and which have a WARM beneficial use. Therefore, the most restrictive standard (e.g. no alteration of temperature for the COLD use) applies. However, for purposes of compliance and enforcement, the Lahontan Regional Water Board will consider historical data and the impact of temperature alternations upon the beneficial uses of the Mojave River below the Discharge Point 001.]
- 20. Toxicity:** All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Water Board [or the Executive Officer or his/her designee]. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for “experimental water” as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).
- 21. Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

- a. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Lahontan Regional Water Board may revise and modify this Order in accordance with such more stringent standards.
- b. The Lahontan Regional Water Board may reopen this order to establish new conditions, effluent limitations, or modify existing effluent or receiving water limitations should monitoring data, toxicity-testing data, or other new information indicate that a constituent is discharged at a level that will do any of the following: 1) Cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality criteria or objective, 2) Cause, have reasonable potential to cause, or contribute to a violation of any narrative water quality objective from the Basin Plan.
- c. The Lahontan Regional Water Board may reopen this order to revise the Operational Provisions for the UV disinfection system specified in section IV.C based on a site-specific engineering study which demonstrates Title 22 equivalency for virus inactivation in tertiary treated recycled water and acceptance by the California Department of Public Health.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity.** To evaluate compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.B).
- b. **Toxicity Reduction Evaluation (TRE).** The Discharger shall investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits toxicity, as described in section VI.C.2.d and e below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for

effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.

- c. **TRE Workplan.** By **December 5, 2013**, the Discharger shall review and update its existing TRE workplan, revise if necessary, and submit it to the Lahontan Regional Water Board. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.
- d. **Accelerated Monitoring.** If the toxicity monitoring trigger is exceeded during regular toxicity monitoring, the Discharger shall initiate accelerated monitoring as specified in section V of the MRP.
 - i. **Numeric Chronic Toxicity Monitoring Trigger.** For routine testing, Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between control and effluent data are significant.

If a chronic toxicity test indicates a statistically significant difference between a sample of 100% effluent and a control, the Discharger shall initiate accelerated chronic WET testing consistent with the requirements of section V.B of the MRP.
 - ii. **Acute Toxicity Accelerated Monitoring Trigger.** If survival is less than 90 percent in two consecutive quarterly samples, the Discharger shall initiate accelerated acute WET testing consistent with the requirements of section V.A of the MRP.
- e. **TRE Implementation.** If toxicity is confirmed to be present in the effluent during accelerated monitoring, the Discharger shall perform a TRE, consistent with the requirements of section VI.C.2.b of this Order and V.A and V.B of the MRP.
 - i. **Acute Toxicity TRE Trigger.** If any of the accelerated (monthly) tests demonstrate a survival rate of less than 70 percent, the Discharger shall initiate a TRE.
 - ii. **Chronic Toxicity TRE Trigger.** If any accelerated (monthly) tests demonstrate chronic toxicity greater than 1 TUc, the Discharger shall initiate a TRE.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as Detected, Not Quantified (DNQ) when the effluent limitation is less

than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or
- ii. A sample result is reported as Non Detect (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Lahontan Regional Water Board:

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Lahontan Regional Water Board including:
 - (a) All PMP monitoring results for the previous year;
 - (b) A list of potential sources of the reportable priority pollutant(s);
 - (c) A summary of all actions undertaken pursuant to the control strategy; and
 - (d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

- a. The Discharger's wastewater treatment facility shall be supervised by people who possess a wastewater treatment plant operator certificate of appropriate grade pursuant to Chapter 26, Title 23, of the California Code of Regulations.
- b. Infiltration/inflow into sewerage facilities from stormwater or nuisance water shall be minimized to the maximum extent practicable.

- c. All facilities used for collection, transportation, treatment, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
- d. Waste biosolids shall be discharged only at a legal point of disposal in accordance with the provisions of Title 27, California Code of Regulations and in accordance with 40 C.F.R. Part 503.
- e. The California Water Code (Sections 13350 and 13385) provides that any person who violates a waste discharge requirement or a provision of the California Water Code, is subject to civil penalties stated therein.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements

- i. The Discharger shall implement their approved Industrial Wastewater Pretreatment Program Plan dated January 1, 1995, including any subsequent modifications approved by the Lahontan Regional Water Board. The Discharger shall perform ongoing industrial inspections and monitoring, as necessary to ensure compliance with pretreatment regulations contained in 40 C.F.R. Part 403.
- ii. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. Part 403, including any subsequent regulatory revisions to 40 C.F.R. Part 403. Where 40 C.F.R. Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 C.F.R. Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, as provided in the Clean Water Act (Clean Water Act).
- iii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.
- iv. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. Part 403 including, but not limited to:
 - (a) Implement the necessary legal authorities as provided in 40 C.F.R. 403.8(f)(1);

- (b)** Enforce the pretreatment requirements under 40 C.F.R. 403.5 and 403.6;
 - (c)** Implement the programmatic functions as provided in 40 C.F.R. 403.8(f)(2); and
 - (d)** Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. 403.8(f)(3).
- v.** The Discharger shall implement, as more completely set forth in 40 C.F.R. 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - (a)** Wastes which create a fire or explosion hazard in the treatment works;
 - (b)** Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - (c)** Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - (d)** Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - (e)** Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F);;
 - (f)** Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - (g)** Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - (h)** Any trucked or hauled pollutants, except at points pre-designated by the Discharger.
- vi.** The Discharger shall implement, as more completely set forth in 40 C.F.R. 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:
 - (a)** Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or

(b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

- b. Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. Part 503.
- i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.
 - ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.
 - iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate applicable groundwater objectives. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate applicable groundwater objectives.
 - iv. The use, disposal, storage, and transportation of biosolids shall comply with existing federal, state, and local laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. Part 503. If the State Water Board and the Lahontan Water Board are given the authority to implement regulations contained in 40 C.F.R. Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards.
 - v. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

- vi. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least 90 days in advance of the change.
- vii. By **March 5, 2014**, the Discharger shall review and update its existing biosolids use or disposal plan, and submit it to the Lahontan Regional Water Board. The updated plan shall describe at a minimum:
 - (a) Sources and amounts of biosolids generated annually.
 - (b) Location(s) of on-site storage and description of the containment area.
 - (c) Plans for ultimate disposal. For landfill disposal, include the Water Board's waste discharge requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name and location of the landfill.
 - (d) The Discharger shall submit to the Water Board a copy of the annual biosolids report submitted to U.S. EPA.

6. Other Special Provisions

- a. **Order Continuation After Expiration Date.** If this Order is not revised and renewed prior to expiration, then the Order shall be continued until revised and renewed, provided that compliance with the requirements contained herein is maintained and that the Discharger has applied for renewal of the Order at least 180 prior to the expiration date.
- b. **Land Ownership Change or Control.** In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Lahontan Regional Water Board.
- c. **Succeeding Owner or Operator.** To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. Transfer shall be approved in writing by the Executive Officer.

- d. Flow Increase Requests.** Future requests for any increase in permitted effluent flow greater than 14 MGD to surface waters shall be accompanied by an antidegradation analysis that demonstrates consistency with State Water Board Resolution No. 68-16. Any antidegradation analysis shall consider, and be representative of, current and future anticipated treatment technologies and capabilities of the Facility.

VII. COMPLIANCE SCHEDULES

The Discharger shall implement the following tasks to comply with the final effluent limitations for dissolved oxygen specified in section IV.A.1.c of this Order. These tasks shall be completed as soon as reasonably possible, but no later than the compliance dates specified below.

Table 6. Compliance Schedule for Dissolved Oxygen

Task	Compliance Date
1. The Discharger shall secure funding to evaluate alternatives to comply with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order.	September 5, 2014
2. The Discharger shall identify and evaluate reasonable alternatives to comply with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order. The Discharger shall identify the effective alternative to be implemented to comply with final effluent limitations for dissolved oxygen. The Discharger shall submit a report to the Regional Water Board which summarizes all reasonable alternatives evaluated and the process of evaluation for each alternative. The report shall identify the selected alternative and provide the rationale for selecting the chosen alternative. Further, the report shall provide an assessment on the effectiveness of the chosen alternative to meet the final effluent limitations for dissolved oxygen specified in section IV.A.1.c of this Order.	September 5, 2015
3. If necessary, the Discharger shall secure additional funding for the implementation and/or construction of the identified alternative from Task 2.	February 5, 2016
4. The Discharger shall issue a contract for the planning and construction of any Facility upgrades necessary to comply with the final effluent limitations for dissolved oxygen.	September 5, 2016
5. The Discharger shall complete construction of any necessary Facility upgrades and achieve full compliance with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order.	September 5, 2017

Within 14 days following each interim date, the Discharger shall notify the Regional Water Board in writing of its compliance or noncompliance with the above compliance schedules. If the Discharger did not comply with an interim compliance date, the Discharger shall provide the reason for the delay and a proposed schedule to comply with the applicable interim compliance task. The report shall further include status updates regarding compliance with all the specified interim tasks and

discuss any known potential issues that may delay achieving compliance with any of the interim tasks or compliance with the final effluent limitation for dissolved oxygen.

VIII. COMPLIANCE DETERMINATION

Compliance with effluent limitations for priority pollutants shall be determined by using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

A. Compliance with Priority Pollutant Limitations

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data.

When determining compliance with an AAEL, AMEL, AWEL, or MDEL and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by section VII.2 above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the

AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by section VII.2 above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by section VII.2 above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

H. Average Annual Effluent Limitation (AAEL)

If the average of daily discharges over a calendar year exceeds the AAEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that year for that parameter (e.g., resulting in 365 or 366 days of non-compliance in a calendar year). If only a single sample is taken during the calendar year and the analytical result for that sample exceeds the AAEL, the Discharger will be considered out of compliance for that calendar year. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar year during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar year.

I. Six Month Median for Chlorine Residual

If the median of the daily total chlorine residual measurements taken over any six-month period exceed 0.002 mg/L, the Discharger will be considered to be out-of-compliance for each day of the six month period. If any total chlorine residual measurement exceeds 0.003 mg/L on any day, the Discharger will be considered to be out-of-compliance for the day. A six-month period is defined for this Order as the first and second semesters of a calendar year.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Persistent Pollutants

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be

particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Lahontan Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or Lahontan Regional Water Board.

Reporting Level (RL)

The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Lahontan Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Lahontan Regional Water Board Basin Plan.

Standard Deviation (σ)

Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

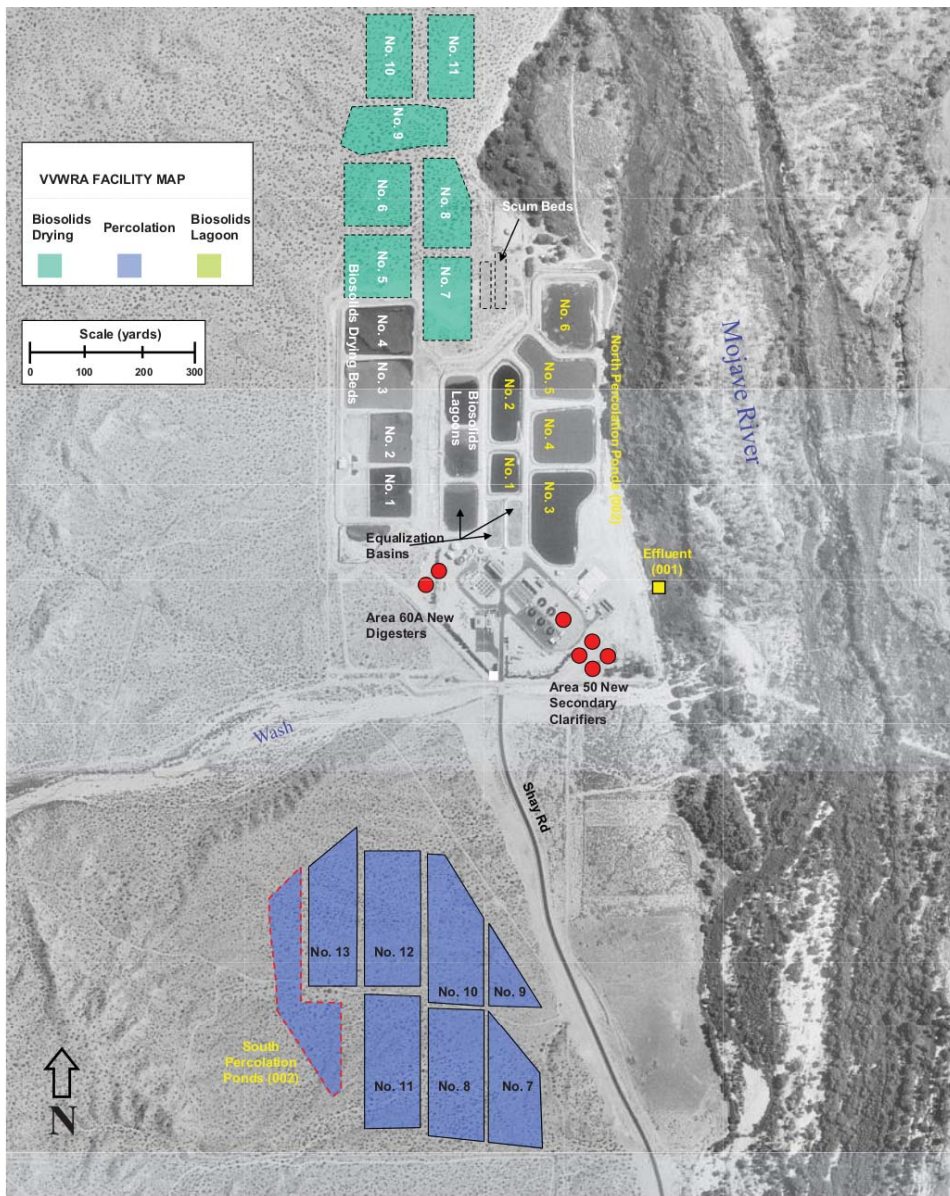
n is the number of samples.

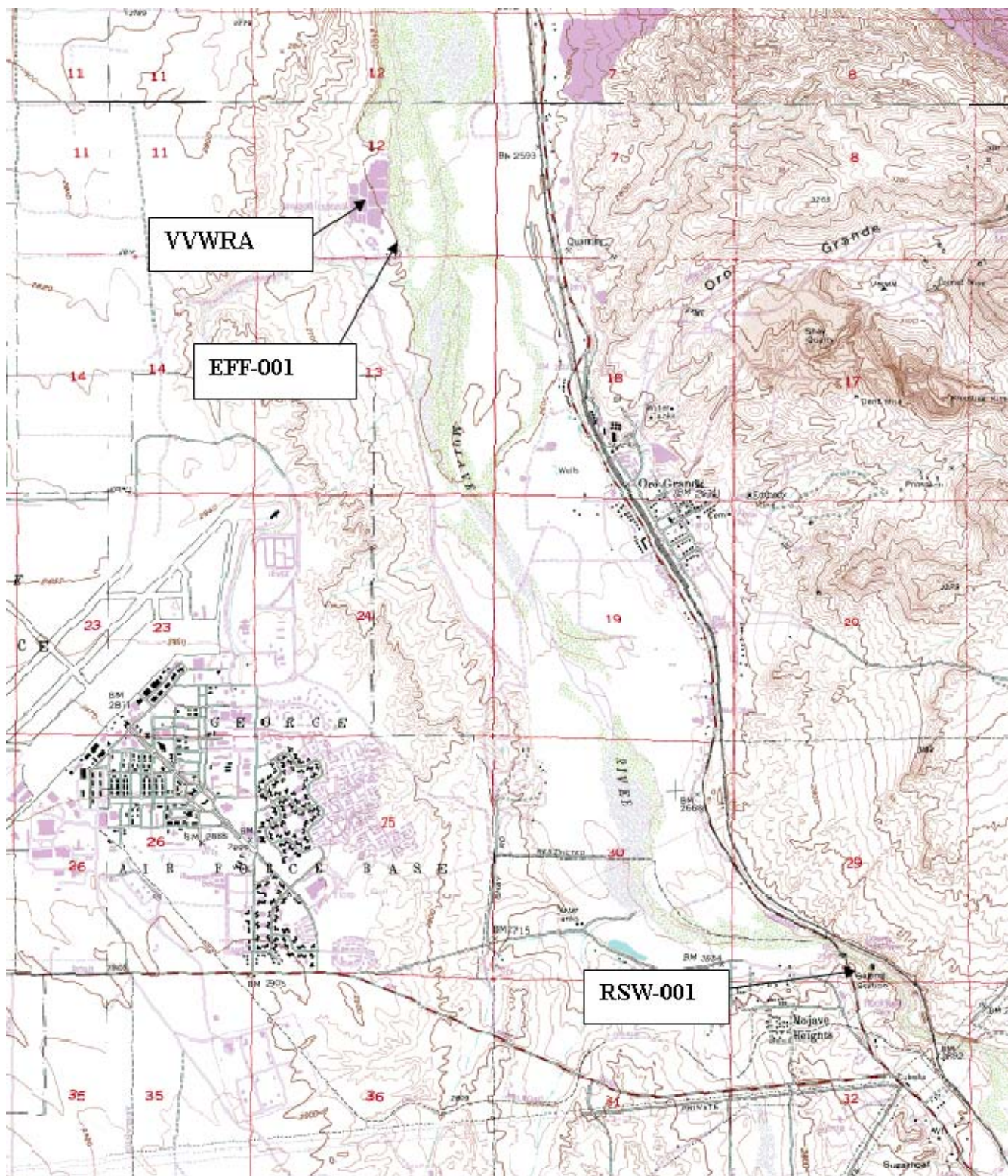
Toxicity Reduction Evaluation (TRE)

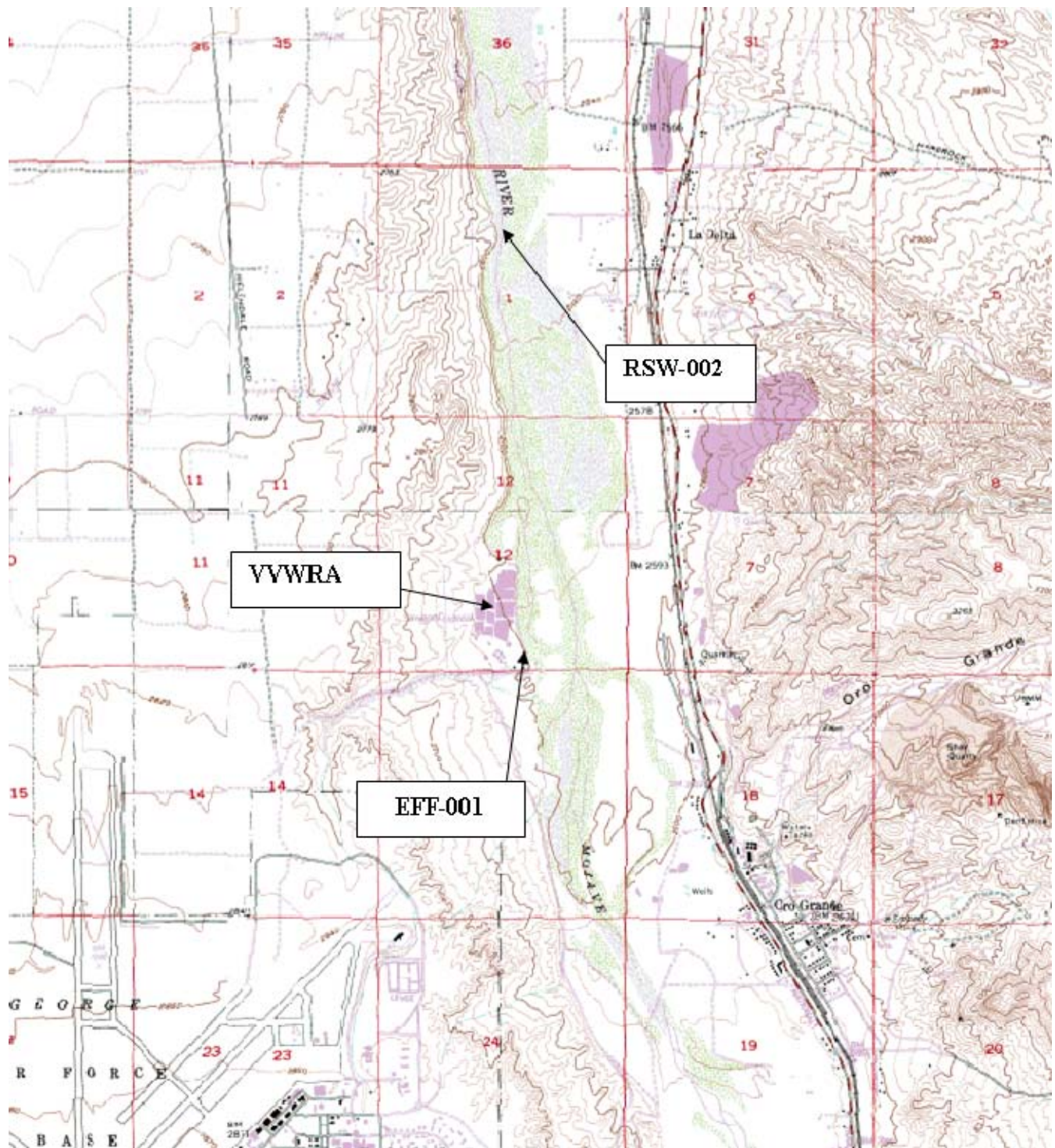
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an

evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

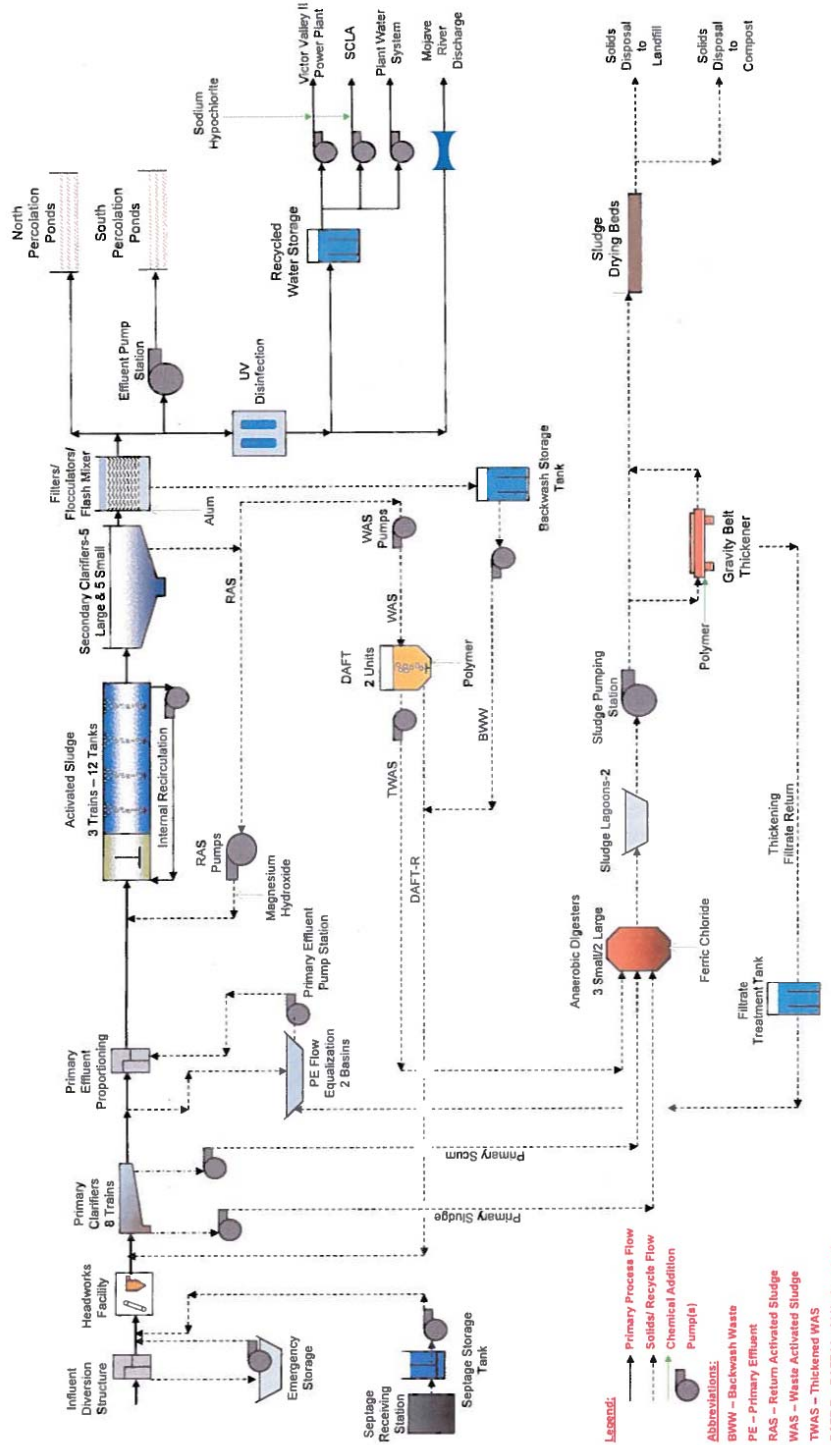
ATTACHMENT B-1 – MAP







ATTACHMENT C – FLOW SCHEMATIC



VVWRA Existing Process Schematic (with Phase IIIA complete in December 2012)-18 MGD

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Lahontan Regional Water Quality Control Board (Lahontan Water Board), State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Lahontan Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied

if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

- c. The Discharger submitted notice to the Lahontan Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Lahontan Water Board may approve an anticipated bypass, after considering its adverse effects, if the Lahontan Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

- c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Lahontan Water Board. The Lahontan Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B. Monitoring results must be conducted according to test procedures under 40 C.F.R. Part 136 or, in the case of sludge use or disposal, approved under 40 C.F.R. Part 136 unless otherwise specified in 40 C.F.R. Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. Part 503), the Discharger shall retain records of all monitoring information, including all calibration and

maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Lahontan Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Lahontan Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Lahontan Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Lahontan Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Lahontan Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency,

- or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Lahontan Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Lahontan Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
 4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Lahontan Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
 5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Lahontan Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. Part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Lahontan Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Lahontan Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Lahontan Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Lahontan Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Lahontan Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Lahontan Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Lahontan Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (C.F.R.), section 122.48 (40 C.F.R. 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board, Lahontan Region to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Lahontan Water Board.
- B.** Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- D.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.
- E.** Laboratories analyzing monitoring samples shall be certified by CDPH, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- F.** The results of all monitoring required by this Order shall be reported to the Lahontan Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	At the location at the headworks, prior to the primary clarifiers, where a representative sample of the influent into the Facility can be collected
001	EFF-001	At a location immediately after UV disinfection and prior to being discharged to Discharge Point No. 001
--	RSW-001	Upstream of Old National Trails Bridge on Route 66, near the USGS Gaging Station at Latitude 34° 34' 22" N and Longitude 117° 19' 13" W
--	RSW-002	1.75 miles downstream of Discharge Point No. 001 at a point west of the intersection of Robertson Ranch Road and National Trails Highway at Latitude 34° 38' 27" N and Longitude 117° 21' 24" W
--	BIO-001	A location where a representative sample of the biosolids can be obtained.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	1/Day	1
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite ²	4/Week ³	1
pH		Continuous	1/Day	1
Total Suspended Solids		24-hr Composite ²	4/Week ³	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; or by methods approved by the Lahontan Regional Water Board or the State Water Board.

² 24-hour flow proportional composite.

³ Monitoring for BOD₅ and TSS shall be conducted simultaneously with effluent monitoring.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor UV disinfected wastewater at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	1/Day	1
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hour Composite	4/Week ³	1
	lbs/day ²	Calculate	4/Week ³	--
pH	standard units	Meter	1/Day ⁴	1
Total Suspended Solids	mg/L	24-hour Composite	4/Week ³	1
	lbs/day ²	Calculate	4/Week ³	--
Priority Pollutants				
Bis(2-ethylhexyl)Phthalate	µg/L	Grab	1/Month	1
		Calculate	1/Month	--
Chlorodibromomethane	µg/L	Grab	1/Month ⁸	1
	lbs/day ²	Calculate	1/Month ⁸	--
Copper, Total Recoverable	µg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Cyanide, Total Recoverable	µg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Dichlorobromomethane	µg/L	Grab	1/Month ⁸	1
	lbs/day ²	Calculate	1/Month ⁸	--
Remaining CTR/NTR Priority Pollutants	µg/L	Grab	1/Year ⁵	1,6
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Boron, Total Recoverable	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Chloride	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Chlorine, Total Residual	mg/L	Grab	1/Week ⁸	1,7
	lbs/day ²	Calculate	1/Week	--
Dissolved Oxygen	mg/L	Grab	1/Week	1
Electrical Conductivity	mmhos/cm	Grab	1/Day	1
Fecal Coliform Organisms	MPN/100 mL	Grab	5/Month	1
Fluoride, total	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter	1
MBAS	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Nitrite Nitrogen, Total (as	mg/L	Grab	2/Month	1

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
N)	lbs/day ²	Calculate	2/Month	--
Nitrogen, Total (sum of nitrate, nitrite, TKN)	mg/L	Calculate	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Oil and Grease	mg/L	Grab	1/Quarter	1,9
	lbs/day ²	Calculate	1/Quarter	--
Phenols, Total	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Sodium, Total	mg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Sulfate	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Temperature	°C	Grab	1/Week	1
Total Coliform Organisms	MPN/100 mL	Grab	1/Day	1
Total Dissolved Solids	mg/L	24-hour Composite	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Turbidity	NTU	Grab	1/Day	1
Whole Effluent Toxicity (see Section V, below)	--	--	--	--

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; for priority pollutants, the methods must meet the lowest MLs specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by the Lahontan Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

² The mass emission (lbs/day) for the discharge shall be calculated and reported using the limitation concentration and the actual flow rate measured at the time of discharge, using the formula:

$$M = 8.34 \times C_e \times Q$$

where: M = mass discharge for a pollutant, lbs/day

C_e = reported concentration for a pollutant

Q = actual discharge flow rate.

³ The percent removal for BOD₅ and TSS shall be reported each calendar month in accordance with Effluent Limitation IV.A.1.b of the Order. Samples for BOD₅ and TSS shall be collected simultaneously with influent samples.

⁴ If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports.

⁵ Effluent priority pollutant monitoring shall be conducted concurrently with receiving water priority pollutant monitoring. (See section VIII.A.I, below)

⁶ National Toxics Rule and California Toxics Rule, As specified in 40 C.F.R. 131.36 and 65 Fed. Register 31682-31719 (May 18, 2000).

⁷ The Discharger shall ensure the reporting limit for total residual chlorine is not greater than 0.1 mg/L.

⁸ The Discharger shall monitor at the frequency specified in the table, however, if after 3 months there is no detectable traces of this pollutant, monitoring may be reduced to once per year during periods when chlorination is not used at the Facility. If the pollutant is detected, monitoring shall return to the frequency specified in the table for the remainder of the permit term. Monitoring shall be performed at the frequency specified in the table when chlorination is being used at the Facility.

⁹ Each oil and grease sampling and analysis event shall be conducted in accordance with USEPA Method 1664.

- a. In addition to the flow monitoring required in section IV.A.1, above, the Discharger shall record the following in a permanent log book and report it with each monthly Report
 - i. The total volume, in million gallons, of wastewater flow to the Facility for each day.
 - ii. The total volume, in million gallons, of wastewater flow to the Facility for each month.
 - iii. The average flow rate, in million gallons per day, of wastewater to and from the Facility calculated for each month.
 - iv. The maximum instantaneous flow rate, in million gallons per day, of wastewater to the Facility that occurs each day.
 - v. The volume, in millions gallons, of wastewater flow to the Mojave River each day.
 - vi. The total volume, in million gallons, of wastewater flow to the Mojave River for each month.
 - vii. The average flow rate, in million gallons per day, of wastewater to the Mojave River calculated for each month.
 - viii. The volume, in gallons, of septic tank pumpings (septage) discharged to the Facility each day. Septage volume recording shall begin immediately after the first dump station becomes operational.
 - ix. The total volume, in million gallons, of septage tank pumping (septage) discharged to the Facility each month.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing – Monitoring Location EFF-001

1. The presence of acute toxicity shall be determined as specified in USEPA's acute toxicity test methods in 40 C.F.R. Part 136 for the *Pimephales promelas* survival test.
2. The Discharger shall conduct acute WET tests on grab samples of undiluted effluent and an appropriate control water, as specified in the test method, a minimum of once per calendar quarter.
3. Where possible, the Discharger shall perform both acute WET testing and chemical-specific testing required by this Order using split samples taken during a single grab sampling event.
4. Acute WET results shall be reported in percent survival.

5. Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).
6. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in EPA's, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 5th Edition* (EPA-821-R-02-012), the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
7. The Discharger shall submit with the monthly report in which WET test results are due, a full report of acute WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
8. If survival is less than 90 percent in two consecutive quarterly samples, the Discharger shall increase the frequency of acute WET testing to one time per month. If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring. When three consecutive monthly tests demonstrate a survival rate of greater than 90 percent of the test organisms, the Discharger may resume acute WET testing at a frequency of one time per calendar quarter.
9. If any of the accelerated (monthly) tests demonstrate a survival rate of less than 70 percent, the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of section VI.C.2 of the Order.

B. Chronic WET Testing – Monitoring Location EFF-001

1. The presence of chronic toxicity shall be determined as specified in USEPA's short-term chronic toxicity test methods in 40 C.F.R. Part 136 for *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* larval survival and growth.
2. The discharger shall conduct chronic WET tests on undiluted (100% effluent) grab samples a minimum of once per calendar year and shall use an appropriate control water, as specified in the test method.
3. Where possible, the Discharger shall perform both chronic WET testing and chemical-specific testing required by this Order using split samples taken during a single grab sampling event.
4. For routine testing, Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between control and effluent data are significant.
5. If a chronic toxicity test indicates a statistically significant difference between a sample of 100% effluent and a control, the discharger shall initiate accelerated chronic WET testing at a frequency of one time per month. If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring.

6. Accelerated chronic WET results shall be reported in TUc where:

$$TUc = \frac{100}{NOEC}$$

NOEC = No Observed Effect Concentration: the highest concentration of effluent to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of effluent to which the values for the observed response show no statistically significant difference from a control).

Accelerated chronic WET testing shall use a series of five dilutions and a control. The dilutions shall be 12.5, 25, 50, 75, and 100 percent effluent, along with the control (0 percent effluent). Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).

7. When three consecutive accelerated monthly tests demonstrate no chronic toxicity, which is defined as WET test results not exceeding 1.0 TUc, the Discharger may resume routine chronic WET testing at a frequency of one time per calendar year.
8. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in the test methods manual, the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
9. The Discharger shall submit with the monthly report in which WET test results are due, a full report of chronic WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
10. If any of the accelerated (monthly) tests demonstrate chronic toxicity ($TUc > 1.0$), the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of section VI.C.2 of the Order.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable. Land discharge monitoring requirements are required under separate orders.

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable. Reclamation monitoring requirements are required under separate orders.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water – Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor the Mojave River at Monitoring Locations RSW-001 and RSW-002 as follows:

Table E-4. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Meter	1/Quarter	1
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Chlorine, Total Residual	mg/L	Grab	1/Quarter	1
Dissolved Oxygen	mg/L	Grab	1/Quarter	1
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Temperature	°C	Grab	1/Quarter	1
Total Coliform Organisms	MPN/100 mL	Grab	1/Quarter	1
Total Dissolved Solids	mg/L	24-hour Composite	1/Quarter	1
Turbidity	NTU	Grab	1/Quarter	1
Remaining NTR/CTR Priority Pollutants ³	µg/L	Grab	1/Year ²	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; for priority pollutants, the methods must meet the lowest MLs specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by the Lahontan Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

² Receiving water priority pollutant monitoring shall be conducted concurrently with effluent priority pollutant monitoring. (See section IV.A.1 above)

³ National Toxics Rule and California Toxics Rule, As specified in 40 C.F.R. 131.36 and 65 Fed. Register 31682-31719 (May 18, 2000).

B. Groundwater

Not Applicable. Groundwater data is reported under a separate order.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. The following shall be recorded monthly and reported with monthly monitoring reports:
 - i. Total quantity of biosolids generated during the monitoring period.
 - ii. Date and quantity of biosolids removed off-site, location of use, recipient (including name and address), and biosolids disposal method (including crops grown if appropriate) for all biosolids removed off-site.
 - iii. Cumulative total quantity of biosolids currently on-site including the quantity of biosolids added during the monitoring period.

- b. A single representative sample of biosolids shall be analyzed and reported as follows:

Table E-5. Biosolids Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Arsenic	mg/kg	Grab	1/Year
Cadmium	mg/kg	Grab	1/Year
Copper	mg/kg	Grab	1/Year
Lead	mg/kg	Grab	1/Year
Mercury	mg/kg	Grab	1/Year
Molybdenum	mg/kg	Grab	1/Year
Nickel	mg/kg	Grab	1/Year
Selenium	mg/kg	Grab	1/Year
Zinc	mg/kg	Grab	1/Year
Fecal Coliform	MPN/g	Grab	1/Year
Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Phosphate, Total (as P)	mg/kg	Grab	1/Year

- c. In addition to the monitoring requirements in section IX.A.1.b, above, the Discharger shall sample annually for the parameters listed in California Code of Regulations, Title 22, section 66261.24, subdivision (a)(2)(A), Table II and California Code of Regulations, title 22, section 66261.24, subdivision (a)(2)(B), Table III. The Discharger shall submit a proposed protocol for sample collection to the Executive Officer for review prior to sample collection and analysis. The Discharger shall make a determination whether the analyses indicate that the biosolids shall be considered a hazardous material.

Results of the annual sampling will be submitted with the results of all other annual monitoring requirements by March 1 of each year.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. By **November 5, 2013**, the Discharger shall revise the Sampling and Analysis Plan (SAP) and submit the revision to the Lahontan Regional Water Board. The revised SAP shall reflect the requirements of this Order for sampling for all media (effluent, surface water, and biosolids). At a minimum, the SAP shall include: sampling locations, sampling schedule, sampling procedures, sample handling procedures, analytical methods, MDLs, MLs, QA/QC protocols, and sampling criteria methods, maps showing all monitoring points. The Discharger shall periodically update the SAP as needed to keep it current.

B. Self-Monitoring Reports (SMR's)

1. The Discharger shall electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS Web Site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP. The Discharger shall submit monthly SMR's including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	Continuous	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week or 4/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month or 2/Month	Permit effective date	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	First day of second calendar month following month of sampling
1/Year	Permit effective date	January 1 through December 31	1 March of each year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 5. Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A. For purposes of reporting and administrative enforcement by the Lahontan Water Board Name and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
- 6. Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case

the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

- c. For fecal coliform organisms, the log mean MPN and percent of times fecal coliform results exceed 40 per 100 mL shall be determined for the last 30 days. The running 30-day log mean value and the running percent of times fecal coliform results exceed 40 per mL during any 30-day period shall be reported for each day along with the results from each individual sample.
 - d. For coliform organisms, the median shall be determined for the last seven days for which coliform results have been obtained. This seven day median value shall be reported for each day along with the results from each individual sample.
 - e. The average turbidity values, the percent of the time that the turbidity exceeds 5 NTU, and the number of times that the turbidity exceeds 10 NTU shall be reported for each monthly monitoring period.
 - f. Compliance evaluation for TDS must be included in the annual report. The compliance evaluation must account for all of the average monthly concentrations for the prior calendar year to assess that the average monthly effluent limitation is not exceeded.
7. The Discharger shall submit SMR's in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with effluent limitations, including, but not limited to; instantaneous minimums and maximums, daily maximums, monthly and weekly averages, 6-month medians (for total residual chlorine), fecal and total coliform limitations, and BOD₅ and TSS percent removal requirements, and mass limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

C. Discharge Monitoring Reports (DMRs)

1. At any time during the term of this permit, the State Water Board or Lahontan Regional Water Board may notify the Discharger to electronically submit DMRs. Until such notification is given specifically for the submittal of DMRs, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMR's must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
Regional Administrator U.S. Environmental Protection Agency Water Division (ENF-4-1) 75 Hawthorne Street San Francisco, CA 94105	Regional Administrator U.S. Environmental Protection Agency Water Division (ENF-4-1) 75 Hawthorne Street San Francisco, CA 94105 EPA Address

3. All discharge monitoring results must be reported on the official U.S. EPA pre-printed DMR forms (EPA Form 3320-1) or on self-generated forms that follow the exact same format of EPA Form 3320-1.
4. A copy of the DMR shall also be submitted to the Lahontan Water Board's Victorville office.

D. Other Reports

1. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Lahontan Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by March 1 of each year and include at least the following information:

- a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

Sludge, as defined in section VI.5.b of the Order, shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. Part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through, interference, or noncompliance with sludge disposal requirements.
- c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
- d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:
 - i. complied with baseline monitoring report requirements (where applicable);
 - ii. consistently achieved compliance;
 - iii. inconsistently achieved compliance;
 - iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. 403.8(f)(2)(vii);
 - v. complied with schedule to achieve compliance (include the date final compliance is required);
 - vi. did not achieve compliance and not on a compliance schedule; and
 - vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii through vii above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the

quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

- e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:
 - i. The names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. The conclusions or results from the inspection or sampling of each industrial user.
- f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:
 - i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
 - ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
 - vi. Restriction of flow to the POTW.
 - vii. Disconnection from discharge to the POTW.
- g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's

administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

- h.** A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- i.** A summary of public participation activities that involve and inform the public.
- j.** A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report.
- k.** Duplicate signed copies of these Pretreatment Program reports shall be submitted to the following:

State Water Resources Control Board
Division of Water Quality
1001 I Street or P.O. Box 100
Sacramento, CA 95812

and the

California Regional Water Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

2. Operation and Maintenance

A brief summary of any operational problems and maintenance activities shall be submitted to the Lahontan Regional Water Board with each monthly SMR. This summary shall discuss:

- a.** Any modifications or additions to the wastewater conveyance system, treatment facilities, or disposal facilities.
- b.** Any major maintenance conducted on the wastewater conveyance system, treatment facilities, or disposal facilities.
- c.** Any major problems occurring in the wastewater conveyance system, treatment facilities, or disposal facilities.

- d. The calibration or any wastewater flow measuring devices.

3. Offsite Disposal

The Discharger shall include in each monthly monitoring report the volume and type of all waste hauled offsite for disposal. The person or company doing the hauling and the legal point of disposal shall also be recorded.

4. Annual Facility Monitoring Report

By March 1 of each year, the Discharger shall submit an Annual Report that summarizes in tabular and graphical format the monitoring data collected for the previous year. This report shall include plant influent and effluent data and time plots of related receiving water data. Included shall be the names and grades of all certified operators. Include also a summary of the compliance status and implement the schedule any non-compliance situation.

5. Sewage and Hazardous Substance Spill Report

In addition to any other reporting requirements, pursuant to CWC Section 13271, the Discharger shall immediately notify the Governor's Office of Emergency Services (OES) of any sewage or hazardous substance discharged into or onto State waters. Pursuant to CWC Section 13267, the Discharger must also notify the Lahontan Regional Water Board's Victorville office of any spills reported to OES within 24 hours by telephone. CWC Section 13271(a)(3) states that OES will immediately notify the Lahontan Regional Water Board, local health officer, and administrator of environmental health. Immediately means: (1) as soon as there is knowledge of the discharge, (2) as soon as notification is possible, and (3) when notification can be provided without substantially impeding cleanup or other emergency measures. For the purposes of CWC Section 13271, Title 23 Section 2250, California Code of Regulations, defines a reportable quantity of sewage to be any unauthorized discharge up to 1,000 gallons or more. The reportable quantities for hazardous substances are those developed by the USEPA contained in 40 C.F.R. Part 302.

6. Report of Waste Discharge

The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than specified in Table 3 of the Order. The report of waste discharge must include a delimited formatted file, such as Excel®, that contains all monitored data that include, for each value, constituent, measurement date, measured value, MDL/RDL, and measurement units, and analysis method.[for the previous permit cycle] In addition, the report of waste discharge will also include average monthly flow at discharge point EFF-001. The data date range is from July 1, 2013 through the month before the report of waste discharge due date.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” fully apply to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	6B360109001
Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title and Phone	Logan Olds, Plant Manager, (760) 948-9849 x110
Authorized Person to Sign and Submit Reports	Logan Olds, Plant Manager, (760) 948-9849 x110
Mailing Address	15776 Main Street, Suite 3 Hesperia, CA 92345
Billing Address	SAME
Type of Facility	Publically Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Y
Facility Permitted Flow	14 million gallons per day (MGD)
Facility Design Flow	18 MGD
Watershed	Mojave River Basin
Receiving Water	Mojave River
Receiving Water Type	Inland surface water and Groundwater

- A. Victor Valley Wastewater Reclamation Authority (hereinafter Discharger) is the owner and operator of the Victor Valley Regional Wastewater Treatment Plant (hereinafter Facility), a Publically Owned Treatment Works (POTW).

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to the Mojave River, a water of the United States, within Mojave River Basin, and to a series of percolation ponds. In addition, recycled water from the Facility is reused onsite and for landscaping and turf irrigation at the City of Victorville Westwinds Golf Course. The Facility is currently regulated by Order No. R6V-2008-0004 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0102822 adopted on February 14, 2008 and expires on April 4, 2013. Additionally, reclaimed water from the Facility is covered under Order No. R6V-2003-028.

Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- C.** The Discharger filed a report of waste discharge and submitted an application for reissuance of its WDR’s and NPDES permit on October 5, 2012. Supplemental information was requested on November 27, 2012 and received on January 30, 2013. The application was deemed complete on February 4, 2013.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment and Controls

- 1. Facility Description.** The Facility is a four-member joint powers authority established in 1977. The Facility, located within the City of Victorville, provides advanced secondary treatment of domestic and commercial wastewater for the City of Victorville, Town of Apple Valley, and the City of Hesperia, along with two San Bernardino County Service Areas (No. 42, Oro Grande, and No. 64, Spring Valley Lakes). The Facility also receives discharges from septage tank hauling companies. The service area population is approximately 284,380.
- 2. Collection System.** The Facility service area includes both sewered customers and unsewered septic tank dischargers. Sewered customers discharge to the Facility through a raw sewage collection system that includes gravity sewers, sewage sump stations and sewage force mains from the City of Victorville, Spring Valley Lake (San Bernardino County Service Area No. 64), Southern California Logistics Airport (formerly George Air Force Base), Town of Apple Valley, Oro Grande (San Bernardino County Service Area No. 42), and City of Hesperia. The Discharger maintains approximately 40 miles of trunk interceptor lines that receive sewage from an approximately 216 square mile service area. The discharger obtained coverage for the sewer collection system under the State General Permit for Sanitary Sewers (Order 2006-0003-DWQ).

3. Treatment Description.

- a. Recent Facility Upgrades.** The Fact Sheet for Order No. R6V-2008-004 discussed potential future Facility upgrades, including membrane biological reactor technology. The Discharger has implemented a number of Facility upgrades that differ from those previously discussed in their past permit. A summary of Facility upgrades implemented over the previous permit term are summarized below:
- i. Rebuilding of aeration basins 1 through 8, repair aeration distribution system, replaced all diffusers membranes.
 - ii. Installed recirculation pumps to basins 1 through 8, increasing the internal recycling rate/volume, thus increasing denitrification.
 - iii. Installed more control instrumentation, dissolved oxygen probes, and oxidation reduction potential sensors.
 - iv. Switched to tapered aeration to enhance nitrification at head of aeration tank and reduce dissolved oxygen at end of aerator to allow for internal recycling of nitrified mixed liquor to anoxic zones for increased denitrification.
 - v. Installed high speed blower on aeration basins 9 through 12.
 - vi. Installed a scum skimmer in distribution channel.
 - vii. Improved return activated sludge pumping and control systems.
 - viii. Improved operational controls based on a nitrogen study to optimize nitrogen removal process.
 - ix. Installed magnesium hydroxide injection system to enhance alkalinity for nitrification.
- b. Current Treatment Process.** Treatment processes consist of screening (two influent channels equipped with aquascreens and one influent channel equipped with a manually cleaned bar rack), two aerated grit chambers, primary sedimentation (eight primary clarifiers), flow equalization, secondary biological treatment (12 aeration basins), secondary clarification (10 secondary clarifiers, five with a 55-foot diameter and five with an 80-foot diameter), coagulation, cloth media filtration, and Ultraviolet Light (UV) disinfection. The Facility has the capacity to treat up to 18 MGD of wastewater, with an additional emergency storage basin with a 4 million gallon capacity.

Prior to entering UV disinfection, secondary effluent is routed to a collection structure that distributes the secondary effluent to either the UV disinfection or to percolation ponds located on site. Treated wastewater is diverted to the six north percolation ponds (Pond Nos. 1, 2, 3, 4, 5, 6) by gravity or six south percolation ponds (7, 8, 9 - currently not available, 10, 11, 12, and 13) by pumping. Pond 9

was backfilled, but VVWRA wants to retain the ability to reconstruct the pond at a future date. Pond 14 is reserved for other discharger uses. Pond 14 will only be used by the City of Victorville. The north percolations ponds (Pond Nos. 1 – 6) receive treated effluent by gravity, but are limited to operation during summer months. Treated wastewater routed to the UV disinfection system is then either reclaimed for use on the Victorville Westwinds Golf Course or High Desert Power Plant or discharged to the Mojave River via Discharge Point No. 001. Only discharges to Discharge Point No. 001 are regulated by this Order.

In addition to the Facility, the Discharger intends to construct two sub-regional reclamation plants, the Apple Valley Sub-Regional Reclamation Plant and the Hesperia Sub-Regional Reclamation Plant. Biosolids from the two sub-regional facilities would be pumped to the Facility. Effluent from these two additional reclamation facilities are subject to other orders; Order Nos. R6V-2013-0004 (Apple Valley) and R6V-2013-0005 (Hesperia), and are not addressed under this permit. Tertiary treated effluent from the two additional reclamation facilities is intended for landscape irrigation and industrial process recycled water uses. Effluent produced in excess of recycled water demand will be discharged to one or more percolations ponds at land discharge sites, and are not subject to this permit.

4. **Biosolids Management.** Primary sludge is treated by two dissolved air floatation thickeners (DAFT). Thickened sludge is fed to three anaerobic digesters and is dewatered on soil-cement lined solar drying beds. Dewatered sludge is removed from the solar drying beds and stored on-site until it achieves Class A quality, then it is transported off-site for use as fuel, land application, or composting.
5. **Stormwater Discharge.** Stormwater discharged from the Facility is covered by the State under the State Water Board’s statewide industrial storm water NPDES permit (NPDES General Permit No. CAS000001).

B. Discharge Points and Receiving Waters

This Order regulates advanced secondary treated wastewater from the following discharge point:

Table F-2. Discharge Points and Receiving Waters

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced Secondary Treated Effluent	34° 37' 01" N	117° 21' 12" W	Mojave River

Discharge of treated wastewater to the percolation ponds and for use as reclaimed water on the Victorville Westwinds Golf Course are regulated under separate orders.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the existing Order for discharges from Discharge Point No 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the previous Order are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2008 – June 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Conventional Pollutants							
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10	15	30	5.0	6.0	12
	lbs/day	1,170	1,750	3,500	--	--	--
pH	standard units	--	--	6.5 – 8.5	--	--	6.4 – 8.1
Total Suspended Solids	mg/L	10	15	30	4.0	5.6	19.6
	lbs/day	1,170	1,750	3,500	--	--	--
Priority Pollutants							
Copper, Total Recoverable	µg/L	13	--	20	<10	--	<10
	lbs/day	1.5	--	2.3	--	--	--
Zinc, Total Recoverable	µg/L	77	--	190	75	--	75
	lbs/day	9.0	--	22	--	--	--
Cyanide, Total (as CN)	µg/L	3.6	--	9.6	6.0 ⁶	--	8.0 ⁶
	lbs/day	0.42	--	1.1	--	--	--
Chlorodibromomethane	µg/L	0.41	--	1.3	8.0 ⁶	--	8.0 ⁶
	lbs/day	0.048	--	0.15	--	--	--
Dichlorobromomethane	µg/L	0.56	--	1.4	13 ⁶	--	13 ⁶
	lbs/day	0.065	--	0.16	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	1.8	--	3.6	8.2 ⁷	--	8.2 ⁷
	lbs/day	0.21	--	0.42	--	--	--
Dibenzo(a,h)anthracene	µg/L	0.0044	--	0.0088	<0.05 ⁷	--	<0.05 ⁷
	lbs/day	0.00051	--	0.0010	--	--	--
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.80 ⁸	--	1.5	1.0	--	2.7
	lbs/day	93.4	--	175	--	--	--
Chlorine, Total Residual	mg/L	0.002 ¹	--	0.003	<0.01	--	0.006
	lbs/day	0.234 ¹	--	0.350	--	--	--
Dissolved Oxygen	mg/L	--	--	4.0 ²	--	--	4.5 ³
Methylene Blue Active Substances (MBAS)	mg/L	0.50	--	0.90	0.2	--	0.2
	lbs/day	58.4	--	105	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	8.2 ⁸	--	11.3	9.9	--	12
	lbs/day	957	--	1,320	--	--	--
Total Dissolved Solids (TDS)	mg/L	460 ⁴	--	580	425 ⁵	--	601
	lbs/day	53,700 ⁴	--	67,700	--	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2008 – June 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

- ¹ Effluent limitation expressed as a 6-month median.
- ² Effluent limitation expressed as an instantaneous minimum.
- ³ Represents the minimum dissolved oxygen concentration reported.
- ⁴ Effluent limitation expressed as an annual average.
- ⁵ Represents that maximum annual average reported.
- ⁶ Order No. R6V-2008-0004 and Time Schedule Order No. R6V-2010-0027, collectively, established compliance schedules through January 2013 for these parameters. Interim effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane were:

Parameter	Units	Maximum Daily Effluent Limitation
Cyanide, Total	µg/L	23
	lbs/day	2.7
Chlorodibromomethane	µg/L	30
	lbs/day	3.5
Dichlorobromomethane	µg/L	18
	lbs/day	2.1

- ⁷ Order No. R6V-2008-0004, established a compliance schedule through May 17, 2010 for these parameters. Interim effluent limitations for bis(2-ethylhexyl)phthalate and dibenzo(a,h)anthracene were:

Parameter	Units	Maximum Daily Effluent Limitation
Bis(2-ethylhexyl)phthalate	µg/L	47
	lbs/day	5.5
Dibenzo(a,h)anthracene	µg/L	0.19
	lbs/day	0.022

- ⁸ Order No. R6V-2008-0004 established a compliance schedule to achieve compliance with final effluent limitations for ammonia and nitrate by January 31, 2013. Interim average monthly effluent limitations for ammonia and nitrate were:

Parameter	Units	Average Monthly Effluent Limitation
Ammonia (as N)	mg/L	3.1
Nitrate (as N) ^[1]	mg/L	11.2

^[1] Additionally, the discharge of total nitrogen was limited to no more than 98 lbs per million gallons discharged per 12-month period.

D. Compliance Summary

- 1. Compliance with Numeric Effluent Limitations.** During the term of the previous Order, the Facility had the following effluent violations:

Table F-4. Summary of Effluent Violations

Date of Sample	Type of Sample	Parameter	Units	Reported Concentration	Effluent Limit
4/23/2008	Max Daily	Chlorine, Total Residual	mg/L	1.19	0.003 ¹
6/1/2008	Instantaneous Minimum	pH	s.u.	6.4	6.5
6/17/2008	Instantaneous Minimum	pH	s.u.	6.4	6.5
1/5/2009	Instantaneous Maximum	pH	s.u.	8.73	8.5 ¹
1/17/2009	Instantaneous Maximum	pH	s.u.	8.6	8.5 ¹
6/30/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.17	0.350
10/11/2010	Max Daily	Total Dissolved Solids	mg/L	601	580 ¹
11/5/2010	Max Daily	Chlorine, Total Residual	mg/L	0.059	0.003
11/28/2010	Instantaneous Maximum	pH	s.u.	9.58	8.5
12/1/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.10	0.350
12/3/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.93	0.350
12/7/2010	Max Daily	Bis(2-Ethylhexyl) Phthalate	µg/L	8.2	3.6
12/13/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.19	0.350
12/22/2010	24-hour Average	Turbidity	NTU	7.92	2.0
12/22/2010	Instantaneous Maximum	Turbidity	NTU	20	10
12/23/2010	Max Daily	Chlorine, Total Residual	mg/L	0.94	0.003
4/28/2011	Max Daily	Chlorine, Total Residual	mg/L	4.14	0.003
4/28/2011	Instantaneous Maximum	Turbidity	NTU	11.6	10
8/4/2011	24-hour Average	Turbidity	NTU	3.12	2.0
11/27/2011	7-day Median	Total Coliform	MPN/100 mL	4.0	2.2

¹ Reported in CIWQS as a violation, however mandatory minimum penalties have not been assessed at this point.

- 2. Cease and Desist Order No. R6V-2008-0005 (CDO).** The Discharger has been under the CDO, adopted on February 14, 2008, because the Facility could not meet final nitrogen effluent limitations established in Order No. R6V-2008-004. The CDO established interim effluent limitations and compliance milestones for meeting applicable nutrient effluent limitations. The Discharger has complied with all requirements of the CDO. The CDO is expected to be rescinded by June 20, 2013.

- 3. Time Schedule Order No. R6V-2010-0027 (TSO).** The Discharger has been under the TSO, adopted on June 16, 2010, to comply with final effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane contained in Order No. R6V-2008-0004 by January 31, 2013. The Discharger has implemented the necessary Facility upgrades to comply with the final effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane and has complied with the applicable effluent limitations as required by the TSO. The TSO was rescinded on April 25, 2013.

E. Planned Changes

No changes are currently planned at the Facility.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by USEPA, and California Water Code (CWC) chapter 5.5, division 7, commencing with section 13370. It serves as an NPDES permit for point source discharges from the Facility to surface waters. This Order also serves as waste discharge requirements pursuant to CWC article 4, chapter 4, division 7, commencing with section 13260.

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to reissue an NPDES permit is exempt from the requirements of CEQA.

C. State and Federal Laws, Regulations, Policies, and Plans

- 1. Water Quality Control Plan.** The Lahontan Regional Water Board adopted a *Water Quality Control Plan for the Lahontan Region* (hereinafter Basin Plan) on March 31, 1995, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Mojave River are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mojave River	<u>Existing:</u> Municipal and domestic water supply (MUN); Agricultural Supply (AGR); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport fishing (COMM); Cold freshwater habitat (COLD); Warm freshwater habitat (WARM); wildlife habitat (WILD).

Requirements of this Order implement the Basin Plan.

- 2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.
- 3. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and to the priority pollutant objectives established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- 4. Alaska Rule.** On March 30, 2000, USEPA revised its regulations that specifies when new and revised state and tribal water quality standards become effective for CWA purposes (65 Fed. Reg. 24641 [April 27, 2000], new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- 5. Antidegradation Policy.** NPDES regulations at 40 C.F.R. 131.12 establish the federal antidegradation policy and require that State water quality standards include antidegradation policies consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which incorporates federal policy where federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies.

- 6. Anti-Backsliding Requirements.** CWA sections 402(o)(2) and 303(d)(4) and 40 C.F.R. 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous order, with some exceptions in which limitations may be relaxed.

D. Impaired Water Bodies on CWA 303(d) List

In October 2011, USEPA approved a revised list of impaired water bodies prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Lahontan Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired water bodies.

The Mojave River at Discharge Point No. 001 is not listed as an impaired water body. The Mojave River between Upper Narrows and Lower Narrows is listed on the 2010 303(d) list as impaired for fluoride, sulfates, and total dissolved solids. Currently, there are no TMDLs applicable to the Facility.

E. Other Plans, Policies and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The Clean Water Act (CWA) requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in National Pollutant Discharge Elimination System (NPDES) permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 C.F.R. 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria (WQC) to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

- 1. Discharge Prohibition III.A (Average annual flow shall not exceed 14.0 MGD).** This prohibition was established in Order No. R6V-2008-004 based on the Facility's design capacity. The design capacity at the Facility has increased to 18 MGD over the term of the previous Order. The Discharger has not requested nor demonstrated a need for an increase in the permitted discharge flow. Consistent with State and federal anti-degradation regulations, this Order retains a maximum permitted effluent flow of 14 MGD.

- 2. Discharge Prohibition III.B (No discharge or application of waste other than that described in this Order).** This prohibition is based on 40 C.F.R. 122.21(a), duty to apply, and CWC section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in this Order, are prohibited. This prohibition is also included as Prohibition 5 in Section 4.1 of the Basin Plan. This provision is retained from the previous Order.
- 3. Discharge Prohibition III.C (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. This prohibition is also included in Section 4.1 of the Basin Plan. This provision is retained from the previous Order.
- 4. Discharge Prohibition III.D (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. This provision is retained from the previous Order.
- 5. Discharge Prohibition III.E (No discharge of waste that causes violation of narrative water quality objectives).** This prohibition is based on Regional Waste Discharge Prohibition 1 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes violation of any narrative water quality objective contained in the Basin Plan. This provision is retained from the previous Order.
- 6. Discharge Prohibition III.F (No discharge of waste that causes violation of numeric water quality objectives).** This prohibition is based on Regional Waste Discharge Prohibition 2 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes violation in the water body of any numeric water quality objective contained in the Basin Plan. This provision is retained from the previous Order.
- 7. Discharge Prohibition III.G (No discharge of waste that causes further degradation).** This prohibition is based on Regional Waste Discharge Prohibition 3 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes further degradation to a water body where a numeric or narrative water quality objective contained in the Basin Plan is already being violated. This provision is retained from the previous Order.
- 8. Discharge Prohibition III.H (No discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes).** This prohibition is based on Regional Waste Discharge Prohibition 4 from Section 4.1 of the Basin Plan, which prohibits discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters. This provision is retained from the previous Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 C.F.R. 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. Part 133.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 C.F.R. Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. BOD₅ and TSS. Federal regulations, 40 C.F.R. Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. In addition, 40 C.F.R. 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD₅ and TSS must be achieved by a secondary treatment plant, it must also be achieved by an advanced secondary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month.

As discussed in section IV.C.4.b.iii of this Fact Sheet, this Order establishes WQBELs that are more stringent than the secondary technology-based treatment described in 40 C.F.R. Part 133 and are necessary to protect the beneficial uses of the receiving stream.

b. pH. The secondary treatment regulations at 40 C.F.R. Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

**Summary of Technology-based Effluent Limitations
 Discharge Point No. 001**

Table F-6. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) ¹	mg/L	30	45	--	--	--
	lbs/day ²	3,503	5,254	--	--	--
	% Removal	85	--	--	--	--
pH ¹	standard units	--	--	--	6.0	9.0
Total Suspended Solids ¹	mg/L	30	45	--	--	--
	lbs/day ²	3,503	5,254	--	--	--
	% Removal	85	85	--	--	--

¹ Note that more stringent WQBELs for BOD₅, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.4.b.iii of this Fact Sheet).

² Based on the design average dry weather flow of 14 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced secondary treatment or equivalent requirements or other provisions, is discussed in section IV.C.4.b.iii of this Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and

criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

The federal CWA section 101(a)(2), states: “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.” Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses. The Facility discharges treated wastewater to the Mojave River, a water of the United States.

The, beneficial uses applicable to the Mojave River are as follows:

Table F-7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mojave River	<u>Existing uses from Table 2-1 of the Basin Plan:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Ground water recharge (GWR); Water contact recreation (REC-1); Noncontact water recreation (REC-2); Commercial and Sportfishing (COMM); Warm Freshwater Habitat (Warm); Cold Freshwater Habitat (COLD); and Wildlife habitat (WILD).

b. Water Quality Objectives

The water quality objectives applicable to the receiving water for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 C.F.R. 131.38;

and the NTR, established by USEPA at 40 C.F.R. 131.36. Some pollutants have water quality objectives established by more than one of these sources.

- i. **Basin Plan.** The Basin Plan specifies numeric and narrative water quality objectives for pollutants in order to protect beneficial uses. The narrative toxicity objective states, "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life."

Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- ii. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries. Human health criteria are further identified as for "water and organisms" or for "organisms only." The CTR criteria applicable to "water and organisms" apply to this receiving water because MUN is specified as a beneficial use for the receiving water.
- iii. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants. The NTR criteria apply to the Mojave River, the receiving water for this Discharge.

- c. **Hardness-Dependent CTR Metals Criteria.** The California Toxics Rule and the National Toxics Rule contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

In February 2009, the Discharger revised magnesium hydroxide injection practices at the Facility, including moving the injection to the return activated sludge wet well and using a more controlled dosage to improve alkalinity. This change appears to have resulted in an increased effluent hardness based on evaluation as detailed in a May 7, 2013 letter submitted by the Discharger titled, "*Additional Information regarding VVWRA Effluent Hardness.*" The Lahontan Water Board has reviewed this letter and associated data and agrees that effluent hardness prior to March 2009 is not representative of current operations at the Facility. Thus, only effluent hardness from March 2009 to the present was considered for use in the reasonable potential analysis.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP. The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals (SIP, section 1.2; 40 C.F.R. 131.38(c)(4)).

Because the receiving water may be effluent dominated at times, the hardness in both the effluent and upstream receiving water were evaluated. The lowest hardness observed in the effluent was 62 mg/L (as CaCO₃).

The lowest hardness observed in the upstream receiving water from August 2007 through October 2011 was 7 mg/L (as CaCO₃), however this value represents the 0.001st percentile of the upstream receiving water data (Monitoring Location R-001) provided in the Mojave River Characterization Study and additional upstream monitoring data. The observed minimum hardness of 7 mg/L (as CaCO₃) appears to be uncharacteristically low compared to the remaining data. For comparison, the fifth percentile of the upstream data (based on Monitoring Location R-001 in the Mojave River Characterization Study and current NPDES permit requirements for upstream monitoring is 60 mg/L (as CaCO₃). As such, the use of 60 mg/L (as CaCO₃) represents a conservative and reasonable worst-case ambient hardness value observed in the receiving water.

Based on the available receiving water and effluent data, a hardness of 60 mg/L (as CaCO₃) was used for evaluating reasonable potential and calculating applicable effluent limitations.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

3. Determining the Need for WQBELs

Assessing whether a pollutant has reasonable potential to exceed a water quality objective in the water body is the fundamental step in determining whether or not a WQBEL is required.

a. Reasonable Potential Analysis Methodology

According to SIP section 1.3, the RPA begins with identifying the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining reasonable potential:

- i. Trigger 1 is activated if the MEC is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted water quality objective, then that pollutant has reasonable potential, and a WQBEL is required.
- ii. Trigger 2 is activated if the observed maximum ambient background concentration (B) is greater than the adjusted water quality objective ($B >$ water quality objective) and the pollutant is detected in any of the effluent samples.

iii. Trigger 3 is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the water quality objective.

b. **Effluent Data.** The Discharger’s priority pollutant data and the nature of the discharge were analyzed to determine if the discharge has reasonable potential. The RPA is based on effluent monitoring data the Discharger collected from April 2008 through August 2012.

i. **Ambient Background Data.** Ambient background data was used from the Discharger’s June 30, 2010 report, titled, *Mojave River Characterization Study Water Quality and Aquatic Life Characterization Report* (Mojave River Characterization Study).

ii. **Assimilative Capacity/Mixing Zone.** The Mojave River Characterization Study indicates that the receiving water is perennial approximately 4 miles upstream of the discharge location and immediately downstream of the discharge location. Because the receiving water in the vicinity of the discharge location may at times be effluent dominated, dilution is not appropriate and has not been granted for this discharge.

c. **Reasonable Potential Analysis.** The MECs, most stringent applicable water quality objectives, and background concentrations used in the RPA are presented in the following table, along with the RPA results for each pollutant. Reasonable potential was not determined for all pollutants because there are not water quality objectives for all pollutants, and monitoring data are unavailable for others. Based on a review of the effluent data collected during the term of the previous order (i.e., April 2008 through July 2012), the pollutants that exhibit reasonable potential are bis(2-ethylhexyl)phthalate, chlorodibromomethane, cyanide, dichlorobromomethane, electrical conductivity, nitrate + nitrite, total ammonia, total dissolved solids, and total residual chlorine, by Trigger 1.

Table F-8. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
CTR/NTR Parameters					
1	Antimony	6.00	<10	No Data	No Limit
2	Arsenic	10.00	<5	No Data	No Limit
3	Beryllium	4.00	<2	No Data	No Limit
4	Cadmium	1.65	<2	No Data	No Limit
5a	Chromium (III)	132	<2	No Data	No Limit
5b	Chromium (VI)	11.43	<1	No Data	No Limit
6	Copper	6.03	<10	0.7	No Limit
7	Lead	1.66	<5	No Data	No Limit
8	Mercury	0.05	<0.2	No Data	No Limit
9	Nickel	33.9	<10	No Data	No Limit
10	Selenium	5.00	<5	No Data	No Limit
11	Silver	1.69	<10	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
12	Thallium	1.70	<10	No Data	No Limit
13	Zinc	77.7	75	2.3	No Limit
14	Cyanide	5.20	8	No Data	Limit Required
15	Asbestos	7.00	<0.2	No Data	No Limit
16	2,3,7,8-TCDD	1.4x10 ⁻⁸	<0.0000031	No Data	No Limit
	Dioxin TEQ	1.4x10 ⁻⁸	<0.0000031	No Data	No Limit
17	Acrolein	320	<10	No Data	No Limit
18	Acrylonitrile	0.06	<10	No Data	No Limit
19	Benzene	1.00	<0.5	No Data	No Limit
20	Bromoform	4.3	<0.5	<0.5	No Limit
21	Carbon Tetrachloride	0.25	<0.5	No Data	No Limit
22	Chlorobenzene	70	<0.5	No Data	No Limit
23	Chlorodibromomethane	0.41	8	<0.4	Limit Required
24	Chloroethane	No Criteria	<0.5	No Data	No Limit
25	2-Chloroethylvinyl ether	No Criteria	<5	No Data	No Limit
26	Chloroform	No Criteria	73	<0.5	No Limit
27	Dichlorobromomethane	0.56	13	<0.5	Limit Required
28	1,1-Dichloroethane	5.00	<0.5	No Data	No Limit
29	1,2-Dichloroethane	0.38	<0.5	No Data	No Limit
30	1,1-Dichloroethylene	0.06	<0.5	No Data	No Limit
31	1,2-Dichloropropane	0.52	<0.5	No Data	No Limit
32	1,3-Dichloropropylene	0.50	<0.5	No Data	No Limit
33	Ethylbenzene	300.00	<0.5	No Data	No Limit
34	Methyl Bromide	48.00	<0.5	No Data	No Limit
35	Methyl Chloride	No Criteria	<0.5	No Data	No Limit
36	Methylene Chloride	4.70	<3	No Data	No Limit
37	1,1,2,2-Tetrachloroethane	0.17	<0.5	No Data	No Limit
38	Tetrachloroethylene	0.80	<0.5	No Data	No Limit
39	Toluene	150.00	<0.5	No Data	No Limit
40	1,2-Trans-Dichloroethylene	0.01	<0.5	No Data	No Limit
41	1,1,1-Trichloroethane	200.00	53	No Data	No Limit
42	1,1,2-Trichloroethane	0.60	<0.5	No Data	No Limit
43	Trichloroethylene	2.70	<0.5	No Data	No Limit
44	Vinyl Chloride	0.50	<0.5	No Data	No Limit
45	2-Chlorophenol	120.00	<5.1	No Data	No Limit
46	2,4-Dichlorophenol	93.00	<5.1	No Data	No Limit
47	2,4-Dimethylphenol	540.00	<2	No Data	No Limit
48	2-Methyl- 4,6-Dinitrophenol	13.40	<5.1	No Data	No Limit
49	2,4-Dinitrophenol	70.00	<5.1	No Data	No Limit
50	2-Nitrophenol	No Criteria	<10	No Data	No Limit
51	4-Nitrophenol	No Criteria	<5.1	No Data	No Limit
52	3-Methyl 4-Chlorophenol	No Criteria	<20	No Data	No Limit
53	Pentachlorophenol	0.28	<2	No Data	No Limit
54	Phenol	21000.00	<10	No Data	No Limit
55	2,4,6-Trichlorophenol	2.10	<10	No Data	No Limit
56	Acenaphthene	1200.00	<0.05	No Data	No Limit
57	Acenaphthylene	No Criteria	<0.05	No Data	No Limit
58	Anthracene	9600.00	<0.05	No Data	No Limit
59	Benzidine	0.0001	<5.1	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
60	Benzo(a)Anthracene	0.00	<0.05	No Data	No Limit
61	Benzo(a)Pyrene	0.00	<0.05	No Data	No Limit
62	Benzo(b)Fluoranthene	0.00	<0.05	No Data	No Limit
63	Benzo(ghi)Perylene	No Criteria	<0.05	No Data	No Limit
64	Benzo(k)Fluoranthene	0.00	<0.05	No Data	No Limit
65	Bis(2-Chloroethoxy)Methane	No Criteria	<5.1	No Data	No Limit
66	Bis(2-Chloroethyl)Ether	0.03	<1	No Data	No Limit
67	Bis(2-Chloroisopropyl)Ether	1400.00	<10	No Data	No Limit
68	Bis(2-Ethylhexyl)Phthalate	1.80	8.2	No Data	Limit Required
69	4-Bromophenyl Phenyl Ether	No Criteria	<5.1	No Data	No Limit
70	Butylbenzyl Phthalate	3000.00	<10	No Data	No Limit
71	2-Chloronaphthalene	1700.00	<10	No Data	No Limit
72	4-Chlorophenyl Phenyl Ether	No Criteria	<1	No Data	No Limit
73	Chrysene	0.00	<0.05	No Data	No Limit
74	Dibenzo(a,h)Anthracene	0.00	<0.05	No Data	No Limit
75	1,2-Dichlorobenzene	600.00	<0.5	No Data	No Limit
76	1,3-Dichlorobenzene	400.00	<0.5	No Data	No Limit
77	1,4-Dichlorobenzene	5.00	<0.5	No Data	No Limit
78	3,3 Dichlorobenzidine	0.04	<5.1	No Data	No Limit
79	Diethyl Phthalate	23000.00	<10	No Data	No Limit
80	Dimethyl Phthalate	313000.00	<10	No Data	No Limit
81	Di-n-Butyl Phthalate	2700.00	<10	No Data	No Limit
82	2,4-Dinitrotoluene	0.11	<5.1	No Data	No Limit
83	2,6-Dinitrotoluene	No Criteria	<5.1	No Data	No Limit
84	Di-n-Octyl Phthalate	No Criteria	<10	No Data	No Limit
85	1,2-Diphenylhydrazine	0.04	<1	No Data	No Limit
86	Fluoranthene	300.00	<0.05	No Data	No Limit
87	Fluorene	1300.00	<0.05	No Data	No Limit
88	Hexachlorobenzene	0.00075	<1	No Data	No Limit
89	Hexachlorobutadiene	0.44	<1	No Data	No Limit
90	Hexachlorocyclopentadiene	50.00	<5.1	No Data	No Limit
91	Hexachloroethane	1.90	<1	No Data	No Limit
92	Indeno(1,2,3-cd)Pyrene	0.00	<0.05	No Data	No Limit
93	Isophorone	8.40	<1	No Data	No Limit
94	Naphthalene	No Criteria	<0.05	No Data	No Limit
95	Nitrobenzene	17.00	<10	No Data	No Limit
96	N-Nitrosodimethylamine	0.00	<5.1	No Data	No Limit
97	N-Nitrosodi-n-Propylamine	0.01	<5.1	No Data	No Limit
98	N-Nitrosodiphenylamine	5.00	<1	No Data	No Limit
99	Phenanthrene	No Criteria	<0.05	No Data	No Limit
100	Pyrene	960.00	<0.05	No Data	No Limit
101	1,2,4-Trichlorobenzene	5.00	<5.1	No Data	No Limit
102	Aldrin	0.00013	<10	No Data	No Limit
103	Alpha-BHC	0.0039	<10	No Data	No Limit
104	Beta-BHC	0.01	<10	No Data	No Limit
105	Gamma-BHC	0.02	<10	No Data	No Limit
106	Delta-BHC	No Criteria	<10	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
107	Chlordane (303(d) listed)	0.0006	<10	No Data	No Limit
108	4,4'-DDT (303(d) listed)	0.0006	<10	No Data	No Limit
109	4,4'-DDE (linked to DDT)	0.0006	<10	No Data	No Limit
110	4,4'-DDD	0.0008	<10	No Data	No Limit
111	Dieldrin (303d listed)	0.00014	<10	No Data	No Limit
112	Alpha-Endosulfan	0.06	<10	No Data	No Limit
113	beta-Endosulfan	0.06	<10	No Data	No Limit
114	Endosulfan Sulfate	110.00	<10	No Data	No Limit
115	Endrin	0.04	<10	No Data	No Limit
116	Endrin Aldehyde	0.76	NA	No Data	No Limit
117	Heptachlor	0.0002	<10	No Data	No Limit
118	Heptachlor Epoxide	0.0001	<10	No Data	No Limit
119-125	PCBs sum (303(d) listed) ⁽⁴⁾	0.0002	<50	No Data	No Limit
126	Toxaphene	0.0002	<50	No Data	No Limit
Basin Plan					
	Total Ammonia (as N)	950	2,700	<100	Limit Required
	Aluminum	200	No Data	No Data	No Limit
	Fluoride	2,000	1,800	No Data	No Limit
	Nitrate (as NO3)	45,000	12,000	1,800	No Limit
	Nitrate+Nitrite (as N)	10,000	12,000	No Data	Limit Required ⁵
	Nitrite (as N) (mg/L)	1,000	100	30	No Limit
	Perchlorate	6	No Data	No Data	No Limit
	cis-1,2-Dichloroethylene	6	No Data	No Data	No Limit
	Dichloromethane	5	No Data	No Data	No Limit
	Methyl-tert-butyl-ether	5	<0.5	No Data	No Limit
	Styrene	100	No Data	No Data	No Limit
	Xylenes	1,750	<0.05	No Data	No Limit
	Alachlor	2	No Data	No Data	No Limit
	Atrazine	1	No Data	No Data	No Limit
	Bentazon	18	No Data	No Data	No Limit
	Trichlorofluoromethane	150	5	No Data	No Limit
	1,1,2-Trichloro-1,2,2-trifluoroethane	1,200	No Data	No Data	No Limit
	Carbofuran	18	No Data	No Data	No Limit
	2,4-D	70	No Data	No Data	No Limit
	Dalapon	200	No Data	No Data	No Limit
	Dibromochloropropane	0.20	No Data	No Data	No Limit
	Di(2-ethylhexyl)adipate	400	No Data	No Data	No Limit
	Di(2-ethylhexyl)phthalate	4	No Data	No Data	No Limit
	Dinoseb	7	No Data	No Data	No Limit
	Diquat	20	No Data	No Data	No Limit
	Endothall	100	No Data	No Data	No Limit
	Ethylene dibromide	0.05	No Data	No Data	No Limit
	Glyphosate	700	No Data	No Data	No Limit
	Methozechlor	30	No Data	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
	Molinate	20	No Data	No Data	No Limit
	Oxamyl	50	No Data	No Data	No Limit
	Picloram	500	No Data	No Data	No Limit
	Simazine	4	No Data	No Data	No Limit
	Thiobencarb	1	No Data	No Data	No Limit
	2,4,5-TP (Silvex)	50	No Data	No Data	No Limit
	MBAS	500	200	No Data	No Limit
	Iron	300	56	No Data	No Limit
	Manganese	50	18	No Data	No Limit
	Total Dissolved Solids (mg/L)	500	601	500	Limit Required ⁴
	Electrical Conductivity (uS/cm)	900	1,255	No Data	Limit Required ⁴
	Total Residual Chlorine	0.002	6.0	No Data	Limit Required

¹ The MEC and maximum background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level (DL).
² The MEC or maximum background concentration is “Not Available” when there are no monitoring data for the constituent.
³ RPA Results = Yes, if MEC > WQC, B > WQC and MEC is detected, or Trigger 3;
 = No Limit, if MEC and B are < WQC or all effluent data are undetected;
 = Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.
⁴ The criteria specified for total dissolved solids and electrical conductivity in Table 64449-B of Title 22 of the California Code of Regulations specify TDS or electrical conductivity. This Order implements the TDS and electrical conductivity objective using TDS.
⁵ Limit is applied as total nitrogen.

- i. **Constituents with limited data.** In some cases, reasonable potential cannot be determined because effluent data are limited, or ambient background concentrations are unavailable. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether numeric effluent limitations are necessary.
- ii. **Pollutants with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to receiving water quality.

4. WQBEL Calculations

- a. **Pollutants with Reasonable Potential.** This Order includes WQBELs for bis (2-ethylhexyl) phthalate, BOD₅, chlorodibromomethane, cyanide, dichlorobromomethane, dissolved oxygen, fecal coliform, nitrate (applied as total nitrogen), pH, total ammonia, total coliform, total dissolved solids, total residual chlorine, TSS, turbidity, and whole effluent toxicity.

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of the water quality objectives. The WQBELs for toxic pollutants were calculated based on water quality objectives and the procedures specified in SIP section 1.4. For WQBELs based on Basin Plan objectives or MCLs for non-toxics, the objectives are applied directly as the effluent limitation, unless otherwise specified in section IV.C.4.b.

The water quality objectives used for each pollutant with reasonable potential are discussed below.

- i. Effluent Concentration Allowance (ECA).** For each water quality criterion/objective for which the SIP procedures were used to calculate effluent limitations, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$$\begin{aligned} \text{ECA} &= C + D(C - B) && \text{where } C > B, \text{ and} \\ \text{ECA} &= C && \text{where } C \leq B \end{aligned}$$

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on maximum contaminant levels (MCLs), which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

- ii. Aquatic Toxicity Criteria.** WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e., LTA_{acute} and LTA_{chronic}) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

As an example, the effluent limitations for cyanide were calculated as follows:

- 1) Identify applicable criteria:

Acute criteria = 22 µg/L
Chronic criteria = 5.2 µg/L

- 2) Determine the appropriate ECA as discussed above.

Because there is no dilution, the ECA was set equal to the criteria:

$$\begin{aligned} ECA_{\text{acute}} &= 22 \mu\text{g/L} \\ ECA_{\text{chronic}} &= 5.2 \mu\text{g/L} \end{aligned}$$

- 3) Calculate the applicable long-term average (LTA). The LTA is calculated by multiplying the ECA by an ECA Multiplier used to find the 99th percentile occurrence probability:

$$\text{LTA} = \text{ECA} \times \text{ECA Multiplier}$$

The appropriate ECA Multiplier is determined as specified in the formula provided in Step 3 of Section 1.4 of the SIP. (ECA Multipliers are provided in Table 1 of Section 1.4 of the SIP). The calculations for the ECA Multiplier are based on the coefficient of variation (CV) of the applicable data set. The CV is the standard deviation divided by the mean of the data. If less than 10 data points are available, or more than 80 percent of the data is reported as non-detect, a default of 0.6 is used as the CV.

$$\begin{aligned} \text{ECA multiplier}_{\text{acute}} &= e^{(0.5\sigma^2 - z\sigma)} \\ \text{ECA multiplier}_{\text{chronic}} &= e^{(0.5\sigma_4^2 - z\sigma_4)} \end{aligned}$$

Where:

$$\begin{aligned} \sigma &= \text{standard deviation} \\ \sigma &= [\ln(\text{CV}^2 + 1)]^{0.5} \\ \sigma^2 &= \ln(\text{CV}^2 + 1) \\ \sigma_4 &= [\ln(\text{CV}^2/4 + 1)]^{0.5} \\ \sigma_4^2 &= \ln(\text{CV}^2/4 + 1) \\ z &= 2.326 \text{ for } 99\text{th percentile probability basis} \end{aligned}$$

For cyanide, the CV was 0.46, resulting in an acute ECA Multiplier of 0.40 and a chronic ECA Multiplier of 0.61.

$$\begin{aligned} \text{LTA}_{\text{acute}} &= 22 \mu\text{g/L} \times 0.40 = 8.8 \mu\text{g/L} \\ \text{LTA}_{\text{chronic}} &= 5.2 \mu\text{g/L} \times 0.61 = 3.16 \mu\text{g/L} \end{aligned}$$

- 4) Select the lowest (most limiting) of the LTAs.

$$\text{Lowest LTA}_{\text{cyanide}} = 3.16 \mu\text{g/L}$$

- 5) Calculate water quality-based effluent limitations by multiplying the LTA by a multiplier that adjusts for the averaging periods and exceedance frequencies of the criteria/objectives.

The multiplier is calculated as specified in Step 5 of Section 1.4 of the SIP and based on the CV of recent data and the required monitoring frequency. For calculating an average monthly effluent limitation (AMEL), a 95th percentile probability basis is used. For calculating a maximum daily effluent limitation (MDEL), a 99th percentile probability basis is used. Applicable multipliers for AMELs and MDELs are provided in Table 2 of Section 1.4 of the SIP.

$$\text{AMEL} = \text{LTA} \times \text{AMEL Multiplier}$$

$$\text{MDEL} = \text{LTA} \times \text{MDEL Multiplier}$$

$$\text{AMEL}_{\text{multiplier95}} = e^{(z\sigma_n - 0.5\sigma_n^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2/n + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2/n + 1)$$

$$z = 1.645 \text{ for 95th percentile probability basis}$$

$$n = \text{number of samples per month}$$

$$\text{MDEL}_{\text{multiplier99}} = e^{(z\sigma - 0.5\sigma^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2 + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2 + 1)$$

$$z = 2.326 \text{ for 99th percentile probability basis}$$

For cyanide, based on a CV of 0.46 and a monitoring frequency of four or less times per month, an AMEL Multiplier of 1.41 and a MDEL Multiplier of 2.50 have been calculated.

$$\text{AMEL} = 3.16 \mu\text{g/L} \times 1.41 = 4.46 \mu\text{g/L}.$$

$$\text{MDEL} = 3.16 \mu\text{g/L} \times 2.50 = 7.90 \mu\text{g/L}.$$

- 6) These effluent limitations are then compared to technology-based effluent limitations, human health-based effluent limitations, and current effluent limitations. The most protective of the applicable effluent limitations are established in the Order to ensure protection of human health, aquatic life, and ensure consistency with State and federal anti-backsliding regulations.

For cyanide, the previous effluent limitations of 3.6 $\mu\text{g/L}$ (AMEL) and 9.6 $\mu\text{g/L}$ (MDEL) are more stringent, because the previous AMEL of 3.6 $\mu\text{g/L}$ is less than the newly calculated AMEL of 4.46 $\mu\text{g/L}$, resulting in the discharge of lower concentrations of cyanide over the longer-term, although allowing for more variation over the averaging period.

iii. Human Health Criteria. WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The ECAs are set equal to the AMEL and a statistical multiplier was used to calculate the MDEL.

$$\begin{aligned}
 \text{AMEL} &= \text{mult}_{\text{AMEL}} \left[\min \left(M_A \text{ECA}_{\text{acute}}, M_C \text{ECA}_{\text{chronic}} \right) \right] \text{LTA}_{\text{acute}} \\
 \text{MDEL} &= \text{mult}_{\text{MDEL}} \left[\min \left(M_A \text{ECA}_{\text{acute}}, M_C \text{ECA}_{\text{chronic}} \right) \right] \text{LTA}_{\text{chronic}} \\
 \text{MDEL}_{\text{HH}} &= \frac{\text{mult}_{\text{MDEL}}}{\text{mult}_{\text{AMEL}}} \text{AMEL}_{\text{HH}}
 \end{aligned}$$

where:

$\text{mult}_{\text{AMEL}}$ = statistical multiplier converting minimum LTA to AMEL

$\text{mult}_{\text{MDEL}}$ = statistical multiplier converting minimum LTA to MDEL

M_A = statistical multiplier converting acute ECA to $\text{LTA}_{\text{acute}}$

M_C = statistical multiplier converting chronic ECA to $\text{LTA}_{\text{chronic}}$

As an example, the effluent limitations for chlorodibromomethane were calculated as follows:

- 1) Identify applicable criteria:

Human Health_{water&organisms} criteria = 0.41 µg/L

- 2) Determine the appropriate ECA as discussed above.

Because there is no dilution, the ECA was set equal to the criteria:

ECA = 0.41 µg/L

- 3) The ECA equals the AMEL.

AMEL = 0.41 µg/L

- 4) The MDEL is calculated by multiplying the ECA by a MDEL/AMEL Multiplier.

MDEL = ECA x MDEL/AMEL Multiplier

The MDEL/AMEL Multiplier is calculated by dividing the MDEL Multiplier discussed in the Aquatic Toxicity Criteria above, by the AMEL Multiplier. Applicable MDEL/AMEL Multipliers are provided in Table 2 of Section 1.4 of the SIP. For chlorodibromomethane, the applicable MDEL/AMEL Multiplier is 2.37.

$$\text{MDEL} = 0.41 \mu\text{g/L} \times 2.37 = 0.97 \mu\text{g/L}$$

- 5) These effluent limitations are then compared to technology-based effluent limitations, aquatic life-based effluent limitations, and current effluent limitations. The most protective of the applicable effluent limitations are established in the Order to ensure protection of human health, aquatic life, and ensure consistency with State and federal anti-backsliding regulations.

b. WQBEL Development

i. Total Ammonia

(a) Water Quality Objectives. The Basin Plan contains water quality objectives for unionized ammonia based on receiving water conditions for pH and temperature. Because the receiving water is perennial upstream and downstream of the Facility, and the receiving water is often effluent dominated, effluent conditions were evaluated in place of upstream data to determine the appropriate pH and temperature to be used in determining the applicable numeric water quality objectives for unionized ammonia. Using the formulas provided in Chapter 3 of the Basin Plan and 1,556 days of paired effluent pH and temperature data from April 1, 2008 through July 15, 2012, the unionized ammonia criteria was determined.

The most conservative paired data set was used to calculate the applicable 1-hour acute criteria for unionized ammonia. Data from November 28, 2010 resulted in the most conservative 1-hour criteria for unionized ammonia. Based on an effluent temperature of 20.8 °C and a pH result of 8.06 s.u., an unionized acute criteria of 0.26 mg/L was calculated. The unionized 1-hour criteria was translated to total ammonia as specified in Chapter 3 of the Basin Plan, resulting in a 1-hour criteria of 5.6 mg/L.

Based on paired pH and temperature data from April 1, 2008 through July 16, 2012, the minimum calculated 4-day running average criteria for total ammonia was 0.95 mg/L (representative of conditions that occurred from July 11, 2012 through July 14, 2012).

Table F-9. Minimum Running 4-day Average Ammonia Criteria

Date	Temperature	pH	Unionized Ammonia (mg/L)	Total Ammonia (mg/L)
7/11/12	28.65	6.66	0.0032	0.96
7/12/12	28.6	6.64	0.0030	0.96
7/13/12	28.6	6.62	0.0029	0.96
7/14/12	28.84	6.68	0.0033	0.94
Average				0.95

- (b) RPA Results.** This Order establishes effluent limitations for total ammonia because the MEC (2.7 mg/L) exceeds the governing water quality objective (0.95 mg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for total ammonia, calculated according to the SIP procedures with an effluent data CV of 2.0 and no dilution, are an AMEL of 0.54 mg/L and a MDEL of 1.6 mg/L.

The previous Order established an AMEL for total ammonia of 0.80 mg/L and a MDEL of 1.5 mg/L. Based on the AMELs, the newly calculated effluent limitations for total ammonia will result in a lower long-term average discharge of pollutant to the receiving water and are thus more stringent. The newly calculated effluent limitations are more conservative and have been established in this Order.

- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations, considered as a pair, for total ammonia are more stringent than those in the previous Order.

ii. Bis (2-Ethylhexyl) Phthalate

- (a) Water Quality Objectives.** The CTR contains a human health water quality objective for bis (2-ethylhexyl) phthalate of 1.8 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for bis (2-ethylhexyl) phthalate because the MEC (8.2 µg/L) exceeds the governing water quality objective (1.8 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for bis (2-ethylhexyl) phthalate, calculated according to the SIP procedures with an effluent data CV of 0.6 and no dilution, are an AMEL of 1.8 µg/L and a MDEL of 3.6 µg/L.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for bis (2-ethylhexyl) phthalate are the same as those in the previous Order.

iii. BOD₅ and TSS

- (a) Water Quality Objectives.** Federal regulations, 40 C.F.R. Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. Advanced secondary treatment is necessary to protect the beneficial uses of the receiving stream. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rate and the corresponding removal rate of the system. The application of advanced secondary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently

prescribed in 40 C.F.R. Part 133; the minimum 30-day average, weekly average, and maximum daily level of effluent quality attainable by an advanced secondary system are 10 mg/L, 15 mg/L, and 30 mg/L, respectively.

- (b) RPA Results.** BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The Facility is a POTW that treats domestic wastewater through an advanced secondary-level treatment system. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rate and the corresponding removal rate of the system. The application of advanced secondary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards. The 99th percentile reported BOD₅ and TSS concentrations between April 2008 and June 2012 were 10 mg/L and 6.0 mg/L, demonstrating effluent quality significantly better than prescribed by secondary treatment standards.

Order R6V-2008-004 found, "... the Discharger provides tertiary treatment, including inline coagulation/flocculation, filtration, chlorination, and dechlorination [now replaced with ultraviolet light disinfection], in order to protect the beneficial uses of the Mojave River downstream of the discharge. The tertiary treatment required to maintain these beneficial uses of the Mojave River results in better performance and warrant more stringent effluent limitations for BOD₅ and TSS than what is required by secondary treatment standards."

As required in previous Order, advanced secondary treatment is required for the protection of beneficial uses. Therefore, this Order contains effluent limitations for BOD₅ and TSS that are based on the capability of an advanced secondary system for the protection of beneficial uses. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD₅ and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

- (c) WQBELs.** Consistent with Order R6V-2008-004, this Order contains AMELs and average weekly effluent limitations (AWELs) for BOD₅ and TSS of 10 mg/L and 15 mg/L, respectively, which are based on the capability of an advanced secondary system. In addition to the AMELs and AWELs, MDELs for BOD₅ and TSS of 30 mg/L are included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for BOD₅ and TSS are the same as those in the previous Order.

iv. Chlorine, Total Residual

- (a) **Water Quality Objectives.** The Basin Plan contains a water quality objective for total residual chlorine of a median value of 0.002 mg/L and a maximum value of 0.003 mg/L. The Basin Plan further states that median values shall be based on daily measurements taken within any six-month period.
- (b) **RPA Results.** The Discharger uses UV treatment to disinfect effluent discharged to the receiving water. However, because the use of chlorination within the treatment system is not prohibited by this Order, and the Discharger may use chlorination as a backup for the UV disinfection system, the potential for a discharge of residual chlorine remains applicable.

Due to the extreme toxicity of total residual chlorine, reasonable potential to exceed water quality objectives is present at all times total residual chlorine is discharged from the Facility. Therefore, WQBELs for total residual chlorine are required in this Order, however monitoring shall be limited to periods during which the Discharger is chlorinating or discharging effluent that has been chlorinated via the reclamation operations conducted on-site.

- (c) **WQBELs.** WQBELs for total residual chlorine, were established based on the objective in the Basin Plan. A MDEL of 0.003 mg/L and a 6-month median of 0.002 mg/L for daily measurements over any 6 month period have been established, consistent with the requirements of the Basin Plan. A six-month period is defined for this Order as the first and second semesters of a calendar year.
- (d) **Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for total residual chlorine are the same as those in the previous Order.

v. Chlorodibromomethane

- (a) **Water Quality Objectives.** The CTR contains a human health water quality objective for chlorodibromomethane of 0.41 µg/L.
- (b) **RPA Results.** This Order establishes effluent limitations for chlorodibromomethane because the MEC (8 µg/L) exceeds the governing water quality objective (0.41 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** WQBELs for chlorodibromomethane, calculated according to the SIP procedures with an effluent data CV of 0.86 and no dilution, are an AMEL of 0.41 µg/L and a MDEL of 0.97 µg/L. The previous Order establishes an AMEL of 0.41 µg/L and a MDEL of 1.3 µg/L. The newly

calculated limitations are more stringent and have been established in this Order.

- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for chlorodibromomethane are more stringent than those in the previous Order.

vi. Cyanide

- (a) Water Quality Objectives.** The CTR contains acute and chronic aquatic life freshwater water quality objectives for cyanide of 22 µg/L and 5.2 µg/L, expressed as total recoverable and a human health water quality objective of 700 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for cyanide because the MEC (8 µg/L) exceeds the governing water quality objective (5.2 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for cyanide, calculated according to the SIP procedures with an effluent data CV of 0.46 and no dilution, are an AMEL of 4.5 µg/L and a MDEL of 7.9 µg/L. The previous Order contained an AMEL of 3.6 µg/L and a MDEL of 9.6 µg/L. The AMEL of the previous order is more stringent than the newly calculated AMEL, thus resulting in a lower allowable long-term average discharge concentration over each month. The previous limitations are considered to be more stringent. This Order retains the previous limitations because they are more stringent than the new ones.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because the effluent limitations for cyanide are the same as those in the previous Order.

vii. Dichlorobromomethane

- (a) Water Quality Objectives.** The CTR contains a human health water quality objective for dichlorobromomethane of 0.56 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for dichlorobromomethane because the MEC (13 µg/L) exceeds the governing water quality objective (0.56 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for dichlorobromomethane, calculated according to the SIP procedures with an effluent data CV of 0.33 and no dilution, are an AMEL of 0.56 µg/L and a MDEL of 0.87 µg/L. The previous Order establishes an AMEL of 0.56 µg/L and a MDEL of 1.4 µg/L. The newly calculated limitations are more stringent and have been established in this Order.

- (d) **Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for dichlorobromomethane are more stringent than those in the previous Order.

viii. Dissolved Oxygen

- (a) **Water Quality Objectives.** The Basin Plan contains water quality objectives for dissolved oxygen for waters with a designated beneficial use of COLD including a daily minimum of 4.0 mg/L, a 7-day mean minimum of 5.0 mg/L, and a 30-day mean minimum of 6.5 mg/L.
- (b) **RPA Results.** The Discharger is a POTW and discharges biochemical oxygen demanding substances, which may lower oxygen levels in the receiving water causing toxicity to fish if not controlled. Effluent data from April 2008 through July 2012 indicates dissolved oxygen levels as low as 4.5 mg/L, indicating reasonable potential to exceed water quality objectives for dissolved oxygen. Effluent limitations for dissolved oxygen are required.
- (c) **WQBELs.** A 1-day minimum of 4.0 mg/L, a 7-day mean of 5.0 mg/L, and a 30-day mean of 6.5 mg/L have been established, consistent with the requirements of the Basin Plan.
- (d) **Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for dissolved oxygen are more stringent than those in the previous Order.
- (e) **Feasibility.** Effluent data since 2011 indicates that the Discharger would have exceeded the minimum monthly average effluent limitation for dissolved oxygen twice and may not be able to immediately comply with the final effluent limitations for dissolved oxygen. As such, a compliance schedule has been granted and is discussed in section VII.B.7 of this Fact Sheet.

ix. Nitrate (Applied as Total Nitrogen)

- (a) **Water Quality Objectives.** The Basin Plan states that waters designated as MUN shall not contain concentrations of chemical constituents in excess of MCLs, including a nitrate + nitrite (as N) concentration of 10 mg/L.
- (b) **RPA Results.** An effluent limitation limiting the discharge of nitrate is necessary because the MEC for nitrate + nitrite (12 mg/L) exceeds the governing water quality objective for nitrate + nitrite (10 mg/L), demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** The previous Order established effluent limitations for nitrate based on the anticipated performance of planned plant upgrades specified in a January 2008 antidegradation analysis submitted by the Discharger.

The previous Order determined that a long-term performance concentration for nitrate-nitrogen of 5.3 mg/L was applicable based on the proposed treatment technology and flow increases, and that concentrations of nitrite would be negligible to water quality if the nitrate effluent limitation was achieved. The previous Order established an AMEL of 8.2 mg/L and a MDEL of 11.3 mg/L, based on a long-term performance goal for nitrate of 5.3 mg/L, a CV of 0.6, and a 95th and 99th probability basis. Consistent with the intent of the anti-degradation policy, these limits were expected to minimize impacts of the proposed effluent flow increase to the receiving water when effluent flows increased from 8.3 MGD to 14.0 MGD, and then to 22 MGD. The anti-degradation analysis indicated that nitrate effluent concentrations would not decrease until after effluent flows increase from 14 MGD to 22 MGD which was expected to occur after mid-2012.

However, the Discharger implemented an alternative treatment technology for nitrogen removal than previously anticipated. In addition, the Discharger has increased the design capacity of the Facility to 18 MGD; however, the Discharger has not requested an effluent flow increase to the Mojave River beyond 14 MGD. The combination of the implementation of alternative treatment technology along with the increase in the treatment capacity of the Facility make it impossible for the Discharger to meet the limits set forth in the previous permit.

The actual observed long-term average for nitrate concentrations within the effluent from June 2009 through June 2012 is 5.8 mg/L. However, this represents treatment capabilities of the Facility well below 10 MGD, and significantly below the current treatment capacity of 18 MGD. The Discharger has indicated the intent to maximize the treatment capacity of the current treatment system as the service population grows, discharging a portion of the treated effluent to the percolation ponds, and maintaining a maximum monthly average flow below 14 MGD. The additional inflow will reduce the nitrogen removal efficiency of the treatment system. Thus, the actual observed long-term average for nitrate is not representative of future treatment capabilities of the Facility and is not an appropriate basis for developing performance-based effluent limitations.

At its percolation ponds, the Discharger has demonstrated its ability to meet average monthly and daily maximum effluent limitations for total nitrogen (nitrate + nitrite + total kjeldahl nitrogen) of 10.3 mg/L and 12.3 mg/L, respectively. These effluent limits were established in Order No. R6V-2012-0058, based on a performance goal of 8.2 mg/L and effluent data for total nitrogen for the period of January 6, 2009 through December 27, 2011 (resulting in a CV of 0.3), and occurrence probabilities of 95 and 99 percent. The effluent limits for total nitrogen established in R6V-2012-0058 are protective of applicable water quality objectives. Because total nitrogen includes both nitrate and nitrite and ammonia and organic nitrogen, establishing effluent limitations for total nitrogen which is

protective of the MCL for nitrate + nitrite (10 mg/L) is protective of the applicable water quality objective.

(d) Anti-backsliding. The removal of effluent limitations for nitrate is consistent with Section 402(o)(2) of the CWA because the treatment technology on which the previous effluent limitations were based on was not implemented. This represents a material and substantial alteration to the permitted facility that occurred after the last permit issuance, and justifies the issuance of a less stringent effluent limit, and is also information, that was not available at the time of the permit issuance, and would have justified the application of less stringent effluent limits at the time of issuance. However, as discussed above, the newly calculated effluent limitations for total nitrogen are protective of water quality standards for nitrate + nitrite and are consistent with Facility treatment capabilities.

x. Pathogens

(a) Fecal Coliform

(1) Water Quality Objectives. The Basin Plan establishes water quality objectives for fecal coliform, including a 30-day log mean of 20/100 mL and that require that no more than 10 percent of all samples collected during any 30-day period shall exceed 40/100 mL.

(2) RPA Results. The beneficial uses of the Mojave River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, no dilution. To protect these beneficial uses, the Lahontan Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's bacteria objective. Therefore, the discharge has reasonable potential for fecal coliform and WQBELs are required.

(3) WQBELs. WQBELs for fecal coliform are based on the water quality objectives contained in the Basin Plan and include a 30-day log mean of 20/100 mL and require that no more than 10 percent of all samples collected during any 30-day period shall exceed 40/100 mL.

(4) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations for fecal coliform are the same as those in the previous Order.

(b) Total Coliform

- (1) Water Quality Objectives.** Section 4.4 of the Basin Plan requires that where water contact recreational use is to be protected, the California Department of Health (CDPH) requirements for coliform must be achieved. The beneficial uses of the Mojave River include water contact recreation. In accordance with the requirements of Title 22, applicable water quality objectives for total coliform organisms include 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.
- (2) RPA Results.** The beneficial uses of the Mojave River include water contact recreation and there is, at times, no dilution. To protect this beneficial uses, the Lahontan Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's bacteria objective. Therefore, the discharge has reasonable potential for total coliform and WQBELs are required.
- (3) WQBELs.** Wastewater must be treated to a level equivalent to that recommended by CDPH. In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.
- (4) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for total coliform are the same as those in the previous Order.

(c) Turbidity

In addition to coliform limitations, an operational specification for turbidity has been included to monitor the effectiveness of treatment filter performance, and to assure compliance with the required level of treatment.

The Title 22 advanced secondary treatment process utilized at the Facility is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU). Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by

comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. In accordance with CDPH recommendations, this Order includes operational specifications for turbidity of 2 NTU as a daily average, 5 NTU not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

The Basin Plan contains water quality objectives for turbidity, which prohibit changes in turbidity that cause a nuisance or adversely affect the water for beneficial uses and result in increases in turbidity of more than 10 percent more than natural levels. Upstream receiving water data indicates turbidity varies between 0 and 16.5 NTU. Maintaining compliance with the specified turbidity effluent limitations will be protective of the water quality objective for turbidity specified in the Basin Plan.

The Lahontan Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

xi. pH

- (a) Water Quality Objectives.** The Basin Plan contains a water quality objective for fresh waters with designated beneficial uses of COLD or WARM, which states, "...changes in normal ambient pH levels shall not exceed 0.5 pH units." The Basin Plan further states that, "For all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5."
- (b) RPA Results.** Effluent limitations for pH are required in this Order based on secondary treatment standards discussed in section IV.B of this Fact Sheet. Effluent limitations must be protective of water quality, thus WQBELs for pH must be developed and compared to the applicable secondary treatment standards, and the most stringent of the two limitations applied. Further, the Facility is a POTW that treats domestic wastewater. The pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.
- (c) WQBELs.** WQBELs for pH, were established in the previous order based on the objective in the Basin Plan. The previous order found that an instantaneous maximum of 8.5 s.u. and an instantaneous minimum of 6.5 s.u. were protective of water quality. Further, the previous order established a receiving water limitation prohibiting changes in the normal ambient pH levels greater than 0.5 s.u. These effluent limitations and receiving water limitation are retained in this Order and are consistent with the requirements of the Basin Plan.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations for pH are the same as those in the previous Order.

xii. Total Dissolved Solids

(a) Water Quality Objectives. The Basin Plan contains a water quality objective for chemical constituents, including a secondary maximum contaminant levels for TDS based on drinking water standards specified in Title 22 of the California Code of Regulations. The applicable water quality objectives listed in Title 22 for TDS are 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum, to be protective of domestic water supplies. The beneficial uses of the Mojave River include municipal and domestic water supply. Upstream receiving water data contained in the Mojave River Characterization Study indicates that upstream concentrations of TDS are at or below 500 mg/L. Consistent with State antidegradation policy in Resolution No. 68-16, which requires that the existing water quality of waters be maintained, the water quality objective of 500 mg/L listed in Title 22 is appropriate for discharges from the Facility.

(b) RPA Results. The maximum effluent concentration for TDS out of 219 monitoring events from April 2008 through June 2012 was 601 mg/L, which is greater than the applicable water quality objective of 500 mg/L. Therefore, the Facility has reasonable potential to exceed water quality objectives for TDS.

(c) WQBELs. The previous Order established an MDEL of 580 mg/L and an annual average of 460 mg/L. The annual average of 460 mg/L results in a long-term average discharge below 500 mg/L and is protective of water quality. Due to State and federal anti-backsliding policies, the effluent limitations from the previous Order have been carried over.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations TDS are the same as those in the previous Order.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program. This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. Acute Toxicity. The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median." Effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay-----	70%
Median for any three consecutive bioassays -----	90%

The effluent limitation for acute toxicity is at least as stringent as the effluent limitation established in the previous Order.

b. Chronic Toxicity. The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” This Order contains a narrative effluent limitation for chronic toxicity based on the Basin Plan narrative toxicity water quality objective. The Order also includes requirements for chronic toxicity monitoring to ensure attainment of the Basin Plan narrative water quality objective and a monitoring “trigger” for initiation of accelerated monitoring requirements when exceeded. The Discharger is required to implement a chronic toxicity reduction evaluation (TRE) in some circumstances.

D. Final Effluent Limitation Considerations

1. Satisfaction of Anti-Backsliding Requirements

Section 402(o) of the CWA establishes statutory language prohibiting the backsliding of effluent limits. Section 402(o)(1) prohibits the relaxation of effluent limits (1) when a permittee seeks to revise a technology-based effluent limitation based on best professional judgment to reflect a subsequently promulgated effluent guideline which is less stringent, and (2) when a permittee seeks relaxation of an effluent limitation which is based upon a state treatment standard or water quality standard. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code Federal Regulations part 122.44(l) outlines specific exceptions to the general prohibition against establishment of less stringent effluent limitations.

These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order with the exception of final effluent limitations for copper, dibenzo(a,h)anthracene, and MBAS. As discussed below, this relaxation of effluent limitations for copper, dibenzo(a,h)anthracene, MBAS, nitrate and zinc is consistent with exceptions identified under 40 C.F.R.122.44(l)(2)(i)(B)(1).

Anti-backsliding provisions in 40 C.F.R. 122.44(l)(2)(i)(B)(1), allow for relaxation of effluent limitations when information is available which was not available at the time of establishing the original limitations. Based on new data collected during the term of Order No. R6V-2008-004, copper, dibenzo(a,h)anthracene, MBAS, and zinc do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. In addition, as described in section IV. C. 4.c.ix, above, material and substantial alterations and new information that was not available at the time the previous permit was issued justify the application of less stringent nitrate effluent limits. The updated information that supports the relaxation of effluent limitations is consistent with anti-backsliding provisions because the data was not available during the drafting of Order No. R6V-2008-004. Therefore, the removal of effluent limitations for copper, dibenzo(a,h)anthracene, MBAS, nitrate and zinc in this Order are consistent with anti-backsliding provisions at 40 C.F.R. 122.44(l)(2)(i)(B)(i).

2. Satisfaction of Antidegradation Policy

Section 131.12 requires that the state water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Lahontan Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

This Order does not provide for an increase in the permitted design flow or allow for a reduction in the level of treatment. The limits included hold the Discharger to performance levels that will not cause or contribute to water quality impairment or water quality degradation. Further, compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Therefore, the issuance of this permit is consistent with the state's antidegradation policy.

3. Mass-based Effluent Limitations

Generally, mass-based effluent limitations ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. 40 C.F.R. 122.45(f)(1) requires that all permit limitations, standards or prohibitions be expressed in terms of mass units except under the following conditions: (1) for pH, temperature, radiation or other pollutants that cannot appropriately be expressed by

mass limitations; (2) when applicable standards or limitations are expressed in terms of other units of measure; or (3) if in establishing technology-based permit limitation on a case-by-case basis limitation based on mass are infeasible because the mass or pollutant cannot be related to a measure of production.

Mass-based effluent limitations are established using the following formula:

$$\text{Mass (lbs/day)} = \text{flow rate (MGD)} \times 8.34 \times \text{effluent limitation (mg/L)}$$

where: Mass = mass limitation for a pollutant (lbs/day)
 Effluent limitation = concentration limitation for a pollutant (mg/L)
 Flow rate = 14 MGD

4. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on percent removal for BOD₅ and TSS at Discharge Point No. 001. Restrictions on these parameters are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

This Order includes WQBELs for ammonia, BOD₅, bis(2-ethylhexyl)phthalate, chlorine, chlorodibromomethane, cyanide, dichlorobromomethane, dissolved oxygen, fecal coliform, pH, total coliform, total dissolved solids, total nitrogen, TSS, turbidity and dissolved oxygen at Discharge Point No. 001. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. The remaining water quality objectives and beneficial uses implemented by this Order (specifically bacteria) were approved by USEPA on September 25, 2002. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Table F-10 provides a summary of the final effluent limitations at Discharge Point No. 001.

5. Summary of Final Effluent Limitations

Table F-10. Summary of Final Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Instantaneous Minimum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	30	--	--	TTC, E
	lbs/day ²	1,170	1,750	3,500	--	--	
	% Removal	85 ³	--	--	--	--	C.F.R., E
pH	standard units	--	--	--	6.5	8.5	BP, E
Total Suspended Solids	mg/L	10	15	30	--	--	TTC, E
	lbs/day ²	1,170	1,750	3,500	--	--	
	% Removal	85 ³	--	--	--	--	C.F.R.,E
Priority Pollutants							
Bis(2-ethylhexyl)Phthalate	µg/L	1.8	--	3.6	--	--	CTR, E
	lbs/day ²	0.21	--	0.42	--	--	
Chlorodibromomethane	µg/L	0.41	--	0.97	--	--	CTR, E
	lbs/day ²	0.048	--	0.11	--	--	
Cyanide, Total Recoverable	µg/L	3.6	--	9.6	--	--	CTR, E
	lbs/day ²	0.42	--	1.1	--	--	
Dichlorobromomethane	µg/L	0.56	--	0.87	--	--	CTR, E
	lbs/day ²	0.065	--	0.10	--	--	
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.54	--	1.6	--	--	BP
	lbs/day ²	63	--	187	--	--	
Chlorine, Total Residual	mg/L	0.002 ⁴	--	0.003	--	--	BP, E
	lbs/day ²	0.234 ⁴	--	0.350	--	--	
Dissolved Oxygen	mg/L	6.5	5.0	--	4.0 ⁵	--	BP, E
Fecal Coliform	MPN/100 mL	20 ⁶	--	40 ⁷	--	--	BP,E
Nitrogen, Total	mg/L	10.3	--	12.3	--	--	BP, TTC
	lbs/day ²	1,203	--	1,436	--	--	
Total Coliform	MPN/100 mL	--	2.2 ⁸	23 ⁹	--	240	Title 22, E
Total Dissolved Solids	mg/L	460 ¹⁰	--	580	--	--	Title 22,E
	lbs/day ²	53,710 ¹⁰	--	67,721	--	--	
Turbidity	NTU	--	5 ¹¹	2 ¹²	--	10	Title 22, E

¹ TTC = Based on treatment capability,
 E = Based on effluent limitations contained in the previous Order.
 C.F.R. = Secondary Treatment Standards from 40 C.F.R. Part 133
 CTR = Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
 BP = Based on water quality objectives contained in the Basin Plan
 Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22)

² Based upon a design average dry weather flow of 14 MGD.

³ The average monthly percent removal shall be at least 85 percent.

⁴ Applied as a 6-month median.

⁵ Applied as a 1-day minimum.

⁶ The number of fecal coliform bacteria shall not exceed a log mean of 20/100 mL for any 30-day period.

⁷ The number of fecal coliform bacteria shall not exceed 40/100 mL in more than 10 percent of all samples collected in any 30-day period.

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Instantaneous Minimum	

- ⁸ Applied as a 7-day median effluent limitation.
- ⁹ Not to be exceeded more than once in any 30-day period.
- ¹⁰ To be applied as an annual average effluent limitation (AAEL).
- ¹¹ Not to be exceeded more than 5 percent of the time within a 24-hour period.
- ¹² Applied as a daily average.

E. Interim Effluent Limitations

The previous Order contains a dissolved oxygen effluent limitation of 4.0 mg/L as a daily minimum. The proposed Order contains additional dissolved oxygen limitations of 5.0 mg/L as a weekly minimum and 6.5 mg/L as a monthly average. In a letter dated May 2, 2013, titled, “*Tentative Order for the VVWRA Regional Wastewater Treatment Plant*”, the Discharger indicates that compliance with the minimum monthly average effluent limitation of 6.5 mg/L for dissolved oxygen is not immediately feasible. A review of recent effluent data indicates that the Discharger would have exceeded the proposed monthly average effluent limitation twice since September 2011. Thus, the Regional Water Board acknowledges that immediate and consistent compliance with the final effluent limitations for dissolved oxygen does not appear feasible for the Discharger.

Consistent with State Water Board Resolution No. 2008-0025, the implementation of the monthly average effluent limitation for dissolved oxygen constitutes a newly interpreted water quality objective or criterion in a water quality standard. Further, the monthly average effluent limitation for dissolved oxygen is more stringent than the daily maximum effluent limitation established in the previous Order. The implementation of interim effluent limitations as a component of a compliance schedule to achieve compliance with the final effluent limitations for dissolved oxygen is consistent with the requirements established in State Water Board Resolution No. 2008-0025. Thus, interim effluent limitations have been established in the Order based on both the current effluent limitation and current facility performance, which indicates that the Discharger can consistently comply with the applicable weekly average effluent limitation for dissolved oxygen.

In discussions with Regional Water Board staff, a Discharger representative has indicated that full compliance may be achievable in 4 years from the effective date of the Order. State Water Board Resolution No. 2008-0025 requires that all compliance schedules be as short as possible, thus compliance with final effluent limitations shall be required as soon as reasonably possible, but no longer than 4 years after the effective date of the Order.

F. Land Discharge Specifications

Land discharge specifications are included under Order No. R6V-2012-0058.

G. Reclamation Specifications

- 1. UV Disinfection Operational Provisions.** These provisions are based on recommendations from the California Department of Public Health (CDPH), specified in an October 12, 2012 letter, with the subject, *Victor Valley Wastewater Reclamation Authority Westside WRF – UV Disinfection Field Commissioning Test Results (System No. 3690013)*. These provisions maximize compliance with Title 22 of the California Code of Regulations, based on site-specific equipment and conditions at the Facility. Implementation of these provisions is necessary for the protection of public health.

CDPH reviewed the field commissioning test results for the Discharger's UV disinfection system, which utilizes XYLEM/Wedeco TAK-55 320W UV reactors to meet the minimum coliform and virus disinfection criteria for recycled water. To verify the performance of the UV disinfection system, on-site bioassays were conducted using seeded MS2 coliphage. Results of the virus disinfection performance were compared to Title 22 standards. Twenty bioassay tests were performed at various flow rates, transmittances, and UV bank combinations. Due to equipment issues and quality assurance reasons, only ten of the twenty bioassays were considered appropriate for review. All of the ten measured dosages were greater than the dose predicted by the UV dose operating equation, which controls the power and dosage level applied, and were found to be acceptable. Additionally, four of the ten tests evaluated flow split between the two channels at the Facility. The results from the two channel flow split tests indicate that good flow split is occurring between the two channels, with a maximum observed difference of 3.4 percent. Based on the test results, CDPH has accepted the Discharger's UV disinfection process, and made the operational recommendations contained in this Order as provisions.

2. Reclamation specifications are included under Order No. R6V-2003-028.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in this Order are based upon the water quality objectives contained in the Basin Plan.

A. Surface Water

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Lahontan Region. Water quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (part 131.12) and State Water Board Resolution No. 68-16. Surface water limitations in this Order are included to ensure protection of beneficial uses of the receiving water.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 C.F.R. 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Lahontan Regional Water Boards to require technical and monitoring reports. The

Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

A. Influent Monitoring

1. Monitoring Location INF-001

Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow, BOD₅, pH, and TSS have been retained from Order No. R6V-2008-004. Daily monitoring requirements for electrical conductivity and monthly monitoring requirements for ammonia, total kjeldahl nitrogen, and nitrate have not been retained from Order R6V-2008-004 as they are not necessary to determine compliance with permit requirements.

B. Effluent Monitoring

Pursuant to the requirements of 40 C.F.R. 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

1. Monitoring Location EFF-001

Effluent monitoring is established at Monitoring Location EFF-001 to allow the Discharger to demonstrate the effluent is in compliance with effluent limitations and requirements of this Order immediately after UV disinfection and prior to being discharged to Mojave River via Discharge Point No. 001.

- a.** Effluent monitoring frequencies for flow, bis (2-ethylhexyl) phthalate, BOD₅, boron, chloride, chlorine, chlorodibromomethane, copper, cyanide, dichlorobromomethane, electrical conductivity, fecal coliform, fluoride, hardness, nitrate, nitrite, oil and grease, pH, sodium, sulfate, temperature, total coliform, total dissolved solids, total nitrogen, total kjeldahl nitrogen, and turbidity have been retained from Order No. R6V-2008-004 to determine compliance with effluent limitations for these parameters or provide data necessary to characterize the wastewater at Discharge Point No. 001. Quarterly phenol monitoring is added.

A reduction in monitoring frequency for chlorodibromomethane, dichlorobromomethane, and total residual chlorine has been granted after three months of monitoring indicates that these parameters are not present at detectable concentrations within the effluent. These parameters are byproducts of the chlorine disinfection. The Discharger is currently using UV treatment for disinfection, thus chlorine byproducts are not expected to be present in the effluent when chlorination is not being used.

- b. Monitoring data collected over the term of Order No. R6V-2008-004 for dibenzo (a,h) anthracene and zinc did not demonstrate reasonable potential to exceed water quality objectives/criteria at Discharge Point No. 001.

Thus, specific monitoring requirements for dibenzo (a,h) anthracene and zinc have not been retained from Order No. R6V-2008-004 at Monitoring Location EFF-001. Monitoring for dibenzo (a,h) anthracene and zinc shall be required annual with priority pollutant monitoring.

- c. Monitoring data collected over the term of Order No. R6V-2008-004 for MBAS did not demonstrate reasonable potential to exceed water quality objectives at Discharge Point No. 001. Thus, specific monitoring requirements for MBAS have been reduced from monthly to quarterly at Monitoring Location EFF-001.
- d. Monitoring for total nitrogen (two times per month) has been added to provide additional data to evaluate the Facility's nitrogen removal and characterize the wastewater. Total nitrogen is calculated based on the sum of nitrate, nitrite and total kjeldahl nitrogen.
- e. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R6V-2008-004 and was used to conduct a meaningful RPA at Discharge Point No. 001. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. Consistent with Order No. R6V-2008-004, this Order requires annual monitoring at Discharge Point No. 001 in order to collect data to conduct an RPA for the next permit renewal.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order No. R6V-2008-004, annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Consistent with Order No. R6V-2008-004, annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Monitoring Locations RSW-001 and 002

- i. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. Upstream monitoring location RSW-001, located about three miles upstream of the effluent discharge point EFF-001 at the Mojave River Lower Narrows, is the closest upstream location with generally perennial surface

water flow in the Mojave River. Due to increase groundwater withdrawal in the Mojave River Flood plan aquifer, for the last two decades there is only ephemeral surface water flow down stream of this location to effluent discharge point EFF-001 following major storm events. Downstream of discharge point EFF-001, the Mojave River has perennial effluent dominated surface flow for some eight miles.

- ii. Receiving water monitoring requirements for ammonia, pH, chlorine, dissolved oxygen, hardness, nitrate, nitrite, temperature, total coliform, and turbidity at Monitoring Locations 001 and 002 have been retained from Order No. R6V-2008-004.
- iii. Receiving water monitoring requirements for boron, chloride, fluoride, haloacetic acids, nitrate, nitrite, orthophosphate, sulfate, and total kjeldahl nitrogen have not been retained at Monitoring Locations RSW-001 and 002 because they are not necessary to determine compliance with requirements of this Order.
- iv. Order No. R6V-2008-004 included chronic toxicity monitoring at Monitoring Location RSW-002 or 003. This Order does not retain these requirements because they are not necessary to determine compliance with requirements of this Order.
- v. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires annual monitoring for priority pollutants and other pollutants of concern, performed concurrently with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal.

b. Monitoring Locations RSW-003 and 004

- i. Provision VI.C.7.d of Order No. R6V-2008-004 required the Discharger to establish additional downstream monitoring locations, Monitoring Locations RSW-003 and RSW-004. This Order does not retain these monitoring requirements for the following reasons:
 - (a) As documented in an October 11, 2010 letter from Tom Dodson and Associates to the Lahontan Regional Water Board, and further stated in the October 5, 2012 report of waste discharge, establishing additional downstream monitoring locations is significantly constrained by access, biological resource issues, regulatory permitting requirements, and mitigations costs. The Discharger has demonstrated that there is not a safe and accessible location to monitor upstream of Monitoring Location RSW-002. Due to the difficulties in establishing additional downstream monitoring locations, the Discharger has requested that downstream monitoring of the receiving water be limited to current location, RSW-002.

- (b) In June 2010, a Mojave River Characterization Study was completed for the Discharger, as required by Order No. R6V-2008-004. In this Study, sites near proposed monitoring locations were monitored for flow and water quality to characterize the water and compare it with Monitoring Location RSW-002. The Study indicates that water quality at Monitoring Location RSW-002 is similar to water quality at the proposed monitoring locations RSW-003 and RSW-004; therefore, samples taken at Monitoring Location RSW-002 adequately characterizes the water quality downstream of Discharge Point No. 001.
- (c) This Order includes end-of-pipe WQBELs for pollutants that have reasonable potential to cause or contribute to downstream impairment and is expected to be protective of water quality within the receiving water. Exceedances of these WQBELs are enforceable and unlike receiving water results, are known to be attributable to the Discharger.
- (d) During the term of the previous Order, the Discharger upgraded to UV disinfection and improved nitrification and added denitrification. As a result, impacts from chlorine and chlorine byproducts, and nitrogen are not expected downstream of the discharge. Thus, monitoring the receiving water for impacts of nitrogen loading and chlorine residual is no longer necessary.

2. Groundwater

Because the Mojave River is effluent dominated downstream of Discharge Point No. 001, receiving groundwater is affected by the surface water discharge as effluent percolates. Therefore, separate Order No. R6V-2012-0058 requires receiving water groundwater monitoring. This Order does not include any groundwater monitoring.

E. Other Monitoring Requirements

1. Biosolids monitoring is required to protect public health and prevent groundwater degradation and are imposed pursuant to 40 C.F.R. Part 503.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the

state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. 122.62 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new relevant information that may be established in the future and other circumstances as allowed by law.

2. Special Studies and Additional Monitoring Requirements

a. Whole Effluent Toxicity. The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" This Order establishes numeric acute toxicity limitations, a narrative chronic toxicity limitation, and a trigger for accelerated monitoring.

This provision requires the Discharger to develop a TRE Workplan in accordance with USEPA guidance. In addition, the provision provides numeric toxicity monitoring triggers and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been demonstrated.

i. Monitoring Trigger. Accelerated monitoring is required when the acute toxicity effluent limitations are exceeded or a chronic toxicity monitoring trigger of $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$) is exceeded. Therefore, a TRE is triggered when the effluent exhibits toxicity at 100% effluent.

ii. Accelerated Monitoring. This provision requires accelerated WET testing when a regular WET test result exceeds an accelerated monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the*

time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

iii. TRE Guidance. The Discharger is required to prepare a TRE Workplan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- (a)** Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- (b)** Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- (c)** Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.
- (d)** Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.
- (e)** Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.
- (f)** Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
- (g)** Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
- (h)** Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
- (i)** Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

3. Best Management Practices and Pollution Prevention

- a. **Pollutant Minimization Program (PMP).** The PMP required in this Order is necessary to address pollutants for which there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:
 - i. A sample result is reported as “detected, but not quantified” (DNQ) and the effluent limitation is less than the Reporting Limit (RL); or
 - ii. A sample result is reported as “not detected” (ND) and the effluent limitation is less than the Method Detection Limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.4
- b. **Best Management Practices.** This Order references the requirement for the Discharger to identify, implement, and monitor BMPs in accordance with a site specific Storm Water Pollution Prevention Plan (SWPPP) as required under the General Industrial Storm Water Permit. The Discharger has applied for coverage under this permit and is regulated under Waste Discharge Identification Number 6B361005756.

4. Construction, Operation, and Maintenance Specifications

- a. These provisions are based on the requirements in 40 C.F.R. 122.41(e) and the existing Order.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Pretreatment Program Requirements.** The federal CWA section 307(b), and federal regulations, 40 C.F.R. Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 C.F.R. Part 403 and are based on the previous Order.
- b. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge treatment disposal and discharge specifications are based on biosolids requirements in 40 C.F.R. Part 503 and the previous Order.

6. Other Special Provisions

- a. **Order Continuation After Expiration Date.** This provision is retained from the previous Order and authorized under 40 C.F.R. 122.6(d).

- b. Land Ownership Change or Control.** In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Lahontan Regional Water Board.
- c. Succeeding Owner or Operator.** Consistent with the requirements of 40 C.F.R. 122.41(1)(3) and 122.61, to assume operation under this Order, a succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. Transfer shall be approved in writing by the Executive Officer.
- d. Flow Increase Requests.** State Water Board Resolution No. 68-16 requires that existing high quality waters be maintained to the maximum extent possible, however allows for change that is consistent with the maximum benefit to the people of the State, does not unreasonably affect present and potential beneficial uses, and will not result in water quality lower than applicable standards. The Discharger submitted an antidegradation analysis in January 2009 for flow increases up to 22 MGD, however the analysis is based on a treatment technology that was not implemented by the Discharger. Future requests for any increase in permitted effluent flow greater than 14 MGD to surface waters must be accompanied by an antidegradation analysis that demonstrates consistency with State Water Board Resolution No. 68-16 and considers current and future anticipated capabilities of the Facility.

7. Compliance Schedules

As discussed in section IV.E of this Fact Sheet, the Discharger cannot immediately comply with the newly established average monthly effluent limitation for dissolved oxygen. The newly established effluent limitation constitutes a newly interpreted water quality objective or criterion in a water quality standard and is more stringent than the previous effluent limitation. Consistent with State Water Board Resolution No. 2008-0025, a compliance schedule has been implemented allowing the Discharger time to upgrade its facilities before it is required to comply with the final effluent limitations for dissolved oxygen as soon as reasonably possible, but no more than 4 years after the effective date of this Order.

As a component of the compliance schedule, interim effluent limitations have been established that are more stringent than the previous effluent limitation and will require the Discharger to continue to operate the Facility at current performance levels. The requirements of the compliance schedule are based on State Water Board Resolution No. 2008-0025.

VIII. PUBLIC PARTICIPATION

The Lahontan Regional Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Victor Valley Regional Wastewater Treatment Plant. As a step in the WDR adoption process, the Lahontan Regional Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Lahontan Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the Water Board web site at:
http://www.waterboards.ca.gov/lahontan/board_info/agenda/2013_schedule.shtml and in the Victorville Daily Press and Barstow Desert Dispatch June 6, 2013.

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Lahontan Regional Water Board at 14440 Civic Drive, Suite 200, Victorville, CA 92392.

To be fully responded to by staff and considered by the Lahontan Regional Water Board, the written comments were due at the Lahontan Regional Water Board office by 5:00 p.m. on July 10, 2013.

C. Public Hearing

The Regional Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date: July 17, 2013
Time: 2:00 p.m.
Location: Hampton Inn Suites Barstow
2710 Lenwood Road, Jackrabbit Room
Barstow, CA 92311

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Lahontan Regional Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Lahontan Regional Water Board by calling (706) 241-6583.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Lahontan Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to John Morales, P.E at 760-241-7366.

Attachment G – Limitation Calculations

Water quality-based effluent limitation calculations for parameters calculated using the aquatic life method based on Section 1.4 of the SIP, as discussed in section IV.C.4.a.ii of the Fact Sheet. Because there is no dilution, the effluent concentration allowable (ECA) has been set equal to the criteria.

Table G-1. Protection of Aquatic Life SIP Method

Parameter	CV	ECA (criteria)		ECA Multipliers		Long Term Average (LTA)		Lowest LTA	Limit Multipliers		Limits	
		Acute	Chronic	Acute ₉₉	Chronic ₉₉	Acute	Chronic		MDEL	AMEL	MDEL	AMEL
Ammonia (mg/L)	2.0	5.6	0.95	0.117	0.204	0.655	0.194	0.194	8.55	2.78	1.6	0.54
Cyanide (µg/L) ¹	0.46	22	5.2	0.40	0.61	8.80	3.16	3.16	2.50	1.41	7.9	4.5
Nitrate (Applied as Total Nitrogen) (mg/L) ²	0.3	NA	NA	NA	NA	NA	NA	8.2	1.5	1.26	12.3	10.3

¹ Previous effluent limitations were more stringent and have been established in the Order. See section IV.C.4 of the Fact Sheet for more information.

² Based on calculations provided in Order No. R6V-2012-0058.

Water quality-based effluent limitation calculations for parameters calculated using the human health method based on Section 1.4 of the SIP, as discussed in section IV.C.4.a.iii of the Fact Sheet. Because there is no dilution, the ECA has been set equal to the criteria.

Table G-2. Protection of Human Health SIP Method

Parameter	CV	ECA (criteria)	AMEL	MDEL/AMEL Multiplier ¹	MDEL
Bis (2-ethylhexyl) phthalate (µg/L)	0.6	1.8	1.8	2.01	3.6
Chlorodibromomethane (µg/L)	0.86	0.41	0.41	2.37	0.97
Cyanide (µg/L) ²	0.46	700	700	1.77	1,240
Dichlorobromomethane (µg/L)	0.33	0.56	0.56	1.55	0.87

¹ Based on a sample frequency of four or less sampling events per month.

² Limits based on aquatic life and contained in the previous permit are more stringent. See section IV.C.4 of the Fact Sheet for more information.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LAHONTAN REGION

14440 Civic Drive, Suite 200
Victorville, CA 92392
Phone 760-241-6583 • Fax 760-241-7308
<http://www.waterboards.ca.gov>

ORDER R6V-2013-0038
NPDES NO. CA0102822
WDID NO. 6B360109001

WASTE DISCHARGE REQUIREMENTS FOR THE VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY REGIONAL WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY

The following Discharger and discharge point is subject to waste discharge requirements set forth in this Order:

Table 1. Discharger Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced secondary treated municipal wastewater	34° 37' 01" N	117° 21' 12" W	Mojave River

Table 3. Administrative Information

This Order was adopted on:	July 17, 2013
This Order shall become effective on:	September 5, 2013
This Order shall expire on:	September 5, 2018
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than:	March 9, 2018

I, Lauri Kemper, Acting Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on **July 17, 2013**.

Lauri Kemper, Acting Executive Officer

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I. FACILITY INFORMATION

The following facility is subject to the waste discharge requirements (WDRs) set forth in this Order:

Table 4. Facility Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title, and Phone	Logan Olds, General Manager, (760) 948-9849 x110
Mailing Address	15776 Main Street, Suite 3, Hesperia, CA 92345
Type of Facility	Publically Owned Treatment Works (POTW)
Facility Permitted Flow	14 million gallons per day (MGD)
Facility Design Flow	18 MGD

II. FINDINGS

The California Regional Water Quality Control Board, Lahontan Region (hereinafter Lahontan Regional Water Board), finds:

- A. Legal Authorities.** This Order serves as WDR’s pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit for point source discharges from this facility to surface waters.
- B. Background and Rationale for Requirements.** The Lahontan Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. In addition, Attachments A through E and G are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Notification of Interested Parties.** The Lahontan Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR’s for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

- E. Consideration of Public Comment.** The Lahontan Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that this Order supersedes Order No. R6V-2008-0004 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Lahontan Regional Water Board from taking enforcement action for past violations of the previous Order. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Discharger shall comply with the analogous portions of the previous Order, which shall remain in effect for all purposes during the pendency of the stay.

III. DISCHARGE PROHIBITIONS

- A.** The average annual flow, as measured at Monitoring Location EFF-001, described in the MRP, shall not exceed 14.0 MGD in any calendar year.
- B.** Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- C.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- D.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- E.** The discharge of waste, as defined in section 4.1 of the Basin Plan, that causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation Objective, is prohibited.
- F.** The discharge of waste that causes violation in the receiving water of any numeric water quality objective contained in the Basin Plan is prohibited.
- G.** Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated in the receiving water, the discharge of waste that causes further degradation or pollution is prohibited.
- H.** The discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

- a.** The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E:

Table 5. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) (BOD ₅)	mg/L	10	15	30	--	--
	lbs/day ¹	1,170	1,750	3,500	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids (TSS)	mg/L	10	15	30	--	--
	lbs/day ¹	1,170	1,750	3,500	--	--
Priority Pollutants						
Bis(2-ethylhexyl)Phthalate	µg/L	1.8	--	3.6	--	--
	lbs/day ¹	0.21	--	0.42	--	--
Chlorodibromomethane	µg/L	0.41	--	0.97	--	--
	lbs/day ¹	0.048	--	0.11	--	--
Cyanide, Total Recoverable	µg/L	3.6	--	9.6	--	--
	lbs/day ¹	0.42	--	1.1	--	--
Dichlorobromomethane	µg/L	0.56	--	0.87	--	--
	lbs/day ¹	0.065	--	0.10	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	0.54	--	1.6	--	--
	lbs/day ¹	63	--	187	--	--
Chlorine, Total Residual	mg/L	0.002 ²	--	0.003	--	--
	lbs/day ¹	0.234 ²	--	0.350	--	--
Nitrogen, Total	mg/L	10.3	--	12.3	--	--
	lbs/day ¹	1,203	--	1,436	--	--
Total Dissolved Solids	mg/L	460 ³	--	580	--	--
	lbs/day ¹	53,710 ³	--	67,721	--	--

¹ Based on a Mojave River discharge flow of 14 MGD.

² Effluent limitation is the median of all daily samples any 6-month period.

³ To be applied as an annual average effluent limitation (AAEL).

b. Percent Removal: The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.

c. Dissolved Oxygen. Effluent concentrations of dissolved oxygen shall, at a minimum, contain:

- i. 4.0 mg/L as daily minimum;
- ii. 5.0 mg/L as an average calendar weekly minimum; and
- iii. 6.5 mg/L as an average calendar monthly average.

- d. Fecal Coliform Organisms.** Effluent at all times shall be adequately disinfected, oxidized, coagulated, clarified, and filtered. The number of fecal coliform bacteria shall not exceed either of the following:

 - i. A log mean of 20 per mL for any 30-day period; and,
 - ii. 40 per 100 mL in more than 10 percent of all of the samples collected in any 30-day period.
- e. Total Coliform Organisms.** Effluent at all times shall be adequately disinfected, oxidized, coagulated clarified, and filtered. The number of total coliform bacteria shall not exceed any of the following:

 - i. A median most probable number (MPN) of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed;
 - ii. 23 MPN/100 mL in more than one sample in any 30-day period; and,
 - iii. 240 MPN/100 mL at any time (instantaneous maximum).
- f. Turbidity.** Effluent shall be filtered and shall not exceed any of the following:

 - i. An average of 2 nephelometric turbidity units (NTU) within a 24-hour period;
 - ii. 5 NTU more than 5 percent of the time in a 24-hour period;
 - iii. 10 NTU at any time (instantaneous maximum).
- g. Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

 - i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.
- h. Chronic Toxicity.** The discharge shall not contain chronic toxicity at a level that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect of growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests measured in samples from Discharge Point No. 001 (at Monitoring Location EFF-001) as described in the MRP.

2. Interim Effluent Limitations – Discharge Point No. 001

The Discharger shall maintain compliance with the following interim effluent limitations for dissolved oxygen at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E. The interim effluent limitations for dissolved oxygen shall be effective from the effective date of this Order through **September 5, 2017**. The final effluent limitations for dissolved oxygen contained in section IV.A.1.c of this Order shall be effective on **September 5, 2017**.

a. Dissolved Oxygen. Effluent concentrations of dissolved oxygen shall, at a minimum, contain:

- i. 4.0 mg/L as daily minimum; and
- ii. 5.0 mg/L as an average calendar weekly minimum.

B. Land Discharge Specifications

Land discharge specifications for percolation ponds and biosolids drying units are included under Order No. R6V-2012-0058.

C. Reclamation Specifications

1. The Discharger shall operate and maintain the disinfection system to achieve equivalency to Title 22 disinfected tertiary recycled water for the treatment of recycled water for distribution. Equivalency to Title 22 disinfection shall include compliance with turbidity and bacteria effluent limitations established in section IV.A.1.d and the UV Disinfection Operational Provisions for Recycled Water Treatment specified in section IV.C.1.a below.

a. UV Disinfection Operational Provisions for Recycled Water Treatment

- i. The UV disinfection system shall be operated to deliver a minimum UV dose of 100 mJ/cm² at all times.
- ii. The following equation shall be used in the automatic UV disinfection control system for calculating UV dose:

$$S = e^{-0.5876} \times e^{0.0456 \times UVT} \times P^{0.9574}$$

Where:

UVTs at or above 52 percent. At UVT values above 72.7 percent (or $A_{254} = 0.138$ cm), the value should be used as the default value in the RED calculation.

S = Measured UV sensor value (mW/cm²).

So = UV intensity at 100 percent lamp power (new lamps) with clean sleeves (0.32 kW/lamp), typically expressed as a function of UVT (mW/cm²).

P = Measured ballast power setting, kW per lamp.

RED = RED calculated with the UV dose-monitoring equation (mJ/cm²).

A_{254} = UV absorbance at 254 nm (cm⁻¹).

Q = Flow rate per lamp, calculated as gallon per minute (GPM) divided by the number of lamps in one bank. At flow rates below 8.2 GPM/lamp, 8.2 GPM/lamp should be used as the default value in the RED calculation.

B = Number of operating banks.

- iii. The UV disinfection system reactor is limited to the following operational parameter ranges:
 - a) Operating in the 320 Watt mode only.
 - b) UVT at or above 52 percent.
 - c) Flow up to 16 MGD under normal operating conditions with proper redundant disinfection capacity.
- iv. On-line monitoring of flow, UVT, and UV intensity must be provided at all times.
- v. UV intensity sensors, flow meters and UVT monitors must be properly calibrated to ensure proper disinfection.
- vi. The online UVT meter shall be cleaned and calibrated to ensure accurate readings. At a minimum, the UVT meter shall be cleaned and calibrated consistent with manufacturer recommended frequencies.
- vii. The online UVT intensity sensors shall be cleaned and calibrated to ensure accurate readings. At a minimum, the UVT intensity sensors shall be cleaned and calibrated consistent with manufacturer recommended frequencies or as otherwise specified herein.
- viii. The Facility shall have a minimum of one reference UV intensity sensor on-site at all times. Measurements made by each duty UV intensity sensor shall be checked at least monthly using a reference UV intensity sensor. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is greater than 1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard.
- ix. The UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
- x. If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2 percent or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer.

- xi. Flow meters measuring the flow through the UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.
- xii. The Discharger shall develop and operate in accordance with an approved operations plan, which clearly specifies the operational limits and responses required for critical conditions and alarms. A copy of this Disinfection Operations Plan shall be submitted to the Regional Water Board within 30 days of the effective date of this Order. Within 30-days of receipt, the Discharger shall make any modifications specified by the Regional Water Board and resubmit the revised Disinfection Operations Plan. Any modifications to this Operations Plan not specified by the Regional Water Board shall be approved by the Regional Water Board prior to implementation.
- xiii. A copy of the effective Disinfection Operations Plan should be maintained at onsite and readily available to operations personnel and regulatory agencies. A quick reference plant operations data sheet should be posted at the treatment plant and include the following information:
 - a) The alarm set points for turbidity, high and low flow, UV dose and transmittance, and UV lamp operation hours.
 - b) The values of turbidity, flow, UV dose, transmittance (UVT), UV lamp operation hours when flow must be diverted to waste.
 - c) The required frequency of calibration for all meters measuring turbidity, UV intensity, flow, and UV transmittance.
 - d) The required frequency of mechanical cleaning/wiping and equipment inspection.
 - e) The UV lamp age tracking procedures and replacement intervals.
- xiv. The Wedeco TAK 55HP UV system must be operated with a built-in automatic reliability feature that must be triggered when the system is below the target UV doses of 100 mJ/cm^2 at all times. If measured UV dose goes below the minimum UV dose, the UV reactor in question must alarm and startup the next available UV lamp bank or redundant channel.
- xv. Conditions that should divert flow include: inability to meet the minimum UV dose, high flow, low UV intensity, low transmittance, intensity sensor failure, multiple lamp failure, or reactor failure.
- xvi. Equivalent replacements or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance.

2. Additional reclamation specifications for Westwinds Golf Course are included under Order No. R6V-2003-0028 and for the High Desert Power Project under Order No. R6V-2003-0028A1.

The Discharger has requested Master Recycled Water Requirements that are not yet adopted and are not included in this Order.

D. Subregional Plant Specifications

Specifications for the Apple Valley Subregional Treatment Plant are included under Order No. R6V-2013-0004.

Specifications for the Hesperia Subregional Treatment Plant are included under Order No. R6V-2013-0005.

E. Collection System Specifications

Specifications for the VVWRA trunk sewer collection system are included under Order No. 2006-003-DWQ and any future revisions thereto.

F. Industrial Stormwater Specifications

Specifications for stormwater discharges are included under Order 97-03-DWQ and any future revisions thereto.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the Mojave River:

1. This discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Lahontan Regional Water Board or the State Water Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Clean Water Act or amendments thereto, the Lahontan Regional Water Board may revise and modify this Order in accordance with such more stringent standards.
2. Ammonia: The neutral, unionized ammonia species (NH_3) is highly toxic to freshwater fish. The fraction of toxic NH_3 to total ammonia species ($\text{NH}_4^+ + \text{NH}_3$) is a function of temperature and pH. Tables 3-1 to 3-4 from the Basin Plan, were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in these tables. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas available on page 3-4 of the Basin Plan.

3. **Bacteria, Coliform:** Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 mL, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 mL. The USEPA recommends that the log mean should ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. [Reference: Ambient water Quality Criteria for Bacteria – 1986, EPA 440/5-84-002, page 2] However, a log mean concentration exceeding 20/100 mL for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.
4. **Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.
5. **Chemical Constituents:** Waters designated as MUN shall not contain concentrations of chemical constituents in excess of the primary maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in Title 22, chapter 15, article 1, section 64400 et. seq of the California Code of Regulations. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes). Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
6. **Chlorine, Total Residual:** For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L. Median values shall be based on daily measurements taken within any six-month period.
7. **Color:** Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
8. **Dissolved Oxygen:** The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. The minimum dissolved oxygen concentration shall not be less than 4.0 mg/L as a daily minimum, 5.0 as a 7-day mean, and 6.5 as a 30-day mean.
9. **Floating Materials:** Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.

- 10. Oil and Grease:** Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.
- 11. Nondegradation of Aquatic Communities and Populations:** All waters shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All waters shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.
- 12. Pesticides:** According to the Basin Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, pesticides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code § 12753). Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life. Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Title 22 of the California Code of Regulations.
- 13. pH:** Changes in normal ambient pH levels shall not exceed 0.5 pH units. The pH shall not be depressed below 6.5 nor raised above 8.5. Compliance with the pH objective for these waters will be determined on a case-by-case basis.
- 14. Radioactivity:** Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations.
- 15. Sediment:** The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.
- 16. Settleable Materials:** Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.

- 17. Suspended Materials:** Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
- 18. Taste and Odor:** Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.
- 19. Temperature:** The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature shall not be altered by more than five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered [Note: The Basin Plan does not specify which reaches of the Mojave River have a COLD and which have a WARM beneficial use. Therefore, the most restrictive standard (e.g. no alteration of temperature for the COLD use) applies. However, for purposes of compliance and enforcement, the Lahontan Regional Water Board will consider historical data and the impact of temperature alternations upon the beneficial uses of the Mojave River below the Discharge Point 001.]
- 20. Toxicity:** All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Water Board [or the Executive Officer or his/her designee]. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for “experimental water” as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).
- 21. Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

- a. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Lahontan Regional Water Board may revise and modify this Order in accordance with such more stringent standards.
- b. The Lahontan Regional Water Board may reopen this order to establish new conditions, effluent limitations, or modify existing effluent or receiving water limitations should monitoring data, toxicity-testing data, or other new information indicate that a constituent is discharged at a level that will do any of the following: 1) Cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality criteria or objective, 2) Cause, have reasonable potential to cause, or contribute to a violation of any narrative water quality objective from the Basin Plan.
- c. The Lahontan Regional Water Board may reopen this order to revise the Operational Provisions for the UV disinfection system specified in section IV.C based on a site-specific engineering study which demonstrates Title 22 equivalency for virus inactivation in tertiary treated recycled water and acceptance by the California Department of Public Health.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity.** To evaluate compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.B).
- b. **Toxicity Reduction Evaluation (TRE).** The Discharger shall investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits toxicity, as described in section VI.C.2.d and e below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for

effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.

- c. **TRE Workplan.** By **December 5, 2013**, the Discharger shall review and update its existing TRE workplan, revise if necessary, and submit it to the Lahontan Regional Water Board. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.
- d. **Accelerated Monitoring.** If the toxicity monitoring trigger is exceeded during regular toxicity monitoring, the Discharger shall initiate accelerated monitoring as specified in section V of the MRP.
 - i. **Numeric Chronic Toxicity Monitoring Trigger.** For routine testing, Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between control and effluent data are significant.

If a chronic toxicity test indicates a statistically significant difference between a sample of 100% effluent and a control, the Discharger shall initiate accelerated chronic WET testing consistent with the requirements of section V.B of the MRP.
 - ii. **Acute Toxicity Accelerated Monitoring Trigger.** If survival is less than 90 percent in two consecutive quarterly samples, the Discharger shall initiate accelerated acute WET testing consistent with the requirements of section V.A of the MRP.
- e. **TRE Implementation.** If toxicity is confirmed to be present in the effluent during accelerated monitoring, the Discharger shall perform a TRE, consistent with the requirements of section VI.C.2.b of this Order and V.A and V.B of the MRP.
 - i. **Acute Toxicity TRE Trigger.** If any of the accelerated (monthly) tests demonstrate a survival rate of less than 70 percent, the Discharger shall initiate a TRE.
 - ii. **Chronic Toxicity TRE Trigger.** If any accelerated (monthly) tests demonstrate chronic toxicity greater than 1 TUc, the Discharger shall initiate a TRE.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as Detected, Not Quantified (DNQ) when the effluent limitation is less

than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or
- ii. A sample result is reported as Non Detect (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Lahontan Regional Water Board:

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Lahontan Regional Water Board including:
 - (a) All PMP monitoring results for the previous year;
 - (b) A list of potential sources of the reportable priority pollutant(s);
 - (c) A summary of all actions undertaken pursuant to the control strategy; and
 - (d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

- a. The Discharger's wastewater treatment facility shall be supervised by people who possess a wastewater treatment plant operator certificate of appropriate grade pursuant to Chapter 26, Title 23, of the California Code of Regulations.
- b. Infiltration/inflow into sewerage facilities from stormwater or nuisance water shall be minimized to the maximum extent practicable.

- c. All facilities used for collection, transportation, treatment, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
- d. Waste biosolids shall be discharged only at a legal point of disposal in accordance with the provisions of Title 27, California Code of Regulations and in accordance with 40 C.F.R. Part 503.
- e. The California Water Code (Sections 13350 and 13385) provides that any person who violates a waste discharge requirement or a provision of the California Water Code, is subject to civil penalties stated therein.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements

- i. The Discharger shall implement their approved Industrial Wastewater Pretreatment Program Plan dated January 1, 1995, including any subsequent modifications approved by the Lahontan Regional Water Board. The Discharger shall perform ongoing industrial inspections and monitoring, as necessary to ensure compliance with pretreatment regulations contained in 40 C.F.R. Part 403.
- ii. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. Part 403, including any subsequent regulatory revisions to 40 C.F.R. Part 403. Where 40 C.F.R. Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 C.F.R. Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, as provided in the Clean Water Act (Clean Water Act).
- iii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.
- iv. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. Part 403 including, but not limited to:
 - (a) Implement the necessary legal authorities as provided in 40 C.F.R. 403.8(f)(1);

- (b)** Enforce the pretreatment requirements under 40 C.F.R. 403.5 and 403.6;
 - (c)** Implement the programmatic functions as provided in 40 C.F.R. 403.8(f)(2); and
 - (d)** Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. 403.8(f)(3).
- v. The Discharger shall implement, as more completely set forth in 40 C.F.R. 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - (a)** Wastes which create a fire or explosion hazard in the treatment works;
 - (b)** Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - (c)** Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - (d)** Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - (e)** Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F);;
 - (f)** Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - (g)** Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - (h)** Any trucked or hauled pollutants, except at points pre-designated by the Discharger.
- vi. The Discharger shall implement, as more completely set forth in 40 C.F.R. 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:
 - (a)** Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or

(b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

- b. Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. Part 503.
- i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.
 - ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.
 - iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate applicable groundwater objectives. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate applicable groundwater objectives.
 - iv. The use, disposal, storage, and transportation of biosolids shall comply with existing federal, state, and local laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. Part 503. If the State Water Board and the Lahontan Water Board are given the authority to implement regulations contained in 40 C.F.R. Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards.
 - v. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

- vi. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least 90 days in advance of the change.
- vii. By **March 5, 2014**, the Discharger shall review and update its existing biosolids use or disposal plan, and submit it to the Lahontan Regional Water Board. The updated plan shall describe at a minimum:
 - (a) Sources and amounts of biosolids generated annually.
 - (b) Location(s) of on-site storage and description of the containment area.
 - (c) Plans for ultimate disposal. For landfill disposal, include the Water Board's waste discharge requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name and location of the landfill.
 - (d) The Discharger shall submit to the Water Board a copy of the annual biosolids report submitted to U.S. EPA.

6. Other Special Provisions

- a. **Order Continuation After Expiration Date.** If this Order is not revised and renewed prior to expiration, then the Order shall be continued until revised and renewed, provided that compliance with the requirements contained herein is maintained and that the Discharger has applied for renewal of the Order at least 180 prior to the expiration date.
- b. **Land Ownership Change or Control.** In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Lahontan Regional Water Board.
- c. **Succeeding Owner or Operator.** To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. Transfer shall be approved in writing by the Executive Officer.

- d. Flow Increase Requests.** Future requests for any increase in permitted effluent flow greater than 14 MGD to surface waters shall be accompanied by an antidegradation analysis that demonstrates consistency with State Water Board Resolution No. 68-16. Any antidegradation analysis shall consider, and be representative of, current and future anticipated treatment technologies and capabilities of the Facility.

VII. COMPLIANCE SCHEDULES

The Discharger shall implement the following tasks to comply with the final effluent limitations for dissolved oxygen specified in section IV.A.1.c of this Order. These tasks shall be completed as soon as reasonably possible, but no later than the compliance dates specified below.

Table 6. Compliance Schedule for Dissolved Oxygen

Task	Compliance Date
1. The Discharger shall secure funding to evaluate alternatives to comply with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order.	September 5, 2014
2. The Discharger shall identify and evaluate reasonable alternatives to comply with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order. The Discharger shall identify the effective alternative to be implemented to comply with final effluent limitations for dissolved oxygen. The Discharger shall submit a report to the Regional Water Board which summarizes all reasonable alternatives evaluated and the process of evaluation for each alternative. The report shall identify the selected alternative and provide the rationale for selecting the chosen alternative. Further, the report shall provide an assessment on the effectiveness of the chosen alternative to meet the final effluent limitations for dissolved oxygen specified in section IV.A.1.c of this Order.	September 5, 2015
3. If necessary, the Discharger shall secure additional funding for the implementation and/or construction of the identified alternative from Task 2.	February 5, 2016
4. The Discharger shall issue a contract for the planning and construction of any Facility upgrades necessary to comply with the final effluent limitations for dissolved oxygen.	September 5, 2016
5. The Discharger shall complete construction of any necessary Facility upgrades and achieve full compliance with the final effluent limitations for dissolved oxygen established in section IV.A.1.c of this Order.	September 5, 2017

Within 14 days following each interim date, the Discharger shall notify the Regional Water Board in writing of its compliance or noncompliance with the above compliance schedules. If the Discharger did not comply with an interim compliance date, the Discharger shall provide the reason for the delay and a proposed schedule to comply with the applicable interim compliance task. The report shall further include status updates regarding compliance with all the specified interim tasks and

discuss any known potential issues that may delay achieving compliance with any of the interim tasks or compliance with the final effluent limitation for dissolved oxygen.

VIII. COMPLIANCE DETERMINATION

Compliance with effluent limitations for priority pollutants shall be determined by using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

A. Compliance with Priority Pollutant Limitations

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data.

When determining compliance with an AAEL, AMEL, AWEL, or MDEL and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by section VII.2 above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the

AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by section VII.2 above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by section VII.2 above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

H. Average Annual Effluent Limitation (AAEL)

If the average of daily discharges over a calendar year exceeds the AAEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that year for that parameter (e.g., resulting in 365 or 366 days of non-compliance in a calendar year). If only a single sample is taken during the calendar year and the analytical result for that sample exceeds the AAEL, the Discharger will be considered out of compliance for that calendar year. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar year during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar year.

I. Six Month Median for Chlorine Residual

If the median of the daily total chlorine residual measurements taken over any six-month period exceed 0.002 mg/L, the Discharger will be considered to be out-of-compliance for each day of the six month period. If any total chlorine residual measurement exceeds 0.003 mg/L on any day, the Discharger will be considered to be out-of-compliance for the day. A six-month period is defined for this Order as the first and second semesters of a calendar year.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Persistent Pollutants

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be

particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Lahontan Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or Lahontan Regional Water Board.

Reporting Level (RL)

The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Lahontan Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Lahontan Regional Water Board Basin Plan.

Standard Deviation (σ)

Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

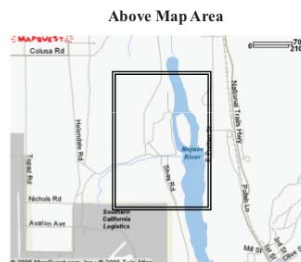
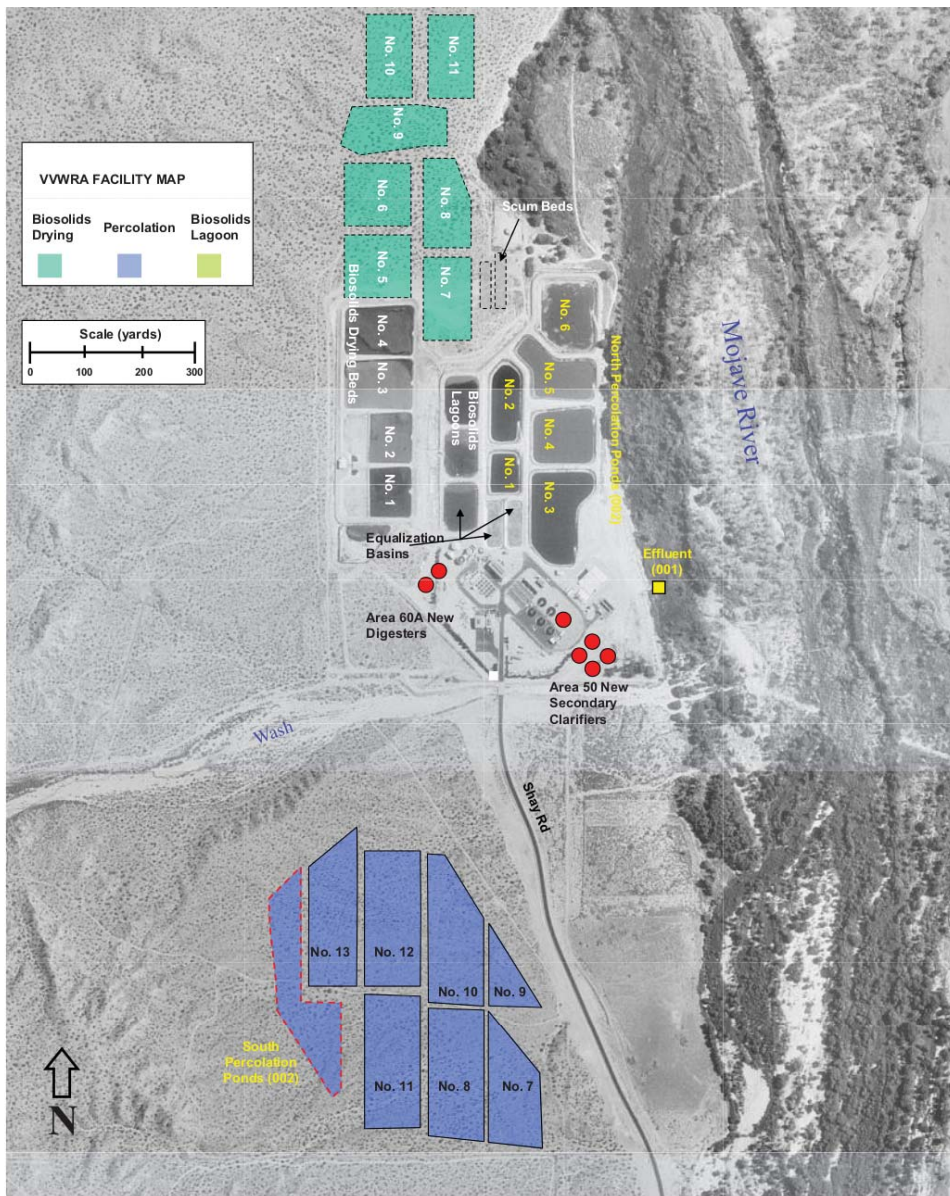
n is the number of samples.

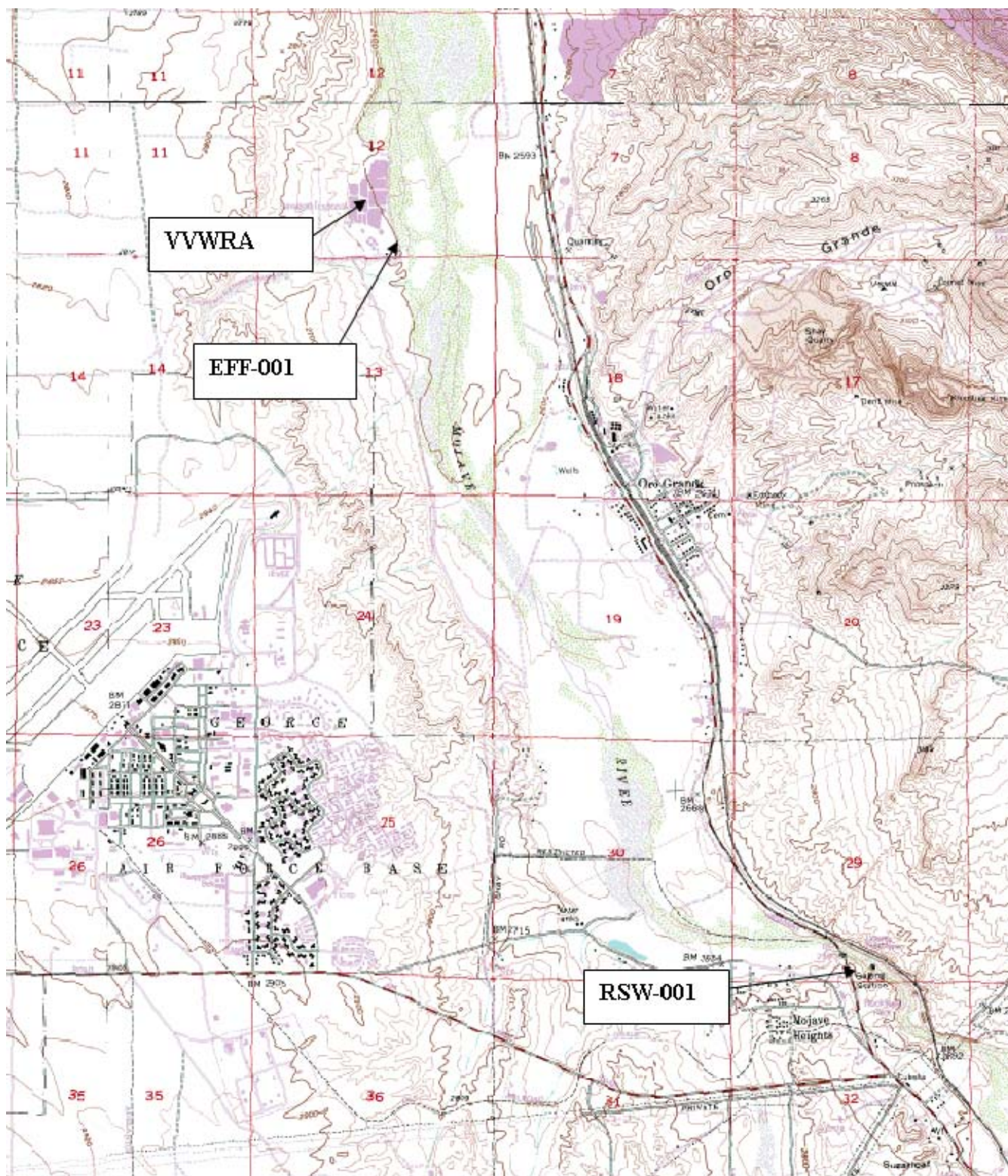
Toxicity Reduction Evaluation (TRE)

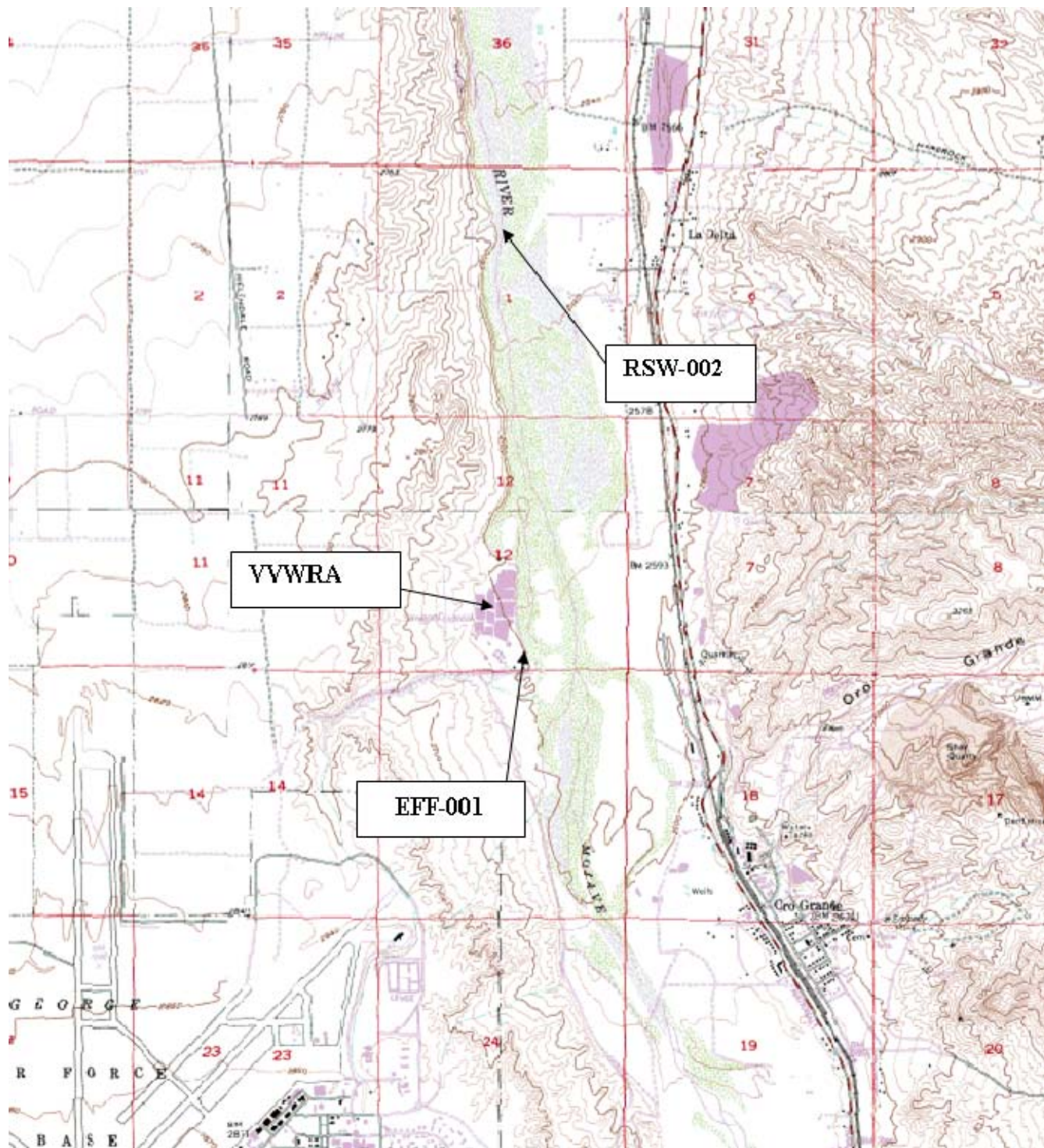
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an

evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

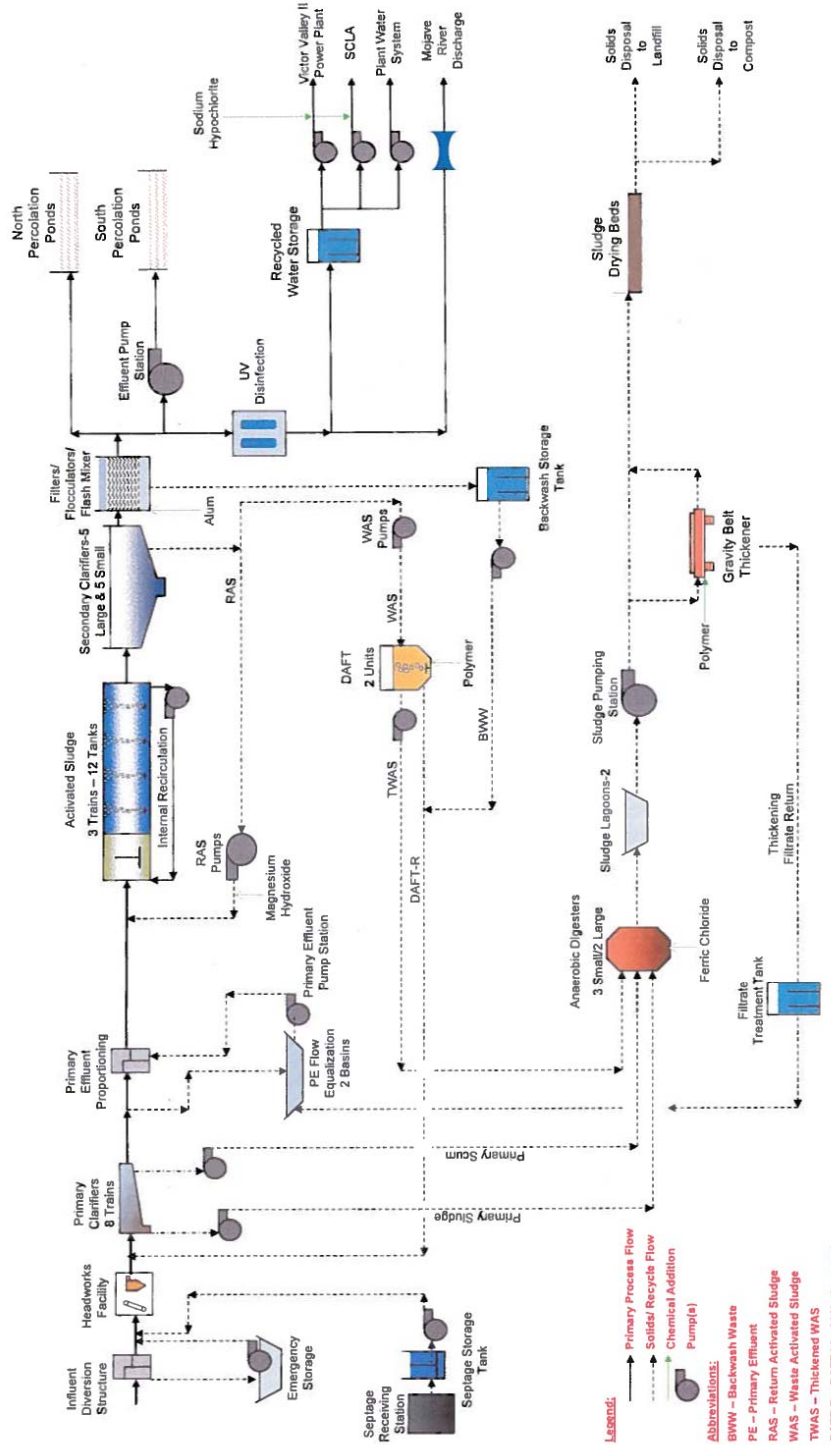
ATTACHMENT B-1 – MAP







ATTACHMENT C – FLOW SCHEMATIC



VVWRA Existing Process Schematic (with Phase IIIA complete in December 2012)-18 MGD

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Lahontan Regional Water Quality Control Board (Lahontan Water Board), State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Lahontan Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied

- if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- c. The Discharger submitted notice to the Lahontan Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Lahontan Water Board may approve an anticipated bypass, after considering its adverse effects, if the Lahontan Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
 5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

- c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Lahontan Water Board. The Lahontan Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under 40 C.F.R. Part 136 or, in the case of sludge use or disposal, approved under 40 C.F.R. Part 136 unless otherwise specified in 40 C.F.R. Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. Part 503), the Discharger shall retain records of all monitoring information, including all calibration and

maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Lahontan Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Lahontan Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Lahontan Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Lahontan Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Lahontan Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency,

- or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Lahontan Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Lahontan Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
 4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Lahontan Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
 5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Lahontan Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. Part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Lahontan Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Lahontan Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Lahontan Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Lahontan Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Lahontan Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Lahontan Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Lahontan Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (C.F.R.), section 122.48 (40 C.F.R. 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board, Lahontan Region to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Lahontan Water Board.
- B.** Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- D.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.
- E.** Laboratories analyzing monitoring samples shall be certified by CDPH, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- F.** The results of all monitoring required by this Order shall be reported to the Lahontan Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	At the location at the headworks, prior to the primary clarifiers, where a representative sample of the influent into the Facility can be collected
001	EFF-001	At a location immediately after UV disinfection and prior to being discharged to Discharge Point No. 001
--	RSW-001	Upstream of Old National Trails Bridge on Route 66, near the USGS Gaging Station at Latitude 34° 34' 22" N and Longitude 117° 19' 13" W
--	RSW-002	1.75 miles downstream of Discharge Point No. 001 at a point west of the intersection of Robertson Ranch Road and National Trails Highway at Latitude 34° 38' 27" N and Longitude 117° 21' 24" W
--	BIO-001	A location where a representative sample of the biosolids can be obtained.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	1/Day	1
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite ²	4/Week ³	1
pH		Continuous	1/Day	1
Total Suspended Solids		24-hr Composite ²	4/Week ³	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; or by methods approved by the Lahontan Regional Water Board or the State Water Board.

² 24-hour flow proportional composite.

³ Monitoring for BOD₅ and TSS shall be conducted simultaneously with effluent monitoring.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor UV disinfected wastewater at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	1/Day	1
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hour Composite	4/Week ³	1
	lbs/day ²	Calculate	4/Week ³	--
pH	standard units	Meter	1/Day ⁴	1
Total Suspended Solids	mg/L	24-hour Composite	4/Week ³	1
	lbs/day ²	Calculate	4/Week ³	--
Priority Pollutants				
Bis(2-ethylhexyl)Phthalate	µg/L	Grab	1/Month	1
		Calculate	1/Month	--
Chlorodibromomethane	µg/L	Grab	1/Month ⁸	1
	lbs/day ²	Calculate	1/Month ⁸	--
Copper, Total Recoverable	µg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Cyanide, Total Recoverable	µg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Dichlorobromomethane	µg/L	Grab	1/Month ⁸	1
	lbs/day ²	Calculate	1/Month ⁸	--
Remaining CTR/NTR Priority Pollutants	µg/L	Grab	1/Year ⁵	1,6
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Boron, Total Recoverable	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Chloride	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Chlorine, Total Residual	mg/L	Grab	1/Week ⁸	1,7
	lbs/day ²	Calculate	1/Week	--
Dissolved Oxygen	mg/L	Grab	1/Week	1
Electrical Conductivity	mmhos/cm	Grab	1/Day	1
Fecal Coliform Organisms	MPN/100 mL	Grab	5/Month	1
Fluoride, total	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter	1
MBAS	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Nitrite Nitrogen, Total (as	mg/L	Grab	2/Month	1

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
N)	lbs/day ²	Calculate	2/Month	--
Nitrogen, Total (sum of nitrate, nitrite, TKN)	mg/L	Calculate	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Oil and Grease	mg/L	Grab	1/Quarter	1,9
	lbs/day ²	Calculate	1/Quarter	--
Phenols, Total	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Sodium, Total	mg/L	Grab	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Sulfate	mg/L	Grab	1/Quarter	1
	lbs/day ²	Calculate	1/Quarter	--
Temperature	°C	Grab	1/Week	1
Total Coliform Organisms	MPN/100 mL	Grab	1/Day	1
Total Dissolved Solids	mg/L	24-hour Composite	1/Month	1
	lbs/day ²	Calculate	1/Month	--
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	2/Month	1
	lbs/day ²	Calculate	2/Month	--
Turbidity	NTU	Grab	1/Day	1
Whole Effluent Toxicity (see Section V, below)	--	--	--	--

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; for priority pollutants, the methods must meet the lowest MLs specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by the Lahontan Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

² The mass emission (lbs/day) for the discharge shall be calculated and reported using the limitation concentration and the actual flow rate measured at the time of discharge, using the formula:

$$M = 8.34 \times C_e \times Q$$

where: M = mass discharge for a pollutant, lbs/day

C_e = reported concentration for a pollutant

Q = actual discharge flow rate.

³ The percent removal for BOD₅ and TSS shall be reported each calendar month in accordance with Effluent Limitation IV.A.1.b of the Order. Samples for BOD₅ and TSS shall be collected simultaneously with influent samples.

⁴ If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports.

⁵ Effluent priority pollutant monitoring shall be conducted concurrently with receiving water priority pollutant monitoring. (See section VIII.A.I, below)

⁶ National Toxics Rule and California Toxics Rule, As specified in 40 C.F.R. 131.36 and 65 Fed. Register 31682-31719 (May 18, 2000).

⁷ The Discharger shall ensure the reporting limit for total residual chlorine is not greater than 0.1 mg/L.

⁸ The Discharger shall monitor at the frequency specified in the table, however, if after 3 months there is no detectable traces of this pollutant, monitoring may be reduced to once per year during periods when chlorination is not used at the Facility. If the pollutant is detected, monitoring shall return to the frequency specified in the table for the remainder of the permit term. Monitoring shall be performed at the frequency specified in the table when chlorination is being used at the Facility.

⁹ Each oil and grease sampling and analysis event shall be conducted in accordance with USEPA Method 1664.

- a. In addition to the flow monitoring required in section IV.A.1, above, the Discharger shall record the following in a permanent log book and report it with each monthly Report
 - i. The total volume, in million gallons, of wastewater flow to the Facility for each day.
 - ii. The total volume, in million gallons, of wastewater flow to the Facility for each month.
 - iii. The average flow rate, in million gallons per day, of wastewater to and from the Facility calculated for each month.
 - iv. The maximum instantaneous flow rate, in million gallons per day, of wastewater to the Facility that occurs each day.
 - v. The volume, in millions gallons, of wastewater flow to the Mojave River each day.
 - vi. The total volume, in million gallons, of wastewater flow to the Mojave River for each month.
 - vii. The average flow rate, in million gallons per day, of wastewater to the Mojave River calculated for each month.
 - viii. The volume, in gallons, of septic tank pumpings (septage) discharged to the Facility each day. Septage volume recording shall begin immediately after the first dump station becomes operational.
 - ix. The total volume, in million gallons, of septage tank pumping (septage) discharged to the Facility each month.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing – Monitoring Location EFF-001

1. The presence of acute toxicity shall be determined as specified in USEPA's acute toxicity test methods in 40 C.F.R. Part 136 for the *Pimephales promelas* survival test.
2. The Discharger shall conduct acute WET tests on grab samples of undiluted effluent and an appropriate control water, as specified in the test method, a minimum of once per calendar quarter.
3. Where possible, the Discharger shall perform both acute WET testing and chemical-specific testing required by this Order using split samples taken during a single grab sampling event.
4. Acute WET results shall be reported in percent survival.

5. Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).
6. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in EPA's, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 5th Edition* (EPA-821-R-02-012), the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
7. The Discharger shall submit with the monthly report in which WET test results are due, a full report of acute WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
8. If survival is less than 90 percent in two consecutive quarterly samples, the Discharger shall increase the frequency of acute WET testing to one time per month. If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring. When three consecutive monthly tests demonstrate a survival rate of greater than 90 percent of the test organisms, the Discharger may resume acute WET testing at a frequency of one time per calendar quarter.
9. If any of the accelerated (monthly) tests demonstrate a survival rate of less than 70 percent, the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of section VI.C.2 of the Order.

B. Chronic WET Testing – Monitoring Location EFF-001

1. The presence of chronic toxicity shall be determined as specified in USEPA's short-term chronic toxicity test methods in 40 C.F.R. Part 136 for *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* larval survival and growth.
2. The discharger shall conduct chronic WET tests on undiluted (100% effluent) grab samples a minimum of once per calendar year and shall use an appropriate control water, as specified in the test method.
3. Where possible, the Discharger shall perform both chronic WET testing and chemical-specific testing required by this Order using split samples taken during a single grab sampling event.
4. For routine testing, Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between control and effluent data are significant.
5. If a chronic toxicity test indicates a statistically significant difference between a sample of 100% effluent and a control, the discharger shall initiate accelerated chronic WET testing at a frequency of one time per month. If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring.

6. Accelerated chronic WET results shall be reported in TUc where:

$$TUc = \frac{100}{NOEC}$$

NOEC = No Observed Effect Concentration: the highest concentration of effluent to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of effluent to which the values for the observed response show no statistically significant difference from a control).

Accelerated chronic WET testing shall use a series of five dilutions and a control. The dilutions shall be 12.5, 25, 50, 75, and 100 percent effluent, along with the control (0 percent effluent). Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).

7. When three consecutive accelerated monthly tests demonstrate no chronic toxicity, which is defined as WET test results not exceeding 1.0 TUc, the Discharger may resume routine chronic WET testing at a frequency of one time per calendar year.
8. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in the test methods manual, the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
9. The Discharger shall submit with the monthly report in which WET test results are due, a full report of chronic WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
10. If any of the accelerated (monthly) tests demonstrate chronic toxicity ($TUc > 1.0$), the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of section VI.C.2 of the Order.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable. Land discharge monitoring requirements are required under separate orders.

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable. Reclamation monitoring requirements are required under separate orders.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water – Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor the Mojave River at Monitoring Locations RSW-001 and RSW-002 as follows:

Table E-4. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Meter	1/Quarter	1
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Chlorine, Total Residual	mg/L	Grab	1/Quarter	1
Dissolved Oxygen	mg/L	Grab	1/Quarter	1
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Temperature	°C	Grab	1/Quarter	1
Total Coliform Organisms	MPN/100 mL	Grab	1/Quarter	1
Total Dissolved Solids	mg/L	24-hour Composite	1/Quarter	1
Turbidity	NTU	Grab	1/Quarter	1
Remaining NTR/CTR Priority Pollutants ³	µg/L	Grab	1/Year ²	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; for priority pollutants, the methods must meet the lowest MLs specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by the Lahontan Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

² Receiving water priority pollutant monitoring shall be conducted concurrently with effluent priority pollutant monitoring. (See section IV.A.1 above)

³ National Toxics Rule and California Toxics Rule, As specified in 40 C.F.R. 131.36 and 65 Fed. Register 31682-31719 (May 18, 2000).

B. Groundwater

Not Applicable. Groundwater data is reported under a separate order.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. The following shall be recorded monthly and reported with monthly monitoring reports:
 - i. Total quantity of biosolids generated during the monitoring period.
 - ii. Date and quantity of biosolids removed off-site, location of use, recipient (including name and address), and biosolids disposal method (including crops grown if appropriate) for all biosolids removed off-site.
 - iii. Cumulative total quantity of biosolids currently on-site including the quantity of biosolids added during the monitoring period.

- b. A single representative sample of biosolids shall be analyzed and reported as follows:

Table E-5. Biosolids Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Arsenic	mg/kg	Grab	1/Year
Cadmium	mg/kg	Grab	1/Year
Copper	mg/kg	Grab	1/Year
Lead	mg/kg	Grab	1/Year
Mercury	mg/kg	Grab	1/Year
Molybdenum	mg/kg	Grab	1/Year
Nickel	mg/kg	Grab	1/Year
Selenium	mg/kg	Grab	1/Year
Zinc	mg/kg	Grab	1/Year
Fecal Coliform	MPN/g	Grab	1/Year
Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Phosphate, Total (as P)	mg/kg	Grab	1/Year

- c. In addition to the monitoring requirements in section IX.A.1.b, above, the Discharger shall sample annually for the parameters listed in California Code of Regulations, Title 22, section 66261.24, subdivision (a)(2)(A), Table II and California Code of Regulations, title 22, section 66261.24, subdivision (a)(2)(B), Table III. The Discharger shall submit a proposed protocol for sample collection to the Executive Officer for review prior to sample collection and analysis. The Discharger shall make a determination whether the analyses indicate that the biosolids shall be considered a hazardous material.

Results of the annual sampling will be submitted with the results of all other annual monitoring requirements by March 1 of each year.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. By **November 5, 2013**, the Discharger shall revise the Sampling and Analysis Plan (SAP) and submit the revision to the Lahontan Regional Water Board. The revised SAP shall reflect the requirements of this Order for sampling for all media (effluent, surface water, and biosolids). At a minimum, the SAP shall include: sampling locations, sampling schedule, sampling procedures, sample handling procedures, analytical methods, MDLs, MLs, QA/QC protocols, and sampling criteria methods, maps showing all monitoring points. The Discharger shall periodically update the SAP as needed to keep it current.

B. Self-Monitoring Reports (SMR's)

1. The Discharger shall electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS Web Site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP. The Discharger shall submit monthly SMR's including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	Continuous	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week or 4/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month or 2/Month	Permit effective date	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	First day of second calendar month following month of sampling
1/Year	Permit effective date	January 1 through December 31	1 March of each year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 5. Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A. For purposes of reporting and administrative enforcement by the Lahontan Water Board Name and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
- 6. Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case

the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

- c. For fecal coliform organisms, the log mean MPN and percent of times fecal coliform results exceed 40 per 100 mL shall be determined for the last 30 days. The running 30-day log mean value and the running percent of times fecal coliform results exceed 40 per mL during any 30-day period shall be reported for each day along with the results from each individual sample.
 - d. For coliform organisms, the median shall be determined for the last seven days for which coliform results have been obtained. This seven day median value shall be reported for each day along with the results from each individual sample.
 - e. The average turbidity values, the percent of the time that the turbidity exceeds 5 NTU, and the number of times that the turbidity exceeds 10 NTU shall be reported for each monthly monitoring period.
 - f. Compliance evaluation for TDS must be included in the annual report. The compliance evaluation must account for all of the average monthly concentrations for the prior calendar year to assess that the average monthly effluent limitation is not exceeded.
7. The Discharger shall submit SMR's in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with effluent limitations, including, but not limited to; instantaneous minimums and maximums, daily maximums, monthly and weekly averages, 6-month medians (for total residual chlorine), fecal and total coliform limitations, and BOD₅ and TSS percent removal requirements, and mass limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

C. Discharge Monitoring Reports (DMRs)

1. At any time during the term of this permit, the State Water Board or Lahontan Regional Water Board may notify the Discharger to electronically submit DMRs. Until such notification is given specifically for the submittal of DMRs, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMR’s must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
Regional Administrator U.S. Environmental Protection Agency Water Division (ENF-4-1) 75 Hawthorne Street San Francisco, CA 94105	Regional Administrator U.S. Environmental Protection Agency Water Division (ENF-4-1) 75 Hawthorne Street San Francisco, CA 94105 EPA Address

3. All discharge monitoring results must be reported on the official U.S. EPA pre-printed DMR forms (EPA Form 3320-1) or on self-generated forms that follow the exact same format of EPA Form 3320-1.
4. A copy of the DMR shall also be submitted to the Lahontan Water Board’s Victorville office.

D. Other Reports

1. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Lahontan Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger’s pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by March 1 of each year and include at least the following information:

- a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW’s influent and effluent for those pollutants USEPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

Sludge, as defined in section VI.5.b of the Order, shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. Part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through, interference, or noncompliance with sludge disposal requirements.
- c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
- d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:
 - i. complied with baseline monitoring report requirements (where applicable);
 - ii. consistently achieved compliance;
 - iii. inconsistently achieved compliance;
 - iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. 403.8(f)(2)(vii);
 - v. complied with schedule to achieve compliance (include the date final compliance is required);
 - vi. did not achieve compliance and not on a compliance schedule; and
 - vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii through vii above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the

quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

- e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:
 - i. The names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. The conclusions or results from the inspection or sampling of each industrial user.
- f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:
 - i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
 - ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
 - vi. Restriction of flow to the POTW.
 - vii. Disconnection from discharge to the POTW.
- g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's

administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

- h.** A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- i.** A summary of public participation activities that involve and inform the public.
- j.** A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report.
- k.** Duplicate signed copies of these Pretreatment Program reports shall be submitted to the following:

State Water Resources Control Board
Division of Water Quality
1001 I Street or P.O. Box 100
Sacramento, CA 95812

and the

California Regional Water Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

2. Operation and Maintenance

A brief summary of any operational problems and maintenance activities shall be submitted to the Lahontan Regional Water Board with each monthly SMR. This summary shall discuss:

- a.** Any modifications or additions to the wastewater conveyance system, treatment facilities, or disposal facilities.
- b.** Any major maintenance conducted on the wastewater conveyance system, treatment facilities, or disposal facilities.
- c.** Any major problems occurring in the wastewater conveyance system, treatment facilities, or disposal facilities.

- d. The calibration or any wastewater flow measuring devices.

3. Offsite Disposal

The Discharger shall include in each monthly monitoring report the volume and type of all waste hauled offsite for disposal. The person or company doing the hauling and the legal point of disposal shall also be recorded.

4. Annual Facility Monitoring Report

By March 1 of each year, the Discharger shall submit an Annual Report that summarizes in tabular and graphical format the monitoring data collected for the previous year. This report shall include plant influent and effluent data and time plots of related receiving water data. Included shall be the names and grades of all certified operators. Include also a summary of the compliance status and implement the schedule any non-compliance situation.

5. Sewage and Hazardous Substance Spill Report

In addition to any other reporting requirements, pursuant to CWC Section 13271, the Discharger shall immediately notify the Governor's Office of Emergency Services (OES) of any sewage or hazardous substance discharged into or onto State waters. Pursuant to CWC Section 13267, the Discharger must also notify the Lahontan Regional Water Board's Victorville office of any spills reported to OES within 24 hours by telephone. CWC Section 13271(a)(3) states that OES will immediately notify the Lahontan Regional Water Board, local health officer, and administrator of environmental health. Immediately means: (1) as soon as there is knowledge of the discharge, (2) as soon as notification is possible, and (3) when notification can be provided without substantially impeding cleanup or other emergency measures. For the purposes of CWC Section 13271, Title 23 Section 2250, California Code of Regulations, defines a reportable quantity of sewage to be any unauthorized discharge up to 1,000 gallons or more. The reportable quantities for hazardous substances are those developed by the USEPA contained in 40 C.F.R. Part 302.

6. Report of Waste Discharge

The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than specified in Table 3 of the Order. The report of waste discharge must include a delimited formatted file, such as Excel®, that contains all monitored data that include, for each value, constituent, measurement date, measured value, MDL/RDL, and measurement units, and analysis method.[for the previous permit cycle] In addition, the report of waste discharge will also include average monthly flow at discharge point EFF-001. The data date range is from July 1, 2013 through the month before the report of waste discharge due date.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” fully apply to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	6B360109001
Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title and Phone	Logan Olds, Plant Manager, (760) 948-9849 x110
Authorized Person to Sign and Submit Reports	Logan Olds, Plant Manager, (760) 948-9849 x110
Mailing Address	15776 Main Street, Suite 3 Hesperia, CA 92345
Billing Address	SAME
Type of Facility	Publically Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Y
Facility Permitted Flow	14 million gallons per day (MGD)
Facility Design Flow	18 MGD
Watershed	Mojave River Basin
Receiving Water	Mojave River
Receiving Water Type	Inland surface water and Groundwater

- A. Victor Valley Wastewater Reclamation Authority (hereinafter Discharger) is the owner and operator of the Victor Valley Regional Wastewater Treatment Plant (hereinafter Facility), a Publically Owned Treatment Works (POTW).

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to the Mojave River, a water of the United States, within Mojave River Basin, and to a series of percolation ponds. In addition, recycled water from the Facility is reused onsite and for landscaping and turf irrigation at the City of Victorville Westwinds Golf Course. The Facility is currently regulated by Order No. R6V-2008-0004 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0102822 adopted on February 14, 2008 and expires on April 4, 2013. Additionally, reclaimed water from the Facility is covered under Order No. R6V-2003-028.

Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- C.** The Discharger filed a report of waste discharge and submitted an application for reissuance of its WDR’s and NPDES permit on October 5, 2012. Supplemental information was requested on November 27, 2012 and received on January 30, 2013. The application was deemed complete on February 4, 2013.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment and Controls

- 1. Facility Description.** The Facility is a four-member joint powers authority established in 1977. The Facility, located within the City of Victorville, provides advanced secondary treatment of domestic and commercial wastewater for the City of Victorville, Town of Apple Valley, and the City of Hesperia, along with two San Bernardino County Service Areas (No. 42, Oro Grande, and No. 64, Spring Valley Lakes). The Facility also receives discharges from septage tank hauling companies. The service area population is approximately 284,380.
- 2. Collection System.** The Facility service area includes both sewered customers and unsewered septic tank dischargers. Sewered customers discharge to the Facility through a raw sewage collection system that includes gravity sewers, sewage sump stations and sewage force mains from the City of Victorville, Spring Valley Lake (San Bernardino County Service Area No. 64), Southern California Logistics Airport (formerly George Air Force Base), Town of Apple Valley, Oro Grande (San Bernardino County Service Area No. 42), and City of Hesperia. The Discharger maintains approximately 40 miles of trunk interceptor lines that receive sewage from an approximately 216 square mile service area. The discharger obtained coverage for the sewer collection system under the State General Permit for Sanitary Sewers (Order 2006-0003-DWQ).

3. Treatment Description.

- a. Recent Facility Upgrades.** The Fact Sheet for Order No. R6V-2008-004 discussed potential future Facility upgrades, including membrane biological reactor technology. The Discharger has implemented a number of Facility upgrades that differ from those previously discussed in their past permit. A summary of Facility upgrades implemented over the previous permit term are summarized below:
- i. Rebuilding of aeration basins 1 through 8, repair aeration distribution system, replaced all diffusers membranes.
 - ii. Installed recirculation pumps to basins 1 through 8, increasing the internal recycling rate/volume, thus increasing denitrification.
 - iii. Installed more control instrumentation, dissolved oxygen probes, and oxidation reduction potential sensors.
 - iv. Switched to tapered aeration to enhance nitrification at head of aeration tank and reduce dissolved oxygen at end of aerator to allow for internal recycling of nitrified mixed liquor to anoxic zones for increased denitrification.
 - v. Installed high speed blower on aeration basins 9 through 12.
 - vi. Installed a scum skimmer in distribution channel.
 - vii. Improved return activated sludge pumping and control systems.
 - viii. Improved operational controls based on a nitrogen study to optimize nitrogen removal process.
 - ix. Installed magnesium hydroxide injection system to enhance alkalinity for nitrification.
- b. Current Treatment Process.** Treatment processes consist of screening (two influent channels equipped with aquascreens and one influent channel equipped with a manually cleaned bar rack), two aerated grit chambers, primary sedimentation (eight primary clarifiers), flow equalization, secondary biological treatment (12 aeration basins), secondary clarification (10 secondary clarifiers, five with a 55-foot diameter and five with an 80-foot diameter), coagulation, cloth media filtration, and Ultraviolet Light (UV) disinfection. The Facility has the capacity to treat up to 18 MGD of wastewater, with an additional emergency storage basin with a 4 million gallon capacity.

Prior to entering UV disinfection, secondary effluent is routed to a collection structure that distributes the secondary effluent to either the UV disinfection or to percolation ponds located on site. Treated wastewater is diverted to the six north percolation ponds (Pond Nos. 1, 2, 3, 4, 5, 6) by gravity or six south percolation ponds (7, 8, 9 - currently not available, 10, 11, 12, and 13) by pumping. Pond 9

was backfilled, but VVWRA wants to retain the ability to reconstruct the pond at a future date. Pond 14 is reserved for other discharger uses. Pond 14 will only be used by the City of Victorville. The north percolations ponds (Pond Nos. 1 – 6) receive treated effluent by gravity, but are limited to operation during summer months. Treated wastewater routed to the UV disinfection system is then either reclaimed for use on the Victorville Westwinds Golf Course or High Desert Power Plant or discharged to the Mojave River via Discharge Point No. 001. Only discharges to Discharge Point No. 001 are regulated by this Order.

In addition to the Facility, the Discharger intends to construct two sub-regional reclamation plants, the Apple Valley Sub-Regional Reclamation Plant and the Hesperia Sub-Regional Reclamation Plant. Biosolids from the two sub-regional facilities would be pumped to the Facility. Effluent from these two additional reclamation facilities are subject to other orders; Order Nos. R6V-2013-0004 (Apple Valley) and R6V-2013-0005 (Hesperia), and are not addressed under this permit. Tertiary treated effluent from the two additional reclamation facilities is intended for landscape irrigation and industrial process recycled water uses. Effluent produced in excess of recycled water demand will be discharged to one or more percolations ponds at land discharge sites, and are not subject to this permit.

4. **Biosolids Management.** Primary sludge is treated by two dissolved air floatation thickeners (DAFT). Thickened sludge is fed to three anaerobic digesters and is dewatered on soil-cement lined solar drying beds. Dewatered sludge is removed from the solar drying beds and stored on-site until it achieves Class A quality, then it is transported off-site for use as fuel, land application, or composting.
5. **Stormwater Discharge.** Stormwater discharged from the Facility is covered by the State under the State Water Board’s statewide industrial storm water NPDES permit (NPDES General Permit No. CAS000001).

B. Discharge Points and Receiving Waters

This Order regulates advanced secondary treated wastewater from the following discharge point:

Table F-2. Discharge Points and Receiving Waters

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced Secondary Treated Effluent	34° 37' 01" N	117° 21' 12" W	Mojave River

Discharge of treated wastewater to the percolation ponds and for use as reclaimed water on the Victorville Westwinds Golf Course are regulated under separate orders.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the existing Order for discharges from Discharge Point No 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the previous Order are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2008 – June 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Conventional Pollutants							
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10	15	30	5.0	6.0	12
	lbs/day	1,170	1,750	3,500	--	--	--
pH	standard units	--	--	6.5 – 8.5	--	--	6.4 – 8.1
Total Suspended Solids	mg/L	10	15	30	4.0	5.6	19.6
	lbs/day	1,170	1,750	3,500	--	--	--
Priority Pollutants							
Copper, Total Recoverable	µg/L	13	--	20	<10	--	<10
	lbs/day	1.5	--	2.3	--	--	--
Zinc, Total Recoverable	µg/L	77	--	190	75	--	75
	lbs/day	9.0	--	22	--	--	--
Cyanide, Total (as CN)	µg/L	3.6	--	9.6	6.0 ⁶	--	8.0 ⁶
	lbs/day	0.42	--	1.1	--	--	--
Chlorodibromomethane	µg/L	0.41	--	1.3	8.0 ⁶	--	8.0 ⁶
	lbs/day	0.048	--	0.15	--	--	--
Dichlorobromomethane	µg/L	0.56	--	1.4	13 ⁶	--	13 ⁶
	lbs/day	0.065	--	0.16	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	1.8	--	3.6	8.2 ⁷	--	8.2 ⁷
	lbs/day	0.21	--	0.42	--	--	--
Dibenzo(a,h)anthracene	µg/L	0.0044	--	0.0088	<0.05 ⁷	--	<0.05 ⁷
	lbs/day	0.00051	--	0.0010	--	--	--
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.80 ⁸	--	1.5	1.0	--	2.7
	lbs/day	93.4	--	175	--	--	--
Chlorine, Total Residual	mg/L	0.002 ¹	--	0.003	<0.01	--	0.006
	lbs/day	0.234 ¹	--	0.350	--	--	--
Dissolved Oxygen	mg/L	--	--	4.0 ²	--	--	4.5 ³
Methylene Blue Active Substances (MBAS)	mg/L	0.50	--	0.90	0.2	--	0.2
	lbs/day	58.4	--	105	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	8.2 ⁸	--	11.3	9.9	--	12
	lbs/day	957	--	1,320	--	--	--
Total Dissolved Solids (TDS)	mg/L	460 ⁴	--	580	425 ⁵	--	601
	lbs/day	53,700 ⁴	--	67,700	--	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2008 – June 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

- ¹ Effluent limitation expressed as a 6-month median.
- ² Effluent limitation expressed as an instantaneous minimum.
- ³ Represents the minimum dissolved oxygen concentration reported.
- ⁴ Effluent limitation expressed as an annual average.
- ⁵ Represents that maximum annual average reported.
- ⁶ Order No. R6V-2008-0004 and Time Schedule Order No. R6V-2010-0027, collectively, established compliance schedules through January 2013 for these parameters. Interim effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane were:

Parameter	Units	Maximum Daily Effluent Limitation
Cyanide, Total	µg/L	23
	lbs/day	2.7
Chlorodibromomethane	µg/L	30
	lbs/day	3.5
Dichlorobromomethane	µg/L	18
	lbs/day	2.1

- ⁷ Order No. R6V-2008-0004, established a compliance schedule through May 17, 2010 for these parameters. Interim effluent limitations for bis(2-ethylhexyl)phthalate and dibenzo(a,h)anthracene were:

Parameter	Units	Maximum Daily Effluent Limitation
Bis(2-ethylhexyl)phthalate	µg/L	47
	lbs/day	5.5
Dibenzo(a,h)anthracene	µg/L	0.19
	lbs/day	0.022

- ⁸ Order No. R6V-2008-0004 established a compliance schedule to achieve compliance with final effluent limitations for ammonia and nitrate by January 31, 2013. Interim average monthly effluent limitations for ammonia and nitrate were:

Parameter	Units	Average Monthly Effluent Limitation
Ammonia (as N)	mg/L	3.1
Nitrate (as N) ^[1]	mg/L	11.2

^[1] Additionally, the discharge of total nitrogen was limited to no more than 98 lbs per million gallons discharged per 12-month period.

D. Compliance Summary

- 1. Compliance with Numeric Effluent Limitations.** During the term of the previous Order, the Facility had the following effluent violations:

Table F-4. Summary of Effluent Violations

Date of Sample	Type of Sample	Parameter	Units	Reported Concentration	Effluent Limit
4/23/2008	Max Daily	Chlorine, Total Residual	mg/L	1.19	0.003 ¹
6/1/2008	Instantaneous Minimum	pH	s.u.	6.4	6.5
6/17/2008	Instantaneous Minimum	pH	s.u.	6.4	6.5
1/5/2009	Instantaneous Maximum	pH	s.u.	8.73	8.5 ¹
1/17/2009	Instantaneous Maximum	pH	s.u.	8.6	8.5 ¹
6/30/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.17	0.350
10/11/2010	Max Daily	Total Dissolved Solids	mg/L	601	580 ¹
11/5/2010	Max Daily	Chlorine, Total Residual	mg/L	0.059	0.003
11/28/2010	Instantaneous Maximum	pH	s.u.	9.58	8.5
12/1/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.10	0.350
12/3/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.93	0.350
12/7/2010	Max Daily	Bis(2-Ethylhexyl) Phthalate	µg/L	8.2	3.6
12/13/2010	Max Daily	Chlorine, Total Residual	lbs/day	1.19	0.350
12/22/2010	24-hour Average	Turbidity	NTU	7.92	2.0
12/22/2010	Instantaneous Maximum	Turbidity	NTU	20	10
12/23/2010	Max Daily	Chlorine, Total Residual	mg/L	0.94	0.003
4/28/2011	Max Daily	Chlorine, Total Residual	mg/L	4.14	0.003
4/28/2011	Instantaneous Maximum	Turbidity	NTU	11.6	10
8/4/2011	24-hour Average	Turbidity	NTU	3.12	2.0
11/27/2011	7-day Median	Total Coliform	MPN/100 mL	4.0	2.2

¹ Reported in CIWQS as a violation, however mandatory minimum penalties have not been assessed at this point.

- 2. Cease and Desist Order No. R6V-2008-0005 (CDO).** The Discharger has been under the CDO, adopted on February 14, 2008, because the Facility could not meet final nitrogen effluent limitations established in Order No. R6V-2008-004. The CDO established interim effluent limitations and compliance milestones for meeting applicable nutrient effluent limitations. The Discharger has complied with all requirements of the CDO. The CDO is expected to be rescinded by June 20, 2013.

3. **Time Schedule Order No. R6V-2010-0027 (TSO).** The Discharger has been under the TSO, adopted on June 16, 2010, to comply with final effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane contained in Order No. R6V-2008-0004 by January 31, 2013. The Discharger has implemented the necessary Facility upgrades to comply with the final effluent limitations for cyanide, chlorodibromomethane, and dichlorobromomethane and has complied with the applicable effluent limitations as required by the TSO. The TSO was rescinded on April 25, 2013.

E. Planned Changes

No changes are currently planned at the Facility.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by USEPA, and California Water Code (CWC) chapter 5.5, division 7, commencing with section 13370. It serves as an NPDES permit for point source discharges from the Facility to surface waters. This Order also serves as waste discharge requirements pursuant to CWC article 4, chapter 4, division 7, commencing with section 13260.

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to reissue an NPDES permit is exempt from the requirements of CEQA.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Lahontan Regional Water Board adopted a *Water Quality Control Plan for the Lahontan Region* (hereinafter Basin Plan) on March 31, 1995, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Mojave River are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mojave River	<u>Existing:</u> Municipal and domestic water supply (MUN); Agricultural Supply (AGR); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport fishing (COMM); Cold freshwater habitat (COLD); Warm freshwater habitat (WARM); wildlife habitat (WILD).

Requirements of this Order implement the Basin Plan.

- 2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.
- 3. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and to the priority pollutant objectives established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- 4. Alaska Rule.** On March 30, 2000, USEPA revised its regulations that specifies when new and revised state and tribal water quality standards become effective for CWA purposes (65 Fed. Reg. 24641 [April 27, 2000], new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- 5. Antidegradation Policy.** NPDES regulations at 40 C.F.R. 131.12 establish the federal antidegradation policy and require that State water quality standards include antidegradation policies consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which incorporates federal policy where federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies.

- 6. Anti-Backsliding Requirements.** CWA sections 402(o)(2) and 303(d)(4) and 40 C.F.R. 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous order, with some exceptions in which limitations may be relaxed.

D. Impaired Water Bodies on CWA 303(d) List

In October 2011, USEPA approved a revised list of impaired water bodies prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Lahontan Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired water bodies.

The Mojave River at Discharge Point No. 001 is not listed as an impaired water body. The Mojave River between Upper Narrows and Lower Narrows is listed on the 2010 303(d) list as impaired for fluoride, sulfates, and total dissolved solids. Currently, there are no TMDLs applicable to the Facility.

E. Other Plans, Policies and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The Clean Water Act (CWA) requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in National Pollutant Discharge Elimination System (NPDES) permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 C.F.R. 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria (WQC) to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

- 1. Discharge Prohibition III.A (Average annual flow shall not exceed 14.0 MGD).** This prohibition was established in Order No. R6V-2008-004 based on the Facility's design capacity. The design capacity at the Facility has increased to 18 MGD over the term of the previous Order. The Discharger has not requested nor demonstrated a need for an increase in the permitted discharge flow. Consistent with State and federal anti-degradation regulations, this Order retains a maximum permitted effluent flow of 14 MGD.

- 2. Discharge Prohibition III.B (No discharge or application of waste other than that described in this Order).** This prohibition is based on 40 C.F.R. 122.21(a), duty to apply, and CWC section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in this Order, are prohibited. This prohibition is also included as Prohibition 5 in Section 4.1 of the Basin Plan. This provision is retained from the previous Order.
- 3. Discharge Prohibition III.C (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. This prohibition is also included in Section 4.1 of the Basin Plan. This provision is retained from the previous Order.
- 4. Discharge Prohibition III.D (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. This provision is retained from the previous Order.
- 5. Discharge Prohibition III.E (No discharge of waste that causes violation of narrative water quality objectives).** This prohibition is based on Regional Waste Discharge Prohibition 1 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes violation of any narrative water quality objective contained in the Basin Plan. This provision is retained from the previous Order.
- 6. Discharge Prohibition III.F (No discharge of waste that causes violation of numeric water quality objectives).** This prohibition is based on Regional Waste Discharge Prohibition 2 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes violation in the water body of any numeric water quality objective contained in the Basin Plan. This provision is retained from the previous Order.
- 7. Discharge Prohibition III.G (No discharge of waste that causes further degradation).** This prohibition is based on Regional Waste Discharge Prohibition 3 from Section 4.1 of the Basin Plan, which prohibits discharge of waste that causes further degradation to a water body where a numeric or narrative water quality objective contained in the Basin Plan is already being violated. This provision is retained from the previous Order.
- 8. Discharge Prohibition III.H (No discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes).** This prohibition is based on Regional Waste Discharge Prohibition 4 from Section 4.1 of the Basin Plan, which prohibits discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters. This provision is retained from the previous Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 C.F.R. 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. Part 133.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 C.F.R. Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. BOD₅ and TSS. Federal regulations, 40 C.F.R. Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. In addition, 40 C.F.R. 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD₅ and TSS must be achieved by a secondary treatment plant, it must also be achieved by an advanced secondary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month.

As discussed in section IV.C.4.b.iii of this Fact Sheet, this Order establishes WQBELs that are more stringent than the secondary technology-based treatment described in 40 C.F.R. Part 133 and are necessary to protect the beneficial uses of the receiving stream.

b. pH. The secondary treatment regulations at 40 C.F.R. Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

**Summary of Technology-based Effluent Limitations
 Discharge Point No. 001**

Table F-6. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) ¹	mg/L	30	45	--	--	--
	lbs/day ²	3,503	5,254	--	--	--
	% Removal	85	--	--	--	--
pH ¹	standard units	--	--	--	6.0	9.0
Total Suspended Solids ¹	mg/L	30	45	--	--	--
	lbs/day ²	3,503	5,254	--	--	--
	% Removal	85	85	--	--	--

¹ Note that more stringent WQBELs for BOD₅, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.4.b.iii of this Fact Sheet).

² Based on the design average dry weather flow of 14 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced secondary treatment or equivalent requirements or other provisions, is discussed in section IV.C.4.b.iii of this Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and

criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

The federal CWA section 101(a)(2), states: “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.” Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses. The Facility discharges treated wastewater to the Mojave River, a water of the United States.

The, beneficial uses applicable to the Mojave River are as follows:

Table F-7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mojave River	<u>Existing uses from Table 2-1 of the Basin Plan:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Ground water recharge (GWR); Water contact recreation (REC-1); Noncontact water recreation (REC-2); Commercial and Sportfishing (COMM); Warm Freshwater Habitat (Warm); Cold Freshwater Habitat (COLD); and Wildlife habitat (WILD).

b. Water Quality Objectives

The water quality objectives applicable to the receiving water for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 C.F.R. 131.38;

and the NTR, established by USEPA at 40 C.F.R. 131.36. Some pollutants have water quality objectives established by more than one of these sources.

- i. **Basin Plan.** The Basin Plan specifies numeric and narrative water quality objectives for pollutants in order to protect beneficial uses. The narrative toxicity objective states, “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.”

Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- ii. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries. Human health criteria are further identified as for “water and organisms” or for “organisms only.” The CTR criteria applicable to “water and organisms” apply to this receiving water because MUN is specified as a beneficial use for the receiving water.
- iii. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants. The NTR criteria apply to the Mojave River, the receiving water for this Discharge.

- c. **Hardness-Dependent CTR Metals Criteria.** The California Toxics Rule and the National Toxics Rule contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

In February 2009, the Discharger revised magnesium hydroxide injection practices at the Facility, including moving the injection to the return activated sludge wet well and using a more controlled dosage to improve alkalinity. This change appears to have resulted in an increased effluent hardness based on evaluation as detailed in a May 7, 2013 letter submitted by the Discharger titled, “*Additional Information regarding VVWRA Effluent Hardness.*” The Lahontan Water Board has reviewed this letter and associated data and agrees that effluent hardness prior to March 2009 is not representative of current operations at the Facility. Thus, only effluent hardness from March 2009 to the present was considered for use in the reasonable potential analysis.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP. The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals (SIP, section 1.2; 40 C.F.R. 131.38(c)(4)).

Because the receiving water may be effluent dominated at times, the hardness in both the effluent and upstream receiving water were evaluated. The lowest hardness observed in the effluent was 62 mg/L (as CaCO₃).

The lowest hardness observed in the upstream receiving water from August 2007 through October 2011 was 7 mg/L (as CaCO₃), however this value represents the 0.001st percentile of the upstream receiving water data (Monitoring Location R-001) provided in the Mojave River Characterization Study and additional upstream monitoring data. The observed minimum hardness of 7 mg/L (as CaCO₃) appears to be uncharacteristically low compared to the remaining data. For comparison, the fifth percentile of the upstream data (based on Monitoring Location R-001 in the Mojave River Characterization Study and current NPDES permit requirements for upstream monitoring is 60 mg/L (as CaCO₃). As such, the use of 60 mg/L (as CaCO₃) represents a conservative and reasonable worst-case ambient hardness value observed in the receiving water.

Based on the available receiving water and effluent data, a hardness of 60 mg/L (as CaCO₃) was used for evaluating reasonable potential and calculating applicable effluent limitations.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

3. Determining the Need for WQBELs

Assessing whether a pollutant has reasonable potential to exceed a water quality objective in the water body is the fundamental step in determining whether or not a WQBEL is required.

a. Reasonable Potential Analysis Methodology

According to SIP section 1.3, the RPA begins with identifying the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining reasonable potential:

- i. Trigger 1 is activated if the MEC is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted water quality objective, then that pollutant has reasonable potential, and a WQBEL is required.
- ii. Trigger 2 is activated if the observed maximum ambient background concentration (B) is greater than the adjusted water quality objective ($B >$ water quality objective) and the pollutant is detected in any of the effluent samples.

- iii. Trigger 3 is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the water quality objective.
- b. **Effluent Data.** The Discharger’s priority pollutant data and the nature of the discharge were analyzed to determine if the discharge has reasonable potential. The RPA is based on effluent monitoring data the Discharger collected from April 2008 through August 2012.
 - i. **Ambient Background Data.** Ambient background data was used from the Discharger’s June 30, 2010 report, titled, *Mojave River Characterization Study Water Quality and Aquatic Life Characterization Report* (Mojave River Characterization Study).
 - ii. **Assimilative Capacity/Mixing Zone.** The Mojave River Characterization Study indicates that the receiving water is perennial approximately 4 miles upstream of the discharge location and immediately downstream of the discharge location. Because the receiving water in the vicinity of the discharge location may at times be effluent dominated, dilution is not appropriate and has not been granted for this discharge.
- c. **Reasonable Potential Analysis.** The MECs, most stringent applicable water quality objectives, and background concentrations used in the RPA are presented in the following table, along with the RPA results for each pollutant. Reasonable potential was not determined for all pollutants because there are not water quality objectives for all pollutants, and monitoring data are unavailable for others. Based on a review of the effluent data collected during the term of the previous order (i.e., April 2008 through July 2012), the pollutants that exhibit reasonable potential are bis(2-ethylhexyl)phthalate, chlorodibromomethane, cyanide, dichlorobromomethane, electrical conductivity, nitrate + nitrite, total ammonia, total dissolved solids, and total residual chlorine, by Trigger 1.

Table F-8. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
CTR/NTR Parameters					
1	Antimony	6.00	<10	No Data	No Limit
2	Arsenic	10.00	<5	No Data	No Limit
3	Beryllium	4.00	<2	No Data	No Limit
4	Cadmium	1.65	<2	No Data	No Limit
5a	Chromium (III)	132	<2	No Data	No Limit
5b	Chromium (VI)	11.43	<1	No Data	No Limit
6	Copper	6.03	<10	0.7	No Limit
7	Lead	1.66	<5	No Data	No Limit
8	Mercury	0.05	<0.2	No Data	No Limit
9	Nickel	33.9	<10	No Data	No Limit
10	Selenium	5.00	<5	No Data	No Limit
11	Silver	1.69	<10	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
12	Thallium	1.70	<10	No Data	No Limit
13	Zinc	77.7	75	2.3	No Limit
14	Cyanide	5.20	8	No Data	Limit Required
15	Asbestos	7.00	<0.2	No Data	No Limit
16	2,3,7,8-TCDD	1.4x10 ⁻⁸	<0.0000031	No Data	No Limit
	Dioxin TEQ	1.4x10 ⁻⁸	<0.0000031	No Data	No Limit
17	Acrolein	320	<10	No Data	No Limit
18	Acrylonitrile	0.06	<10	No Data	No Limit
19	Benzene	1.00	<0.5	No Data	No Limit
20	Bromoform	4.3	<0.5	<0.5	No Limit
21	Carbon Tetrachloride	0.25	<0.5	No Data	No Limit
22	Chlorobenzene	70	<0.5	No Data	No Limit
23	Chlorodibromomethane	0.41	8	<0.4	Limit Required
24	Chloroethane	No Criteria	<0.5	No Data	No Limit
25	2-Chloroethylvinyl ether	No Criteria	<5	No Data	No Limit
26	Chloroform	No Criteria	73	<0.5	No Limit
27	Dichlorobromomethane	0.56	13	<0.5	Limit Required
28	1,1-Dichloroethane	5.00	<0.5	No Data	No Limit
29	1,2-Dichloroethane	0.38	<0.5	No Data	No Limit
30	1,1-Dichloroethylene	0.06	<0.5	No Data	No Limit
31	1,2-Dichloropropane	0.52	<0.5	No Data	No Limit
32	1,3-Dichloropropylene	0.50	<0.5	No Data	No Limit
33	Ethylbenzene	300.00	<0.5	No Data	No Limit
34	Methyl Bromide	48.00	<0.5	No Data	No Limit
35	Methyl Chloride	No Criteria	<0.5	No Data	No Limit
36	Methylene Chloride	4.70	<3	No Data	No Limit
37	1,1,2,2-Tetrachloroethane	0.17	<0.5	No Data	No Limit
38	Tetrachloroethylene	0.80	<0.5	No Data	No Limit
39	Toluene	150.00	<0.5	No Data	No Limit
40	1,2-Trans-Dichloroethylene	0.01	<0.5	No Data	No Limit
41	1,1,1-Trichloroethane	200.00	53	No Data	No Limit
42	1,1,2-Trichloroethane	0.60	<0.5	No Data	No Limit
43	Trichloroethylene	2.70	<0.5	No Data	No Limit
44	Vinyl Chloride	0.50	<0.5	No Data	No Limit
45	2-Chlorophenol	120.00	<5.1	No Data	No Limit
46	2,4-Dichlorophenol	93.00	<5.1	No Data	No Limit
47	2,4-Dimethylphenol	540.00	<2	No Data	No Limit
48	2-Methyl- 4,6-Dinitrophenol	13.40	<5.1	No Data	No Limit
49	2,4-Dinitrophenol	70.00	<5.1	No Data	No Limit
50	2-Nitrophenol	No Criteria	<10	No Data	No Limit
51	4-Nitrophenol	No Criteria	<5.1	No Data	No Limit
52	3-Methyl 4-Chlorophenol	No Criteria	<20	No Data	No Limit
53	Pentachlorophenol	0.28	<2	No Data	No Limit
54	Phenol	21000.00	<10	No Data	No Limit
55	2,4,6-Trichlorophenol	2.10	<10	No Data	No Limit
56	Acenaphthene	1200.00	<0.05	No Data	No Limit
57	Acenaphthylene	No Criteria	<0.05	No Data	No Limit
58	Anthracene	9600.00	<0.05	No Data	No Limit
59	Benzidine	0.0001	<5.1	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
60	Benzo(a)Anthracene	0.00	<0.05	No Data	No Limit
61	Benzo(a)Pyrene	0.00	<0.05	No Data	No Limit
62	Benzo(b)Fluoranthene	0.00	<0.05	No Data	No Limit
63	Benzo(ghi)Perylene	No Criteria	<0.05	No Data	No Limit
64	Benzo(k)Fluoranthene	0.00	<0.05	No Data	No Limit
65	Bis(2-Chloroethoxy)Methane	No Criteria	<5.1	No Data	No Limit
66	Bis(2-Chloroethyl)Ether	0.03	<1	No Data	No Limit
67	Bis(2-Chloroisopropyl)Ether	1400.00	<10	No Data	No Limit
68	Bis(2-Ethylhexyl)Phthalate	1.80	8.2	No Data	Limit Required
69	4-Bromophenyl Phenyl Ether	No Criteria	<5.1	No Data	No Limit
70	Butylbenzyl Phthalate	3000.00	<10	No Data	No Limit
71	2-Chloronaphthalene	1700.00	<10	No Data	No Limit
72	4-Chlorophenyl Phenyl Ether	No Criteria	<1	No Data	No Limit
73	Chrysene	0.00	<0.05	No Data	No Limit
74	Dibenzo(a,h)Anthracene	0.00	<0.05	No Data	No Limit
75	1,2-Dichlorobenzene	600.00	<0.5	No Data	No Limit
76	1,3-Dichlorobenzene	400.00	<0.5	No Data	No Limit
77	1,4-Dichlorobenzene	5.00	<0.5	No Data	No Limit
78	3,3 Dichlorobenzidine	0.04	<5.1	No Data	No Limit
79	Diethyl Phthalate	23000.00	<10	No Data	No Limit
80	Dimethyl Phthalate	313000.00	<10	No Data	No Limit
81	Di-n-Butyl Phthalate	2700.00	<10	No Data	No Limit
82	2,4-Dinitrotoluene	0.11	<5.1	No Data	No Limit
83	2,6-Dinitrotoluene	No Criteria	<5.1	No Data	No Limit
84	Di-n-Octyl Phthalate	No Criteria	<10	No Data	No Limit
85	1,2-Diphenylhydrazine	0.04	<1	No Data	No Limit
86	Fluoranthene	300.00	<0.05	No Data	No Limit
87	Fluorene	1300.00	<0.05	No Data	No Limit
88	Hexachlorobenzene	0.00075	<1	No Data	No Limit
89	Hexachlorobutadiene	0.44	<1	No Data	No Limit
90	Hexachlorocyclopentadiene	50.00	<5.1	No Data	No Limit
91	Hexachloroethane	1.90	<1	No Data	No Limit
92	Indeno(1,2,3-cd)Pyrene	0.00	<0.05	No Data	No Limit
93	Isophorone	8.40	<1	No Data	No Limit
94	Naphthalene	No Criteria	<0.05	No Data	No Limit
95	Nitrobenzene	17.00	<10	No Data	No Limit
96	N-Nitrosodimethylamine	0.00	<5.1	No Data	No Limit
97	N-Nitrosodi-n-Propylamine	0.01	<5.1	No Data	No Limit
98	N-Nitrosodiphenylamine	5.00	<1	No Data	No Limit
99	Phenanthrene	No Criteria	<0.05	No Data	No Limit
100	Pyrene	960.00	<0.05	No Data	No Limit
101	1,2,4-Trichlorobenzene	5.00	<5.1	No Data	No Limit
102	Aldrin	0.00013	<10	No Data	No Limit
103	Alpha-BHC	0.0039	<10	No Data	No Limit
104	Beta-BHC	0.01	<10	No Data	No Limit
105	Gamma-BHC	0.02	<10	No Data	No Limit
106	Delta-BHC	No Criteria	<10	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
107	Chlordane (303(d) listed)	0.0006	<10	No Data	No Limit
108	4,4'-DDT (303(d) listed)	0.0006	<10	No Data	No Limit
109	4,4'-DDE (linked to DDT)	0.0006	<10	No Data	No Limit
110	4,4'-DDD	0.0008	<10	No Data	No Limit
111	Dieldrin (303d listed)	0.00014	<10	No Data	No Limit
112	Alpha-Endosulfan	0.06	<10	No Data	No Limit
113	beta-Endosulfan	0.06	<10	No Data	No Limit
114	Endosulfan Sulfate	110.00	<10	No Data	No Limit
115	Endrin	0.04	<10	No Data	No Limit
116	Endrin Aldehyde	0.76	NA	No Data	No Limit
117	Heptachlor	0.0002	<10	No Data	No Limit
118	Heptachlor Epoxide	0.0001	<10	No Data	No Limit
119-125	PCBs sum (303(d) listed) ⁽⁴⁾	0.0002	<50	No Data	No Limit
126	Toxaphene	0.0002	<50	No Data	No Limit
Basin Plan					
	Total Ammonia (as N)	950	2,700	<100	Limit Required
	Aluminum	200	No Data	No Data	No Limit
	Fluoride	2,000	1,800	No Data	No Limit
	Nitrate (as NO3)	45,000	12,000	1,800	No Limit
	Nitrate+Nitrite (as N)	10,000	12,000	No Data	Limit Required ⁵
	Nitrite (as N) (mg/L)	1,000	100	30	No Limit
	Perchlorate	6	No Data	No Data	No Limit
	cis-1,2-Dichloroethylene	6	No Data	No Data	No Limit
	Dichloromethane	5	No Data	No Data	No Limit
	Methyl-tert-butyl-ether	5	<0.5	No Data	No Limit
	Styrene	100	No Data	No Data	No Limit
	Xylenes	1,750	<0.05	No Data	No Limit
	Alachlor	2	No Data	No Data	No Limit
	Atrazine	1	No Data	No Data	No Limit
	Bentazon	18	No Data	No Data	No Limit
	Trichlorofluoromethane	150	5	No Data	No Limit
	1,1,2-Trichloro-1,2,2-trifluoroethane	1,200	No Data	No Data	No Limit
	Carbofuran	18	No Data	No Data	No Limit
	2,4-D	70	No Data	No Data	No Limit
	Dalapon	200	No Data	No Data	No Limit
	Dibromochloropropane	0.20	No Data	No Data	No Limit
	Di(2-ethylhexyl)adipate	400	No Data	No Data	No Limit
	Di(2-ethylhexyl)phthalate	4	No Data	No Data	No Limit
	Dinoseb	7	No Data	No Data	No Limit
	Diquat	20	No Data	No Data	No Limit
	Endothall	100	No Data	No Data	No Limit
	Ethylene dibromide	0.05	No Data	No Data	No Limit
	Glyphosate	700	No Data	No Data	No Limit
	Methoxychlor	30	No Data	No Data	No Limit

CTR #	Priority Pollutants	Governing water quality objective (µg/L)	MEC or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	Maximum Background or Minimum DL ⁽¹⁾⁽²⁾ (µg/L)	RPA Results ⁽³⁾
	Molinate	20	No Data	No Data	No Limit
	Oxamyl	50	No Data	No Data	No Limit
	Picloram	500	No Data	No Data	No Limit
	Simazine	4	No Data	No Data	No Limit
	Thiobencarb	1	No Data	No Data	No Limit
	2,4,5-TP (Silvex)	50	No Data	No Data	No Limit
	MBAS	500	200	No Data	No Limit
	Iron	300	56	No Data	No Limit
	Manganese	50	18	No Data	No Limit
	Total Dissolved Solids (mg/L)	500	601	500	Limit Required ⁴
	Electrical Conductivity (uS/cm)	900	1,255	No Data	Limit Required ⁴
	Total Residual Chlorine	0.002	6.0	No Data	Limit Required

¹ The MEC and maximum background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level (DL).
² The MEC or maximum background concentration is “Not Available” when there are no monitoring data for the constituent.
³ RPA Results = Yes, if MEC > WQC, B > WQC and MEC is detected, or Trigger 3;
 = No Limit, if MEC and B are < WQC or all effluent data are undetected;
 = Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.
⁴ The criteria specified for total dissolved solids and electrical conductivity in Table 64449-B of Title 22 of the California Code of Regulations specify TDS or electrical conductivity. This Order implements the TDS and electrical conductivity objective using TDS.
⁵ Limit is applied as total nitrogen.

- i. **Constituents with limited data.** In some cases, reasonable potential cannot be determined because effluent data are limited, or ambient background concentrations are unavailable. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether numeric effluent limitations are necessary.
- ii. **Pollutants with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to receiving water quality.

4. WQBEL Calculations

- a. **Pollutants with Reasonable Potential.** This Order includes WQBELs for bis (2-ethylhexyl) phthalate, BOD₅, chlorodibromomethane, cyanide, dichlorobromomethane, dissolved oxygen, fecal coliform, nitrate (applied as total nitrogen), pH, total ammonia, total coliform, total dissolved solids, total residual chlorine, TSS, turbidity, and whole effluent toxicity.

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of the water quality objectives. The WQBELs for toxic pollutants were calculated based on water quality objectives and the procedures specified in SIP section 1.4. For WQBELs based on Basin Plan objectives or MCLs for non-toxics, the objectives are applied directly as the effluent limitation, unless otherwise specified in section IV.C.4.b.

The water quality objectives used for each pollutant with reasonable potential are discussed below.

- i. Effluent Concentration Allowance (ECA).** For each water quality criterion/objective for which the SIP procedures were used to calculate effluent limitations, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$$\begin{aligned} \text{ECA} &= C + D(C - B) && \text{where } C > B, \text{ and} \\ \text{ECA} &= C && \text{where } C \leq B \end{aligned}$$

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on maximum contaminant levels (MCLs), which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

- ii. Aquatic Toxicity Criteria.** WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e., LTA_{acute} and LTA_{chronic}) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

As an example, the effluent limitations for cyanide were calculated as follows:

- 1) Identify applicable criteria:

Acute criteria = 22 µg/L
Chronic criteria = 5.2 µg/L

- 2) Determine the appropriate ECA as discussed above.

Because there is no dilution, the ECA was set equal to the criteria:

$$\begin{aligned} ECA_{\text{acute}} &= 22 \mu\text{g/L} \\ ECA_{\text{chronic}} &= 5.2 \mu\text{g/L} \end{aligned}$$

- 3) Calculate the applicable long-term average (LTA). The LTA is calculated by multiplying the ECA by an ECA Multiplier used to find the 99th percentile occurrence probability:

$$\text{LTA} = \text{ECA} \times \text{ECA Multiplier}$$

The appropriate ECA Multiplier is determined as specified in the formula provided in Step 3 of Section 1.4 of the SIP. (ECA Multipliers are provided in Table 1 of Section 1.4 of the SIP). The calculations for the ECA Multiplier are based on the coefficient of variation (CV) of the applicable data set. The CV is the standard deviation divided by the mean of the data. If less than 10 data points are available, or more than 80 percent of the data is reported as non-detect, a default of 0.6 is used as the CV.

$$\begin{aligned} \text{ECA multiplier}_{\text{acute}} &= e^{(0.5\sigma^2 - z\sigma)} \\ \text{ECA multiplier}_{\text{chronic}} &= e^{(0.5\sigma_4^2 - z\sigma_4)} \end{aligned}$$

Where:

$$\begin{aligned} \sigma &= \text{standard deviation} \\ \sigma &= [\ln(\text{CV}^2 + 1)]^{0.5} \\ \sigma^2 &= \ln(\text{CV}^2 + 1) \\ \sigma_4 &= [\ln(\text{CV}^2/4 + 1)]^{0.5} \\ \sigma_4^2 &= \ln(\text{CV}^2/4 + 1) \\ z &= 2.326 \text{ for 99th percentile probability basis} \end{aligned}$$

For cyanide, the CV was 0.46, resulting in an acute ECA Multiplier of 0.40 and a chronic ECA Multiplier of 0.61.

$$\begin{aligned} \text{LTA}_{\text{acute}} &= 22 \mu\text{g/L} \times 0.40 = 8.8 \mu\text{g/L} \\ \text{LTA}_{\text{chronic}} &= 5.2 \mu\text{g/L} \times 0.61 = 3.16 \mu\text{g/L} \end{aligned}$$

- 4) Select the lowest (most limiting) of the LTAs.

$$\text{Lowest LTA}_{\text{cyanide}} = 3.16 \mu\text{g/L}$$

- 5) Calculate water quality-based effluent limitations by multiplying the LTA by a multiplier that adjusts for the averaging periods and exceedance frequencies of the criteria/objectives.

The multiplier is calculated as specified in Step 5 of Section 1.4 of the SIP and based on the CV of recent data and the required monitoring frequency. For calculating an average monthly effluent limitation (AMEL), a 95th percentile probability basis is used. For calculating a maximum daily effluent limitation (MDEL), a 99th percentile probability basis is used. Applicable multipliers for AMELs and MDELs are provided in Table 2 of Section 1.4 of the SIP.

$$\text{AMEL} = \text{LTA} \times \text{AMEL Multiplier}$$

$$\text{MDEL} = \text{LTA} \times \text{MDEL Multiplier}$$

$$\text{AMEL}_{\text{multiplier95}} = e^{(z\sigma_n - 0.5\sigma_n^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2/n + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2/n + 1)$$

$$z = 1.645 \text{ for 95th percentile probability basis}$$

$$n = \text{number of samples per month}$$

$$\text{MDEL}_{\text{multiplier99}} = e^{(z\sigma - 0.5\sigma^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2 + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2 + 1)$$

$$z = 2.326 \text{ for 99th percentile probability basis}$$

For cyanide, based on a CV of 0.46 and a monitoring frequency of four or less times per month, an AMEL Multiplier of 1.41 and a MDEL Multiplier of 2.50 have been calculated.

$$\text{AMEL} = 3.16 \mu\text{g/L} \times 1.41 = 4.46 \mu\text{g/L}.$$

$$\text{MDEL} = 3.16 \mu\text{g/L} \times 2.50 = 7.90 \mu\text{g/L}.$$

- 6) These effluent limitations are then compared to technology-based effluent limitations, human health-based effluent limitations, and current effluent limitations. The most protective of the applicable effluent limitations are established in the Order to ensure protection of human health, aquatic life, and ensure consistency with State and federal anti-backsliding regulations.

For cyanide, the previous effluent limitations of 3.6 $\mu\text{g/L}$ (AMEL) and 9.6 $\mu\text{g/L}$ (MDEL) are more stringent, because the previous AMEL of 3.6 $\mu\text{g/L}$ is less than the newly calculated AMEL of 4.46 $\mu\text{g/L}$, resulting in the discharge of lower concentrations of cyanide over the longer-term, although allowing for more variation over the averaging period.

iii. Human Health Criteria. WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The ECAs are set equal to the AMEL and a statistical multiplier was used to calculate the MDEL.

$$\begin{aligned}
 \text{AMEL} &= \text{mult}_{\text{AMEL}} \left[\min \left(M_A \text{ECA}_{\text{acute}}, M_C \text{ECA}_{\text{chronic}} \right) \right] \text{LTA}_{\text{acute}} \\
 \text{MDEL} &= \text{mult}_{\text{MDEL}} \left[\min \left(M_A \text{ECA}_{\text{acute}}, M_C \text{ECA}_{\text{chronic}} \right) \right] \text{LTA}_{\text{chronic}} \\
 \text{MDEL}_{\text{HH}} &= \frac{\text{mult}_{\text{MDEL}}}{\text{mult}_{\text{AMEL}}} \text{AMEL}_{\text{HH}}
 \end{aligned}$$

where:

$\text{mult}_{\text{AMEL}}$ = statistical multiplier converting minimum LTA to AMEL

$\text{mult}_{\text{MDEL}}$ = statistical multiplier converting minimum LTA to MDEL

M_A = statistical multiplier converting acute ECA to $\text{LTA}_{\text{acute}}$

M_C = statistical multiplier converting chronic ECA to $\text{LTA}_{\text{chronic}}$

As an example, the effluent limitations for chlorodibromomethane were calculated as follows:

- 1) Identify applicable criteria:

Human Health_{water&organisms} criteria = 0.41 µg/L

- 2) Determine the appropriate ECA as discussed above.

Because there is no dilution, the ECA was set equal to the criteria:

ECA = 0.41µg/L

- 3) The ECA equals the AMEL.

AMEL = 0.41 µg/L

- 4) The MDEL is calculated by multiplying the ECA by a MDEL/AMEL Multiplier.

MDEL = ECA x MDEL/AMEL Multiplier

The MDEL/AMEL Multiplier is calculated by dividing the MDEL Multiplier discussed in the Aquatic Toxicity Criteria above, by the AMEL Multiplier. Applicable MDEL/AMEL Multipliers are provided in Table 2 of Section 1.4 of the SIP. For chlorodibromomethane, the applicable MDEL/AMEL Multiplier is 2.37.

$$\text{MDEL} = 0.41 \mu\text{g/L} \times 2.37 = 0.97 \mu\text{g/L}$$

- 5) These effluent limitations are then compared to technology-based effluent limitations, aquatic life-based effluent limitations, and current effluent limitations. The most protective of the applicable effluent limitations are established in the Order to ensure protection of human health, aquatic life, and ensure consistency with State and federal anti-backsliding regulations.

b. WQBEL Development

i. Total Ammonia

(a) Water Quality Objectives. The Basin Plan contains water quality objectives for unionized ammonia based on receiving water conditions for pH and temperature. Because the receiving water is perennial upstream and downstream of the Facility, and the receiving water is often effluent dominated, effluent conditions were evaluated in place of upstream data to determine the appropriate pH and temperature to be used in determining the applicable numeric water quality objectives for unionized ammonia. Using the formulas provided in Chapter 3 of the Basin Plan and 1,556 days of paired effluent pH and temperature data from April 1, 2008 through July 15, 2012, the unionized ammonia criteria was determined.

The most conservative paired data set was used to calculate the applicable 1-hour acute criteria for unionized ammonia. Data from November 28, 2010 resulted in the most conservative 1-hour criteria for unionized ammonia. Based on an effluent temperature of 20.8 °C and a pH result of 8.06 s.u., an unionized acute criteria of 0.26 mg/L was calculated. The unionized 1-hour criteria was translated to total ammonia as specified in Chapter 3 of the Basin Plan, resulting in a 1-hour criteria of 5.6 mg/L.

Based on paired pH and temperature data from April 1, 2008 through July 16, 2012, the minimum calculated 4-day running average criteria for total ammonia was 0.95 mg/L (representative of conditions that occurred from July 11, 2012 through July 14, 2012).

Table F-9. Minimum Running 4-day Average Ammonia Criteria

Date	Temperature	pH	Unionized Ammonia (mg/L)	Total Ammonia (mg/L)
7/11/12	28.65	6.66	0.0032	0.96
7/12/12	28.6	6.64	0.0030	0.96
7/13/12	28.6	6.62	0.0029	0.96
7/14/12	28.84	6.68	0.0033	0.94
Average				0.95

- (b) RPA Results.** This Order establishes effluent limitations for total ammonia because the MEC (2.7 mg/L) exceeds the governing water quality objective (0.95 mg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for total ammonia, calculated according to the SIP procedures with an effluent data CV of 2.0 and no dilution, are an AMEL of 0.54 mg/L and a MDEL of 1.6 mg/L.

The previous Order established an AMEL for total ammonia of 0.80 mg/L and a MDEL of 1.5 mg/L. Based on the AMELs, the newly calculated effluent limitations for total ammonia will result in a lower long-term average discharge of pollutant to the receiving water and are thus more stringent. The newly calculated effluent limitations are more conservative and have been established in this Order.

- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations, considered as a pair, for total ammonia are more stringent than those in the previous Order.

ii. Bis (2-Ethylhexyl) Phthalate

- (a) Water Quality Objectives.** The CTR contains a human health water quality objective for bis (2-ethylhexyl) phthalate of 1.8 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for bis (2-ethylhexyl) phthalate because the MEC (8.2 µg/L) exceeds the governing water quality objective (1.8 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for bis (2-ethylhexyl) phthalate, calculated according to the SIP procedures with an effluent data CV of 0.6 and no dilution, are an AMEL of 1.8 µg/L and a MDEL of 3.6 µg/L.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for bis (2-ethylhexyl) phthalate are the same as those in the previous Order.

iii. BOD₅ and TSS

- (a) Water Quality Objectives.** Federal regulations, 40 C.F.R. Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. Advanced secondary treatment is necessary to protect the beneficial uses of the receiving stream. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rate and the corresponding removal rate of the system. The application of advanced secondary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently

prescribed in 40 C.F.R. Part 133; the minimum 30-day average, weekly average, and maximum daily level of effluent quality attainable by an advanced secondary system are 10 mg/L, 15 mg/L, and 30 mg/L, respectively.

- (b) RPA Results.** BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The Facility is a POTW that treats domestic wastewater through an advanced secondary-level treatment system. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rate and the corresponding removal rate of the system. The application of advanced secondary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards. The 99th percentile reported BOD₅ and TSS concentrations between April 2008 and June 2012 were 10 mg/L and 6.0 mg/L, demonstrating effluent quality significantly better than prescribed by secondary treatment standards.

Order R6V-2008-004 found, "... the Discharger provides tertiary treatment, including inline coagulation/flocculation, filtration, chlorination, and dechlorination [now replaced with ultraviolet light disinfection], in order to protect the beneficial uses of the Mojave River downstream of the discharge. The tertiary treatment required to maintain these beneficial uses of the Mojave River results in better performance and warrant more stringent effluent limitations for BOD₅ and TSS than what is required by secondary treatment standards."

As required in previous Order, advanced secondary treatment is required for the protection of beneficial uses. Therefore, this Order contains effluent limitations for BOD₅ and TSS that are based on the capability of an advanced secondary system for the protection of beneficial uses. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD₅ and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

- (c) WQBELs.** Consistent with Order R6V-2008-004, this Order contains AMELs and average weekly effluent limitations (AWELs) for BOD₅ and TSS of 10 mg/L and 15 mg/L, respectively, which are based on the capability of an advanced secondary system. In addition to the AMELs and AWELs, MDELs for BOD₅ and TSS of 30 mg/L are included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for BOD₅ and TSS are the same as those in the previous Order.

iv. Chlorine, Total Residual

- (a) Water Quality Objectives.** The Basin Plan contains a water quality objective for total residual chlorine of a median value of 0.002 mg/L and a maximum value of 0.003 mg/L. The Basin Plan further states that median values shall be based on daily measurements taken within any six-month period.
- (b) RPA Results.** The Discharger uses UV treatment to disinfect effluent discharged to the receiving water. However, because the use of chlorination within the treatment system is not prohibited by this Order, and the Discharger may use chlorination as a backup for the UV disinfection system, the potential for a discharge of residual chlorine remains applicable.

Due to the extreme toxicity of total residual chlorine, reasonable potential to exceed water quality objectives is present at all times total residual chlorine is discharged from the Facility. Therefore, WQBELs for total residual chlorine are required in this Order, however monitoring shall be limited to periods during which the Discharger is chlorinating or discharging effluent that has been chlorinated via the reclamation operations conducted on-site.

- (c) WQBELs.** WQBELs for total residual chlorine, were established based on the objective in the Basin Plan. A MDEL of 0.003 mg/L and a 6-month median of 0.002 mg/L for daily measurements over any 6 month period have been established, consistent with the requirements of the Basin Plan. A six-month period is defined for this Order as the first and second semesters of a calendar year.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for total residual chlorine are the same as those in the previous Order.

v. Chlorodibromomethane

- (a) Water Quality Objectives.** The CTR contains a human health water quality objective for chlorodibromomethane of 0.41 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for chlorodibromomethane because the MEC (8 µg/L) exceeds the governing water quality objective (0.41 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for chlorodibromomethane, calculated according to the SIP procedures with an effluent data CV of 0.86 and no dilution, are an AMEL of 0.41 µg/L and a MDEL of 0.97 µg/L. The previous Order establishes an AMEL of 0.41 µg/L and a MDEL of 1.3 µg/L. The newly

calculated limitations are more stringent and have been established in this Order.

- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for chlorodibromomethane are more stringent than those in the previous Order.

vi. Cyanide

- (a) Water Quality Objectives.** The CTR contains acute and chronic aquatic life freshwater water quality objectives for cyanide of 22 µg/L and 5.2 µg/L, expressed as total recoverable and a human health water quality objective of 700 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for cyanide because the MEC (8 µg/L) exceeds the governing water quality objective (5.2 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for cyanide, calculated according to the SIP procedures with an effluent data CV of 0.46 and no dilution, are an AMEL of 4.5 µg/L and a MDEL of 7.9 µg/L. The previous Order contained an AMEL of 3.6 µg/L and a MDEL of 9.6 µg/L. The AMEL of the previous order is more stringent than the newly calculated AMEL, thus resulting in a lower allowable long-term average discharge concentration over each month. The previous limitations are considered to be more stringent. This Order retains the previous limitations because they are more stringent than the new ones.
- (d) Anti-backsliding.** Anti-backsliding requirements are satisfied because the effluent limitations for cyanide are the same as those in the previous Order.

vii. Dichlorobromomethane

- (a) Water Quality Objectives.** The CTR contains a human health water quality objective for dichlorobromomethane of 0.56 µg/L.
- (b) RPA Results.** This Order establishes effluent limitations for dichlorobromomethane because the MEC (13 µg/L) exceeds the governing water quality objective (0.56 µg/L), demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** WQBELs for dichlorobromomethane, calculated according to the SIP procedures with an effluent data CV of 0.33 and no dilution, are an AMEL of 0.56 µg/L and a MDEL of 0.87 µg/L. The previous Order establishes an AMEL of 0.56 µg/L and a MDEL of 1.4 µg/L. The newly calculated limitations are more stringent and have been established in this Order.

- (d) **Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for dichlorobromomethane are more stringent than those in the previous Order.

viii. Dissolved Oxygen

- (a) **Water Quality Objectives.** The Basin Plan contains water quality objectives for dissolved oxygen for waters with a designated beneficial use of COLD including a daily minimum of 4.0 mg/L, a 7-day mean minimum of 5.0 mg/L, and a 30-day mean minimum of 6.5 mg/L.
- (b) **RPA Results.** The Discharger is a POTW and discharges biochemical oxygen demanding substances, which may lower oxygen levels in the receiving water causing toxicity to fish if not controlled. Effluent data from April 2008 through July 2012 indicates dissolved oxygen levels as low as 4.5 mg/L, indicating reasonable potential to exceed water quality objectives for dissolved oxygen. Effluent limitations for dissolved oxygen are required.
- (c) **WQBELs.** A 1-day minimum of 4.0 mg/L, a 7-day mean of 5.0 mg/L, and a 30-day mean of 6.5 mg/L have been established, consistent with the requirements of the Basin Plan.
- (d) **Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for dissolved oxygen are more stringent than those in the previous Order.
- (e) **Feasibility.** Effluent data since 2011 indicates that the Discharger would have exceeded the minimum monthly average effluent limitation for dissolved oxygen twice and may not be able to immediately comply with the final effluent limitations for dissolved oxygen. As such, a compliance schedule has been granted and is discussed in section VII.B.7 of this Fact Sheet.

ix. Nitrate (Applied as Total Nitrogen)

- (a) **Water Quality Objectives.** The Basin Plan states that waters designated as MUN shall not contain concentrations of chemical constituents in excess of MCLs, including a nitrate + nitrite (as N) concentration of 10 mg/L.
- (b) **RPA Results.** An effluent limitation limiting the discharge of nitrate is necessary because the MEC for nitrate + nitrite (12 mg/L) exceeds the governing water quality objective for nitrate + nitrite (10 mg/L), demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** The previous Order established effluent limitations for nitrate based on the anticipated performance of planned plant upgrades specified in a January 2008 antidegradation analysis submitted by the Discharger.

The previous Order determined that a long-term performance concentration for nitrate-nitrogen of 5.3 mg/L was applicable based on the proposed treatment technology and flow increases, and that concentrations of nitrite would be negligible to water quality if the nitrate effluent limitation was achieved. The previous Order established an AMEL of 8.2 mg/L and a MDEL of 11.3 mg/L, based on a long-term performance goal for nitrate of 5.3 mg/L, a CV of 0.6, and a 95th and 99th probability basis. Consistent with the intent of the anti-degradation policy, these limits were expected to minimize impacts of the proposed effluent flow increase to the receiving water when effluent flows increased from 8.3 MGD to 14.0 MGD, and then to 22 MGD. The anti-degradation analysis indicated that nitrate effluent concentrations would not decrease until after effluent flows increase from 14 MGD to 22 MGD which was expected to occur after mid-2012.

However, the Discharger implemented an alternative treatment technology for nitrogen removal than previously anticipated. In addition, the Discharger has increased the design capacity of the Facility to 18 MGD; however, the Discharger has not requested an effluent flow increase to the Mojave River beyond 14 MGD. The combination of the implementation of alternative treatment technology along with the increase in the treatment capacity of the Facility make it impossible for the Discharger to meet the limits set forth in the previous permit.

The actual observed long-term average for nitrate concentrations within the effluent from June 2009 through June 2012 is 5.8 mg/L. However, this represents treatment capabilities of the Facility well below 10 MGD, and significantly below the current treatment capacity of 18 MGD. The Discharger has indicated the intent to maximize the treatment capacity of the current treatment system as the service population grows, discharging a portion of the treated effluent to the percolation ponds, and maintaining a maximum monthly average flow below 14 MGD. The additional inflow will reduce the nitrogen removal efficiency of the treatment system. Thus, the actual observed long-term average for nitrate is not representative of future treatment capabilities of the Facility and is not an appropriate basis for developing performance-based effluent limitations.

At its percolation ponds, the Discharger has demonstrated its ability to meet average monthly and daily maximum effluent limitations for total nitrogen (nitrate + nitrite + total kjeldahl nitrogen) of 10.3 mg/L and 12.3 mg/L, respectively. These effluent limits were established in Order No. R6V-2012-0058, based on a performance goal of 8.2 mg/L and effluent data for total nitrogen for the period of January 6, 2009 through December 27, 2011 (resulting in a CV of 0.3), and occurrence probabilities of 95 and 99 percent. The effluent limits for total nitrogen established in R6V-2012-0058 are protective of applicable water quality objectives. Because total nitrogen includes both nitrate and nitrite and ammonia and organic nitrogen, establishing effluent limitations for total nitrogen which is

protective of the MCL for nitrate + nitrite (10 mg/L) is protective of the applicable water quality objective.

(d) Anti-backsliding. The removal of effluent limitations for nitrate is consistent with Section 402(o)(2) of the CWA because the treatment technology on which the previous effluent limitations were based on was not implemented. This represents a material and substantial alteration to the permitted facility that occurred after the last permit issuance, and justifies the issuance of a less stringent effluent limit, and is also information, that was not available at the time of the permit issuance, and would have justified the application of less stringent effluent limits at the time of issuance. However, as discussed above, the newly calculated effluent limitations for total nitrogen are protective of water quality standards for nitrate + nitrite and are consistent with Facility treatment capabilities.

x. Pathogens

(a) Fecal Coliform

(1) Water Quality Objectives. The Basin Plan establishes water quality objectives for fecal coliform, including a 30-day log mean of 20/100 mL and that require that no more than 10 percent of all samples collected during any 30-day period shall exceed 40/100 mL.

(2) RPA Results. The beneficial uses of the Mojave River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, no dilution. To protect these beneficial uses, the Lahontan Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's bacteria objective. Therefore, the discharge has reasonable potential for fecal coliform and WQBELs are required.

(3) WQBELs. WQBELs for fecal coliform are based on the water quality objectives contained in the Basin Plan and include a 30-day log mean of 20/100 mL and require that no more than 10 percent of all samples collected during any 30-day period shall exceed 40/100 mL.

(4) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations for fecal coliform are the same as those in the previous Order.

(b) Total Coliform

- (1) Water Quality Objectives.** Section 4.4 of the Basin Plan requires that where water contact recreational use is to be protected, the California Department of Health (CDPH) requirements for coliform must be achieved. The beneficial uses of the Mojave River include water contact recreation. In accordance with the requirements of Title 22, applicable water quality objectives for total coliform organisms include 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.
- (2) RPA Results.** The beneficial uses of the Mojave River include water contact recreation and there is, at times, no dilution. To protect this beneficial uses, the Lahontan Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's bacteria objective. Therefore, the discharge has reasonable potential for total coliform and WQBELs are required.
- (3) WQBELs.** Wastewater must be treated to a level equivalent to that recommended by CDPH. In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.
- (4) Anti-backsliding.** Anti-backsliding requirements are satisfied because this Order's effluent limitations for total coliform are the same as those in the previous Order.

(c) Turbidity

In addition to coliform limitations, an operational specification for turbidity has been included to monitor the effectiveness of treatment filter performance, and to assure compliance with the required level of treatment.

The Title 22 advanced secondary treatment process utilized at the Facility is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU). Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by

comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. In accordance with CDPH recommendations, this Order includes operational specifications for turbidity of 2 NTU as a daily average, 5 NTU not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

The Basin Plan contains water quality objectives for turbidity, which prohibit changes in turbidity that cause a nuisance or adversely affect the water for beneficial uses and result in increases in turbidity of more than 10 percent more than natural levels. Upstream receiving water data indicates turbidity varies between 0 and 16.5 NTU. Maintaining compliance with the specified turbidity effluent limitations will be protective of the water quality objective for turbidity specified in the Basin Plan.

The Lahontan Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

xi. pH

- (a) Water Quality Objectives.** The Basin Plan contains a water quality objective for fresh waters with designated beneficial uses of COLD or WARM, which states, "...changes in normal ambient pH levels shall not exceed 0.5 pH units." The Basin Plan further states that, "For all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5."
- (b) RPA Results.** Effluent limitations for pH are required in this Order based on secondary treatment standards discussed in section IV.B of this Fact Sheet. Effluent limitations must be protective of water quality, thus WQBELs for pH must be developed and compared to the applicable secondary treatment standards, and the most stringent of the two limitations applied. Further, the Facility is a POTW that treats domestic wastewater. The pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.
- (c) WQBELs.** WQBELs for pH, were established in the previous order based on the objective in the Basin Plan. The previous order found that an instantaneous maximum of 8.5 s.u. and an instantaneous minimum of 6.5 s.u. were protective of water quality. Further, the previous order established a receiving water limitation prohibiting changes in the normal ambient pH levels greater than 0.5 s.u. These effluent limitations and receiving water limitation are retained in this Order and are consistent with the requirements of the Basin Plan.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations for pH are the same as those in the previous Order.

xii. Total Dissolved Solids

(a) Water Quality Objectives. The Basin Plan contains a water quality objective for chemical constituents, including a secondary maximum contaminant levels for TDS based on drinking water standards specified in Title 22 of the California Code of Regulations. The applicable water quality objectives listed in Title 22 for TDS are 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum, to be protective of domestic water supplies. The beneficial uses of the Mojave River include municipal and domestic water supply. Upstream receiving water data contained in the Mojave River Characterization Study indicates that upstream concentrations of TDS are at or below 500 mg/L. Consistent with State antidegradation policy in Resolution No. 68-16, which requires that the existing water quality of waters be maintained, the water quality objective of 500 mg/L listed in Title 22 is appropriate for discharges from the Facility.

(b) RPA Results. The maximum effluent concentration for TDS out of 219 monitoring events from April 2008 through June 2012 was 601 mg/L, which is greater than the applicable water quality objective of 500 mg/L. Therefore, the Facility has reasonable potential to exceed water quality objectives for TDS.

(c) WQBELs. The previous Order established an MDEL of 580 mg/L and an annual average of 460 mg/L. The annual average of 460 mg/L results in a long-term average discharge below 500 mg/L and is protective of water quality. Due to State and federal anti-backsliding policies, the effluent limitations from the previous Order have been carried over.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order's effluent limitations TDS are the same as those in the previous Order.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program. This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. Acute Toxicity. The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median." Effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay-----	70%
Median for any three consecutive bioassays -----	90%

The effluent limitation for acute toxicity is at least as stringent as the effluent limitation established in the previous Order.

b. Chronic Toxicity. The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” This Order contains a narrative effluent limitation for chronic toxicity based on the Basin Plan narrative toxicity water quality objective. The Order also includes requirements for chronic toxicity monitoring to ensure attainment of the Basin Plan narrative water quality objective and a monitoring “trigger” for initiation of accelerated monitoring requirements when exceeded. The Discharger is required to implement a chronic toxicity reduction evaluation (TRE) in some circumstances.

D. Final Effluent Limitation Considerations

1. Satisfaction of Anti-Backsliding Requirements

Section 402(o) of the CWA establishes statutory language prohibiting the backsliding of effluent limits. Section 402(o)(1) prohibits the relaxation of effluent limits (1) when a permittee seeks to revise a technology-based effluent limitation based on best professional judgment to reflect a subsequently promulgated effluent guideline which is less stringent, and (2) when a permittee seeks relaxation of an effluent limitation which is based upon a state treatment standard or water quality standard. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code Federal Regulations part 122.44(l) outlines specific exceptions to the general prohibition against establishment of less stringent effluent limitations.

These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order with the exception of final effluent limitations for copper, dibenzo(a,h)anthracene, and MBAS. As discussed below, this relaxation of effluent limitations for copper, dibenzo(a,h)anthracene, MBAS, nitrate and zinc is consistent with exceptions identified under 40 C.F.R.122.44(l)(2)(i)(B)(1).

Anti-backsliding provisions in 40 C.F.R. 122.44(l)(2)(i)(B)(1), allow for relaxation of effluent limitations when information is available which was not available at the time of establishing the original limitations. Based on new data collected during the term of Order No. R6V-2008-004, copper, dibenzo(a,h)anthracene, MBAS, and zinc do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. In addition, as described in section IV. C. 4.c.ix, above, material and substantial alterations and new information that was not available at the time the previous permit was issued justify the application of less stringent nitrate effluent limits. The updated information that supports the relaxation of effluent limitations is consistent with anti-backsliding provisions because the data was not available during the drafting of Order No. R6V-2008-004. Therefore, the removal of effluent limitations for copper, dibenzo(a,h)anthracene, MBAS, nitrate and zinc in this Order are consistent with anti-backsliding provisions at 40 C.F.R. 122.44(l)(2)(i)(B)(i).

2. Satisfaction of Antidegradation Policy

Section 131.12 requires that the state water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Lahontan Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

This Order does not provide for an increase in the permitted design flow or allow for a reduction in the level of treatment. The limits included hold the Discharger to performance levels that will not cause or contribute to water quality impairment or water quality degradation. Further, compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Therefore, the issuance of this permit is consistent with the state's antidegradation policy.

3. Mass-based Effluent Limitations

Generally, mass-based effluent limitations ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. 40 C.F.R. 122.45(f)(1) requires that all permit limitations, standards or prohibitions be expressed in terms of mass units except under the following conditions: (1) for pH, temperature, radiation or other pollutants that cannot appropriately be expressed by

mass limitations; (2) when applicable standards or limitations are expressed in terms of other units of measure; or (3) if in establishing technology-based permit limitation on a case-by-case basis limitation based on mass are infeasible because the mass or pollutant cannot be related to a measure of production.

Mass-based effluent limitations are established using the following formula:

$$\text{Mass (lbs/day)} = \text{flow rate (MGD)} \times 8.34 \times \text{effluent limitation (mg/L)}$$

where: Mass = mass limitation for a pollutant (lbs/day)
 Effluent limitation = concentration limitation for a pollutant (mg/L)
 Flow rate = 14 MGD

4. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on percent removal for BOD₅ and TSS at Discharge Point No. 001. Restrictions on these parameters are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

This Order includes WQBELs for ammonia, BOD₅, bis(2-ethylhexyl)phthalate, chlorine, chlorodibromomethane, cyanide, dichlorobromomethane, dissolved oxygen, fecal coliform, pH, total coliform, total dissolved solids, total nitrogen, TSS, turbidity and dissolved oxygen at Discharge Point No. 001. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. The remaining water quality objectives and beneficial uses implemented by this Order (specifically bacteria) were approved by USEPA on September 25, 2002. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Table F-10 provides a summary of the final effluent limitations at Discharge Point No. 001.

5. Summary of Final Effluent Limitations

Table F-10. Summary of Final Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Instantaneous Minimum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	30	--	--	TTC, E
	lbs/day ²	1,170	1,750	3,500	--	--	
	% Removal	85 ³	--	--	--	--	C.F.R., E
pH	standard units	--	--	--	6.5	8.5	BP, E
Total Suspended Solids	mg/L	10	15	30	--	--	TTC, E
	lbs/day ²	1,170	1,750	3,500	--	--	
	% Removal	85 ³	--	--	--	--	C.F.R.,E
Priority Pollutants							
Bis(2-ethylhexyl)Phthalate	µg/L	1.8	--	3.6	--	--	CTR, E
	lbs/day ²	0.21	--	0.42	--	--	
Chlorodibromomethane	µg/L	0.41	--	0.97	--	--	CTR, E
	lbs/day ²	0.048	--	0.11	--	--	
Cyanide, Total Recoverable	µg/L	3.6	--	9.6	--	--	CTR, E
	lbs/day ²	0.42	--	1.1	--	--	
Dichlorobromomethane	µg/L	0.56	--	0.87	--	--	CTR, E
	lbs/day ²	0.065	--	0.10	--	--	
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.54	--	1.6	--	--	BP
	lbs/day ²	63	--	187	--	--	
Chlorine, Total Residual	mg/L	0.002 ⁴	--	0.003	--	--	BP, E
	lbs/day ²	0.234 ⁴	--	0.350	--	--	
Dissolved Oxygen	mg/L	6.5	5.0	--	4.0 ⁵	--	BP, E
Fecal Coliform	MPN/100 mL	20 ⁶	--	40 ⁷	--	--	BP,E
Nitrogen, Total	mg/L	10.3	--	12.3	--	--	BP, TTC
	lbs/day ²	1,203	--	1,436	--	--	
Total Coliform	MPN/100 mL	--	2.2 ⁸	23 ⁹	--	240	Title 22, E
Total Dissolved Solids	mg/L	460 ¹⁰	--	580	--	--	Title 22,E
	lbs/day ²	53,710 ¹⁰	--	67,721	--	--	
Turbidity	NTU	--	5 ¹¹	2 ¹²	--	10	Title 22, E

¹ TTC = Based on treatment capability,
 E = Based on effluent limitations contained in the previous Order.
 C.F.R. = Secondary Treatment Standards from 40 C.F.R. Part 133
 CTR = Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
 BP = Based on water quality objectives contained in the Basin Plan
 Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22)

² Based upon a design average dry weather flow of 14 MGD.

³ The average monthly percent removal shall be at least 85 percent.

⁴ Applied as a 6-month median.

⁵ Applied as a 1-day minimum.

⁶ The number of fecal coliform bacteria shall not exceed a log mean of 20/100 mL for any 30-day period.

⁷ The number of fecal coliform bacteria shall not exceed 40/100 mL in more than 10 percent of all samples collected in any 30-day period.

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Instantaneous Minimum	

- ⁸ Applied as a 7-day median effluent limitation.
- ⁹ Not to be exceeded more than once in any 30-day period.
- ¹⁰ To be applied as an annual average effluent limitation (AAEL).
- ¹¹ Not to be exceeded more than 5 percent of the time within a 24-hour period.
- ¹² Applied as a daily average.

E. Interim Effluent Limitations

The previous Order contains a dissolved oxygen effluent limitation of 4.0 mg/L as a daily minimum. The proposed Order contains additional dissolved oxygen limitations of 5.0 mg/L as a weekly minimum and 6.5 mg/L as a monthly average. In a letter dated May 2, 2013, titled, “*Tentative Order for the VVWRA Regional Wastewater Treatment Plant*”, the Discharger indicates that compliance with the minimum monthly average effluent limitation of 6.5 mg/L for dissolved oxygen is not immediately feasible. A review of recent effluent data indicates that the Discharger would have exceeded the proposed monthly average effluent limitation twice since September 2011. Thus, the Regional Water Board acknowledges that immediate and consistent compliance with the final effluent limitations for dissolved oxygen does not appear feasible for the Discharger.

Consistent with State Water Board Resolution No. 2008-0025, the implementation of the monthly average effluent limitation for dissolved oxygen constitutes a newly interpreted water quality objective or criterion in a water quality standard. Further, the monthly average effluent limitation for dissolved oxygen is more stringent than the daily maximum effluent limitation established in the previous Order. The implementation of interim effluent limitations as a component of a compliance schedule to achieve compliance with the final effluent limitations for dissolved oxygen is consistent with the requirements established in State Water Board Resolution No. 2008-0025. Thus, interim effluent limitations have been established in the Order based on both the current effluent limitation and current facility performance, which indicates that the Discharger can consistently comply with the applicable weekly average effluent limitation for dissolved oxygen.

In discussions with Regional Water Board staff, a Discharger representative has indicated that full compliance may be achievable in 4 years from the effective date of the Order. State Water Board Resolution No. 2008-0025 requires that all compliance schedules be as short as possible, thus compliance with final effluent limitations shall be required as soon as reasonably possible, but no longer than 4 years after the effective date of the Order.

F. Land Discharge Specifications

Land discharge specifications are included under Order No. R6V-2012-0058.

G. Reclamation Specifications

- 1. UV Disinfection Operational Provisions.** These provisions are based on recommendations from the California Department of Public Health (CDPH), specified in an October 12, 2012 letter, with the subject, *Victor Valley Wastewater Reclamation Authority Westside WRF – UV Disinfection Field Commissioning Test Results (System No. 3690013)*. These provisions maximize compliance with Title 22 of the California Code of Regulations, based on site-specific equipment and conditions at the Facility. Implementation of these provisions is necessary for the protection of public health.

CDPH reviewed the field commissioning test results for the Discharger's UV disinfection system, which utilizes XYLEM/Wedeco TAK-55 320W UV reactors to meet the minimum coliform and virus disinfection criteria for recycled water. To verify the performance of the UV disinfection system, on-site bioassays were conducted using seeded MS2 coliphage. Results of the virus disinfection performance were compared to Title 22 standards. Twenty bioassay tests were performed at various flow rates, transmittances, and UV bank combinations. Due to equipment issues and quality assurance reasons, only ten of the twenty bioassays were considered appropriate for review. All of the ten measured dosages were greater than the dose predicted by the UV dose operating equation, which controls the power and dosage level applied, and were found to be acceptable. Additionally, four of the ten tests evaluated flow split between the two channels at the Facility. The results from the two channel flow split tests indicate that good flow split is occurring between the two channels, with a maximum observed difference of 3.4 percent. Based on the test results, CDPH has accepted the Discharger's UV disinfection process, and made the operational recommendations contained in this Order as provisions.

2. Reclamation specifications are included under Order No. R6V-2003-028.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in this Order are based upon the water quality objectives contained in the Basin Plan.

A. Surface Water

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Lahontan Region. Water quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (part 131.12) and State Water Board Resolution No. 68-16. Surface water limitations in this Order are included to ensure protection of beneficial uses of the receiving water.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 C.F.R. 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Lahontan Regional Water Boards to require technical and monitoring reports. The

Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

A. Influent Monitoring

1. Monitoring Location INF-001

Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow, BOD₅, pH, and TSS have been retained from Order No. R6V-2008-004. Daily monitoring requirements for electrical conductivity and monthly monitoring requirements for ammonia, total kjeldahl nitrogen, and nitrate have not been retained from Order R6V-2008-004 as they are not necessary to determine compliance with permit requirements.

B. Effluent Monitoring

Pursuant to the requirements of 40 C.F.R. 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

1. Monitoring Location EFF-001

Effluent monitoring is established at Monitoring Location EFF-001 to allow the Discharger to demonstrate the effluent is in compliance with effluent limitations and requirements of this Order immediately after UV disinfection and prior to being discharged to Mojave River via Discharge Point No. 001.

- a.** Effluent monitoring frequencies for flow, bis (2-ethylhexyl) phthalate, BOD₅, boron, chloride, chlorine, chlorodibromomethane, copper, cyanide, dichlorobromomethane, electrical conductivity, fecal coliform, fluoride, hardness, nitrate, nitrite, oil and grease, pH, sodium, sulfate, temperature, total coliform, total dissolved solids, total nitrogen, total kjeldahl nitrogen, and turbidity have been retained from Order No. R6V-2008-004 to determine compliance with effluent limitations for these parameters or provide data necessary to characterize the wastewater at Discharge Point No. 001. Quarterly phenol monitoring is added.

A reduction in monitoring frequency for chlorodibromomethane, dichlorobromomethane, and total residual chlorine has been granted after three months of monitoring indicates that these parameters are not present at detectable concentrations within the effluent. These parameters are byproducts of the chlorine disinfection. The Discharger is currently using UV treatment for disinfection, thus chlorine byproducts are not expected to be present in the effluent when chlorination is not being used.

- b. Monitoring data collected over the term of Order No. R6V-2008-004 for dibenzo (a,h) anthracene and zinc did not demonstrate reasonable potential to exceed water quality objectives/criteria at Discharge Point No. 001.

Thus, specific monitoring requirements for dibenzo (a,h) anthracene and zinc have not been retained from Order No. R6V-2008-004 at Monitoring Location EFF-001. Monitoring for dibenzo (a,h) anthracene and zinc shall be required annual with priority pollutant monitoring.

- c. Monitoring data collected over the term of Order No. R6V-2008-004 for MBAS did not demonstrate reasonable potential to exceed water quality objectives at Discharge Point No. 001. Thus, specific monitoring requirements for MBAS have been reduced from monthly to quarterly at Monitoring Location EFF-001.
- d. Monitoring for total nitrogen (two times per month) has been added to provide additional data to evaluate the Facility's nitrogen removal and characterize the wastewater. Total nitrogen is calculated based on the sum of nitrate, nitrite and total kjeldahl nitrogen.
- e. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R6V-2008-004 and was used to conduct a meaningful RPA at Discharge Point No. 001. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. Consistent with Order No. R6V-2008-004, this Order requires annual monitoring at Discharge Point No. 001 in order to collect data to conduct an RPA for the next permit renewal.

C. Whole Effluent Toxicity Testing Requirements

- 1. **Acute Toxicity.** Consistent with Order No. R6V-2008-004, annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
- 2. **Chronic Toxicity.** Consistent with Order No. R6V-2008-004, annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Monitoring Locations RSW-001 and 002

- i. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. Upstream monitoring location RSW-001, located about three miles upstream of the effluent discharge point EFF-001 at the Mojave River Lower Narrows, is the closest upstream location with generally perennial surface

water flow in the Mojave River. Due to increase groundwater withdrawal in the Mojave River Flood plan aquifer, for the last two decades there is only ephemeral surface water flow down stream of this location to effluent discharge point EFF-001 following major storm events. Downstream of discharge point EFF-001, the Mojave River has perennial effluent dominated surface flow for some eight miles.

- ii. Receiving water monitoring requirements for ammonia, pH, chlorine, dissolved oxygen, hardness, nitrate, nitrite, temperature, total coliform, and turbidity at Monitoring Locations 001 and 002 have been retained from Order No. R6V-2008-004.
- iii. Receiving water monitoring requirements for boron, chloride, fluoride, haloacetic acids, nitrate, nitrite, orthophosphate, sulfate, and total kjeldahl nitrogen have not been retained at Monitoring Locations RSW-001 and 002 because they are not necessary to determine compliance with requirements of this Order.
- iv. Order No. R6V-2008-004 included chronic toxicity monitoring at Monitoring Location RSW-002 or 003. This Order does not retain these requirements because they are not necessary to determine compliance with requirements of this Order.
- v. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires annual monitoring for priority pollutants and other pollutants of concern, performed concurrently with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal.

b. Monitoring Locations RSW-003 and 004

- i. Provision VI.C.7.d of Order No. R6V-2008-004 required the Discharger to establish additional downstream monitoring locations, Monitoring Locations RSW-003 and RSW-004. This Order does not retain these monitoring requirements for the following reasons:
 - (a) As documented in an October 11, 2010 letter from Tom Dodson and Associates to the Lahontan Regional Water Board, and further stated in the October 5, 2012 report of waste discharge, establishing additional downstream monitoring locations is significantly constrained by access, biological resource issues, regulatory permitting requirements, and mitigations costs. The Discharger has demonstrated that there is not a safe and accessible location to monitor upstream of Monitoring Location RSW-002. Due to the difficulties in establishing additional downstream monitoring locations, the Discharger has requested that downstream monitoring of the receiving water be limited to current location, RSW-002.

- (b) In June 2010, a Mojave River Characterization Study was completed for the Discharger, as required by Order No. R6V-2008-004. In this Study, sites near proposed monitoring locations were monitored for flow and water quality to characterize the water and compare it with Monitoring Location RSW-002. The Study indicates that water quality at Monitoring Location RSW-002 is similar to water quality at the proposed monitoring locations RSW-003 and RSW-004; therefore, samples taken at Monitoring Location RSW-002 adequately characterizes the water quality downstream of Discharge Point No. 001.
- (c) This Order includes end-of-pipe WQBELs for pollutants that have reasonable potential to cause or contribute to downstream impairment and is expected to be protective of water quality within the receiving water. Exceedances of these WQBELs are enforceable and unlike receiving water results, are known to be attributable to the Discharger.
- (d) During the term of the previous Order, the Discharger upgraded to UV disinfection and improved nitrification and added denitrification. As a result, impacts from chlorine and chlorine byproducts, and nitrogen are not expected downstream of the discharge. Thus, monitoring the receiving water for impacts of nitrogen loading and chlorine residual is no longer necessary.

2. Groundwater

Because the Mojave River is effluent dominated downstream of Discharge Point No. 001, receiving groundwater is affected by the surface water discharge as effluent percolates. Therefore, separate Order No. R6V-2012-0058 requires receiving water groundwater monitoring. This Order does not include any groundwater monitoring.

E. Other Monitoring Requirements

1. Biosolids monitoring is required to protect public health and prevent groundwater degradation and are imposed pursuant to 40 C.F.R. Part 503.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the

state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. 122.62 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new relevant information that may be established in the future and other circumstances as allowed by law.

2. Special Studies and Additional Monitoring Requirements

a. Whole Effluent Toxicity. The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" This Order establishes numeric acute toxicity limitations, a narrative chronic toxicity limitation, and a trigger for accelerated monitoring.

This provision requires the Discharger to develop a TRE Workplan in accordance with USEPA guidance. In addition, the provision provides numeric toxicity monitoring triggers and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been demonstrated.

i. Monitoring Trigger. Accelerated monitoring is required when the acute toxicity effluent limitations are exceeded or a chronic toxicity monitoring trigger of $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$) is exceeded. Therefore, a TRE is triggered when the effluent exhibits toxicity at 100% effluent.

ii. Accelerated Monitoring. This provision requires accelerated WET testing when a regular WET test result exceeds an accelerated monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the*

time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

iii. TRE Guidance. The Discharger is required to prepare a TRE Workplan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- (a)** Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- (b)** Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- (c)** Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.
- (d)** Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.
- (e)** Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.
- (f)** Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
- (g)** Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
- (h)** Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
- (i)** Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

3. Best Management Practices and Pollution Prevention

- a. **Pollutant Minimization Program (PMP).** The PMP required in this Order is necessary to address pollutants for which there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:
 - i. A sample result is reported as “detected, but not quantified” (DNQ) and the effluent limitation is less than the Reporting Limit (RL); or
 - ii. A sample result is reported as “not detected” (ND) and the effluent limitation is less than the Method Detection Limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.4
- b. **Best Management Practices.** This Order references the requirement for the Discharger to identify, implement, and monitor BMPs in accordance with a site specific Storm Water Pollution Prevention Plan (SWPPP) as required under the General Industrial Storm Water Permit. The Discharger has applied for coverage under this permit and is regulated under Waste Discharge Identification Number 6B361005756.

4. Construction, Operation, and Maintenance Specifications

- a. These provisions are based on the requirements in 40 C.F.R. 122.41(e) and the existing Order.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Pretreatment Program Requirements.** The federal CWA section 307(b), and federal regulations, 40 C.F.R. Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 C.F.R. Part 403 and are based on the previous Order.
- b. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge treatment disposal and discharge specifications are based on biosolids requirements in 40 C.F.R. Part 503 and the previous Order.

6. Other Special Provisions

- a. **Order Continuation After Expiration Date.** This provision is retained from the previous Order and authorized under 40 C.F.R. 122.6(d).

- b. Land Ownership Change or Control.** In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Lahontan Regional Water Board.
- c. Succeeding Owner or Operator.** Consistent with the requirements of 40 C.F.R. 122.41(1)(3) and 122.61, to assume operation under this Order, a succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. Transfer shall be approved in writing by the Executive Officer.
- d. Flow Increase Requests.** State Water Board Resolution No. 68-16 requires that existing high quality waters be maintained to the maximum extent possible, however allows for change that is consistent with the maximum benefit to the people of the State, does not unreasonably affect present and potential beneficial uses, and will not result in water quality lower than applicable standards. The Discharger submitted an antidegradation analysis in January 2009 for flow increases up to 22 MGD, however the analysis is based on a treatment technology that was not implemented by the Discharger. Future requests for any increase in permitted effluent flow greater than 14 MGD to surface waters must be accompanied by an antidegradation analysis that demonstrates consistency with State Water Board Resolution No. 68-16 and considers current and future anticipated capabilities of the Facility.

7. Compliance Schedules

As discussed in section IV.E of this Fact Sheet, the Discharger cannot immediately comply with the newly established average monthly effluent limitation for dissolved oxygen. The newly established effluent limitation constitutes a newly interpreted water quality objective or criterion in a water quality standard and is more stringent than the previous effluent limitation. Consistent with State Water Board Resolution No. 2008-0025, a compliance schedule has been implemented allowing the Discharger time to upgrade its facilities before it is required to comply with the final effluent limitations for dissolved oxygen as soon as reasonably possible, but no more than 4 years after the effective date of this Order.

As a component of the compliance schedule, interim effluent limitations have been established that are more stringent than the previous effluent limitation and will require the Discharger to continue to operate the Facility at current performance levels. The requirements of the compliance schedule are based on State Water Board Resolution No. 2008-0025.

VIII. PUBLIC PARTICIPATION

The Lahontan Regional Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Victor Valley Regional Wastewater Treatment Plant. As a step in the WDR adoption process, the Lahontan Regional Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Lahontan Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the Water Board web site at:
http://www.waterboards.ca.gov/lahontan/board_info/agenda/2013_schedule.shtml and in the Victorville Daily Press and Barstow Desert Dispatch June 6, 2013.

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Lahontan Regional Water Board at 14440 Civic Drive, Suite 200, Victorville, CA 92392.

To be fully responded to by staff and considered by the Lahontan Regional Water Board, the written comments were due at the Lahontan Regional Water Board office by 5:00 p.m. on July 10, 2013.

C. Public Hearing

The Regional Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date: July 17, 2013
Time: 2:00 p.m.
Location: Hampton Inn Suites Barstow
2710 Lenwood Road, Jackrabbit Room
Barstow, CA 92311

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Lahontan Regional Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Lahontan Regional Water Board by calling (706) 241-6583.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Lahontan Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to John Morales, P.E at 760-241-7366.

Attachment G – Limitation Calculations

Water quality-based effluent limitation calculations for parameters calculated using the aquatic life method based on Section 1.4 of the SIP, as discussed in section IV.C.4.a.ii of the Fact Sheet. Because there is no dilution, the effluent concentration allowable (ECA) has been set equal to the criteria.

Table G-1. Protection of Aquatic Life SIP Method

Parameter	CV	ECA (criteria)		ECA Multipliers		Long Term Average (LTA)		Lowest LTA	Limit Multipliers		Limits	
		Acute	Chronic	Acute ₉₉	Chronic ₉₉	Acute	Chronic		MDEL	AMEL	MDEL	AMEL
Ammonia (mg/L)	2.0	5.6	0.95	0.117	0.204	0.655	0.194	0.194	8.55	2.78	1.6	0.54
Cyanide (µg/L) ¹	0.46	22	5.2	0.40	0.61	8.80	3.16	3.16	2.50	1.41	7.9	4.5
Nitrate (Applied as Total Nitrogen) (mg/L) ²	0.3	NA	NA	NA	NA	NA	NA	8.2	1.5	1.26	12.3	10.3

¹ Previous effluent limitations were more stringent and have been established in the Order. See section IV.C.4 of the Fact Sheet for more information.

² Based on calculations provided in Order No. R6V-2012-0058.

Water quality-based effluent limitation calculations for parameters calculated using the human health method based on Section 1.4 of the SIP, as discussed in section IV.C.4.a.iii of the Fact Sheet. Because there is no dilution, the ECA has been set equal to the criteria.

Table G-2. Protection of Human Health SIP Method

Parameter	CV	ECA (criteria)	AMEL	MDEL/AMEL Multiplier ¹	MDEL
Bis (2-ethylhexyl) phthalate (µg/L)	0.6	1.8	1.8	2.01	3.6
Chlorodibromomethane (µg/L)	0.86	0.41	0.41	2.37	0.97
Cyanide (µg/L) ²	0.46	700	700	1.77	1,240
Dichlorobromomethane (µg/L)	0.33	0.56	0.56	1.55	0.87

¹ Based on a sample frequency of four or less sampling events per month.

² Limits based on aquatic life and contained in the previous permit are more stringent. See section IV.C.4 of the Fact Sheet for more information.