

## **EXHIBIT O-2**

**Response to Item 35: Lahontan Regional Water Quality Control Board Investigative Order  
No. R6V-2012-0056, dated November 14, 2012**

**Lahontan Regional Water Quality Control Board**

November 14, 2012

Los Angeles County Sanitation District **CERTIFIED MAIL: 7009 1300 0001 6173 1855**  
Grace Chan, GM, Chief Engineer  
P.O. Box 4998  
Whittier, CA 90607-4998

City of Los Angeles **CERTIFIED MAIL: 7009 1300 0001 6173 2197**  
Gina Marie Lindsay, Chief Executive Officer  
Los Angeles World Airports  
Administration E, Building M, 10<sup>th</sup> Floor  
1 World Way  
Los Angeles, CA 90045

**INVESTIGATIVE ORDER NO. R6V-2012-0056 REQUIRING COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY AND THE CITY OF LOS ANGELES TO SUBMIT TECHNICAL REPORTS FOR DISCHARGES FROM THE PALMDALE WATER RECLAMATION PLANT, LOS ANGELES COUNTY**

This Order requires the County Sanitation District No. 20 of Los Angeles County and the City of Los Angeles to submit technical reports pursuant to Water Code section 13267 to fully delineate the nitrate plume in groundwater resulting from discharges of wastewater to ground, to evaluate plume containment, to evaluate increasing nitrate concentration trends, and to identify options to use extracted groundwater that would reduce the adverse effects on groundwater overdraft conditions.

**FINDINGS**

1. The County Sanitation District No. 20 of Los Angeles County (District) owns and operates the Palmdale Water Reclamation Plant (Reclamation Plant). Effluent from the Reclamation Plant is reused at the Agricultural Site owned by the City of Los Angeles and managed by City of Los Angeles World Airports, a City department (collectively hereinafter the City of Los Angeles). The District currently leases the Agricultural Site from the City of Los Angeles to use recycled wastewater for irrigation of crops.
2. The Reclamation Plant and Agricultural Site are located approximately two miles northeast of central Palmdale as shown in Attachment A, which is made part of this Order. The Reclamation Plant is located at 39300 30th Street East, Palmdale. The Agricultural Site is located northeast of the Reclamation Plant, generally between 40<sup>th</sup> and 70<sup>th</sup> Streets East and between of Avenues N and P.

DON JARDINE, CHAIR | PATTY Z. KOUYOUMDJIAN, EXECUTIVE OFFICER

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3. Over the course of the operation of the Reclamation Plant, which began in 1953, the effluent has been discharged to unlined ponds on the District's property and to an effluent disposal site, also known as the Effluent Management Site or Agricultural Site, which is owned by the City of Los Angeles. Effluent disposal at the Agricultural Site has included direct discharge to land without the presence of a crop, discharging to crops in amounts greater than crop uptake of water and nitrogen, and, since March 2010, discharging to crops at agronomic rates.
4. The District currently operates the Reclamation Plant and Agricultural Site (collectively referred to as the "Facility") under Waste Discharge Requirements (WDRs) and Water Recycling Requirements (WRRs) adopted by Water Board Order No. R6V-2011-0012. The Water Board previously established WDRs for the District in Water Board Order Nos. 6-72-30, 6-81-31, 6-86-100, 6-89-31, 6-93-18, 6-00-57, 6-00-57A01, 6-00-57A02, 6-00-57A03, 6-00-57A04 (incorporated by reference) and in resolutions in 1952, 1957 and 1959. Waste discharges on the District's property been controlled by the District. The District has leased the Agricultural Site from the City of Los Angeles since February 4, 2002 and has controlled the discharge to that site since then.
5. The City of Los Angeles has had WRRs or WDRs for its use of treated wastewater from the Reclamation Plant at the Agricultural Site since at least 1982, with Water Board Order Nos. 6-82-81, 6-90-64, 6-00-57, 6-00-57A01, and 6-00-57A02 (incorporated by reference). From at least March 1, 1981 until at least March 1, 2001, the City of Los Angeles controlled the discharge of effluent or reclaimed water to the City of Los Angeles' land, based on agreements between the City of Los Angeles and the District, dated January 15, 1981 and March 14, 1989 (available in the Water Board's files in Victorville and South Lake Tahoe), and based on the WRR and WDR Orders to the City of Los Angeles cited above. Prior to 1981, other entities discharged reclaimed water on land within the Agricultural Site owned and controlled by the City of Los Angeles, such as through Water Board Order No. 6-80-74 for the L and A Sheep Company (incorporated by reference).
6. In 1989, the District installed two monitoring wells in the vicinity of the former Effluent Management Site. Initial sampling revealed elevated concentrations of nitrate in groundwater. Subsequent groundwater investigations and monitoring showed that the discharge from the Agricultural Site and the District's unlined ponds had caused concentrations of nitrate as nitrogen<sup>1</sup> in groundwater to exceed the maximum contaminant level (MCL) of 10 milligrams/liter (mg/L), established to protect drinking water supplies. Concentrations of nitrate in groundwater from numerous monitoring wells in the area of the discharge exceed the MCL (see, for example, the findings in CAO No. R6V-2003-056 [incorporated by reference] and the August 17, 2012 *Palmdale Water Reclamation Plant, Quarterly Monitoring Report for Second Quarter 2012* [available in the Water Board's files in Victorville and South Lake Tahoe]). The groundwater impacted by nitrate in the discharges is generally suitable for other beneficial uses, such as agricultural and industrial uses.

<sup>1</sup> All nitrate concentrations discussed in this CAO are reported as nitrate as nitrogen, unless otherwise noted.



7. Based on the findings above, for the purposes of this Order, the District and the City of Los Angeles are referred to as the "Dischargers."
8. On November 12, 2003, the Water Board adopted Cleanup and Abatement Order (CAO) No. R6V-2003-056. The 2003 CAO ordered the District and the City of Los Angeles to cleanup and abate the effects of the discharge and the threatened discharge of nitrate to groundwater and to conduct the following tasks in accordance to a specified schedule.
  - a. Provide a plan and a schedule to reduce the amount of nitrogen that reaches groundwater (i.e., abatement measures).
  - b. Complete plume delineation by August 15, 2004.
  - c. Contain the plume to its extent as delineated.
  - d. Implement a plan to "restore ground water quality to background levels or other levels approved by the Regional Board pursuant to State Water Resources Control Board Resolutions Nos. 68-16 and 92-49."
9. The Water Board adopted Cease and Desist Order No. R6V-2004-0039 (CDO) for the District on October 13, 2004. The CDO required the District to cease disposal of effluent in a manner that would cause violations of water quality objectives by date certain. The District expanded the agricultural reuse area and constructed lined storage ponds so that effluent generated during the winter months could be stored for reuse on crops at agronomic rates during the summer. Since March 2010, the District's application of wastewater for reuse as irrigation has not exceeded agronomic rates. The Water Board rescinded the CDO on June 9, 2011 after the District achieved full compliance with the CDO.
10. The Water Board adopted Resolution No. R6V-2005-0010 (Resolution) on April 13, 2005. The 2005 Resolution found that it was "premature to establish a cleanup standard consistent with State policies given the rather limited range of alternatives proposed, the costs, and the possible consumptive use of pumped groundwater associated with the alternatives considered by the Dischargers." The Resolution directed the Dischargers to initiate a cleanup project to reduce nitrate concentrations in groundwater to less than the MCL in the shortest possible time. The Resolution stated its intent that the Dischargers should continue to consider additional options for remediation of affected groundwater to nitrate levels of approximately 2 mg/l and that these options should not exacerbate overdraft of the groundwater basin.
11. The District's compliance with the 2003 CAO and 2005 Resolution is summarized below. Though both the District and the City of Los Angeles were identified as Dischargers in the 2003 CAO and the 2005 Resolution, actions to comply have been implemented by the District.



a. Abatement (CAO)

The District submitted the Abatement Report in March 2004. That report satisfied the short-term abatement-related requirements of the CAO, but did not provide or implement a long-term plan to restore the groundwater nitrate levels to background levels or other levels approved by the Water Board (see Finding 8.d., above).

b. Complete Plume Delineation (CAO)

The District's Nitrate Delineation effort included the installation of additional monitoring wells and collection of groundwater samples from exploratory borings and delineation of the extent of the plume as of 2004. The effort established that in 2004, elevated nitrate concentrations in groundwater encompassed an area nearly four miles long and more than two miles wide. Depth discrete groundwater samples revealed that the highest concentrations of nitrate in groundwater (greater than 10 mg/L) are in the upper 50 feet of the aquifer and that concentrations decrease to less than 3.0 mg/L below 150 feet from the top of the aquifer. Areas monitored outside of the nitrate plume associated with the discharges generally contain nitrate concentrations much less than 3 mg/L.

Water Board staff previously determined that the District's Nitrate Delineation effort satisfied the 2003 CAO's requirement for plume delineation. However, the extent of the plume can change over time due to migration with the regional groundwater flow and other factors that influence groundwater movement such as groundwater pumping. Additionally, the groundwater samples from the exploratory borings were one-time samples that cannot be used to delineate the plume's extent after 2004. Consequently, plume delineation must be an ongoing effort. Attachment B shows isoconcentration contours that represent the approximate extent of elevated nitrate concentrations in groundwater based on data from the first and second quarters of 2012.

This Order requires the Dischargers to evaluate the adequacy of the monitoring program for the purpose of plume delineation (see Order A.1, below).

c. Containment to Delineated Extent (CAO)

In 2006, the District implemented an interim remedial measure (Interim Measure) consisting of abatement measures (i.e., better effluent management) and extraction of nitrate-impacted groundwater in the vicinity of the plume's hot spot. The District's Interim Measure was designed to both contain and remediate the nitrate plume and is discussed further under Finding No. 11.d.



Water Board staff evaluated the current status of containment by examining nitrate concentration trends in wells near the perimeter of the plume as delineated in 2004. In cases where the 2004 delineation was based on interpolation between sampling points or on a sample from an exploratory boring, staff evaluated trends in the nearest upgradient well. Well locations are shown in Attachments B and C.

Based on staff's evaluation, the perimeter of the plume appears to be stable or decreasing, except in the northwestern portion of the plume, where nitrate concentrations are trending upward. Concentrations of nitrate in the perimeter wells in the northwest remain below the MCL, but show statistically significant increasing trends as described below.

- Nitrate concentrations in MW-28, approximately one mile north of the Agricultural Site, have increased from average annual concentration of 6.9 mg/L in 2006 to an average annual concentration of 8.7 mg/L in 2011 and 9.72 mg/L in the second quarter 2012 (see Table 1). There are no monitoring wells downgradient of MW-28.
- MW-57 and deeper, paired well MW-58 are located at the northwestern edge of the hot spot near the boundary of Air Force Plant 42. MW-57 has increased from an average annual concentration of 7.2 mg/L when monitoring began in 2008 to an average annual concentration of 8.8 mg/L in 2011 and 9.0 in the second quarter 2012 (see Table 1). MW-58 has increased from an average annual concentration of 4.7 mg/L when monitoring began in 2008 to an average annual concentration of 5.9 mg/L in 2011 and 6.3 for the first two quarters of 2012.
- DW4-2 is an Air Force municipal supply well located approximately 3,000 feet northwest and downgradient of MW 57. Since DW4-2 was incorporated in the monitoring program in 2006, it has increased from an average annual concentration of 1.9 mg/L to an average annual concentration of 3.2 mg/L in 2011 and 3.8 for the first two quarters of 2012.
- MW-32 is located approximately 1.3 miles west of the Agricultural Site. Nitrate concentrations in groundwater from this well are very low (less than 1.0 mg/L). However, a trend analysis for this well shows a statistically significantly increasing trend, with average annual nitrate concentration increasing from 0.57 mg/L in 2007 to 0.71 in 2011 and 0.78 in the second quarter 2012.



| <b>Table 1: Average Annual Nitrate Concentrations<br/>From Perimeter Groundwater Wells</b> |                                     |             |             |             |             |             |              |
|--|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|
| <b>Well</b>  | <b>Average Concentration (mg/L)</b> |             |             |             |             |             |              |
|  | <b>2006</b>                         | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012*</b> |
| MW-28  | 6.9                                 | 6.6         | 8.0         | 8.5         | 8.4         | 8.7         | 9.7**        |
| DW4-2  | 1.9                                 | 2.2         | 2.4         | 2.8         | 2.8         | 3.2         | 3.8          |
| MW-57  | NA                                  | NA          | 7.2         | 7.3         | 8.5         | 8.8         | 9.0**        |
| MW-58  | NA                                  | NA          | 4.7         | 4.9         | 5.4         | 5.9         | 6.3          |
| MW-32  | 0.57                                | 0.57        | 0.57        | 0.62        | 0.67        | 0.71        | 0.78**       |

Wells are listed from north to northwest to west.

NA = data not available because the wells were installed after specified year.

\* Average of first and second quarters

\*\* Second quarter data; not sampled in first quarter due to lack of water or similar

Based on the increasing trends, the Dischargers may not have achieved containment in the northwestern portion of the plume. However, demonstration of containment can be complicated by regional or localized sources that can be contributing nitrate to groundwater, such as from agricultural inputs immediately north of the Dischargers' Agricultural Site. Also, one of the upgradient monitoring wells, MW-1, shows an increasing trend, increasing from 0.3 in 2003 to 3.0 in 2011. MW-1 is the most westerly of the upgradient wells and the increasing trend may be due to and upgradient source of nitrate (e.g., application of fertilizer, septic systems, or livestock). The increasing trend is consistent with an increasing trend in supply well SW-5, which is approximately 0.7 miles west of MW-1. The nitrate concentrations in SW-5 have increased from about 1.0 in 1990 when first sampled to almost 5.0 when last sampled in 2008.

This Order requires the Dischargers to delineate and investigate the northwestern portion of the plume to determine if additional containment measures are necessary (see Orders A.1 and A.2, below).

d. **Develop and Implement a Plan to Restore Groundwater (CAO and Resolution)**

In response to the CAO's requirement to develop a plan to restore groundwater quality, the District evaluated various remedial alternatives using numerical models to simulate nitrate migration in the vadose zone and aquifer. The District submitted its initial evaluation in the 2004 Containment and Remediation Plan (CR Plan). Four supplements to the CR Plan were submitted to evaluate additional remedial scenarios and to re-evaluate the scenarios after the models were revised based on additional hydrogeologic data. The CR Plan and its supplements compared the alternatives according to various criteria, including remedial effectiveness and costs for active treatments based on certain unit processes and assumptions (e.g., CR Plan, pp. 53-56). Based on the comparisons, the District concluded that the preferred alternative was the Hot Spot Containment and Remediation



alternative, which consisted of groundwater extraction in the vicinity of the nitrate hot spot. These comparisons were limited, however, by the limited information on the existing technologies and by the CAO directive to reduce nitrate to below the MCL in the shortest possible time,

To satisfy the Resolution's directive to implement a cleanup project to reduce nitrate concentrations to below the MCL in the shortest possible time, the District submitted the Groundwater Monitoring Plan for Containment and Remediation (Groundwater Plan) in September 2005. The Groundwater Plan described how the District's preferred alternative, Hot Spot Containment and Remediation, would be implemented as the Interim Measure and how its performance would be monitored.

In February 2006, Water Board staff requested that the District implement the Interim Measure. In 2006, the District installed six extraction wells in the vicinity of the nitrate hot spot and began operation of the Interim Measure. From 2006 to 2009, the District operated the extraction wells seasonally, from spring through fall. The District completed construction of lined storage reservoirs in November 2009 that allow the District to irrigate crops at the Agricultural Site at agronomic rates. Since 2009, the District has operated the extraction wells continuously. The six extraction wells each extract groundwater at rates ranging from approximately 15 to 130 gallons per minute, with rates dependent on the lithologic characteristics found at each well. Combined, the wells extracted an average of 36 acre-feet (AF) per month, or 433 AF per year during 2010 and 2011. The wells also extracted an annual average of 3.6 tons of nitrate as nitrogen and 28,800 tons of TDS during those years. Attachment C shows the locations of the extraction wells, along with monitoring and production wells in the area.

## 12. Remediation Status

To evaluate the results of the District's implementation of the Interim Measure (i.e., groundwater extraction in the vicinity of the hot spot), Water Board staff evaluated nitrate concentrations in hot spot monitoring wells. Table 2 shows a comparison of annual average nitrate concentrations of wells in the hot spot.

Based on staff's evaluation, nitrate concentrations are stable or decreasing in most monitoring wells in the vicinity of the hot spot, with certain exceptions, most notably MW-23, which shows an average annual nitrate concentration increase from 5.7 mg/L in 2006 to 12.6 mg/L by June 2012. MW-51, a slightly deeper well located adjacent to MW-23, also shows an increasing trend but the nitrate concentrations are still below the MCL. These two wells are at the western edge of the nitrate hot spot and are adjacent to the District's extraction well R4. The nitrate concentration increases in these monitoring wells, appears to be from the extraction well causing the higher nitrate-impacted groundwater from the center of the hot spot to migrate toward the vicinity of the monitoring wells. In addition, MW-23 is downgradient from LACSD's 40<sup>th</sup> Street East oxidation ponds and former



percolation ponds, which may also be a source of nitrate to groundwater, though those ponds are no longer in service. Extraction well R10, which is located adjacent to the oxidation ponds, has the highest nitrate concentrations of any extraction well at the site.

This Order requires that the Dischargers evaluate the increasing trends in this portion of the hot spot and determine if the plume is fully delineated and contained downgradient of this area (see Orders A.1, A.2, and A.3, below).

**Table 2: Average Annual Nitrate Concentrations from Groundwater Wells in the Vicinity of the Plume Hot Spot**

| Well  | Average Concentration (mg/L) |             |             |             |             |             |             |
|-------|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|       | 2006                         | 2007        | 2008        | 2009        | 2010        | 2011        | 2012*       |
| MW-52 | NA                           | NA          | <b>10.2</b> | <b>11.9</b> | 8.5         | 8.3         | **          |
| MW-4  | <b>17.0</b>                  | <b>15.5</b> | <b>14.9</b> | <b>14.8</b> | <b>14.8</b> | <b>13.7</b> | <b>13.5</b> |
| MW-53 | NA                           | NA          | <b>14.9</b> | <b>15.6</b> | <b>15.4</b> | <b>14.7</b> | <b>15.7</b> |
| MW-54 | NA                           | NA          | 9.1         | <b>10.3</b> | 9.7         | 7.9         | 7.2         |
| MW-23 | 5.7                          | 7.4         | 7.2         | 8.1         | <b>12.2</b> | <b>12.4</b> | <b>12.6</b> |
| MW-51 | 7.2                          | 7.4         | 6.4         | 8.1         | 8.8         | 8.3         | **          |
| MW-40 | NA                           | NA          | <b>10.0</b> | <b>10.4</b> | <b>10.0</b> | <b>10.2</b> | <b>10.9</b> |

Wells are listed from north to south.

Nitrate concentrations equal or greater than the MCL of 10 mg/L are shown in bold.

NA = data not available because the wells were installed in 2008.

\* Average of first and second quarters

\*\* Not sampled due to lack of water or similar

### 13. Resolution's Requirement to Determine If Additional Remedial Technologies Or Extracted Water Use Options Are Available

CR Plan Supplement No. 4 indicates that no additional remedial technologies have become available since the 2004 CR Plan. However, Supplement 4 did not evaluate whether nitrate removal technologies previously examined, such as wellhead treatment by ion exchange or reverse osmosis, have advanced technologically since the 2004 evaluation, or increased in cost effectiveness. Citing moderate to high costs for these types of treatments, the reports and supplements did not propose or evaluate certain potential cleanup options that might be better suited here because of the basin's overdraft situation. For example, treating the "hot spots" and allowing monitored natural attenuation (MNA) under hydraulic control, with use or reinjection of treated waters could potentially work as a long-term cleanup strategy while protecting the basin from further overdraft. Nitrate-contaminated water left in the aquifer (i.e., below the MCL of 10 mg/l) could then be further treated by the District to meet background or other cleanup levels determined by the Water Board (e.g., for drinking water supply). Providing wellhead treatment for affected supplies, and/or replacing water supplies would reduce the amount of water extracted for treatment or use (by the Dischargers). Such an option could reduce total treatment costs, while conserving water in the



containment areas for existing or potential municipal uses, agricultural uses (the current dominant use) or other uses. The Water Board is recommending additional cleanup options be considered and options previously rejected be reconsidered in light of technological advances since the last supplement to the CR Plan was prepared.

The District continues to evaluate the feasibility of water reuse options for recycled municipal wastewater. Currently, the District is working with local water purveyors to supply recycled water to various sites. The City of Palmdale is designing a pump station that would provide recycled water to City-owned sites near the Reclamation Plant. The Palmdale Water District has completed a Recycled Water Facilities Master Plan, but has not established the schedule for its implementation. The City of Palmdale and Los Angeles County Waterworks are near completion of the design for a main recycled water pipeline that would supply recycled water to a proposed hybrid power plant. The hybrid power plant completion date will be sometime after 2015.

This Order requires evaluation of options for cleanup, including uses of extracted groundwater that will help to reduce adverse effects on groundwater overdraft conditions from Discharger pumping (see Order A.4, below), and reconsideration of feasibility and cost information for ion exchange or reverse osmosis treatment processes for nitrate removal, with MNA under hydraulic control for water with nitrate concentrations less than 10 mg/L, which would reduce concerns of overdraft, and requiring additional treatment by the District as necessary for serving domestic or municipal beneficial uses.

#### 14. Regulatory Authority

Water Code section 13267 states in part,

- (a) A regional board may investigate the quality of any waters of the state within its region.*
- (b) (1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*



15. Reports Justification

Pursuant to Water Code section 13267, subdivision (b), this Order requires the Dischargers to provide to the Water Board technical and monitoring reports (reports). The reports required by this Order are described in section A of this Order, below. The bases for requiring the reports of the Dischargers are presented in the findings, above. The Water Board needs the information required by these reports to determine the extent of groundwater affected by nitrate from the Dischargers' operations, to evaluate plume containment, to evaluate increasing concentrations in an area of the nitrate plume, and to evaluate options for use of extracted groundwater. The burden, including costs, of preparing these reports bears a reasonable relationship to the need for the reports and the benefit to be obtained from them.

16. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provision of the California Environmental Quality Act (CEQA; Public Resources Code section 21000 et seq.), pursuant to California Code of Regulations (CCR), title 14, sections 15308 and 15321, subdivision (a)(2). This Order requires submittal of detailed work plans that address investigation and cleanup activities. The proposed activities under the work plans are not yet known, but implementation of the work plans may result in significant physical impacts to the environment that must be evaluated under CEQA. The appropriate lead agency will address the CEQA requirements prior to implementing any work plan that may have a significant impact on the environment.

**IT IS HEREBY ORDERED** that, pursuant to California Water Code section 13267, the Dischargers shall take the following actions to comply with this Order:

**A. ORDERS**

**1. Plume Delineation**

**By January 1, 2013**, the Dischargers shall submit a plume delineation plan for the Executive Officer's acceptance. The plan shall describe how the northwestern portion of the plume will be delineated and shall include a schedule for conducting the effort and reporting the results. The Dischargers shall begin implementation the plan within 30 days after the Executive Officer's acceptance of the workplan. The Dischargers may use the existing monitoring well network the District uses associated with its Board Order and Monitoring and Reporting Program No. R6V-2011-0012 or may use another monitoring well network acceptable to the Executive Officer.



## **2. Plume Containment**

**By January 1, 2013** the Dischargers shall submit for the Executive Officer's acceptance a plume containment evaluation plan. The plan shall propose methods to evaluate the plume, including the nitrate concentrations at various locations and depths, and whether the nitrate concentrations are increasing or spreading into unaffected or lesser-affected areas over time (containment). The plan shall propose specific perimeter groundwater monitoring wells and screened depths to use for containment evaluation. The evaluation methods shall include statistical evaluation of nitrate concentrations consistent with the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, March 2009.

## **3. Plume Evaluation Near MW-23**

**By January 1, 2013**, the Dischargers shall submit for the Executive Officer's acceptance a plan and a schedule to evaluate the increasing nitrate concentration trends in the vicinity of MW-23. The Dischargers shall implement the plan within 30 days after the Executive Officer's acceptance of the work plan.

## **4. Remediation Options and Uses of Extracted Groundwater**

- a. **By January 1, 2013**, the Dischargers must submit for the Executive Officer's acceptance a plan and schedule to establish short-term options for uses of the extracted groundwater that will reduce adverse effects of extraction on groundwater overdraft conditions. The plan must designate the use areas and parties, and provide a schedule for implementation of the uses. Such use options could include substituting extracted groundwater for groundwater used for irrigation by other entities, or other suitable alternatives.
- b. **By March 1, 2013**, the Dischargers must provide for the Executive Officer's acceptance a technical report that reviews available technological information and literature to assess the cost and feasibility of removing nitrate from water to levels of 3 mg/l or less. This report must look at technologies that have come available since the last CP Supplement, and reassess technologies previously considered but rejected including but not limited to, ion exchange, reverse osmosis or nano-membrane treatments. The report must include preliminary or complete line-item cost estimates for treatment systems, reinjection systems, and other use or disposal systems, for use at a variety of flow rates (i.e., for individual home, small community water system, municipal system, and reinjection systems). In addition to strategies that remove the water from the basin, such as agricultural and other water reuse options, the Dischargers must also evaluate hybrid cleanup strategies that leave the water in the basin to alleviate overdraft concerns, such as reinjecting treated groundwater and hydraulically-controlled MNA, which would ensure nitrate contamination did not spread, and providing reverse-osmosis treatment or other high-level treatment for municipal supply waters.



## **5. Certification for all Plans and Reports**

All reports required under this Order are required pursuant to Water Code section 13267 and shall include a statement by the Dischargers, or by a duly authorized representative of the Dischargers, certifying (under penalty in conformance with the laws of the State of California) that the plan and /or report is true, complete, and accurate. Hydrogeologic and engineering technical reports and plans shall be prepared or directly supervised by and signed by a Professional Geologist or Professional Civil Engineer licensed in California.

## **NOTIFICATIONS**

### **B. No Limitation of Water Board Authority**

This Order in no way limits the authority of the Water Board or State Water Board to institute additional enforcement actions or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised by the Executive Officer as additional information becomes available.

### **C. Request for Extension of Time.**

If for any reason, the Dischargers are unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the Dischargers may request, in writing, an extension of the time specified. The extension request shall include justification for the delay. An extension may be granted only by revision of or amendment to this Order.

### **D. Enforcement Notification.**

Failure to comply with the terms or conditions of this Order may result in additional enforcement action, which may include the imposition of administrative civil liability pursuant to Water Code section 13268 or referral to the Attorney General of the State of California for such legal action as he or she may deem appropriate.

### **E. Requesting Administrative Review by the State Water Board.**

Any person aggrieved by an action of the Water Board that is subject to review as set forth in Water Code section 13320, subdivision (a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within 30 days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the law and regulation applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

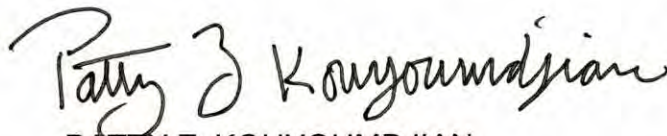


**F. Compliance by One Considered Compliance by All**

Compliance with the provisions of this Order by any one of the responsible parties will be considered as compliance by all responsible parties. If neither of the responsible parties comply with this Order, both of the responsible parties will be considered in non-compliance with this Order and subject to additional enforcement action.

Please be sure that copies of all reports required by this Order are sent to the Water Board's South Lake Tahoe office at 2500 Lake Tahoe Blvd., South Lake Tahoe CA 96150, and are also sent to the Water Board's Victorville office at 14440 Civic Drive, Suite 200, Victorville, California 93292.

Contact Chuck Curtis at (530) 542-5460 if you have any questions regarding this Order.



PATTY Z. KOUYOUMDJIAN  
EXECUTIVE OFFICER

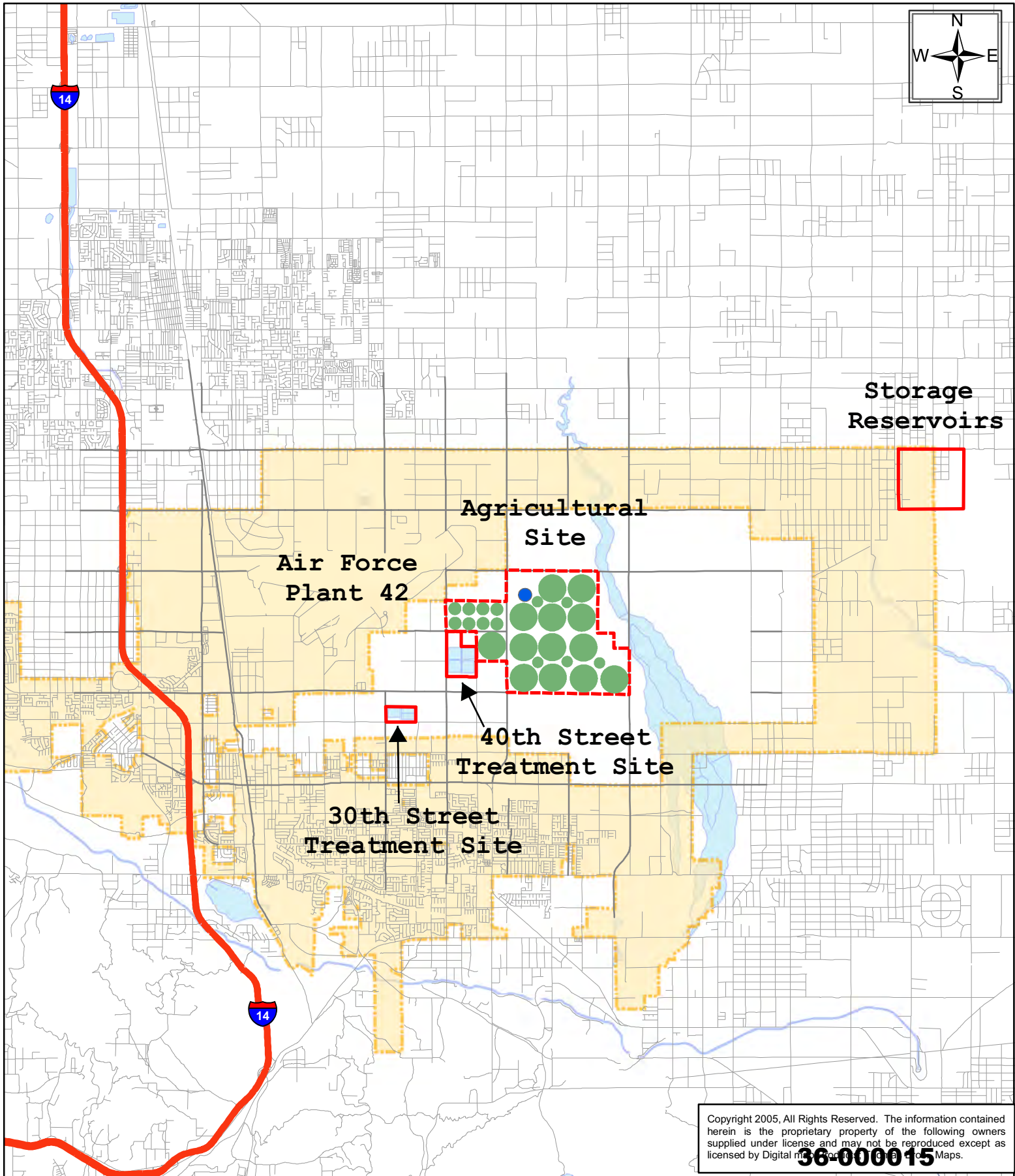
Attachments:    A. Location Map  
                      B. Nitrate Distribution Map  
                      C. Well Location Map  
                      D. Water Code section 13267 Fact Sheet

CC:                Mail List

Various/adw/T: LACSD 20-LAWA 13267-revised 3.docx  
File: WDID 6B190107069 (VVL)

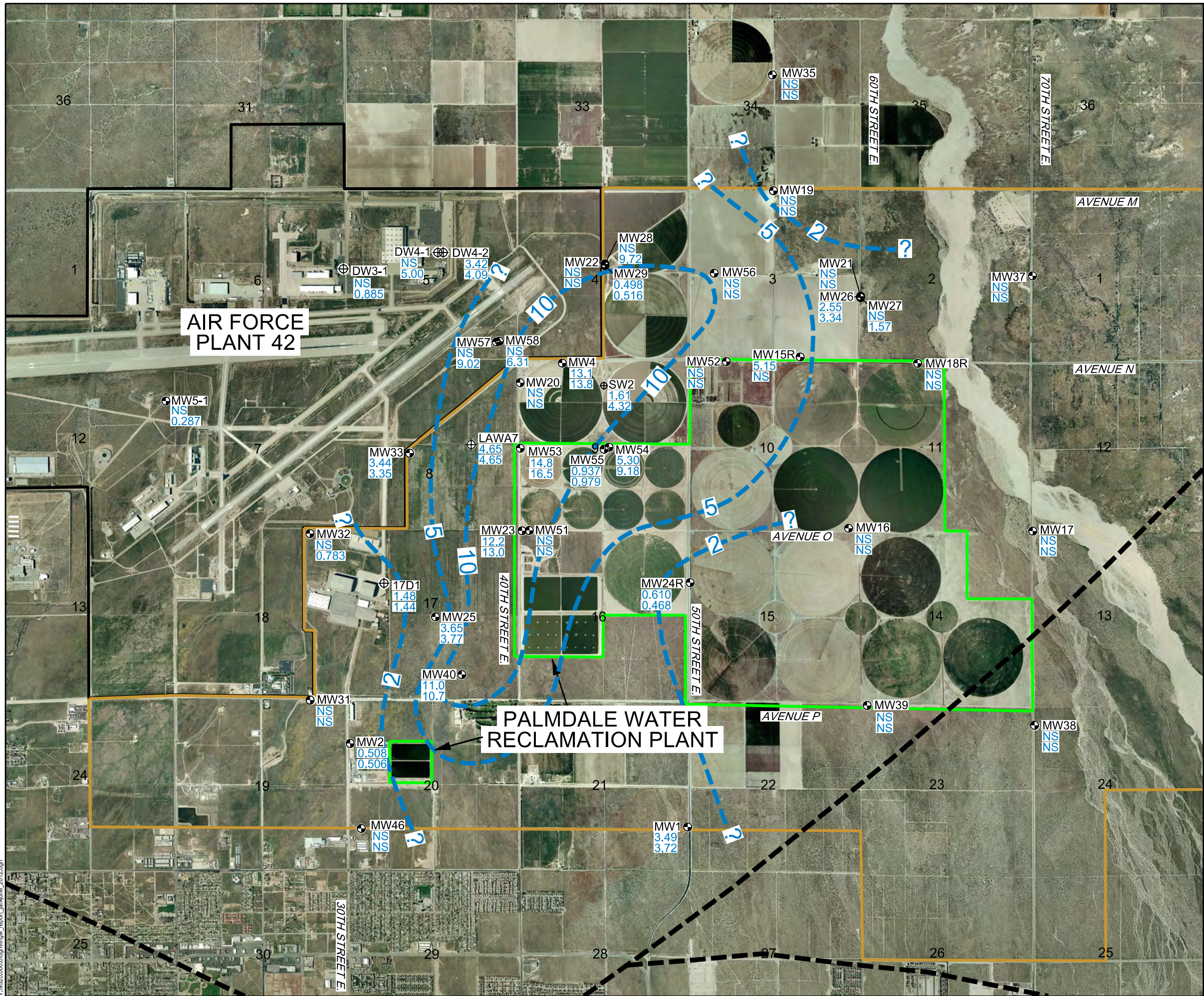


# General Facilities Locations





7/31/2012 6:27:22 PM pat.horling  
lb.nc3.concentration  
Y:\9520.000\0\dgn\8\vw\_report\_jan-june\_2012.dgn



## Explanation

MW21 ● Monitoring well location and designation

LAWA7 ⊕ Water supply well location and designation

3.49  
3.72 Nitrate (as N) in groundwater in milligrams per liter; results listed are from the First and Second Quarter 2012 groundwater sampling event

NS Not sampled

10 --- Interpreted nitrate (as N) isoconcentration contour

Effluent Management Site

Air Force Plant 42 boundary

Los Angeles World Airports boundary

--- Coincidence of fault and groundwater subbasin, faults approximate with Antelope Valley groundwater basin (Bloyd, 1967)

24 Public land survey section

## Notes:

1. Reported results are from groundwater samples collected during the First and Second Quarter 2012 sampling events coordinated by District Staff.
2. Isoconcentration contours were interpreted using data from monitoring wells completed in the upper 50 feet of the regional water table, and consideration of discrete depth groundwater data obtained during the nitrate delineation program.



0 1500 3000  
Approximate Scale in Feet

Basemap modified from aerial photograph  
provided by AirPhoto USA (March 2004)

INTERPRETED DISTRIBUTION OF  
NITRATE (AS N) IN GROUNDWATER  
JANUARY TO JUNE 2012  
Palmdale WRP  
Palmdale, California

By: pah

Date: 07/31/12

Project No: 9520



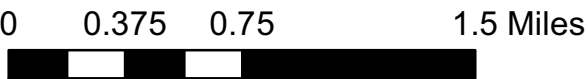
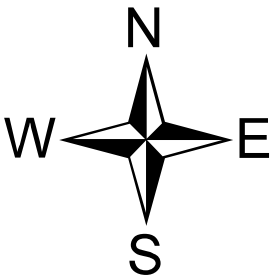
Attachment B

36-000016

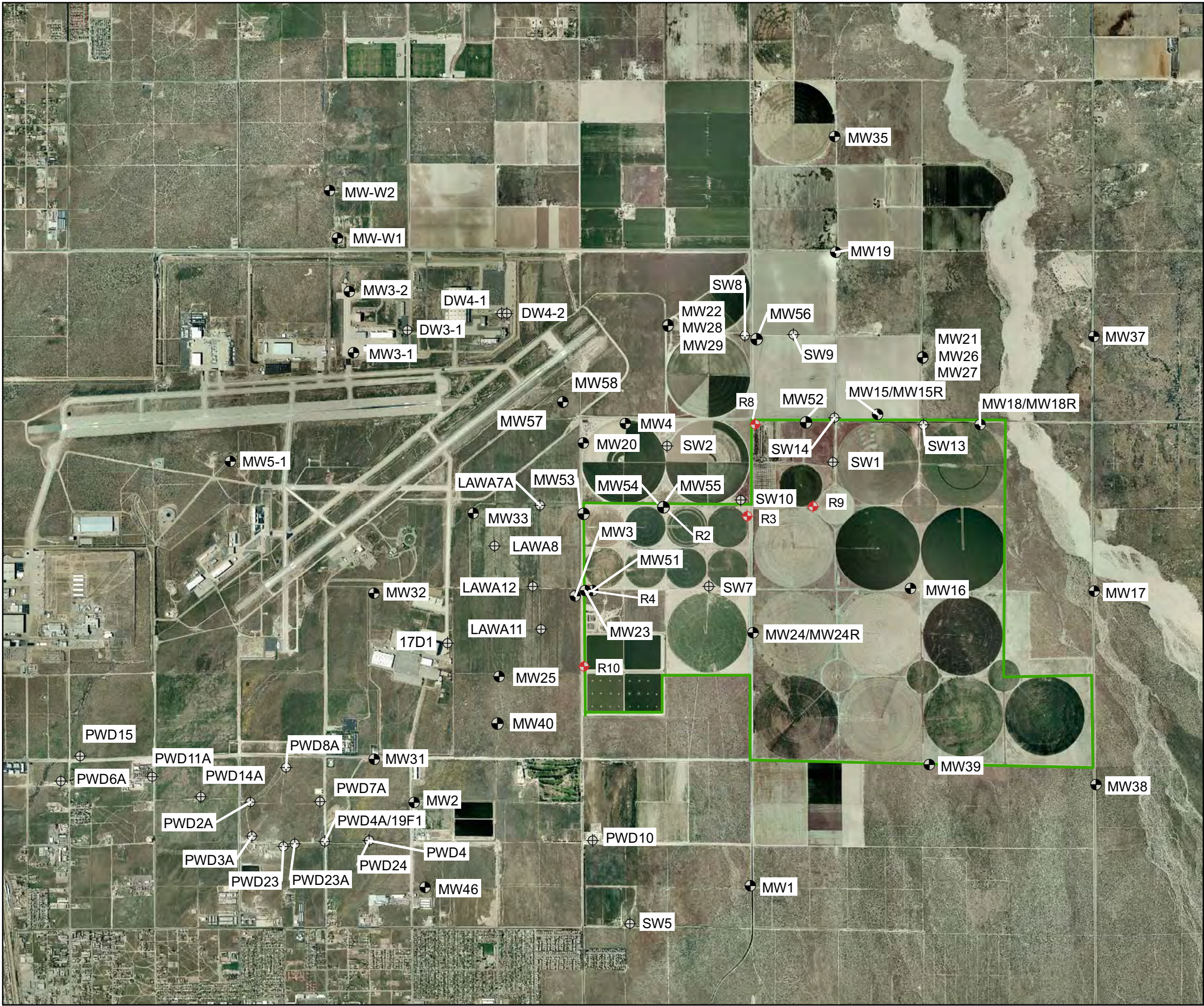


Legend

- ⊕ Supply/Production Wells
- Monitoring Wells
- ⬮ Extraction Wells
- Agricultural Site



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**Groundwater Monitoring  
Locations  
Palmdale WRP  
Palmdale, California**



**Fact Sheet – Requirements for Submitting Technical Reports  
Under Section 13267 of the California Water Code**

October 8, 2008

**What does it mean when the regional water board requires a technical report?**

Section 13267<sup>1</sup> of the California Water Code provides that "...the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged...waste that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires".

**This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?**

Providing the required information in a technical report is not an admission of guilt or responsibility. However, the information provided can be used by the regional water board to clarify whether a given party has responsibility.

**Are there limits to what the regional water board can ask for?**

Yes. The information required must relate to an actual or suspected discharge of waste, and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The regional water board is required to explain the reasons for its request.

**What if I can provide the information, but not by the date specified?**

A time extension can be given for good cause. Your request should be submitted in writing, giving reasons. A request for a time extension should be made as soon as it is apparent that additional time will be needed and preferably before the due date for the information.

**Are there penalties if I don't comply?**

Depending on the situation, the regional water board can impose a fine of up to \$1,000 per day, and a court can impose fines of up to \$25,000 per day as well as criminal penalties. A person who submits false information is guilty of a misdemeanor and may be fined as well.

**What if I disagree with the 13267 requirement and the regional water board staff will not change the requirement and/or date to comply?**

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

**Claim of Copyright or other Protection**

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

**If I have more questions, who do I ask?**

Requirements for technical reports normally indicate the name, telephone number, and email address of the regional water board staff person involved at the end of the letter.

<sup>1</sup> All code sections referenced herein can be found by going to [www.leginfo.ca.gov](http://www.leginfo.ca.gov). Copies of the regulations cited are available from the Regional Board upon request.