

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**MEETING OF MARCH 14 AND 15, 2012
BARSTOW**

ITEM: 5

SUBJECT: **PROPOSED CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR VICTORVILLE WATER DISTRICT AND HIGH DESERT POWER PROJECT LIMITED LIABILITY COMPANY; HIGH DESERT POWER PLANT- GROUNDWATER BANKING OPERATION, SAN BERNARDINO COUNTY**

CHRONOLOGY: February 14, 2002 Conditional Waiver – adopted
March 17, 2007 Conditional Waiver - revised

ISSUE: Should the Board conditionally waive Waste Discharge Requirements and find that localized groundwater degradation is acceptable for a groundwater banking project associated with a power plant?

DISCUSSION: The High Desert Power Project located on the Southern California Logistics Airport in Victorville requires cooling water. State Water Project water supplied by the Mojave Water Agency's Mojave River Aqueduct is used as the source of plant cooling water. When State Water Project water is unavailable, cooling water is retrieved from a groundwater "bank." The California Energy Commission (CEC) required the High Desert Power Project to inject treated State Water Project water into the aquifer "bank" five miles south of the power plant where water is to be continuously "banked" before use on a one-to-one replacement ratio. The Victorville Water District owns and operates the injection/extraction wells.

Previously, the Water Board adopted Conditional Waivers on February 14, 2002 and March 17, 2007 that specified conditions for the project including injection water limits for total dissolved solids, trihalomethanes, chlorine residual and turbidity. Monitoring data submitted over the last five years indicates the Discharger has maintained full compliance with the existing Waiver.

The Board is asked to allow localized groundwater degradation out to a distance of 1,800 feet from each of four injection wells. The only substantive revisions from the previous waiver are:

- a. The annual mean trihalomethanes concentration in injected water is reduced from 2.0 to 1.7 mg/L reflecting a technology change whereby injected water is now disinfected with ultraviolet light instead of chloramines, and
- b. Injection water quality is now based on specified total dissolved solids concentrations. Previously, limits were set on the volume of water injected as representing the degree of degradation predicted. There is no change in facility operation. Direct limits on total dissolved solids concentrations are a better indicator of water quality than an indirect indicator based on volume.

**RECOMMEN-
DATION:**

Adoption of the Conditional Waiver as Proposed.

ENCLOSURE	ITEM NO.	BATE NUMBER
1.	Proposed Conditional Waiver of Waste Discharge Requirements and Monitoring and Reporting Program	5-004
2.	High Desert Power Project Comments dated January 24, 2012	5-0024
3.	Staff Responses dated February 7, 2012	5-0031

ENCLOSURE 1

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
NO. R6V-2012-(PROPOSED)
WDID NO. 6B360105004
FOR**

**VICTORVILLE WATER DISTRICT
AND
HIGH DESERT POWER PROJECT LIMITED LIABILITY COMPANY,
HIGH DESERT POWER PLANT - GROUNDWATER BANKING OPERATION**

San Bernardino County

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

1. The High Desert Power Project Limited Liability Company (HDPP LLC) and Victorville Water District (together referred to as the “Dischargers”) operate a water treatment plant, water distribution system and a series of four groundwater injection/extraction wells as part of an aquifer banking system (Facility) to supply water for the High Desert Power Project (Power Project). The Facility treats State Water Project (SWP) water from the California Aqueduct (source water) and injects the treated water into the groundwater (receiving water) for backup use by the power plant cooling system when aqueduct source water is not directly available. The source water that is injected for storage in the aquifer contains inorganic constituents, primarily total dissolved solids (TDS), at higher concentrations than the receiving water and these constituents are considered to be wastes. Over time, these waste constituents will accumulate in the receiving water near the Facility injection wells. This accumulation will result in a degradation of the receiving water quality. No other on-site waste disposal is planned. Wastes from water treatment consisting of concentrated brine sludge and residue are disposed offsite.
2. The Facility is located on both federal and municipally owned property. The water treatment plant is located on the federally owned Southern California Logistics Airport (SCLA) Property on the former George Air Force Base at 1900 Perimeter Rd, Victorville, CA 92304. The Victor Valley Economic Development Authority leases SCLA from the Air Force. On October 25, 2000, the Victor Valley Economic Development Authority assigned rights to the lease to the City of Victorville Southern California Logistics Airport Authority (SCLAA). SCLAA leases the site to the High Desert Power Trust. The water delivery, water injection, and water extraction portions of the facility are located on property owned by the City of Victorville. The Victorville Water District owns and operates the four injection/extraction wells located on lots identified by Assessor Parcel Numbers (APN): 0395-272-01, 3104-372-01, 3104-402-84, 3104-231-04, and connecting pipeline.

3. In accordance with the California Energy Commission (CEC) Condition of Certification, as amended on November 18, 2009, HDPP is required to inject source water into the aquifer groundwater when an excess of source water is available. A cumulative of 13,000 acre-feet (AF) of treated source water is to be banked for use when source water is unavailable, such as during maintenance of the California Aqueduct, during times of drought, or when source water is otherwise unavailable. Under the previous Waivers: Board Order R6V-2007-0014 and Board Order R6V-2002-0010, the Dischargers banked a net volume of 4,528.8 AF of water, with a total of 6,239.7 AF injected into four wells between January 2002 and May 2011, and a total of 1710.9 AF extracted.
4. The Dischargers submitted a Report of Waste Discharge (ROWD) on June 13, 2011. Pursuant to the California Water Code, Section 13269(a) the Water Board may waive Waste Discharge Requirements (WDRs) for projects that have filed a ROWD. Such Waivers must: 1) be consistent with the Water Quality Control Plan for the Lahontan Region (Basin Plan), 2) be in the public interest, 3) not exceed five years in duration; 4) be conditional and able to be terminated at any time by the Water Board, and 5) require individual, group, or watershed-based monitoring to support the development and implementation of the waiver program, including verifying the adequacy and effectiveness of the waiver's conditions. The Water Board finds that is not against the public interest to conditionally waive WDRs for the Facility provided that the conditions and monitoring criteria established in this waiver are met.
5. Source water from the California Aqueduct is treated with conventional technology (coagulation, sedimentation, and filtration) to remove suspended solids, settleable solids, turbidity and pathogens larger than 0.005 microns in diameter prior to injection into the receiving water. The water treatment system includes a clarifier, a multimedia filter, an ultrafiltration (UF) system, and an Ultraviolet (UV) disinfection system. The UF system removes ultra-fine particles, including pathogens, from the water. This UF water is then stored in a storage tank. Pumps deliver water from the storage tank to the aquifer storage and recovery well field. UV disinfection was installed in July 2007 at the pump station to provide an alternative to disinfection by chlorination in order to reduce potential contamination by disinfection bi-products such as trihalomethanes (THMs). Since installation of the UV lights, chlorination has not been used for disinfection. The option of using chlorination is retained for use on an "as needed basis" should bio-fouling occur in the delivery pipes between the treatment system and the injection wells at the Facility. Treated source water is continually monitored for TDS and water that exceeds an instantaneous maximum concentration of 400 mg/L TDS is diverted to other uses, such as cooling, and is not injected into the receiving water.
6. The HDPP also produces a concentrated brine slurry and a solid salt residue that can be classified as "designated" wastes under Title 27 of the California Code of Regulations (CCR), if not properly managed., This Waiver requires that the salt residue from evaporative cooling water be adequately characterized and

disposed into a waste management unit capable of accepting designated wastes and meeting the requirements of Title 27.

7. A summary of data was compiled between January 2007 and May 2011 from the following sources: analyses of water samples taken prior to injection to four injection wells, water extracted from the same four wells, and water extracted from four drinking water wells within two miles of the injection sites. The data show that TDS, consisting primarily of sodium chloride, increases in groundwater near the injection wells. Disinfection by-products have been detected in groundwater near the injection wells; however, these concentrations are expected to decrease after implementation of UV disinfection in July 2007.

HDDP submitted a groundwater modeling report in conjunction with the initial ROWD that included predictions of possible degradation of groundwater that could occur in the area surrounding the injection wells over a 30-year duration. Solute fate and transport models (MT3D99 and MODFLOW) were used to analyze potential hydraulic and groundwater quality changes that could result from three alternative injection volumes. Source water quality was estimated from analysis of historical monitoring data and used as an initial assumption in each of the three alternative injection volume scenarios. Of the three potential injection volume scenarios modeled, the "worst case" annual scenario predicted that concentrations of TDS in receiving water may increase by 200 to 250 mg/L above background concentrations in the aquifer surrounding each of the injection wells. The results also indicated that the plume of groundwater with increased TDS would extend laterally from each injection point with gradients of elevated TDS concentrations that would gradually decrease until reaching background concentrations at approximately 1,800 feet from each of the four injection/extraction wells.

8. In accordance with State Water Resources Control Board (State Water Board) Resolution No. 68-16 (*Statement of Policy With Respect to Maintaining High Quality of Waters in California*) and the Water Quality Control Plan for the Lahontan Region (Basin Plan) degradation of the quality of waters of the state may be allowed if the following conditions are met: 1) any change in water quality must be consistent with maximum benefit to people of the State; 2) the discharge will not unreasonably affect present and anticipated beneficial uses; 3) the discharge will not result in water quality less than prescribed in the Basin Plan; and 4) the Dischargers must use the 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 finds that, for this project, a condition of long-term localized degradation within a radius of 1800 feet from each of the injection/extraction wells is reasonable, acceptable and appropriate because the benefit of ground water recharge with SWP outweighs the economically viable alternatives. One alternative would be to extract groundwater for cooling without replacement. The other would be to not produce electrical power when SWP water is not available. At the time the program was initiated, the CA Energy Commission determined that alternative cooling methods

were not economically viable. The Water Board finds that the waiver for the injection/extraction wells is in the best interest of the people of California for the following reasons:

- a. Without use of groundwater to cool the power plant, production of electricity would not be viable when SWP water is not available. The State, with a growing population, has an interest in maintaining and even increasing power output statewide. This plant provides power to the area, jobs to the local economy, and reuses a former military base. Loss of power production when SWP water is not available could create a hardship to the people of California who depend on the power supply.
- b. Extraction of groundwater for cooling when source water is not available without replacement at a different date would result in acceleration of groundwater overdraft.
- c. The injected source water is required to meet all California Code of Regulations, Title 22 drinking water standards and Basin Plan objectives. It can serve the same beneficial uses that the existing groundwater provides.
- d. The area of groundwater that will be degraded is estimated to be limited to approximately 1800 feet from the points of injection (HDPP well field). The project proponents, who are also purveyors of municipal water, are monitoring source water quality and controlling the injection rate so that groundwater beneficial uses of municipal, agricultural, and industrial water supply will not be impacted by the Project.
- e. The degree of degradation/year is expected diminish over the life of the project. Salt removed from the groundwater by extraction and salt added to groundwater by injection will approach an equilibrium after the initial 13,000 AF of water is stored and when the volume of injected water will be balanced by extraction of groundwater on an as-needed basis.
- f. The injected source water contains lower concentrations of trace metals, including arsenic and chromium, than the background water quality of the receiving water. As a result, in regards to trace metals, the project could result in a localized improvement of water quality.
- g. Based on the factors listed above, the Water Board finds that: (1) changes in water quality as a result of this project are consistent with maximum benefit to people of the State; (2) beneficial uses will not be affected; (3) changes in water quality will be consistent with Basin Plan objectives; and (4) the best practicable treatment of control of the discharge is used such that no pollution or nuisance results. Therefore, the Water Board further finds the project is consistent with State Water Board Resolution No. 68-16 and the Basin Plan.

9. This Conditional Waiver governs operation of the existing Facility. There have been no proposed changes to the project that could pose adverse environmental impacts since the Regional Board's adoption of Resolution No R6V-2007-0012 Second Addendum to the Functional Equivalent of an Environmental Impact Report Certified by the California Energy Commission for Victor Valley Water District and High Desert Power Project Limited Liability Company, High Desert Power Plant – Ground Water Banking Operation was adopted by the Water Board on March 14, 2007. Approval of this waiver of WDRs consists only of allowing the continued operation of an existing facility and involves no expansion of use, and is therefore exempt from the provisions of the California Environmental Quality Act, Public Resources Code, Section 21000 et seq., in accordance with the California Code of Regulations, title 27, section 15301.

THEREFORE:

Pursuant to the California Water Code, Section 13269 (a) Waste Discharge Requirements are Conditionally Waived.

1. This Conditional Waiver expires on **March 14, 2017, (five years after adoption)** unless terminated by the Water Board before then. The Water Board may renew this Conditional Waiver if appropriate at that time or earlier.
2. The following conditions apply.
 - a. The discharge of injection water shall not contain concentrations in excess of the following limits. Annual Means are to be determined based on a calendar one-year average of samples collected. See footnotes for explanations for how exceedances of continuously monitored constituents will be determined.

<u>Constituent</u>	<u>Waiver Limit Annual Mean</u>	<u>Waiver Limit Maximum</u>
Total Dissolved Solids (mg/L)	322 ^{1,2}	400 ^{3,4}
Combined Chlorine Residual (mg/L)		0.5 ^{5, 6}
Turbidity (NTU)		1.0 ^{6,7}
Total Trihalomethanes (ug/L)	1.7 ^{8,9}	5.0 ^{6, 10}

- b. Concentrated brine and sludge residue from the Waste Treatment Plant and power plant cooling shall be adequately characterized pursuant to Title 27 requirements to determine if it is "hazardous" or "designated," and disposed into an approved waste management unit that meets regulatory requirements.
 - c. The injection of source water shall not cause a violation of any applicable water quality standards for receiving water adopted by the Water Board or the State Water Board.

- d. Installation and destruction of injection, extraction wells or monitoring wells shall be in accordance with California Well Standards criteria (DWR Bulletins 74-90 and 74-81). Well Completion Reports shall be submitted to the DWR as required in the California Water Code, Section 13751.
- e. The Facility shall be equipped with sampling points and monitoring devices at appropriate locations in the water treatment plant and at individual injection/extraction wells so that water quality samples and water level measurements can be collected consistent with the requirements of this Waiver and the attached Monitoring and Reporting Program.
- f. If water extracted from the injection wells exceeds concentrations predicted by the model referenced in Finding 7, the Discharger shall conduct a study to evaluate the cause of the exceedance, the probability that the exceedance might continue and recommended actions to prevent future exceedances. Initial and predicted maximum concentrations of TDS in receiving groundwater at the injection wellhead, based on an estimated 250 mg/L increase above background, are shown in the table below.

Well	Sample Date	Initial Value (mg/L)	Predicted Max (mg/L)
F	8/23/2002	120	370
G	7/3/2002	130	380
H	1/29/2003	120	370
K	12/18/2002	260	510

The study shall be submitted in a technical report pursuant to Water Code section 13267; due no later than 90 days after such exceedance is determined.

- g. The Dischargers shall verify and report that they meet the conditions established in this Waiver through compliance with the attached Monitoring and Reporting Program.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Waiver adopted by the California Regional Water Quality Control Board, Lahontan Region, on March 14, 2012.

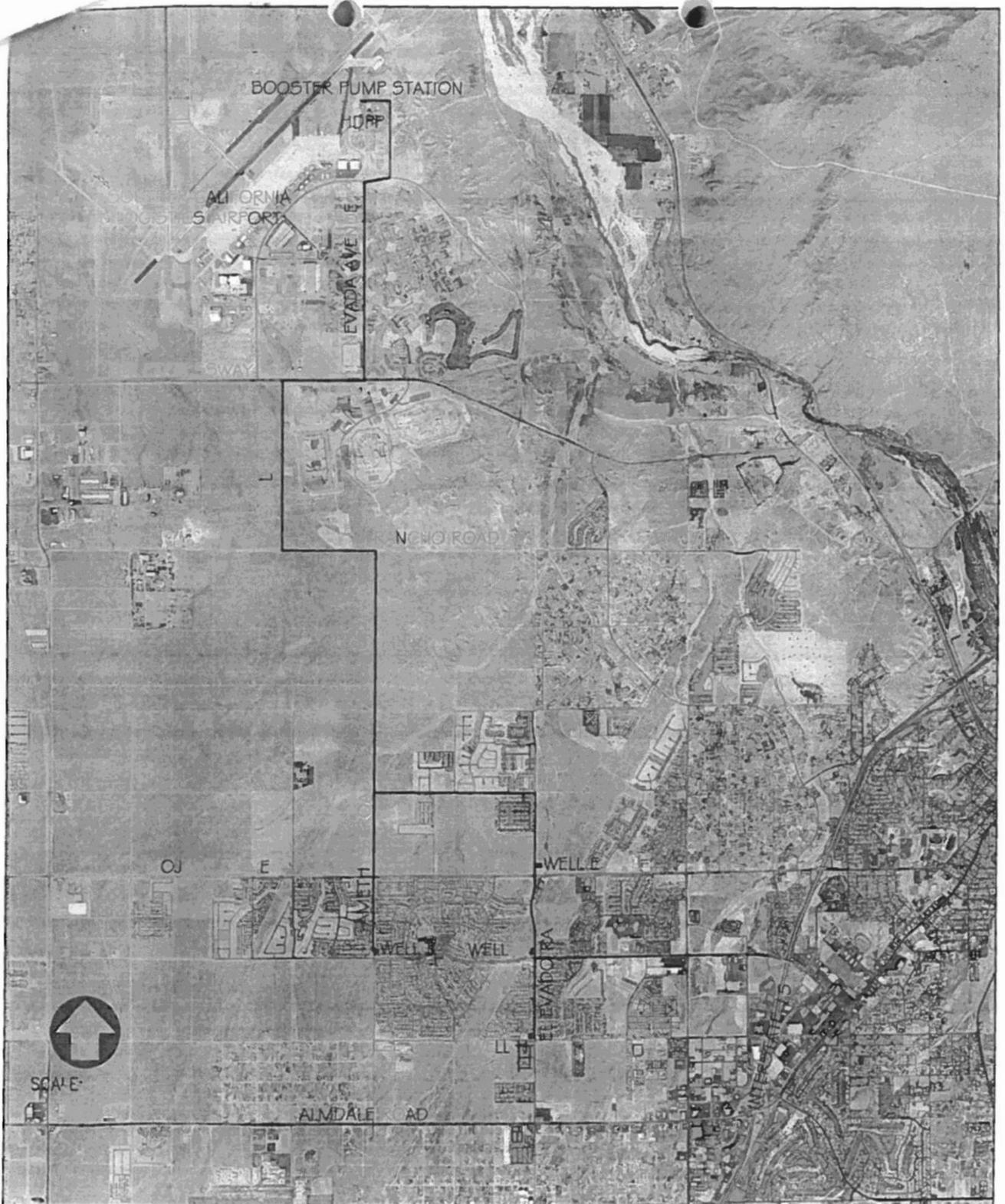
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Site Map
 B. Monitoring and Reporting Program

- ¹ The mean TDS limit represents the estimated injection water quality (Table 8 Original Report of Waste Discharge dated June 18, 2001).
- ² To determine compliance with the annual mean TDS limit, hourly electrical conductivity readings shall be recorded and converted to an equivalent TDS value. The average of all hourly TDS values over the reporting period shall be determined and reported.
- ³ The maximum TDS limit represents 80% of the recommended secondary drinking water standard of 500 mg/L.
- ⁴ To determine compliance with the maximum TDS limit, hourly electrical conductivity readings shall be recorded and converted to an equivalent TDS value. More than one exceedance greater than the maximum limit is considered to be a violation. This calculation shall be determined and reported.
- ⁵ The chlorine residual maximum limit of 0.5 mg/L was based on data submitted in the June 2001 Report of Waste Discharge. Water Board staff determined this limit to be the most restrictive value that was technically achievable and reasonable.
- ⁶ Compliance with the maximum limits for combined chlorine residual, turbidity, and trihalomethanes, will be determined by evaluating whether any measured values exceed the limit.
- ⁷ The maximum turbidity value is based on: existing background water quality and the most restrictive value that is technically achievable and reasonable.
- ⁸ The mean annual limit for total trihalomethane was lowered from the previous permit to reflect the Discharger's installation of Ultraviolet treatment for pathogens prior to water injection. The limit is based on 1% of the average Trihalomethane Formation Potential of 167 ug/L for years 2010 and 2011 per the Discharger's January 24, 2012 letter.
- ⁹ Compliance with the mean annual trihalomethane limit will be determined using the average of data collected, analyzed and reported during the previous calendar year.
- ¹⁰ The maximum limit for total trihalomethanes is the most restrictive limit that is based on the most restrictive value achievable and reasonable based on historical monitoring data.

MD/rp BO2012/March/HDPP/Proposed/R6V-2012Proposed Waiver WDR

ATTACHMENT A



PREPARED BY:

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
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Figure 1
Aquifer Banking System Facilities

5-0011

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

MONITORING AND REPORTING PROGRAM NO. R6V-2012-(PROPOSED)

WDID NO. 6B360105004

**FOR
VICTORVILLE WATER DISTRICT AND
HIGH DESERT POWER PROJECT LIMITED LIABILITY COMPANY,
HIGH DESERT POWER PLANT -
GROUND WATER BANKING OPERATION**

_____ San Bernardino County _____

1. The Discharger shall implement the following Monitoring and Reporting Program upon adoption of this Waiver.
 - A. The Discharger must monitor for the following parameters at each injection well at the frequency listed in the following tables.

Injection Water Monitoring by Continuous Meters

PARAMETERS	UNITS	FREQUENCY¹
Specific Conductance	µSiemens/cm	Continuous
Turbidity	NTU	Continuous
Chlorine Residual	mg/L	Continuous
Total Dissolved Solids (TDS)	mg/L	Calculated from continuous electroconductivity monitoring data
Flow to Injection Wells	Gallons/minute	Continuous
Cumulative Injection Flow	Gallons/minute	Continuous
Average Injection Flow Rate	Gallons/minute	Continuous
Total Monthly Injection Flow	Gallons/month	Calculated from continuous monitoring data
Total Injected Annual Flow	Gallons/year	Calculated from continuous monitoring data
Injected Water Deviation from May 2011 ROWD	%	Annually

¹ Quarterly monitoring shall reflect samples collected in each calendar quarter.
Semi-annual monitoring shall reflect samples collected in each half of the calendar year.
Annual monitoring shall reflect samples collected during each calendar year.

Injection Water Monitoring by Grab Samples

Parameter	Units	Frequency
General Physical and Aggregate Parameters		
Alkalinity (as CaCO ₃)	mg/L	Semi-annually
Apparent Color	Units	Semi-annually
Bicarbonate (HCO ₃)	mg/L	Semi-annually
Hardness (as CaCO ₃)	mg/L	Semi-annually
Odor	Units	Semi-annually
pH	Units	Semi-annually
Specific Conductance	µsiemens/cm	Semi-annually
Temperature	Deg. C	Semi-annually
Total Dissolved Solids (TDS)	mg/L	Semi-annually
Turbidity	NTU	Daily
Inorganic and Non-metallic Constituents		
Chloride (Cl)	mg/L	Quarterly
Combined Chlorine Residual	mg/L	Daily
Fluoride (F)	mg/L	Semi-annually
Nitrate (as NO ₃)	mg/L	Semi-annually
Nitrite (as N)	mg/L	Semi-annually
Sulfate (SO ₄)	mg/L	Semi-annually
Metals		
Calcium (Ca)	mg/L	Semi-annually
Hexavalent Chromium (Cr VI)	mg/L	Semi-annually
Iron (Fe)	mg/L	Semi-annually
Magnesium (Mg)	mg/L	Semi-annually
Manganese (Mn)	mg/L	Semi-annually
Potassium (K)	mg/L	Semi-annually
Sodium (Na)	mg/L	Quarterly
Total Metals		
Aluminum (Al)	mg/L	Semi-annually
Antimony (Sb)	mg/L	Semi-annually
Arsenic (As)	mg/L	Semi-annually
Barium (Ba)	mg/L	Semi-annually
Beryllium (Be)	mg/L	Semi-annually
Boron (B)	mg/L	Semi-annually
Cadmium (Cd)	mg/L	Semi-annually

Parameter	Units	Frequency
Chromium (Cr)	mg/L	Semi-annually
Copper (Cu)	mg/L	Semi-annually
Lead (Pb)	mg/L	Semi-annually
Mercury (Hg)	mg/L	Semi-annually
Nickel (Ni)	mg/L	Semi-annually
Selenium (Se)	mg/L	Semi-annually
Thallium (Th)	mg/L	Semi-annually
Zinc (Zn)	mg/L	Semi-annually
Other Constituents		
Coliform	mpn/100 ml	Monthly
Total Organic Carbon	mg/L	Semi-annually
Total Trihalomethane Compounds	mg/L	Monthly
Trihalomethane Formation Potential	µg/L	Monthly

- B. The following must be monitored for each extraction well and municipally owned well within the receiving waters monitoring area covered by this waiver:

Extraction Water Monitoring by Continuous Meters

Parameter	Units	Frequency
Average Flow Rate	Gallons/minute	Continuous
Flow from Extraction Wells	Gallons/minute	Continuous
Total Annual Flow	Gallons/Year	Continuous
Total Monthly Flow	Gallons/month	Calculated from continuous monitoring data

Extraction Water and Local Ground Water Monitoring by Grab Samples

Parameter	Units	Frequency
Groundwater Elevation	Feet above msl	Quarterly
General Physical and Aggregate Parameters		
Alkalinity (as CaCO ₃)	mg/L	Semi-annually
Apparent Color	Units	Semi-annually
Bicarbonate (HCO ₃)	mg/L	Semi-annually
Hardness (as CaCO ₃)	mg/L	Semi-annually
Odor	Units	Semi-annually
pH	Units	Semi-annually
Specific Conductance	µsiemens/cm	Semi-annually

Parameter	Units	Frequency
Temperature	Deg. C	Semi-annually
Total Dissolved Solids (TDS)	mg/L	Semi-annually
Turbidity	NTU	Semi-annually
Inorganic and Non-metallic Constituents		
Chloride (Cl)	mg/L	Semi-annually
Combined Chlorine Residual	mg/L	Semi-annually
Fluoride (F)	mg/L	Semi-annually
Nitrate (as NO ₃)	mg/L	Semi-annually
Nitrite (as N)	mg/L	Semi-annually
Sulfate (SO ₄)	mg/L	Semi-annually
Metals		
Calcium (Ca)	mg/L	Semi-annually
Hexavalent Chromium (Cr VI)	mg/L	Semi-annually
Iron (Fe)	mg/L	Semi-annually
Magnesium (Mg)	mg/L	Semi-annually
Manganese (Mn)	mg/L	Semi-annually
Potassium (K)	mg/L	Semi-annually
Sodium (Na)	mg/L	Semi-annually
Total Metals		
Aluminum (Al)	mg/L	Semi-annually
Antimony (Sb)	mg/L	Semi-annually
Arsenic (As)	mg/L	Semi-annually
Barium (Ba)	mg/L	Semi-annually
Beryllium (Be)	mg/L	Semi-annually
Boron (B)	mg/L	Semi-annually
Cadmium (Cd)	mg/L	Semi-annually
Chromium (Cr)	mg/L	Semi-annually
Copper (Cu)	mg/L	Semi-annually
Lead (Pb)	mg/L	Semi-annually
Mercury (Hg)	mg/L	Semi-annually
Nickel (Ni)	mg/L	Semi-annually
Selenium (Se)	mg/L	Semi-annually
Thallium (Th)	mg/L	Semi-annually
Zinc (Zn)	mg/L	Semi-annually

Other Constituents		
Coliform	mpn/100 ml	Semi-annually
Total Organic Carbon	mg/L	Semi-annually
Total Trihalomethane Compounds	mg/L	Semi-annually
Trihalomethane Formation Potential	mg/L	Semi-annually

C. The following must be monitored for sludge generated by the Discharger.

Sludge Monitoring

Parameter/Type of Data	Units	Frequency
Quantity generated	Cubic yards	Quarterly
Quantity disposed offsite	Cubic yards	Quarterly
Classification (Haz, Design, Non Haz Solid)		Quarterly
Final disposition of waste (location & dates of disposal)		Quarterly

2. Record Keeping

The following documentation must be kept on site and be available at all times for inspection:

A. The following records must be kept in bound notebooks:

- a. QA/QC (Quality Assurance/Quality Control) data;
- b. Monitoring date, location, and time;
- c. Technician initials or name who records data, metadata, or QA/QC data;
- d. Calibration data for instrumentation used for compliance with monitoring requirements; and
- e. Sludge monitoring data.

B. Copies of the following documents are to be kept in bound notebooks, binders, or other format that it is accessible to responsible staff and inspectors at all times:

- a. A copy of the waiver attached to this Monitoring and Reporting Plan;
- b. A copy of this Monitoring and Reporting Plan;
- c. The Sampling and Analysis Plan specified in the waiver and this Monitoring and Reporting Program; and
- d. A copy of any applicable Quality Assurance and Quality Control (QA/QC) Plan.

- C. Documentation of training events for staff who conduct monitoring. Documentation will include:
 - a. Name of Trainer;
 - b. Name(s) of staff who are trained; and
 - c. List of topics covered by training.
 - D. Records of readings taken from continuous meters shall be kept in a bound notebook with time, date, meter read, location, and initials or name of staff that makes the reading or a printout from the monitoring equipment must be kept on-site.
 - E. The Dischargers must comply with the attached General Provisions for Monitoring and Reporting.
3. Scheduled Reports to be Filed with the Water Board

The following reports shall be submitted to the Water Board pursuant to Water Code Section 13267, as specified below.

- A. **By May 15, 2012**, submit an updated Sampling and Analysis Plan. The updated SAP shall describe sample collection method and procedures, sample frequencies and methods of analysis and data quality control. The SAP shall be updated and a revised SAP shall be submitted if changes are made to the project, or facilities associated with the project.
- B. By **March 30, 2012** and by **March 1 of each year** thereafter, submit an Annual Report with an evaluation of all data collected the previous year and a statement whether the Discharger has complied with this Conditional Waiver. The following data sets are to be collected, compiled and included in the report: water quality data graphs and trends, elevation monitoring data graphs and trends, quality assurance and quality control data for all data sets, injection volume, and extraction volume.
- B. By **October 15, 2016**, (five years after adoption minus 140 days). The Dischargers shall submit a Report of Waste Discharge that includes the following:
 - a. Form 200 Report of Waste Discharge;
 - b. Tabulated monitoring data collected over the duration of this permit;
 - c. Tabulated data that describes the naturally occurring ground water quality prior to initial injection of SWP water;
 - d. An evaluation of Discharger's compliance with this Conditional Waiver. The Report of this evaluation shall include: A time series comparison of water elevation and quality changes over time as predicted by the initial model described in Finding 7 versus observed changes;

- e. A complete characterization of discharge water including parameters listed in California and Federal Drinking Water Standards, SIP, and Applicable Basin Plan Objectives; and
- f. This Report shall be signed by a California registered Civil Engineer, a California Registered Geologist and shall reference this Conditional Waiver.

D. These reports shall contain the following information in addition to what is required in the General Provisions for Monitoring and Reporting.

- a. All data collected from the previous year with the following:

Parameter/Type of Data	Frequency
Compliance Calculations	Annually
Narrative compliance evaluation	Annually
Operation and maintenance performed	Annually
Metadata for sample collection and analyses	
Documentation of ELAP certification for analyses conducted by both onsite and offsite labs/personnel; documentation of appropriate training of personnel who perform field measurement and/or read and maintain continuous meters.	Annually
Analysis date, time, location, method, technician name for each sample	With Each Data Set
Certification of data analysis by lab director or responsible party	With Each Data Set
Chain of custody sheets for off-site data analyses	With Each Data Set
Detection limit for each parameter	With Each Data Set
EPA analysis method number for each method	With Each Data Set
Lab contact name/telephone no./email	With Each Data Set
QA/QC data for each parameter	With Each Data Set
Reporting limit for each parameter	With Each Data Set
Sample collection time, location, date, and method for each sample	With Each Data Set
Violations noted by color change, formatting change or symbol in data tables.	With Each Data Set
General Report Information	
Electronic form of tab separated text either on a CD or uploaded directly to the California Integrated Water Quality System (CIWQS).	Each Data Set
Page number	Each Page of Each Report
Board Order Number for Waiver	Each Report
Certification of report by responsible party	Each Report

Dates of reporting period included within the report	Each Report
Name, title and contact information of party(ies) who prepared the report	Each Report
Name, title, and contact information for responsible party who certifies the report	Each Report
Waste Discharge Identification (WDID) number for waiver	Each Report

- b. A map or aerial photograph showing the locations of monitoring wells in the receiving water program;
 - c. Information on operation and maintenance of the Facility which may affect water quality;
 - d. Any periods of non-operation; and
 - e. The compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with the Waiver.
- E. In reporting the monitoring data, the Discharger shall arrange the data in tabular and/or graphical form so that the date, the constituents, and the concentrations are readily discernible. The data must be summarized in such a manner to illustrate clearly the compliance with the Waiver.
- F. This Monitoring and Reporting Program may be modified by the Executive Officer.

Ordered by: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: _____

Attachment: A. General Provisions for Monitoring and Reporting (dated September 1, 1994)

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.

ENCLOSURE 2



High Desert Power Project, LLC

1044 N. 115 Street, Suite 400 | Omaha, Nebraska 68154-4446
402-691-9500 | FAX: 402-691-9526

January 24, 2012

Ms. Cindi Mitton
California Regional Water Quality
Control Board – Lahonton Region
14440 Civic Drive, Suite 200
Victorville, California 92392-2306

CRWQCB REG6	-99
REC'D	RECEIVED JAN 25 2012
	CM
	JC
FILE	1/26

Via Overnight Courier

Re: Comments to Tentative Waiver of Waste Discharge Requirements
Victorville Water District and High Desert Power Project
WDID 6B360105004

Dear Ms. Mitton:

High Desert Power Project, LLC (“HDPP”) appreciates the opportunity to provide comments on the above-referenced Tentative Waiver. Our comments are presented below in the order in which they appear in the proposed Order. Where shown, proposed deletions are presented in ~~strikeout~~ and proposed additions are shown in **bold underline**.

HDPP submitted an Application for Renewal of its Conditional Waiver on June 9, 2011. Throughout the application materials are references to “High Desert Power Project, LLC”. In the Tentative Conditional Waiver the Water Board staff has spelled out the “LLC” acronym as “Limited Liability Corporation”. Please note that in the case of High Desert Power Project, LLC, the “LLC” stands for “Limited Liability **Company**”.

(1) Page 1 – Title

The title of the Conditional Waiver should read:

HIGH DESERT POWER PROJECT LIMITED LIABILITY CORPORATION
COMPANY

(2) Page 1 – paragraph 1

Language in this paragraph should read:

The High Desert Power Project Limited Liability ~~Corporation~~ **Company** (HDPP) and Victorville Water District (together referred to as the “Dischargers”) operate a water treatment plant, water distribution system and a series of four groundwater injection/ extraction wells as part of an aquifer banking system (Facility) to supply water for the High Desert Power ~~Plant~~ **Project** (Power Plant).

(3) Page 1 – paragraph 2

Reference to the “Victorville City Water District” should be “Victorville Water District”.

(4) Page 5 – item No. 2(a) – Combined Chlorine Residual

The Tentative Conditional Waiver includes a maximum limit for Combined Chlorine Residual of 0.005 mg/L. HDPP understands that the limit in the Tentative Conditional Waiver was presented in error and should, in fact, be 0.5 mg/L. HDPP understands that the Water Board staff will correct this matter and the true, proposed limit of 0.5 mg/L will be presented in the next version of the draft Conditional Waiver.

(5) Page 5 – item No. 2(a) – Trihalomethanes

The Tentative Conditional Waiver includes a mean annual limit for trihalomethanes of 0.5 µg/L. This proposed limit represents a 75% reduction from the current allowable limit of 2.0 µg/L. HDPP respectfully objects to the proposed limit for reasons discussed herein.

There has been no change in Power Plant operations, groundwater monitoring data, fate and transport modeling results, or health risk assessment which justifies a 75% decrease in the limit from its current value. Furthermore, trihalomethanes were not detected in samples collected from extracted groundwater and surrounding groundwater wells in 2011.

The Power Plant uses UV to disinfect treated water prior to injection which eliminates the creation of trihalomethanes. However, bleach is required in the cleaning of the ultrafiltration system to control biofouling for which there is no practical substitute. The addition of bleach to water creates trihalomethanes, for which HDPP takes great care in minimizing the creation of, by flushing the systems at the Power Plant. However, the creation of trace amounts of trihalomethanes is unavoidable.

Due to the fluctuating water quality received from the State Water Project, it is unlikely that the Power Plant can achieve the overly-aggressive proposed mean annual limit of 0.5 µg/L. While HDPP recognizes the importance of protecting waters of the state, and although HDPP does not believe that a reduction from the current allowable limit of 2.0 µg/L is justified or warranted, Water Board staff are asked to consider proposing a more meaningful and achievable limit of 1.7 µg/L as discussed below.

The creation of trihalomethanes is rooted in the presence of Total Organic Carbon in the State Water Project water delivered to HDPP. The potential to create trihalomethanes is described numerically as Total Trihalomethane Formation Potential. An increase in Total Trihalomethane Formation Potential increases the unavoidable likelihood of creating trihalomethanes. During the time period 2007 – 2009, the Total Trihalomethane Formation Potential averaged 89 µg/L. However, during the time period 2010 – 2011, the Total Trihalomethane Formation

Potential averaged 167 $\mu\text{g/L}$ — an increase of 88% — with a corresponding 100% increase in total trihalomethanes recorded (see data table below).

With UV treatment as the primary disinfection technology used at the Power Plant, and the potential for future chloramination due to biofouling, and the need to use bleach to clean the Ultrafilters, HDPP believes that the annual average limit for trihalomethanes in the Conditional Waiver should be based on the Total Trihalomethane Formation Potential, which is beyond HDPP's control, and which has shown large swings in concentrations of more than 250% from year to year. For this reason, HDPP proposes that the mean annual limit for trihalomethanes be reduced to no less than one percent of the 2010 – 2011 mean Total Trihalomethane Formation Potential values, or no less than 1.7 $\mu\text{g/L}$. A more restrictive limit would endanger HDPP's ability to operate the Aquifer Banking System and place power plant operations under risk of shutdown unnecessarily without providing any significant protection to public health. We note that the federal drinking water standard for total trihalomethanes is 80 $\mu\text{g/L}$. [40 CFR 141.64(b)]

The remainder of this page intentionally left blank.

	Total THMs (µg/L)	THM Formation Potential (µg/L)
Sep-07	0.25*	95
Oct-07	0.25*	71
Nov-07	0.25*	52
Dec-07	0.25*	78
Jan-08	0.25*	94
Nov-08	0.25*	68
Dec-08	0.25*	68
Aug-09	0.25*	176
Sep-09	0.25*	136
Oct-09	0.25*	**
Nov-09	0.25*	68
Dec-09	0.25*	68
Aug-10	0.25*	240
Sep-10	1.0	136
Oct-10	0.6	**
Nov-10	0.25*	**
Dec-10	0.25*	220
Mar-11	0.6	**
Aug-11	0.25*	**
Sep-11	0.7	98
Oct-11	0.25*	140
Dec-11	0.9	**
2007 – 2009 MEAN	0.25*	89
2010 – 2011 MEAN	0.5	167

* Not detected. Value shown is one-half of the detection limit used for reporting purposes.

** No data available. Semi-annual data collection only.

(6) Page 6 – item No. 2(f)

The Tentative Conditional Waiver proposes to require the submittal of a revised ROWD, including revised fate and transport modeling, if the injected or extracted water amounts vary more than 10% in any one year from what was described in the May 2011 ROWD, or more than 15% over a running five-year period. HDPP believes this requirement should be limited to only conditions pertaining to 10% and 15% increases in injection only and not extraction for the following reasons:

- (i) Extraction does not constitute the discharge of waste and a ROWD is therefore not required for extraction.

- (ii) Modelling was performed assuming a maximum amount of injection to estimate the maximum potential impact. Actual operation of the aquifer banking system is dependent on State Water Project quality, availability, and power block operation. Injecting less water than the worst case does not invalidate the model.

Therefore, HDPP proposes that Condition 2(f) be revised as follows:

A revised ROWD (including revised groundwater flow fate and transport model) must be submitted if the injected ~~or extracted~~ water amounts ~~vary~~ **exceed** more than 10% in any one year from what was described in the May 2011 Report of Waste Discharge or more than 15% over a running five-year period.

Sincerely,

HIGH DESERT POWER TRUST,

a Delaware statutory business trust

By: High Desert Power Project, LLC,
a California limited liability company, as agent
for the High Desert Power Trust under that certain
Amended and Restated Project Supervisory Agreement
dated as of April 30, 2001

By: 
M. Fred Strauss, P.G.
Director, Environmental Programs

Notice
Submittal of Written Material for Regional Board Consideration

In order to ensure that the State of California Lahontan Regional Water Quality Control Board has the opportunity to fully study and consider written material, it is necessary to submit it at least ten (10) days before the Regional Board Meeting. Pursuant to Title 23 of the California Code of Regulations, Section 648.2, the Regional Board may refuse to admit written testimony into evidence unless the proponent can demonstrate why he or she was unable to submit the material on time or that compliance with the deadline would otherwise create a hardship. If any other party demonstrates prejudice resulting from admission of the written testimony, the Regional Board may refuse to admit it.

COMPLETE FORM AND RETURN

To: CA Regional Water Quality Control Board, Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392
ATTN: Mary Dellavalle

Comments VICTORVILLE WATER DISTRICT AND HIGH DESERT POWER PROJECT LIMITED LIABILITY CORPORATION, HIGH DESERT POWER PLANT, GROUNDWATER BANKING OPERATION

_____ We concur with proposed requirements

_____ We concur; comments attached

We do not concur; comments attached

_____ *M. Fred Strauss* (Sign)

_____ **M. Fred Strauss, P.G.** (Type or print name)

_____ **High Desert Power Project, LLC** (Organization)

_____ **19000 Perimeter Road** (Address)

_____ **Victorville, CA 92394** (City and State)

_____ **(402) 691-9736 (Omaha, NE)** (Telephone)

ENCLOSURE 3



California Regional Water Quality Control Board Lahontan Region



Victorville Office

14440 Civic Drive, Suite 200, Victorville, California 92392
(760) 241-6583 • FAX (760) 241-7308
<http://www.waterboards.ca.gov/lahontan>

Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown, Jr.
Governor

February 7, 2012

WDID No.: 6B360105004

Fred Strauss
Director, Environmental Programs
High Desert Power Project, LLC
1044 N. 115 St, Ste 400 I
Omaha NE 68154-4446

RESPONSES TO COMMENTS – TENTATIVE WAIVER OF WASTE DISCHARGE REQUIREMENTS, VICTORVILLE WATER DISTRICT AND HIGH DESERT POWER PROJECT

Following a January 19, 2012 meeting in our office, the California Regional Water Quality Control Board (Water Board) staff received your comments, dated January 24, 2012 on the tentative conditional waiver of waste discharge requirements for the High Desert Power Project that was issued on December 22, 2011. Following are responses to your comments.

Comment (1) Page 1 –Title

The title of the Conditional Waiver should read: High Desert Power Project Limited Liability Company.

Water Board Response:

Water Board Staff included the requested revision in the Proposed Waiver.

Comment (2) Page 1 -Paragraph 1

Language in this paragraph should read: The High Desert Power Project Limited Liability Company (HDPP) and Victorville Water District (together referred to as the "Dischargers") operate a water treatment plant, water distribution system and a series of four groundwater injection/ extraction wells as part of an aquifer banking system (Facility) to supply water for the High Desert Power Project (Power Plant).

Water Board Response:

Water Board Staff included the requested revision in the Proposed Waiver.

Comment (3) Page 1 - paragraph 2

Reference to the "Victorville *City* Water District" should be "Victorville Water District".

Water Board Response:

Water Board Staff included the requested revision in the Proposed Waiver.

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The Tentative Conditional Waiver includes a maximum limit for Combined Chlorine Residual of 0.005 mg/L. HDPP understands that the limit in the Tentative Conditional Waiver was presented in error and should, in fact, be 0.5 mg/L. HDPP understands that the Water Board staff will correct this matter and the true, proposed limit of 0.5 mg/L will be presented in the next version of the draft Conditional Waiver.

Water Board Response:

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The Power Plant uses UV to disinfect treated water prior to injection which eliminates the creation of trihalomethanes. However, bleach is required in the cleaning of the ultrafiltration system to control biofouling for which there is no practical substitute. The addition of bleach to water creates trihalomethanes, for which HDPP takes great care in minimizing the creation of, by flushing the systems at the Power Plant. However, the creation of trace amounts of trihalomethanes is unavoidable. Due to the fluctuating water quality received from the State Water Project, it is unlikely that the Power Plant can achieve the overly-aggressive proposed mean annual limit of 0.5 ug/L.

While HDPP recognizes the importance of protecting waters of the state, and although HDPP does not believe that a reduction from the current allowable limit of 2.0 ug/L is justified or warranted, Water Board staff is asked to consider proposing a more meaningful and achievable limit of 1.7 ug/L as discussed below.

The creation of trihalomethanes is rooted in the presence of Total Organic Carbon in the State Water Project water delivered to HDPP. The potential to create trihalomethanes is described numerically as Total Trihalomethane Formation Potential. An increase in Total Trihalomethane Formation Potential increases the unavoidable likelihood of creating trihalomethanes. During the time period 2007 - 2009, the Total Trihalomethane Formation Potential averaged 89 ug/L. However, during the time period 2010 - 2011, the Total Trihalomethane Formation Potential averaged 167 ug/L - an increase of 88% - with a corresponding 100% increase in total trihalomethanes recorded (see data table below). With UV treatment as the primary disinfection technology used at the Power Plant, and the

potential for future chloramination due to biofouling, and the need to use bleach to clean the Ultrafilters, HDPP believes that the annual average limit for trihalomethanes in the Conditional Waiver should be based on the Total Trihalomethane Formation Potential, which is beyond HDPP's control, and which has shown large swings in concentrations of more than 250% from year to year. For this reason, HDPP proposes that the mean annual limit for trihalomethanes be reduced to no less than one percent of the 2010 - 2011 mean Total Trihalomethane Formation Potential values, or no less than 1.7 ug/L. A more restrictive limit would endanger HDPP's ability to operate the Aquifer Banking System and place power plant operations under risk of shutdown unnecessarily without providing any significant protection to public health. We note that the federal drinking water standard for total trihalomethanes is 80 ug/L. [40 CFR 141.64(b)]

Water Board Response:

Water Board staff acknowledges the High Desert Power project has replaced the use of chloramine with ultraviolet light for disinfection of injection water. As a result the likelihood of trihalomethane (THM) formation is governed by the THM formation potential and periodic use of chlorine compounds for ultrafiltration system cleaning. Water Board staff accepts the proposed limit be based on 1% of TMH formation potential (167 ug/L mean value for years 2010 and 2011). Thus, the proposed limit will be rounded up to 1.7 ug/L. However, in order to collect more representative data for THP formation potential, we have increased injection water sampling for this parameter from semi-annually to monthly so that a larger future data set is available.

Comment (6) Page 6 - Item No. 2(f)

The Tentative Conditional Waiver proposes to require the submittal of a revised ROWD, including revised fate and transport modeling, if the injected or extracted water amounts vary more than 10% in any one year from what was described in the May 2011 ROWD, or more than 15% over a running five-year period. HDPP believes this requirement should be limited to only conditions pertaining to 10% and 15% increases in injection only and not extraction for the following reasons:

- (i) Extraction does not constitute the discharge of waste and a ROWD is therefore not required for extraction.
- (ii) Modeling was performed assuming a maximum amount of injection to estimate the maximum potential impact. Actual operation of the aquifer banking system is dependent on State Water Project quality, availability, and power block operation. Injecting less water than the worst case does not invalidate the model. Therefore, HDPP proposes that Condition 2(f) be revised as follows:

A revised ROWD (including revised groundwater flow fate and transport model) must be submitted if the injected amounts exceed more than 10% in any one year from what was described in the May 2011 Report of Waste Discharge or more than 15% over a running five-year period.

Water Board Response:

Water Board staff concurs that extracting greater water volumes than modeled water volumes will not create a situation whereby the receiving water quality would be adversely affected. While the model does assume a correlation between the volumes of injected and/or extracted water and the extent of degradation of the receiving water, exceeding the extracted water volume would only reduce the volume and area of degraded water. The requested change was made. The need to reevaluate and rerun the model should be evaluated every permitting cycle - not annually - and submitted with the ROWD for the next permitting cycle.

If you have any further questions please call me at (760) 241-2434 or by e-mail at jcass@waterboards.ca.gov.

Sincerely,



Jehiel Cass, P.E.

Senior Water Resources Control Engineer

BO2012/HDPP/proposed/RTC-HDPP_TENT (jwc 2012-02-01)