CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2006-0051
WDID NO. 6B190605007

WASTE DISCHARGE REQUIREMENTS

FOR
LOS ANGELES COUNTY SANITATION DISTRICT NO. 14 LANCASTER, FOUR NEW STORAGE RESERVOIRS

_____ Los Angeles County _____

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

1. Discharger

   On May 23, 2006, the Los Angeles County Sanitation District No. 14 sent information to the Water Board, completing an application under Water Code section 13522.5. The application also included information for a revised Report of Waste Discharge under Water Code section 13260. The documents that constitute the complete application are listed in Attachment D (References). For the purposes of this Order, the Los Angeles County Sanitation District No. 14 is the "Discharger."

2. Facilities

   The Discharger collects and treats an average of 13 million gallons per day (mgd) of municipal wastewater. Treated effluent is either disposed or recycled. The Discharger's service area includes a majority of the City of Lancaster, part of the City of Palmdale, and adjacent areas within unincorporated areas of Los Angeles County. Through a network of trunk sewers, the Discharger collects untreated domestic wastewater from local sewers. Currently, all wastewater receives treatment at the Discharger's existing primary and secondary treatment facility, which is located in Lancaster. This facility produces un-disinfected and disinfected secondary treated wastewater. A portion of the secondary effluent receives further treatment at the adjacent Antelope Valley Tertiary Treatment Plant (AVTTP Plant). The Discharger has recently constructed a pilot tertiary treatment plant (Membrane Bioreactor Plant (MBR Plant)). The Discharger has operated oxidation ponds for treatment at the current plant site since 1959. Since 1988, the Discharger has operated four reservoirs located adjacent to the treatment facilities to store secondary effluent.

   The Discharger is implementing its 2020 Facilities Plan to upgrade and expand treatment capacity to 26 mgd. The Discharger has submitted an application to the Water Board for a proposed activated-sludge tertiary treatment plant that will replace the existing secondary treatment plant. A component of this project is the construction of new storage reservoirs that are regulated by this Order.

3. Order History

a. Waste Discharge Requirements and Water Recycling Requirements

The Water Board adopted the following Orders for the Lancaster Water Reclamation Plant:

i. Board Order No. 6-85-35, adopted April 11, 1985, issuing requirements to the County of Los Angeles for use of disinfected tertiary treated wastewater at Apollo Park and General William J. Fox Airfield;
ii. Board Order No. 6-86-58, adopted May 15, 1986, requirements Nebeker Ranch for use of un-disinfected secondary treated wastewater to irrigate fodder crops;
iii. Board Order No. R6V-2006-0009, adopted March 8, 2006, issuing Master Water Recycling Requirements for use of disinfected tertiary treated wastewater in the Division Street Treated Wastewater Project;
iv. Board Order No. R6V-2002-053, adopted on September 11, 2002, establishing revised Waste Discharge Requirements (WDRs) and Water Recycling Requirements for the Discharger;
v. Board Order No. R6V-2002-053A1 amending Board Order No. R6V-2002-053, adopted on July 13, 2005, amendment including: (i) requirements regulating the Discharger's network of trunk sewers, and (ii) effluent limits for treated wastewater discharged to Piute Ponds and Impoundments No. A, B and C; and
vi. Board No. R6V-2006-0035, adopted on September 14, 2006, regulating the discharge of tertiary treated wastewater to Agricultural Site No. 1.

b. Enforcement

The Water Board adopted Cease and Desist Order No. R6V-2004-0038, on October 13, 2004, to the Discharger for threatening to violate WDRs prescribed in Board Order No. R6V-2002-053. The Cease and Desist Order includes a schedule for achieving compliance with WDRs.

4. Reason for Action

The Water Board is adopting these Waste Discharge Requirements for the Discharger's proposed new storage reservoirs at this time because the Discharger has submitted an application to discharge tertiary-treated wastewater from the District's proposed activated-sludge tertiary treatment plant, the AVTTP Plant and/or the MBR Plant effluent to four additional storage reservoirs. The four new storage reservoirs will have a combined storage capacity of 1,299 million gallons.

At its September 13-14, 2006 meeting in Lancaster, the Water Board considered a proposed order that included requirements for proposed effluent storage reservoirs. The order was based on a proposal by the Discharger to construct its new storage reservoirs with a soil liner that would have allowed a leakage volume that the Discharger predicted would result in degradation of the underlying groundwater to an extent that some beneficial uses would have been adversely affected. The Water Board rejected the sections of the proposed order dealing with the storage reservoirs because it found the amount of degradation predicted to be unacceptable because it found that the amount of degradation predicted would unreasonably affect one or more beneficial uses (Municipal and/or Agricultural) and that there was a technically and economically feasible alternative that would reduce the amount of degradation.

The Discharger had evaluated various construction designs for the proposed reservoirs, including compacted native soil, which was the alternative proposed. The Discharger did not propose the other alternatives evaluated (compacted clay and synthetic material liners) due to their increased costs. This Order establishes requirements for the four proposed storage reservoirs limiting the degree of groundwater degradation to an acceptable level that meets groundwater beneficial uses. The synthetic liner alternative evaluated by the Discharger is a method that may be used to limit the degradation of groundwater. Other methods may be used.

5. Facility Location

The treatment facilities and storage reservoirs (both existing and proposed) are located approximately five miles north of central Lancaster, in the Lancaster Hydrologic Area of the Antelope Hydrologic Unit as shown in Attachment A, which is made a part of this Order. The address for the treatment facility office is 1865 W. Avenue D, Lancaster, California 93534.

6. Description of Facilities

a. Description of Existing Primary and Secondary Treatment Facility

All wastewater receives primary treatment by sedimentation tanks followed by secondary treatment in oxidation ponds No. 1 through 10. The primary treatment facility has a treatment capacity of 17 mgd and the secondary treatment facility has a treatment capacity of 16 mgd.

Oxidation ponds No. 1 through 6 include surface aerators. Anaerobic digesters treat sludge from the primary sedimentation tanks. Digested sludge is dried and stockpiled onsite until it is transported to a composting facility. Dried sludge that may be generated from pond cleaning will be hauled offsite for disposal/reuse at an authorized reuse or disposal site.

b. Description of AVTTP

The source of influent flow for the AVTTP is secondary effluent from the Discharger's last oxidation pond. This plant has the capacity to treat a maximum of 0.6 million gallons during a 24-hour period. For longer time-periods the treatment capacity is limited to 0.5 mgd. This plant includes chemical addition for coagulation/flocculation and phosphorus removal, followed by sedimentation, filtration, and disinfection with hypochlorite. The plant was not designed for nitrogen removal.

c. Description of Membrane Bioreactor Tertiary Treatment Plant

The source of influent wastewater flow for the MBR plant is effluent from the Discharger's primary treatment facility. The plant will include: (i) a suspended-growth biological process, (ii) membrane bioreactors (MBRs) and (iii) two ultraviolet disinfection systems. The treatment capacity of the proposed MBR plant in terms of effluent production is: (i) annual average net flow of 1.0 mgd, and (ii) maximum daily average net flow of 1.75 mgd. The two ultraviolet disinfection systems will be operated in parallel and each will have a disinfection treatment capacity of 1.0 mgd (in terms of average daily flow). The MBR plant will provide removal of biochemical oxygen demand (BOD) and nitrogen using a single-sludge, suspended-growth biological treatment process with MBR tanks instead of conventional clarifiers. Suspended-growth biological treatment will occur in activated sludge tanks, with initial treatment in an anoxic zone followed by further treatment in an aerobic zone. Flow from the activated sludge tanks will go to the MBR tanks for further treatment, including filtration by membranes and removal of sludge. Removed sludge will either be returned to the activated sludge tanks or wasted to Oxidation Pond No. 1.

The Discharger will use citric acid and sodium hypochlorite solutions to periodically clean the surfaces of membranes in the MBR tanks. Use of these solutions will be minimal and not cause pH concentrations of disinfection byproducts to exceed values in Table No. 3 (Finding No. 13).

d. Description of Existing and Proposed Impoundments

The Discharger operates existing impoundments (oxidation ponds and storage reservoirs) covering 410 acres. Oxidation ponds (currently 270 acres) have been operated at the plant site since 1959. Four reservoirs (140 acres) located adjacent to the oxidation ponds have been used since 1988 to store secondary effluent. The total storage capacity in the four existing reservoirs is 470 million gallons. The bottoms of the existing impoundments are constructed with compacted native soil. The Discharger is proposing to construct four additional reservoirs that would have a total surface area of 283 acres.

The following table summarizes the four proposed-reservoir storage capacities and the Discharger's estimated dates (subject to change) for completing reservoir construction.

Table 1 – Four Proposed Storage Reservoirs

Reservoir No.	Volume of Storage (Million Gallons)	Surface Area (Acres)	Tentative Construction Completion Date
1	305	66	March 2010
2	322	66	March 2010
3	381	85	September 2010
4	291	66	September 2010
	1,299 Total	283 Total	

7. Land Ownership

The storage reservoirs are located on land owned by the Discharger.

8. Authorized Storage Sites

This Order authorizes storage of tertiary effluent[1] as described in Finding Nos. 13 and 17 in the proposed reservoirs and limits the volume of allowable leakage from them.

9. Topography

The direction of the natural ground-surface gradient at the site of the Discharger's proposed surface impoundments is toward Rosamond Dry Lakebed in directions ranging from northeasterly to northwesterly. The slope of the gradient is 0.001 feet/foot at the proposed surface impoundments.

10. Geology and Hydrogeology

a. Geology

Between 1960 and 1967, the U.S. Department of Agriculture (Soil Conservation Service) investigated shallow soils (located between the ground surface and a depth of five feet) in the Antelope Valley. Results of the investigation show that shallow soils in a 25,000-acre area between the City of Lancaster and Rosamond Dry Lakebed consist of silts and sandy silts that are high in soluble salts (*USDA, 1970, Jan*). The existing oxidation ponds and storage reservoirs and the proposed new storage reservoirs are located within this area.

In geologic terms, the shallow soils located at the surface impoundment site are

[1] For the purpose of this Order, tertiary effluent or tertiary treated wastewater means an oxidized, filtered and disinfected wastewater that meets the requirements in California Code of Regulations, title 22, section 60301.230.

Quaternary alluvium. The Quaternary alluvium extends down to a lacustrine layer (blue-clay layer), which is present under these sites. The alluvium consists of interbedded, discontinuous layers with hydraulic conductivity values that vary. Layers with lower values tend to slow the downward movement of water in the vadose zone. Thin beds of clay and evaporative salt deposits, which have formed from small intermittent lakes or playas, are present in the Quaternary alluvium. The lateral extent of the Quaternary alluvium and blue-clay layer is significant. They extend throughout a large portion of Antelope Valley. The blue-clay layer was formed by the accumulation of fine-grained sediments in a large ancestral lake. Remnants of the lake are shown as Rosamond Dry Lake and Rogers Dry Lake (*USGS, 2003*).

b. Hydrogeology (General)

Using information from historic site investigation reports, the US Geologic Survey prepared a 2003 report that includes maps (plan view and cross-sectional) showing the general locations of the following hydrogeologic features in the Antelope Valley: alluvium, blue-clay layer, bedrock and the Upper, Middle and Lower Aquifers (*USGS, 2003*). The Upper Aquifer is located above the blue-clay layer and the Lower Aquifer is located below the layer. The upper portion of the Lower Aquifer is sometimes referred to as the Middle Aquifer. The blue-clay layer is considered to be an effective aquitard and the Middle and Lower Aquifers are considered to be confined aquifers (*USGS, 2003*), (*LACSD14, 2005, Jan. 28)*.

c. Hydrogeology (Discharger's Surface Impoundments)

In 2004 and 2005, the Discharger conducted hydrogeologic investigations in the area of the Discharger's existing and proposed surface impoundments. The investigation included logging of 38 boreholes, consisting of five exploratory borings and 33 boreholes for monitoring wells and piezometers. Eight of the boreholes extended into the blue-clay layer by depths ranging from several feet to 100 feet, respectively (*LACSD14, 2005, Jan. 28),* (*LACSD14, 2005, Dec. 12)*. The Discharger completed site investigation reports that include cross-sectional diagrams showing alluvium, blue-clay layer and the location of groundwater. These diagrams were constructed using information from the above-described USGS reports and the Discharger's investigations (*LACSD14, 2005, Jan. 28),* (*LACSD14, 2005, Dec. 12)*.

The reports indicate the thickness of the Quaternary alluvium located above the top surface of the blue-clay layer ranges from approximately 100 to 200 feet at the Discharger's existing and proposed surface impoundments. The surface of the blue clay layer slopes toward the southwest at approximately 0.01 feet per foot in this area (*LACSD14, 2005, Jan. 28),* (*LACSD14, 2005, Dec. 12)*. In this area, the water table for the Upper Aquifer is located at depths ranging from 40 to 75 feet below ground surface (bgs). The direction of the water table gradient

varies, ranging from toward the west to toward the north. Its slope is approximately 0.001 feet/foot (*LACSD14, 2006, May 4*).
At depths ranging from 20 to 30 feet below the ground surface (bgs) at the existing surface impoundments, there is a saturated zone perched on discontinuous layers of finer grained materials. The perched saturated zone is recharged by treated effluent that has percolated from existing surface impoundments. This perched saturated zone is located above the Upper Aquifer. The hydrogeology for the proposed reservoirs is similar to that for the existing impoundments, except the perched saturated zone is not present.

11. Groundwater (Background Quality)

The background groundwater quality is shown in Table No. 2 along with the drinking water Maximum Contaminant Levels (MCLs). The arsenic and chromium concentrations in groundwater are believed to be from naturally occurring sources. The Discharger proposed in the "Groundwater Quality Effects Analysis for the Stage V Storage Reservoirs" that background water quality contained 230 mg/L total dissolved solids. This information was based upon an initial sample collected from newly installed wells. Water Board staff evaluated self-monitoring report data submitted by the Discharger and determined that it was more appropriate to use the background TDS value shown in Table 2, below. The TDS data was determined from samples collected in groundwater monitoring wells 208, 209 and 210 located near the proposed reservoir site. Attachment F provides the data and a statistical evaluation of that data.

Table No. 2
Background Concentrations in Groundwater

Constituents	MCLs	Upper Aquifer[1]
Nitrate (mg/L as N)	10	2.4
Total Dissolved Solids (mg/L)	500[2] & 1000[3]	255 - 360
Arsenic (µg/L)	10	5 to 11
Total Chromium (µg/L)	50	8.7 to 20
Hexavalent Chromium (µg/L)	Not Established	0.1 to 16

Footnote:

1. The TDS range is the range of the average concentrations in individual monitoring wells (wells 208, 209, and 210) for samples collected during 2004, 2005 and 2006. The nitrate value (2.4 mg/L) is from Table No. 1 of the following report prepared by the Discharger: (LACSD14, 2006, May 10). The range of the average nitrate concentrations in individual monitoring wells (wells 208, 209, and 210) for samples collected during 2004, 2005 and 2006 was 0.7 to 1.8 mg/L as N. Wells 208, 209, and 210 are screened in the Upper Aquifer. These wells are located west and north of the existing unlined oxidation ponds and outside of the influence of degraded water from the existing unlined oxidation ponds. See Attachment F for an analysis of this data. Arsenic is based on nine samples collected in 2004 and 2005. Total Chromium is based on seven samples collected in 2005. Hexavalent chromium is based on six samples collected in 2004 and 2005. There has been either little or no anthropogenic development of the land in the vicinity of these well sites. Monitoring well No. 208 is located approximately 3,500 feet west of the Discharger's existing surface impoundments. Monitoring wells No. 209 and 210 are located approximately 2,000 and 3,000 feet (respectively) north of the Discharger's existing surface impoundments. The Discharger presented nitrate values in the "Water Quality Effects Analysis" supplied with the Report of Waste Discharge for this project.
2. Secondary TDS MCL (Recommended)
3. Secondary TDS MCL (Upper)

12. Groundwater (Existing Quality)

a. Proposed Storage Reservoir Site

The existing impoundments have caused groundwater degradation that is estimated to extend laterally from 1,400 to 1,800 feet beneath the Proposed Storage Reservoir Site (southern portion of site). The existing quality in the degraded groundwater, which is described below, is applicable to the southern portion of the proposed storage reservoir site. Groundwater beneath the northern portion of the proposed reservoir site has not been affected by the degraded groundwater. The background water quality beneath northern portion of the proposed reservoir site is represented by monitoring wells MW208, MW209 and MW210 because they are generally located in the proposed reservoir location and are not influenced by leakage from the existing unlined oxidation ponds.

b. Existing Impoundments (Oxidation Ponds and Storage Reservoirs)

The Discharger's 2004 and 2005 hydrogeologic investigations showed that percolation of effluent from the existing impoundments has caused groundwater degradation by increasing TDS concentrations to greater than background levels.

The average concentration of TDS in the existing surface impoundments is approximately 550 mg/L. During 2004 and 2005, sampling results for groundwater wells at the existing surface impoundment site found that annual average TDS concentrations for individual wells ranged from 784 to 897 mg/L. These data indicate that TDS concentrations in effluent increase as effluent percolates through the vadose zone that contains naturally occurring soluble salts. As discussed in Finding No. 10.a., the U.S. Department of Agriculture has confirmed the presence of naturally occurring soluble salts in the vadose zone underlying this area.

Concentrations of total nitrogen in effluent discharged from the Discharger's existing impoundments (oxidation ponds) range from 10 mg/L in the summer to 60 mg/l in the winter. Concentrations of nitrate in the perched groundwater and Upper Aquifer underlying the proposed reservoir site range from non-detect to 2.0 mg/L (as N), which is equal to or less than background concentrations.

13. Effluent Quality

Table No. 3 summarizes data for the existing AVTTP plant and proposed MBR plant. The data for the proposed MBR plant is based on design data for that plant. Treated wastewater generated by both plants will be stored in the proposed storage

reservoirs. The values for the MBR/AVTTP blend are given in the fourth column of Table No. 3. The values are based on a combination of 1.0 mgd of MBR plant effluent and 0.3 mgd of AVTTP plant effluent.

Table No. 3
Constituent Concentrations[1] in Disinfected Tertiary Treated Wastewater

Constituents	AVTTP plant effluent with hypochlorite disinfection	MBR plant effluent with ultraviolet disinfection	AVTTP and MBR plant effluent blend
Turbidity (NTUs)	5	0.2	---
Biochemical Oxygen Demand (mg/L)	6	5	---
Total Dissolved Solids (TDS)	703	550	585
Total Nitrogen (mg/L as N)	3.7	7	6
Arsenic (µg/L)	4	4	4
Total Chromium (µg/L)	2	2	2
Hexavalent Chromium (µg/L)	0.1	0.1	0.1
Disinfection By-Products:			
Trihalomethanes (µg/L)	100	20	40
Total haloacetic acids (µg/L)	80	20	34

Footnote:
1. All concentrations in this table are estimated values, with the exception of AVTTP plant turbidity, BOD, and total nitrogen, which are measured on a routine basis. Data is from the amended report of waste discharge (*LACSD14, 2006, Apr 10*) and the Discharger's annual report (*LACSD14, 2006, Mar 29).*

14. Receiving Waters

The receiving waters are the groundwaters of the Antelope Valley Groundwater Basin (Department of Water Resources Unit No. 6-44) within the Lancaster Hydrologic Area of the Antelope Hydrologic Unit (Department of Water Resources Unit No. 626.50).

15. Lahontan Basin Plan

The Water Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which became effective on March 31, 1995, and this Order implements the Basin Plan as amended.

16. Beneficial Uses

The beneficial uses of the groundwaters of the Antelope Valley groundwater basin (DWR No. 6-44) as set forth and defined in the Basin Plan are:

a. Municipal and Domestic Supply (MUN);
b. Agricultural Supply (AGR);
c. Industrial Service Supply (IND); and

d. Freshwater Replenishment (FRSH).

17. Water Quality Effects Analysis (Proposed Storage Reservoirs)

a. Summary

The Discharger evaluated various construction designs for the proposed reservoirs, including engineered compacted native soil, engineered compacted imported clay, and a synthetic liner. An initial screening of alternatives by the Discharger concluded that the cost of engineered compacted imported clay liners was comparable to a synthetic liner alternative. The analysis concluded that the synthetic liner alternative resulted in better groundwater quality protection. Furthermore, the Discharger determined that implementing an engineered compacted imported clay liner would be difficult due to the need to identify locations of and import significant amounts of clay. Therefore, the Discharger eliminated the engineered compacted imported clay liner alternative from further analysis.

Table 4, below, summarizes the remaining four alternatives evaluated (Alternatives No. 1A, 1B, 2A and 2B). The Discharger conducted a “Water Quality Effects Analysis” that is described in documents submitted as part of the Report of Waste Discharge. The last document was submitted on May 23, 2006. All of the alternatives would cause some long-term localized degradation of groundwater (i.e., increases in TDS for all alternatives and nitrate for Alternative 1A), but the magnitude and extent of degradation varied significantly. There was essentially no nitrate groundwater degradation predicted from Alternatives 2A and 2B and very small degradation for TDS. The alternatives analysis is summarized below. The Discharger had requested the Water Board to allow degradation associated with the operation of Alternative 1A.

Table No. 4
Summary of Alternatives Evaluated

Alternative No.	Liner (*LACSD14, 2006, Jan.*)	Assumed Effluent Concentrations (*LACSD14, 2006, Jan.*)		Predicted Concentrations in Groundwater Underlying the Northern Portion of the Proposed Reservoir Site[1]		Cost (Million Dollars) (*LACSD14, 2006, Jan.*) (*LACSD14, 2004, May*)
		TDS (mg/L)	TN (mg/L as N)	TDS (mg/L)	Nitrate (mg/L as N)	
1A	Unlined (Compacted Soil)	550	10	900[2]	4[2]	172.7
1B	Unlined (Compacted Soil)	550	5	900[2]	2.4[3]	203.3
2A	Lined (Synthetic)	550	10	260-365[4]	2.4[4]	203.2
2B	Lined (Synthetic)	550	5	260-365[4]	2.4[4]	233.8

Footnotes:

1. The predicted concentrations are for the northern portion of the proposed reservoir site. The existing impoundments have caused degradation of groundwater that extends from 1,400 to 1,800 feet onto the proposed reservoir site (southern portion of site). The remainder of the site (northern portion of site) has not been affected by the degraded groundwater.
2. Based on evaluation described in the Water Quality Effects Analysis.
3. Calculated using the method described in the Water Quality Effects Analysis modified to account for biological denitrification. The increase in nitrate concentrations would be negligible.
4. The liner system evaluated under these alternatives included a 40 mil synthetic liner. If this liner system were installed for the proposed reservoirs there could be some degradation of groundwater by the proposed reservoirs. TDS and nitrate concentrations in groundwater underlying the northern portion of site are believed to be representative of backround quality described in Finding No. 11. As a result of leakage through the liner system, these TDS concentrations in groundwater would increase. The Discharger predicted this increase would be 5 mg/L, although it may be higher when a higher leakage rate is considered. Therefore, the predicted arithmetic mean of groundwater beneath the proposed reservoirs is the current arithmetic mean (255-360 mg/L) plus 5 mg/L, or 260-365 mg/L. The increase in nitrate concentrations would be negligible.

b. Summary of Methods Used in the Analysis (Alternatives No. 1A and 1B-Unlined, Compacted Native Soil)

In the evaluation of the proposed unlined, compacted native soil reservoirs (Alternatives No. 1A and 1B), there was significant reliance on data from the existing surface impoundments. The behavior of the effluent TDS and nitrogen in the vadose zone and groundwater underlying the proposed unlined reservoirs were assumed to be similar to that which is occurring at the existing impoundments, with one exception: the nitrogen loss at the proposed reservoirs site would be less than the loss at the existing impoundments. The nitrogen loss for the proposed impoundments is based on literature (*WEI, 1998*).

The Discharger performed some mathematical modeling during its evaluation. Calibration and sensitivity analysis for the modeling was not performed. Results of a groundwater mixing cell model were used in the evaluation of the alternatives. A mixing cell model using a simple mass balance approach to evaluate the potential effects of liner leakage to the aquifer beneath the proposed reservoirs.

The Discharger estimated leakage from an unlined, compacted native soil reservoir would be about 100,000 gallons per day (347 gallons per acre per day). The Discharger's final evaluation of the effects of Alternatives No. 1A and 1B on TDS and nitrate concentrations in groundwater (Shown in Table No. 4 below) were primarily based on information in literature, empirical data for the existing surface impoundments, and a mixing cell model.

The mixing cell model results indicated that salt concentrations increased in groundwater although to a lesser extent for Alternatives 2A and 2B than for Alternatives 1A and 1B.

c. Summary of Methods Used in the Analysis (Alternatives No. 2A and 2B – Synthetic Lined)

The synthetic liner alternative described by the Discharger in the "Water Quality Effects Analysis" consists of the following:

1) The upper 12 inches of native soil would be scarified, graded and re-compacted;
2) A 40-mil Reinforced Polypropylene (RPE) liner would be installed;
3) A geotextile cushion is placed over the liner; and
4) A 2-foot protective soil layer is placed over the geotextile.

For the synthetic liner alternatives, the Discharger decided to use an overall permeability of 1×10^{-12} cm/sec. This analysis resulted in an estimated leakage of 300 gal/day or 1.06 gal/acre/day and that the percolate would take over 200 years to reach groundwater.

Water Board staff reviewed literature and concluded that a liner installed with good quality control/quality assurance techniques could produce higher leakage rates than predicted by the Discharger's analysis. In 1992, the US EPA collected empirical data from landfills with composite liner systems installed and concluded that 70% of the units evaluated had a leakage rate of 20 gal/acre/day or less (EPA 530-R-92-004, 1992, Office of Solid Waste, page 9). The EPA concluded that in order to achieve a leakage rate of 20 gal/acre/day or less, geomembrane defects had to be virtually eliminated by using adequate quality control/quality assurance techniques. Water Board staff considered it reasonable that a synthetic liner system installed with adequate quality control/quality assurance techniques would leak between

1 gal/acre/day and 20 gal/acre/day. This leakage rate would produce about 5,660 gallons per day from the entire 283 acres of synthetic lined reservoirs.

Based on staff's evaluation, some limited groundwater degradation due to TDS would occur using the control measures evaluated by the Discharger under Alternatives 2A and 2B. The Discharger estimated that TDS concentrations in groundwater beneath a lined reservoir may increase by a minimum of 5 mg/L and there would be negligible increase in nitrate concentrations as described by the Discharger in its "Water Quality Effects Analysis." Staffs' evaluation of background water quality, and the Discharger's analysis indicates a TDS concentration of 260 to 365 mg/L under Alternatives 2A and 2B, as shown in Table 4.

d. Predicted Maximum TDS Concentration in Groundwater Underlying Reservoirs for Alternatives 1A & 1B – Unlined, Compacted Native Soil

The effect on predicted groundwater TDS concentration is predicted to be the same for Alternatives 1A and 1B. At the proposed reservoir site, the depth to the water table of the Upper Aquifer is approximately 75 feet below ground surface. The following assumptions were made:

1) The TDS concentration in the effluent contained in the proposed reservoirs would be the same as the concentration in the existing impoundments (550 mg/L);
2) The characteristics of the soils (e.g., amount of soluble salts in soils) in the vadose zone underlying the proposed reservoirs are the same as for the existing reservoirs (See discussion in Findings No 10.a and 12.b. on soluble salts);
3) As effluent percolates through the vadose zone underlying the proposed reservoirs, the TDS concentration increases will be the same as the increases that occur under the existing impoundments, and
4) The TDS concentration in the upper 20 feet of the groundwater (Upper Aquifer) underlying the proposed reservoirs will not exceed TDS concentrations found in groundwater underlying the existing impoundments.

e. Predicted Maximum Nitrate Concentration Underlying Reservoirs for Alternative 1A –Unlined, Compacted Native Soil, with an Effluent concentration of 10 mg/L N.

The following assumptions were made for Alternative No. 1A:

1) The total nitrogen concentration in effluent stored in the proposed unlined reservoirs would be 10 mg/L as N (annual average).
2) One (1) mg/L of organic nitrogen is assumed to be resistant to biodegradation under most conditions and would neither convert to nitrate nor affect groundwater. This value is based on literature (*WEI, 1998*).

The remaining total nitrogen is assumed to decrease no more than 50% because of nitrogen losses due to biological denitrification in the proposed reservoirs and the vadose zone. This assumed nitrogen loss is less than that occurring at the existing impoundment site, which has an apparent nitrogen loss of 80% or greater. It is less because tertiary-treated effluent will be stored in the proposed reservoirs and it contains a lower ratio of organic carbon to total N (C:N ratio) than secondary treated effluent, which is contained in the existing storage reservoirs. The literature indicates a loss of 50% or less can be expected for tertiary effluent. (*WEI, 1998*). (*M&E, 2003)* (*WEI, 1998*):

Nitrogen losses for the proposed storage reservoirs, are expected to be less than the losses for the existing oxidation ponds and storage reservoirs. This is because the level of denitrification is expected to be lower for the proposed reservoirs. The loss of nitrogen due to ammonia volatilization at the proposed impoundments would be less than the loss at the existing impoundments, because total ammonia concentrations will be much lower in the proposed impoundments (less than 1.0 mg/L).

Using the above assumptions, a predicted nitrate concentration of 4.5 mg/L as N was calculated for effluent-percolate reaching groundwater. A mixing-cell model was used to estimate the effect of percolate on the groundwater directly under the proposed reservoirs. This model predicts a concentration of four (4) mg/L in groundwater.

f. Predicted Characteristics of TDS and Nitrate in Groundwater Under Alternative 1A –Unlined, Compacted Native Soil, with an Effluent concentration of 10 mg/L N.

Table No. 5 provides values for the estimated lateral distance of effluent TDS and nitrate migration in groundwater from the edges of the proposed impoundments. The values are based on data for the existing surface impoundments. The Discharger has operated the existing impoundments at the current plant site for 47 years. Graphs of TDS concentrations in existing monitoring wells show that effluent TDS in groundwater underlying the existing impoundments have migrated laterally from 1,400 to 1,800 feet from the edge of the impoundments in 47 years. Based on these graphs, the effluent TDS and nitrate in groundwater was estimated to migrate laterally from the edge of the proposed impoundments the same distance (1,400 to 1,800 feet) in the same amount of time (47 years). There is insufficient information to show whether steady state would be reached in groundwater within the 47-year period, because there is not a calibrated model. If steady state is not reached at 47 years, there would be additional lateral migration.

The estimated maximum distance of effluent TDS and nitrate migration in groundwater in a vertical-downward direction from the water table is 125 feet, the depth at which the blue clay layer is found. It is an effective barrier to groundwater movement (*USGS, 2003*). The Middle Aquifer is located below the blue clay layer, its exact vertical distance from the bottom of the Upper Aquifer is not known, but it may be close to 70 feet. This estimate is based on the location of the screened interval in the Discharger's water supply well reportedly screened in the Middle Aquifer and information on borings that penetrated the blue clay layer.

Concentrations of TDS and nitrate in groundwater affected by effluent leakage would range from 358 to 900 mg/L for TDS and from 2.4 to 4.0 mg/L as N for nitrate.

Table No. 5
Volumes and Extent of Predicted Groundwater Degradation from Alternative IA

Factor	**Magnitude**
Time Frame	Predicted to occur by 2055
Estimated Distance of Lateral Migration (feet) [1]	1400 to 1800
Area (acres)	960
Volume (acre-feet) [2]	60,000
Percent (%) of total volume of groundwater in storage within the Antelope Valley [3]	0.08
Percent (%) of annual volume of groundwater used in Antelope Valley for crop irrigation [4]	150

Footnotes:
1. The lateral distances for migration in groundwater are expected to be similar for all lateral directions, because there is relatively little slope to the surface of the water table (approximately 0.001 feet/foot (*LACSD14, 2006, May 4*).
2. The volumes of degraded groundwater were calculated assuming soils that are silts with a porosity of 0.5 (*Fetter, 1984*) and the aquifer is degraded from the water table to a depth of 125 feet below the water table.
3. A fraction was calculated by dividing the above volume of affected groundwater (acre-feet) by the estimated volume of groundwater in storage in Antelope Valley which is 72 million-acre feet. (*DWR, 1975*). The percent was calculated by multiplying the fraction by 100.
4. Current groundwater pumping in Antelope Valley for Agriculture Supply (crop irrigation) is estimated to be 40,000 acre-feet per year, based on the acreage of crops planted (*DWR, 2003*) (*UCCE, 2006*) (*KJC, 1995*). A fraction was calculated by dividing the above volume of affected groundwater (acre-feet) by 40,000 acre-feet. The percent was calculated by multiplying the fraction by 100.

g. Predicted Characteristics of TDS and Nitrate in Groundwater Under Alternative 1B –Unlined, Compacted Native Soil, with an Effluent concentration of 5 mg/L N.

Under Alternative 1B, the predicted maximum concentration and extent of TDS in groundwater beneath the proposed storage reservoirs is the same as for 1A, because the TDS concentration in effluent that would be stored in the reservoirs would be the same. Because the volume of leakage from

alternative 1A and 1B is the same, the resulting extent of TDS degradation in groundwater is the same for both alternatives. The Discharger predicted a maximum nitrate concentration in groundwater for Alternative 1B of 2.4 mg/L, based on the nitrogen content of the stored effluent for Alternative 1B. The extent of nitrate degradation in groundwater would be less for Alternative 1B than Alternative 1A, because the effluent nitrogen concentration of the water stored in the ponds is lower.

h. Predicted Characteristics of TDS and Nitrate in Groundwater Under Alternatives 2A and 2B (Synthetic Lined)

Using the Discharger's "Water Quality Effects Analysis", the resulting TDS concentration from reservoir leakage could produce a predicted arithmetic mean of TDS concentrations to increase by 5 mg/L above background. A further unquantified increase would occur in the receiving groundwater after passing through the vadose zone containing naturally occurring soluble salts. Nitrate concentrations in underlying receiving water, as shown in Table 4, would remain essentially at the background water quality concentration of about 2.4 mg/L. The discharger did not calculate the predicted extent of degraded water that would result under Alternatives 2A or 2B. However, it would be significantly less than under Alternatives 1A or 1B because the volume of leakage would be less (300 to 5,660 gallons per day for Alternatives 2A and 2B versus 100,000 gallons per day for Alternatives 1A and 1B).

18. Degradation Analysis

In accordance with State Water Resources Control Board Resolution No. 68-16 (*Statement of Policy With Respect to Maintaining High Quality of Waters in California*) and the Basin Plan, the Water Board can allow degradation of a water of the State. The Discharger is proposing to discharge waste in a manner that will result in some degradation of groundwater underlying the storage ponds. The Water Board has evaluated the various options available to the Discharger and has determined that allowing some level of degradation is appropriate, consistent with Resolution No. 68-16.

As described in Finding No. 17, the Discharger evaluated four alternatives. In addition to the four alternatives, the Water Board considered that the Discharger could prevent any degradation by constructing double-lined storage reservoirs. The Discharger did not provide any cost estimates for this alternative; however, it would likely be considerably more than that predicted for Alternatives 2A and 2B.

In order to allow any degradation, the Water Board must make all of the four findings contained in Resolution No. 68-16. The analysis of the conditions will also dictate the amount of degradation to be allowed. This analysis is project-specific as degradation may be justified in some cases but not in others. The four findings that must be made are as follows:

- The water quality changes are consistent with maximum benefit to the people of the State.
- The water quality changes will not unreasonably affect present and anticipated beneficial uses
- The water quality changes will not result in water quality less than that prescribed in the Basin Plan.
- The water quality changes are consistent with the use of best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the State.

The Water Board considered the following information in determining if it could make the above findings related to the discharge from the storage reservoirs to groundwater:

Municipal Beneficial Use

The receiving groundwater has a designated Municipal beneficial use. The Water Board has established numeric water quality objectives as specified in the California Code of Regulations to protect this beneficial use. The California Code of Regulations, Title 22 sections 64431 and 64449 establish acceptable nitrate and TDS concentrations for a Municipal drinking water supply as follows:

Nitrate (primary MCL)

Nitrate + Nitrite (sum as nitrogen) - 10 mg/l.

TDS (secondary MCL)

Recommended - 500 mg/L (desirable for a higher degree of consumer acceptance)
Upper - 1,000 mg/L (acceptable if it is neither reasonable nor feasible to provide more suitable waters), and
Short-Term - 1,500 mg/L (acceptable only for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources).

The information in Finding No. 17 of this Order indicates that it is possible to maintain groundwater TDS concentrations at or below 500 mg/l. Additionally, none of the alternatives analyzed in Finding 17 would result in nitrate levels approaching 10 mg/l.

Agricultural Beneficial Uses

The Basin Plan does not prescribe numerical water quality objectives for the agricultural beneficial use but does contain narrative criteria stating that groundwater

should not contain concentrations of chemical constituents that adversely affect the water for that use. The Basin Plan states that in determining compliance with Agricultural beneficial use objectives, sources such as the University of California Cooperative Extension should be used. The Cooperative Extension Services recommends the "Western Fertilizer Handbook" as an authoritative source on irrigated agricultural crop yields.

Carrots, onions, peaches, nectarines, grapes, potatoes and alfalfa are all grown commercially in the Antelope Valley (*UCCE, 2006*). More specific information on crop yields using higher TDS concentrations in irrigation water for individual crops grown in the Antelope Valley was developed from the Western Fertilizer Handbook (*CFA, 1985*) as shown in Table No. 7, below.

Table No. 7
Percent Reduction in Crop Yield

Crop[1]	Percent Reduction in Crop Yield[2]	Concentration of TDS in Degraded Groundwater
Carrots	0 to 10	450 to 704
	10 to 16	704 to 900
Onions		
	0 to 10	512 to 768
	10 to 15	768 to 900
Peaches and nectarines		
	0 to 10	704 to 900
Grapes		
	0 to 6	640 to 900
Potatoes		
	0 to 5	704 to 900

Footnotes:
1. Crops listed in order of increasing tolerance to TDS.
2 Based on information provided in the following references: (*CFA, 1985*), (*UNL, 2006*).

The Discharger evaluated the effects from Alternatives 1A and 1B and determined that groundwater TDS concentrations may increase to 900 mg/L. The Discharger evaluated Alternatives 2A and 2B and determined that groundwater TDS concentrations would increase only 5 mg/L above background. The maximum TDS concentration from Alternatives 1A and 1B would occur under the reservoirs in the upper aquifer and TDS concentrations in groundwater would decrease further away from the storage reservoirs. These levels of TDS in groundwater (under Alternatives 1A and 1B) could affect carrot, onion, peach, nectarine and potato yields. Alternatives 2A and 2B evaluated by the Discharger would result in concentrations of TDS in groundwater that would not affect crop yield as indicated in the above table.

Use of the Groundwater Basin

The Water Board is aware of various projects being considered in the Antelope Valley for groundwater recharge or banking that will use imported water. These projects would supplement municipal drinking water supplies benefiting both the residents of the Antelope Valley and potentially a larger number of Californians. The groundwater basin in the Antelope Valley is a closed basin. Salts are a conservative constituent. Therefore, salts that are added to the groundwater basin will likely contribute to increases in groundwater TDS concentrations. The California Water Code section 13263(b) indicates that the Water Board "need not authorize the utilization of the full waste assimilation capacities of the receiving waters" when prescribing waste discharge requirements. The Water Board believes that it is appropriate to limit the additional salt loading to this groundwater basin by controllable sources to maintain as much assimilative capacity for groundwater recharge or banking projects with have a higher public benefit than wastewater discharges.

Technology and Economics

The Discharger evaluated two storage reservoir liner alternatives and two wastewater treatment alternatives. These evaluations clearly indicate that there are treatment or control technologies that are better (result in lower levels of degradation) than those proposed by the Discharger.

Table No. 8 compares the Discharger's user charges to those for other wastewater agencies in California for the various alternatives evaluated. and shows that those higher rates are not excessive in comparison to those of similar agencies in California.

Table No. 8
Increase in User Charge Per Connection

	Monthly User Charge[1]	Total No. of Agencies in California (CA) that Reported[2]	No. of Agencies in CA with Higher User Charges[2]	Percent of Agencies in CA with Higher User Charge
Before the 2020 Facilities Plan completed in 2004	$9.33	766	721	94.1%
Based on implementing the 2020 Facilities Plan	$28.75	766	195	25.5%
Assuming Discharger were required to line the proposed reservoirs	$33.33	766	141	18.4%

Footnotes:
1. User charge information provided by the Discharger (*LACSD14, 2006, May 8)*
2. Information from State Wastewater Resources Control Board wastewater user charge survey report (*SWRCB, 2004*)

In conclusion, the above factors demonstrate that the level of degradation that would result from discharges associated with the Discharger's proposal (allowing a discharge from storage reservoirs with native soil liners) would result in groundwater constituent concentrations that have less public acceptance as a drinking water supply, would compromise the yields of crops that are grown in the Antelope Valley and would use some of the assimilative capacity of the groundwater basin that should be reserved for uses that provide a higher public benefit. However, the Water Board is able to make the findings required in Resolution No. 68-16 to allow limited degradation of groundwater quality that maintains TDS levels below the recommended levels for municipal use, that does not cause an adverse effect on crop yields and minimizes the use of the assimilative capacity of the groundwater basin.

19. Authority to Regulate Waste Leakage From Impoundments

Although the proposed reservoirs are to store treated wastewater that will ultimately be put to reuse for irrigation of fodder crops, the leakage from the ponds is not a recognized and permitted reuse of water for groundwater recharge and is therefore a discharge of waste to the groundwater and is appropriately regulated by these waste discharge requirements. The Water Board is establishing receiving groundwater limits that minimize water quality degradation while balancing this limited degradation against economic and social factors to protect Agricultural and Municipal beneficial uses.

20. Consideration of Water Code Section 13241 Factors

Section 13263 of the Water Code requires that the Board, when prescribing waste discharge requirements, take into consideration five specific factors in Section 13241 of the Water Code. The Board has considered these factors as follows.

a. Past, Present, and Probable Future Beneficial Uses of Water

The hydrologic unit of the receiving waters is the Antelope Valley Groundwater Basin. The ground water basin is presently in an overdraft condition. The beneficial uses of the groundwater include Municipal and Domestic Supply and Agriculture Supply. The receiving water limits established in this Order are to maintain, water quality objectives for Municipal and Domestic Supply and Agricultural Supply, the most sensitive beneficial uses.

b. Environmental Characteristics of The Hydrographic Unit Under Consideration, Including the Quality of Water Available Thereto

The geological and hydrogeologic characteristics of the subsurface soils and the groundwater basin are described in Finding No. 10. The background groundwater quality and the existing groundwater quality are listed in

Findings No. 11 and 12, respectively. While these WDRs allow some degradation of the upper aquifer, the lateral extent is limited and there should not be degradation of the middle or lower aquifers.

c. Water Quality Conditions That Could Reasonably be Achieved Through the Coordinated Control of All Factors, Which Affect Water Quality in the Area

The Water Board is aware that the Discharger is proposing to reuse wastewater on agricultural lands east of this location. Additionally, there are active and planned projects that will result in additional reuse of wastewater in the Antelope Valley. Finally, there are active efforts to develop groundwater recharge projects using water imported into the Antelope Valley and possibly treated wastewater. All of these activities will result in salts being added to the groundwater basin. Salts are a conservative constituent and the buildup of salts in groundwater is a likely result of the above activities. The leakage from these proposed storage reservoirs can be controlled and minimizing the discharge of salts is technically possible. Such action will reduce the impact on the assimilative capacity of this groundwater basin.

d. Economic Considerations

Economic considerations were discussed Table 4 and Table 8, above. Four alternatives, including lined impoundments, were evaluated. The additional costs for synthetic liner alternative, which was not the least cost, is justified based on the resultant additional degree of groundwater protection and the maintenance of all beneficial uses.

e. The Need for Developing Housing within the Region

The discharge will indirectly enhance the development of housing in the region, because the storage reservoirs are an integral part of the Discharger's 20-year plan for expansion of its sewage treatment and disposal capacity to address the housing growth in the service area served by the Discharger.

f. The Need to Develop and Use Treated Wastewater

These storage reservoirs are intended to store treated wastewater in winter that could be recycled during the summer. Currently, this treated wastewater is discharged to receiving waters eliminating any reuse possibilities. Therefore, this project will result in the increased use of treated wastewater.

21. California Environmental Quality Act (CEQA)

In accordance with the CEQA, the Discharger, acting as the lead agency, certified an Environmental Impact Report (EIR) on June 16, 2004 for the 2020 Plan project. The

EIR found that the project would not pose a significant impact to water quality provided that the mitigation measures summarized in Table No. 9, below, are implemented. This Order includes requirements to ensure the mitigation measures for the storage reservoirs are implemented and effective. The project certified by the Lead Agency (Discharger) would have resulted in degradation of water quality and possibly some adverse effect on beneficial uses. The Water Board has determined that there is an alternative that would provide additional water quality protection and is imposing water quality objective in this order that will eliminate the possible adverse effects resulting from the implementation of the project as evaluated in the certified EIR. The requirements in this order establish a higher level of water quality protection than that provided by the unlined storage reservoirs and therefore preclude the need for mitigation of leakage from unlined storage reservoirs.

Table No. 9
Mitigation Measures Identified in the 2020 Plan
Environmental Impact Report (EIR)

	Impact	Mitigation Measure Identified in EIR	Water Board Orders
a.	Downward migration of treated wastewater from storage reservoirs would degrade the quality of groundwater.	Native soils in the bottom of the proposed reservoirs will be compacted to minimize leakage.	This order allows less degradation than evaluated by the EIR and is therefore equally or more protective of water quality. No further investigation is needed.
b.	Downward migration of treated wastewater applied at agriculture site would degrade the quality of groundwater.	Limit the application of excess water to crop agronomic rates	Board Order R6V-2006-0035,[1] regulating the Eastern Agricultural Area, indicates degradation of underlying groundwater is not expected in the Eastern Agricultural Area because of hydrogeologic conditions and the method that will be used for crop irrigation.
c.	Agriculture-site run on and/or runoff would degrade the quality of surface water.	Construct drainage controls to prevent run on and runoff	Board Order R6V-2006-0035[1] requires the Discharger to construct drainage controls to prevent run on and runoff.
d.	Flow of treated wastewater down abandoned wells would degrade the quality of groundwater.	Identify and properly destroy abandoned groundwater wells	Board Order R6V-2006-0035[1] requires the Discharger to identify and properly destroy abandoned groundwater wells.
e.	Elimination of the threatened violations related to effluent-induced overflows described in Finding No. 18 of this Order will cause existing total dissolved solids concentrations (500 to 1400 mg/L) in Piute Ponds to increase to concentrations (>3000 mg/L) that will impact beneficial uses (*LACSD14, 2003, Oct. Pg 3-10).*	Mitigation measures are not determined yet.	Mitigation to be addressed under a future separate Board action.

[1] Board Order No. R6V-2006-0035 includes mitigation measures for limited usage of the agricultural site. Mitigation measures for the full-scale usage of the agricultural site will be addressed under a future separate Board action.

22. Notification of Interested Parties

The Water Board has notified the Discharger and interested persons of its intent to issue Waste Discharge Requirements for the discharge/reuse.

23. Consideration of Public Comments

The Water Board, held public meetings on September 13 and 14, 2006 and November 8, 2006, and heard and considered comments pertaining to the discharge of waste from the proposed storage reservoirs.

24. Authority for Requesting Reports

The fact that the Discharger is seeking coverage under waste discharge requirements issued by the Water Board for one or more proposed discharges supports the requirement that the Discharger submit technical and monitoring reports in compliance with this Order and the attached Monitoring and Reporting Program.

IT IS HEREBY ORDERED that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Receiving Water Limitations

The discharge shall not cause the presence of the following substances or conditions in groundwaters of the Antelope Hydrologic Unit.

1. Groundwater

The discharge shall not cause a violation of the following Water Quality Objectives for the groundwaters of the Lancaster Hydrologic Area.

a. Bacteria - Groundwaters shall not contain concentrations of coliform organisms attributable to human wastes.

b. Chemical Constituents - Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (Secondary MCL) based upon drinking water standards specified in the following provisions of title 22 of the California Code of Regulations: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64433.2-A of section 64433.2 (Fluoride), Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section

64449 (Secondary Maximum Contaminant Levels-Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

c. Radioactivity - Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits specified in the CCR, title 22, chapter 15, article 5, section 64443.

d. Taste and Odors - Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance (Water Code section 13050, subdivision (m)) or that adversely affect waters for beneficial uses.

e. Nitrate and TDS (Impoundments, Upper Aquifer) – Effluent seepage through the bottom of the proposed storage reservoirs shall be limited to an amount that does not cause nitrate and TDS concentrations to exceed the following limits in groundwater samples collected from compliance monitoring locations in the currently unaffected (northern) portion of the proposed reservoir location, which shall consist of monitoring wells screened across the upper 20-feet of the Upper Aquifer and located within 100 feet of the reservoirs.

Parameter	Units	Annual Average
TDS	mg/L	450
Nitrate	mg/L as N	2.4

f. Compliance Monitoring Wells - The Discharger shall establish groundwater monitoring wells for use as a receiving water compliance monitoring points. At a minimum, the Discharger shall establish four compliance monitoring wells (i.e. Existing compliance monitoring Well No. MW 209 plus three additional compliance monitoring wells). Before discharging treated-tertiary wastewater to the storage reservoirs, the Discharger shall complete installation of the additional required compliance monitoring wells and complete a minimum of eight TDS sampling rounds for each of the four compliance-monitoring wells. The frequency of monitoring shall be no less than weekly.

TDS Threshold Concentration – The Discharger is required to

calculate a TDS threshold concentration for each compliance monitoring well. The TDS threshold concentration is calculated as follows: TDS threshold concentration = upper 99% confidence interval for the first eight TDS samples collected from the well + five (5) mg/L. The factor of 5 mg/L in the above TDS Threshold concentration equation is based on the Discharger's estimate of the increase in the TDS concentration in groundwater that would result from implementation of either Alternative 2A or 2B.)

The purpose of the TDS threshold concentration is: i.) to provide early warning that TDS concentrations are increasing and may threaten to violate the receiving water limit of 450 mg/L and (ii) to trigger actions described below to address the increasing concentrations. When a TDS threshold concentration at a compliance point is exceeded, the Discharger shall collect a second confirmatory sample and complete analysis of the sample within thirty (30) days of the Discharger receiving the first laboratory result. If the results of the second sampling event confirms the results of the first event, the Discharger shall investigate the cause of the exceedance as described below:

i. Submit a technical report to the Board pursuant to Section 13267 of the Water Code within 60 days following the Discharger's receipt of the second confirmatory laboratory result indicating the TDS threshold concentration has been exceeded. The technical report shall include a plan of action with a schedule for completing actions to investigate the cause of the increase in the TDS concentrations.

iii. Provide quarterly reports on the status of the measures taken to ensure there are no violations of the receiving water limit as a result of leakage from the four storage reservoirs.

B. General Requirements and Prohibitions

1. Surface flow, or visible discharge of sewage or treated effluent, from the authorized storage reservoirs to adjacent land areas or surface waters is prohibited.

2. All facilities used for collection, transport, storage, treatment, or disposal of waste regulated by these Waste Discharge Requirements 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.

3. The vertical distance between the liquid surface elevation and the lowest point of a pond dike or the invert of an overflow structure of the storage reservoirs shall not be less than two (2.0) feet. The reservoir berm shall be surveyed and visual monitoring devices installed at the lowest elevations.

4. The discharge shall not cause pollution, as defined in California Water Code section 13050, subdivision (l), or a threatened pollution.

5. Neither the treatment nor the discharge shall cause a nuisance, as defined in California Water Code section 13050, subdivision (m).

6. The discharge of wastewater except to the authorized disposal/water recycling sites is prohibited.

7. The disposal of waste residue, including sludge, shall be in a manner in compliance with all local, state, and federal requirements.

8. The storage reservoirs shall be operated as described in the Findings of this Order and the Discharger's application referenced in Finding No. 1.

9. The discharge of waste, as defined in the California Water Code, which causes violation of any narrative Water Quality Objective contained in the Basin Plan, including the Non-Degradation Objective, is prohibited except for nitrate and TDS in groundwater underlying the storage reservoirs as provided in Discharge Specification No. I.A.1.e.

II. PROVISIONS

A. Monitoring of Proposed Storage Reservoirs

Pursuant to the California Water Code section 13267, by **April 9, 2007**, the Discharger shall submit to the Water Board a Groundwater Monitoring Workplan including a schedule for constructing additional groundwater monitoring wells at the storage reservoir site. The Discharger shall install the monitoring network and complete the sampling described below following the Water Board Executive Officer's acceptance of the Workplan and before discharging treated wastewater into the storage reservoirs. The workplan shall include:

1. A detailed schedule for completing all tasks associated with installation of the monitoring network, including performing a sufficient number of sampling events with a sufficient time-interval between each event. The sampling must occur prior to discharging treated wastewater into the storage reservoirs;
2. A map showing proposed locations for monitoring facilities;

3. Justification for the proposed monitoring locations and number of monitoring sites; and
4. Design plans and specifications for the proposed monitoring network.

B. Construction of Storage Reservoirs

1. Before constructing the storage reservoirs and pursuant to the California Water Code section 13267, the Discharger shall submit to the Water Board its Final Design Plans for the reservoirs, including construction specifications.

2. Before constructing the proposed reservoirs, the Discharger shall submit, pursuant to California Water Code section 13267, to the Water Board a Construction Quality Control/Quality Assurance (CQC/QA) Program describing activities that provide assurance that the completed reservoirs would achieve the lowest leakage possible to meet the receiving water standards specified above. If a synthetic liner is installed as part of the reservoir construction, as a minimum, the CQC/QA Program shall include the following:

   a. Plans for inspecting the liner sub-grade prior to installation to ensure that the liner will be protected;

   b. Plans for a system of inspections to directly monitor and control the quality of the overall construction project;

   c. Measures that will be taken by the installer or contractor to determine compliance with materials and workmanship requirements stated in the plans and specifications;

   d. A planned system of activities including inspections, audits, verifications and evaluations of materials and workmanship to determine and document quality of the constructed project; and

   e. Plans for conducting appropriate testing of any proposed synthetic liners to ensure that liner holes, tears, faulty seams, etc. are located and repaired before the reservoirs is placed into operation. Test methods shall be state-of-the-art methods (e.g., ASTM International methods for single synthetic liners).

      The CQA/QC plan shall be signed by a California registered engineer and include means for independent inspection with an inspector empowered to order correction of noted deficiencies.

3. Pursuant to California Water Code section 13267, the Discharger shall submit to the Water Board the following, under the signature of a California registered civil engineer, before use of the new storage

reservoirs, or within 90 days of completing their construction, whichever is first:

a. Results of the CQC/QA program;

b. Certification that the CQC/QA program was implemented as proposed; and

c. As-built drawings that the storage reservoirs were constructed in accordance with the Final Design Plans.

C. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment "E" which is made part of this Order.

D. Monitoring and Reporting

1. Pursuant to Water Code section 13267, the Discharger shall comply with the Monitoring and Reporting Program No. R6V-2006-0051 as specified by the Executive Officer. Reports requested under the Monitoring and Reporting Program are being required to monitor the effects on water quality from known or suspected discharges of waste to waters of the State as a result of releases of treated wastewater regulated by this Order.

2. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made a part of the Monitoring and Reporting Program.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on November 8, 2006.

"Original Signed by"

_____

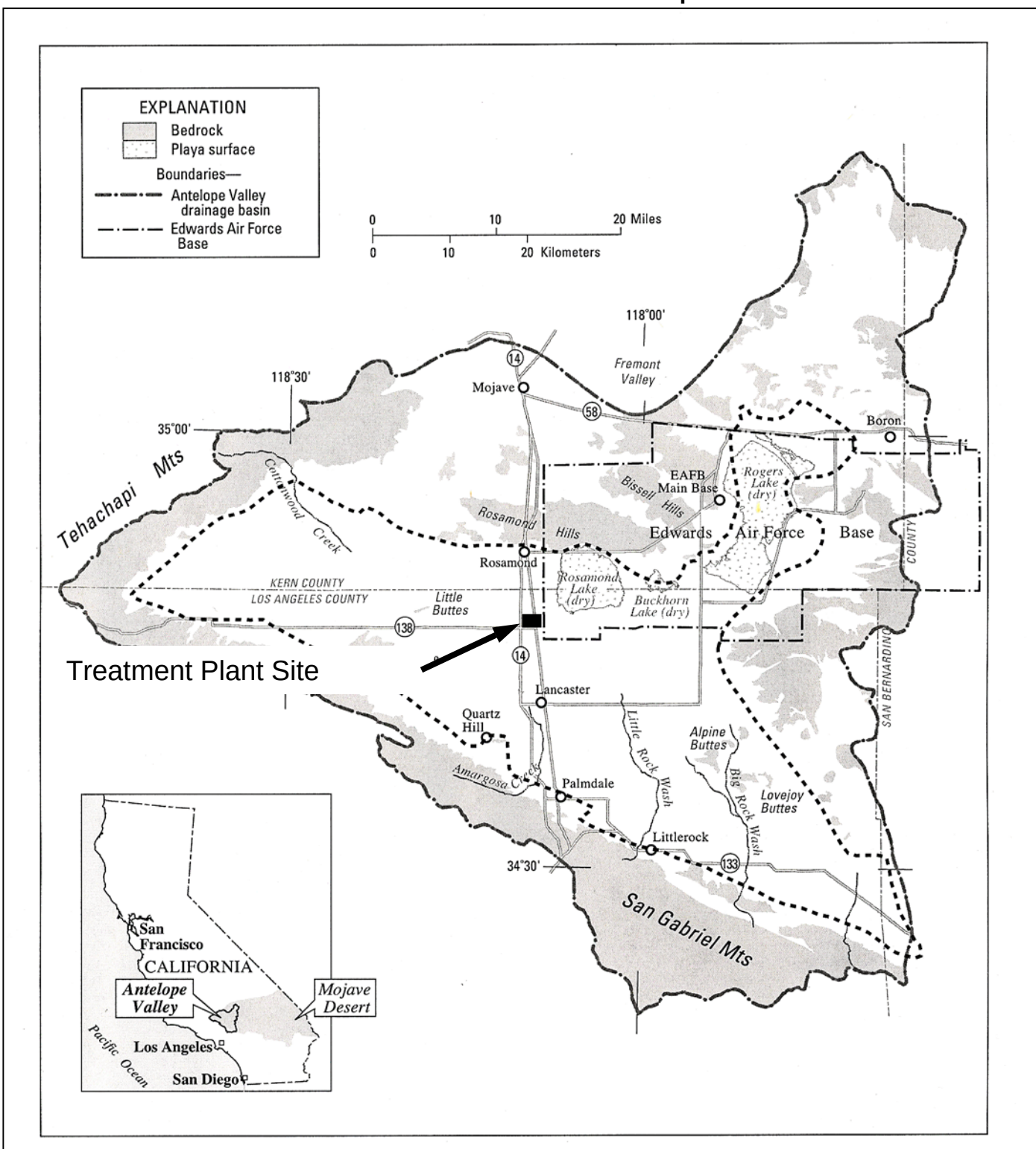
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. General Location Map
B. General Facilities Locations
C. Map of Treatment Plant Site and Storage Reservoirs
D. References
E. Standard Provisions for Waste Discharge Requirements
F. Background Water Quality - TDS

CS/rp
LACSD#14-Lancaster/Storage reservoirs/R6V-2006-PROP LACSD14 WDR

ATTACHMENT A

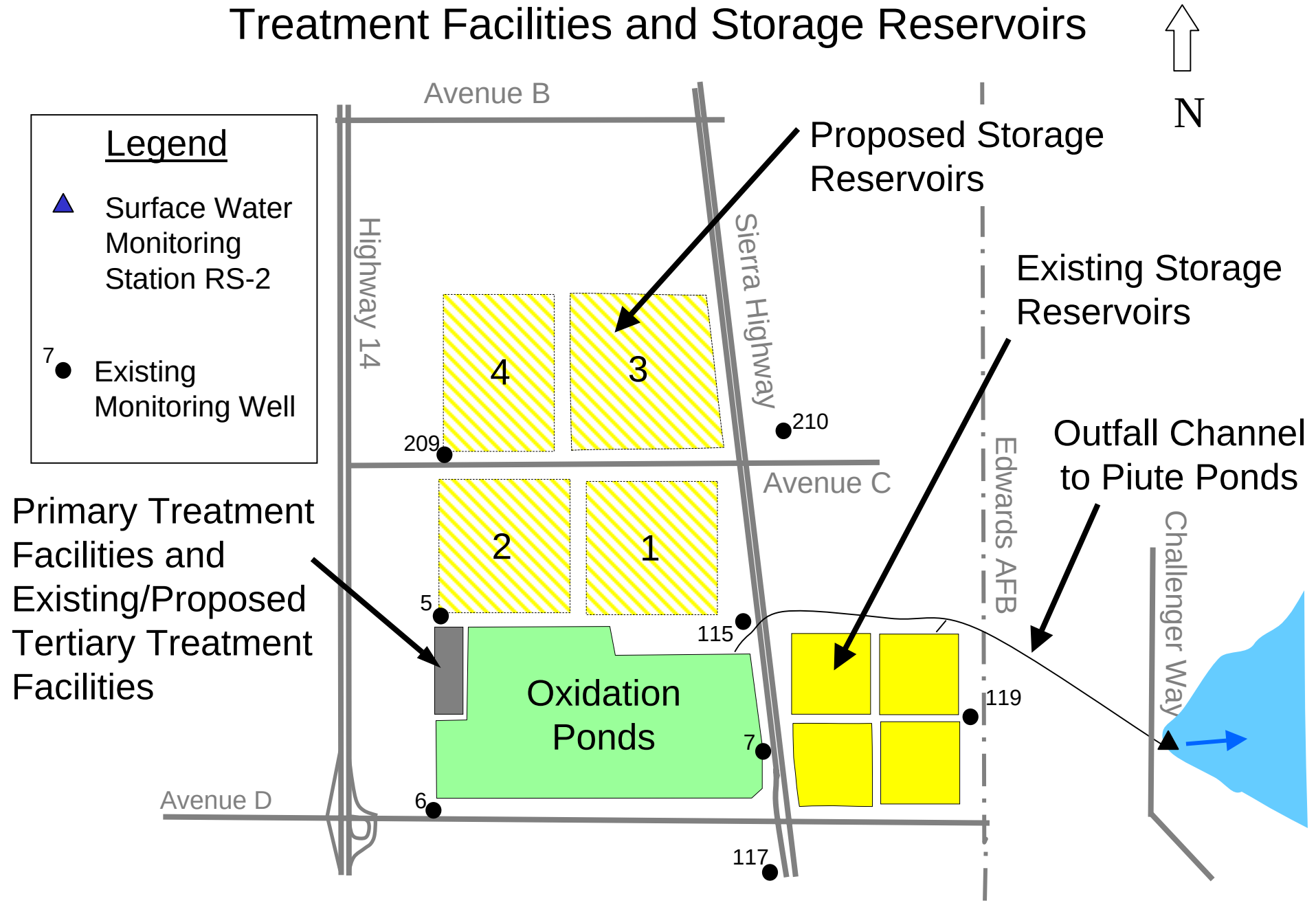
General Location Map



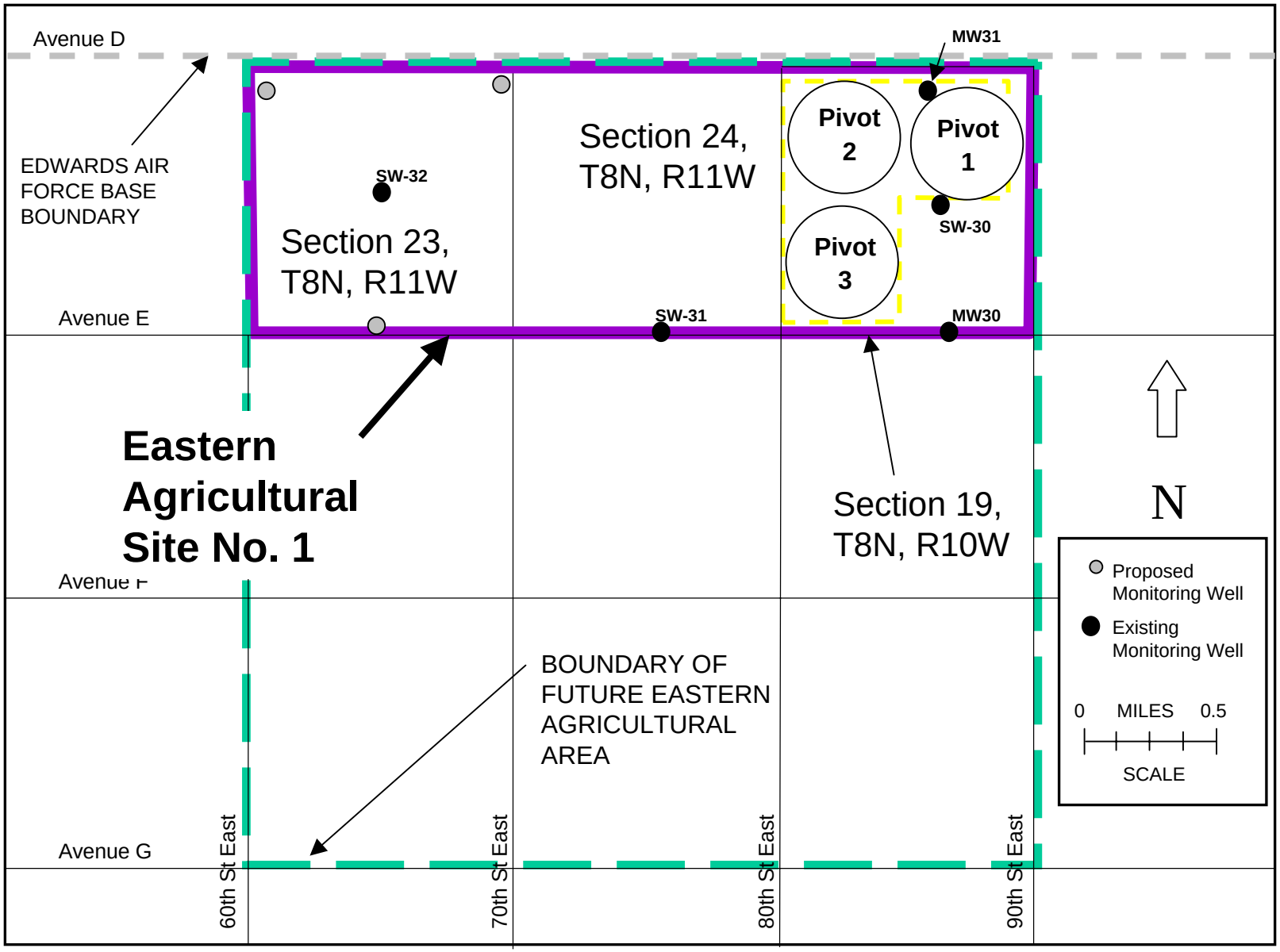
Modified from Figure 1, *Simulation of Groundwater Flow and Land Subsidence, Antelope Valley Ground-Water Basin*, USGS, 2003

ATTACHMENT C

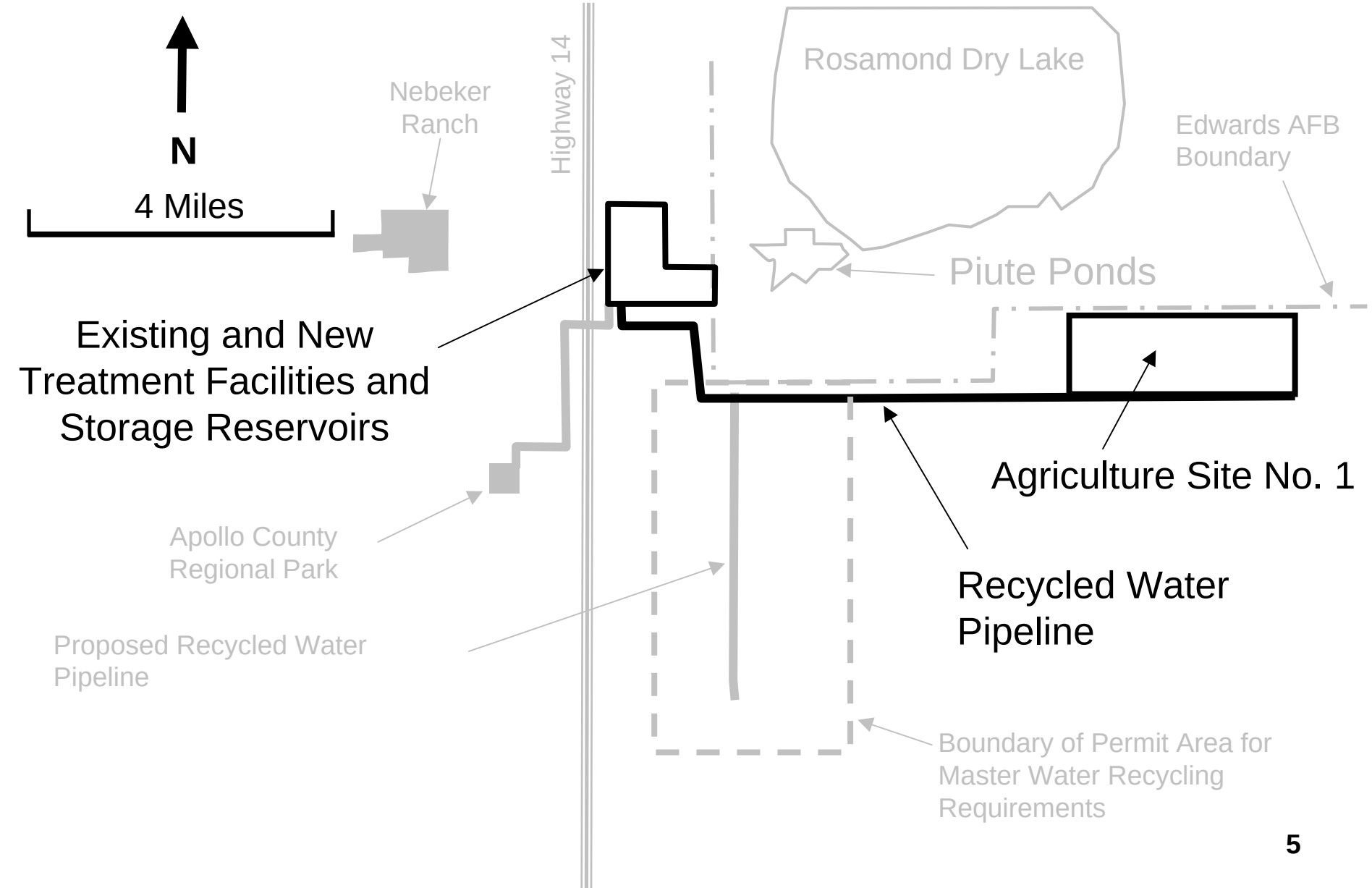
Treatment Facilities and Storage Reservoirs



Attachment D
Eastern Agricultural Site No. 1



Attachment B
General Facilities Locations



Attachment D
References

Los Angeles County Sanitation District No. 14
Domestic Wastewater Treatment Facilities, Storage Reservoirs And
Agriculture Site No. 1

Note: The references that constitute the submittals for completing the Discharger's application are in **bold** text.

1. American Society of Civil Engineers, 2006, Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, April.

2. Asano, T., et al. 1984. Irrigation With Reclaimed Municipal Wastewater - A Guidance Manual Report No. 84-1 wr. Calif. State Water Resources Control Board, Sacramento, CA. (*Asano, 1984*)

3. California Department of Health Services, 2005, Letter containing recommendations and comments on the January 15, 2005 engineering report prepared by Los Angeles County Sanitation District No. 14, June 2. (*CDHS, 2005, Jun. 2*)

4. California Department of Health Services, 2004, Hexavalent chromium monitoring results on the CDHS website, http://www.dhs.ca.gov/ps/ddwem/chemicals/Chromium6/Cr+6index.htm, Dec 15. (*CDHS, 2004, Dec 15*)

5. California Department of Water Resources, 1975, Bulletin 118 California's Groundwater, September (*DWR, 1975*).

6. California Fertilizer Association (CFA), 1985, Western Fertilizer Handbook, Seventh Edition (*CFA, 1985*)

7. Fetter, C.W., Applied Hydrologeology, Third Edition, 1994 (*Fetter, 1984*)

8. Hermanson, et al, 2000, Nitrogen Use by Crops and the Fate of Nitrogen in the Soil and Vadoze Zone, A Literature Search. Washington State Department of Ecology (*Hermanson, 2000*)

9. Kennedy/Jenks Consultants (KJC), 1995, Antelope Valley Water Resource Study, March (*KJC, 1995*)

10. Los Angeles County Sanitation District No. 14, 2006, E-mail from District staff to Lahontan Water Board staff transmitting table summarizing data for groundwater monitoring wells located at Eastern Agriculture Site No. 1, August 15. (*LACSD14, 2006, Aug 15)*.

11. **Los Angeles County Sanitation District No. 14, 2006, *Proposed Stage V Storage Reservoir Water Quality Effects Analysis – Supplement No. II*. May 23 (*LACSD14, 2006, May 23*)**

12. Los Angeles County Sanitation District No. 14, 2006, E-mail from District staff to Lahontan Water Board staff providing in information on the District's user charges, Mar. 8. (*LACSD14, 2006, May 8)*.

13. **Los Angeles County Sanitation District No. 14, 2006, *Proposed Stage V Storage Reservoir Water Quality Effects Analysis – Supplement No. I*. May 4 (*LACSD14, 2006, May 4*)**

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LACSD14 Att D ref

Attachement E

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

a. to enter upon premises in which an effluent source is located or in which any required records are kept;

b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);

c. to inspect monitoring equipment or records; and

d. to sample any discharge.

2. Reporting Requirements

a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.

b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.

c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.

d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars ($1,000) for each day of violation.

f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. 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) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.

b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, 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.

Attachment F –
Background Water Quality Near Proposed Storage Reservoirs
Lancaster Water Reclamation Plant - Total Dissolved Solids

Water Board staff evaluated available data from three monitoring wells (shown in Table A) to represent background water quality in the vicinity of the proposed four new storage reservoirs.

Table A – Total Dissolved Solids Concentrations in Wells Representing Background

Date	Well MW208 (mg/L)	Well MW209 (mg/L)	Well MW210 (mg/L)
12/2004	314	230	348
6/2005	218	261	376
9/2005	250	255	340
10/2005	261		
12/2005		267	
1/2006	274		
4/2006	241	247	
5/2006			382
7/2006	264	261	

Data Source: Self-Monitoring Reports provided by LACSD #14

Table B – Statistical Analysis of Data Set

Statistical Parameter	All Data (mg/L)	MW 208	MW 209	MW 210
Count	17.	7.	6.	4.
Deg of Freedom	16.	6.	5.	3.
St Dev	50.6	29.9	13.4	20.6
variance	2560.8	892.2	178.3	425.0
Students t (DF, 1-99%, 1-tail)	2.5669	2.9979	3.1417	3.7469
Maximum	382.	314.	267.	382.
99% CI (Upper 99% of Mean)	315	285	270	400
Arithmetic Mean	280	260	255	360
Minimum	220	220	230	340

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM
NO. R6V-2006-0051
WDID NO. 6B190605007

FOR
LOS ANGELES COUNTY SANITATION DISTRICT NO. 14
FOUR NEW STORAGE RESERVOIRS

_____ Los Angeles County _____

1. MONITORING

Board Order R6V-2006-0051 requires the Discharger to submit a Groundwater Monitoring Workplan to evaluate leakage from the new storage reservoirs.

A. Groundwater Monitoring

At a minimum, the Discharger shall install three groundwater-monitoring wells, in addition to Well No. MW 209, to monitor groundwater beneath the proposed storage reservoirs. The monitoring wells are for monitoring trends and compliance with receiving water limits contained in the Order. The monitoring shall include:

1. Monitoring locations sufficient to evaluate the groundwater in the northern (unaffected) portion of the proposed reservoir location for the upper 20-feet of the Upper Aquifer and located within 100 feet of the impoundments;

2. Grab samples of groundwater shall be collected from one existing and three proposed new monitoring wells;

3. Field parameters shall be determined in each monitoring wells each time they are sampled to determine the following;

Table 1 - Field Parameters

Parameters	**Units**
Static water depth	Feet below ground surface
Electrical conductivity	uS/cm
pH	pH units
Temperature	Degrees C
Dissolved Oxygen	mg/L
Turbidity	NTU
Color	Visual

4. The field parameters from each well shall be reported in a separate table;

5. Groundwater samples shall be analyzed for the following;

Table 2 - Groundwater Parameters

Parameter	Units	Frequency
Total Kjeldahl Nitrogen	mg/L as N	Semi-annually
Nitrate Nitrogen	mg/L as N	Semi-annually
Ammonia Nitrogen	mg/L as N	Semi-annually
Nitrite Nitrogen	mg/L as N	Semi-annually
Total Dissolved Solids	mg/L	Semi-annually
Total trihalomethanes (THMs)	μg/L	Annually
Haloacetic acids (HAAs)	μg/L	Annually
Nitrosodimethylamine (NDMA)[8]	μg/L	Annually

6. The analytical laboratory results shall be summarized and reported in a separate table; and

7. Annually, the District shall calculate and record the groundwater gradient, the direction of the gradient, and velocity of groundwater flow at the storage reservoirs.

B. Reservoir Monitoring

1. The freeboard (the vertical distance between the top of the water level and the lowest point of a dike or overflow structure) shall be monitored and recorded weekly, and reported in the monitoring report.

2. The general condition of the reservoirs shall be noted in the monitoring reports and any repairs or maintenance conducted.

C. Data Presentation for Compliance Determinations

Monitoring reports shall contain:

1. A plot of the groundwater elevations above mean sea level and elevation isopleths on an 11" x 17" copy of a site plan, which shows the locations of the authorized disposal/water recycling sites and monitoring points.

2. Graphs showing long-term trends of the following in groundwater monitoring wells: depth to groundwater and groundwater elevation.

3. Graphs (concentration versus time) showing term trends in concentrations of the following constituents in groundwater monitoring wells for TDS.

4. Before discharging treated-tertiary wastewater to the storage reservoirs, the Discharger shall complete installation of the additional required compliance monitoring wells and complete a minimum of eight TDS sampling rounds for each compliance monitoring well. The frequency of

monitoring shall be no less than weekly. The Discharger shall then determine background water quality for these parameters and determine the "Threshold" level for TDS as described in the Order. In each monitoring report the Discharger shall compare the data for the TDS concentrations in each well with respect to the "Threshold" level. If the "Threshold" level is exceeded in any well, the Discharger shall submit technical reports as required in the Order. (Note: If a constituent concentration is non-detectable on the first sample, such as THMs, HAAs(5), or NDMA, the Discharger may elect to use this value to represent background conditions and discontinue further analysis for that parameter.)

II. REPORTING

A. General Provisions and Reports

The Discharger shall comply with the "General Provisions for Monitoring and Reporting," (GPMR - Attachment "A") dated September 1, 1994, which is attached to and made part of this Monitoring and Reporting Program.

B. Reports required by this MRP are listed in table below.

Report Designation	Monitoring Period	Submittal Date
1st Semester Monitoring Report	Jan 1–June 30	September 1
2nd Semester Monitoring Report	July 1- Dec 31	March 1

"Original Signed by"
Ordered by: _____ Dated: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. General Provisions for Monitoring and Reporting

JC/rp BO2006/LACSD14 Storage Reservoirs (R6V-2006-0051 LACSD14 MRP.doc)

ATTACHMENT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

GENERAL PROVISIONS
FOR MONITORING AND REPORTING

1. SAMPLING AND ANALYSIS

a. All analyses shall be performed in accordance with the current edition(s) of the following documents:

i. Standard Methods for the Examination of Water and Wastewater

ii. Methods for Chemical Analysis of Water and Wastes, EPA

b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.

c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.

d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.

e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.

f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.

b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.

d. Monitoring reports shall be signed by:

i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;

ii. In the case of a partnership, by a general partner;

iii. In the case of a sole proprietorship,by the proprietor; or

iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

e. Monitoring reports are to include the following:

i. Name and telephone number of individual who can answer questions about the report.

ii. The Monitoring and Reporting Program Number.

iii. WDID Number.

f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars ($1,000) for each day of violation under Section 13268 of the Water Code.