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RESPONSE TO CEC STAFF DATA REQUEST SET NO. 1 (1-63)

In support of the

PETITION TO AMEND

for the

PALMDALE ENERGY PROJECT

(08-AFC-09C)

Submitted to the:

California Energy Commission

Submitted by:

PALMDALE ENERGY, LLC

Prepared by:

DAYZEN LLC

NOVEMBER 2015

DAYZEN LLC

November 30, 2015

Eric Veerkamp
Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Subject: **PALMDALE ENERGY LLC'S RESPONSE TO CEC STAFF DATA REQUEST SET NO. 1 (1-63)**
PALMDALE ENERGY PROJECT (08-AFC-09C)

Dear Mr. Veerkamp,

On behalf of Palmdale Energy, LLC, enclosed for filing with the California Energy Commission is the electronic version of **PALMDALE ENERGY, LLC'S RESPONSE TO CEC STAFF DATA REQUEST SET NO.1 (1-63)**, for the Palmdale Energy Project (08-AFC-9C).

Sincerely,

Scott A. Galati
Counsel to Palmdale Energy, LLC

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APPENDICES

INTRODUCTION

Attached are Palmdale Energy, LLC's) responses to California Energy Commission Staff (Staff) Data Request Set No. 1 (1-63) for the Palmdale Energy Project (PEP) Petition For Amendment. The Staff issued Data Request Set No. 1 (1-63) to Palmdale Energy LLC on October 30, 2015.

The Data Responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as the Staff presented them and are keyed to the Data Request numbers (1-63). Additional tables, figures, or documents submitted in response to a data request (e.g., supporting data, stand-alone documents such as plans, folding graphics, etc.) are found in the Appendices and are not sequentially page-numbered consistently with the remainder of the document, although they may have their own internal page numbering system.

For context the text of the Background and Data Request precede each Data Response.

AIR QUALITY AND GREENHOUSE GASES (1-30)

The following data requests for the Palmdale Energy Project (PEP) address information needed by Energy Commission staff (staff) to complete the Air Quality Analysis. The City of Lancaster submitted separate data requests on October 20, 2015, some of which address information needs similar to those of staff. Staff reviewed the City of Lancaster's data requests to avoid duplication in this data request. Staff has different requirements to complete our analysis. The background information provided below as well as the information requested in each subject area will enable the applicant to provide a complete response to staff data needs.

PROJECT PERMITS: BACKGROUND

The proposed project amendment would require a new Determination of Compliance (DOC) from the Antelope Valley Air Quality Management District (AVAQMD or District). Once available, the DOC will be integrated into the staff analysis. Therefore, staff will need copies of relevant correspondence between the applicant and the District in a timely manner on permit issues that may arise during the preparation of the Preliminary and Final Staff Assessments.

Data Request 1

Please provide copies of substantive District correspondence regarding the Palmdale Energy Project (PEP) within one week of submittal, receipt or reporting event. This includes all DOC preparation documents including emails and reports of conversation. This request is to remain in effect until the final Energy Commission Decision has been adopted.

Response to Data Request 1

Palmdale Energy LLC will provide CEC with copies of substantive District correspondence regarding the PEP within one week of submittal, receipt or reporting event, including but not limited to all DOC preparation documents including emails and reports of conversation. Palmdale Energy LLC will continue these submissions up to the date of the final adoption date of the Commission Decision.

EMISSION ESTIMATES: BACKGROUND

Appendix 4.1A (Calculation of Maximum Hourly, Daily and Annual Emissions) and Section 5.1E (Construction Emissions and Impact Analysis) for PEP are used to

document emission calculations. Staff needs the original spreadsheet files of these emission calculations with live embedded formulas to complete their review.

Staff understands there may have been changes made to the project that may impact construction and operation emissions. For example, the project owner states recycled water from the Palmdale Water Reclamation Plant would be trucked to the project site until such time that the recycled water supply line is brought to the project's property line. It is unclear when this pipeline would be completed. Project emission calculations need to include emissions from the associated activities such as truck trips. Detailed emission spreadsheets are necessary for staff to ensure all project emissions are evaluated. Therefore, all spreadsheets provided should be updated to reflect current project proposals.

Data Request 2

Please provide the spreadsheet version of Appendix 4.1A work sheets with live, embedded formulas.

Response to Data Request 2

Electronic versions of the following spreadsheets are provided on the CD included in Appendix DR-2 to support the operational emissions estimates:

Filename	**Description**
Table 4.1A-1A,B,C	Turbine emissions estimates
Table 4.1A-2 GT-CT-HAPs-Max	Turbine HAPs estimates
Table 4.1A-3 SU-SD Emissions	Turbine SU/SD emissions estimates
Table 4.1A-4A Aux-Blr-Gas-HAPs Scen 1	Aux boiler HAPs
Table 4.1A-4A Aux-Blr-Gas-HAPs Scen 2	Aux boiler HAPs
Table 4.1A-4A Aux-Blr-Gas-HAPs Scen 3	Aux boiler HAPs
Table 4.1A-5 EGS Emissions	Emer gen set emissions estimates
Table 4.1A-5 Page 2	Emer gen set GHG emissions
Table 4.1A-6 FP Emissions	Firepump emissions estimates
Table 4.1A-6 Page 2	FIrepump GHG emissions
Table 4.1A-9 Commissioning Emissions Page 1	Commissioning emissions support
Table 4.1A-9 Commissioning Emissions Page 2	PDF file-commissioning schedule
Table 4.1A-10 Fuel Use Calc	Fuel use calcs for turbines

Data Request 3

Please provide the spreadsheets with supporting calculations for the Construction Emission Estimates presented in Appendix 4.1E. Please provide the spreadsheets with live embedded formulas and include any updates to the spreadsheets reflecting project changes.

Response to Data Request 3

The following spreadsheets are included in the CD in Appendix DR-2 and are provided to support the construction emissions calculations:

Filename	Description
Onsite Ops Vehicle Emissions	Onsite Ops vehicle emissions
PEP Construction Emissions Rev 2017	Main construction emissions files
PEP Construction GHG Emissions Rev 2017	Construction GHG emissions estimates

Palmdale Energy LLC originally chose to rely upon the construction emissions estimates provided for the PHPP project. These estimates were revised by project staff per Data Request 91 dated May 1, 2009. These calculations were reviewed and refined by the project team. Refinements were made in the following areas:

- Construction equipment emissions factors were updated from 2009 to 2017 (the anticipated start year of construction).
- Onsite dedicated vehicle operations were refined to consist of two (2) Ford F-150 type pickups, each having an annual mileage of 10,000 miles.
- All of the data in the spreadsheets applicable to the solar array portion of the previous project were zeroed out.

These workbooks and worksheets are password protected, but CEC staff can view the embedded formulas, etc. These worksheet files are the sole property of AECOM and are provided for the sole use of CEC staff. Any distribution of these files to any entity other than CEC staff is prohibited. Additionally, it should be noted that these spreadsheets contain emissions calculations for the solar array portion of the previous project that have been zeroed out, but not removed from the workbook in order to preserve the internal linking of the calculation sheets. See Response to Data Request 4 below.

Data Request 4

Please update any other table or spreadsheet as needed to reflect project changes.

Response to Data Request 4

Palmdale Energy LLC has revised the construction emissions estimates per Response to Data Request 3 above. The following tables show these estimates for the Power Block portion of the project only.

Table's 4-1 through 4-4 show the estimated daily and annual construction emissions estimates.

Table 4-1 Estimated Daily Construction Emissions (lbs)
Onsite and Offsite Emissions

Project Component	NO_x	CO	VOC	SO_x	PM10	PM2.5
Onsite	49.7	34.3	8.2	0.1	46.4	12.2
Offsite	58.7	161.6	16.6	0.1	19.0	5.3

Table 4-2 Estimated Annual Onsite Construction Emissions (TPY)

Project Component	NO_x	CO	VOC	SO_x	PM10	PM2.5
Onsite Exhaust	5.7	4.3	1.0	<0.05	0.3	0.3
Onsite Fugitives	-	-	-	-	4.9	1.2

Table 4-3 Daily Emissions Estimates for Offsite Linears (lbs)						
Project Component	**NO_x**	**CO**	**VOC**	**SO_x**	**PM10**	**PM2.5**
Reclaim water line	90.6	164.6	27.5	0.1	41.9	13.8
Natural gas pipeline	90.6	164.6	27.5	0.1	41.9	13.8
Sanitary wastewater line	24.2	51.0	7.8	0.05	10.1	3.4
Potable water line	24.2	51.0	7.8	0.05	10.1	3.4
T-line Segment 1	219.7	156.1	30.0	0.2	84.1	23.6
T-line Segment 2	255.6	195.4	33.8	0.3	309.7	72.4

Table 4-4 Construction Related GHG Emissions Estimates	
Construction Source	**GHG Emissions, mtCO2e**
Combined Cycle Facility	5640
Solar Array Facility (deleted)	0
Reclaimed Water Line	1919
Nat Gas Pipeline	2591
Sewer Line	303
Potable Water Line	121
T-Line Segment 1	3014
T-Line Segment 2	944
Construction Total	**14532**

These revised emissions values were used in the revised impact modeling analysis per Data Request 7 below.

AMMONIA EMISSION ESTIMATES: BACKGROUND

Appendix 4.1A (Calculation of Maximum Hourly, Daily and Annual Emissions) for PEP includes tables used to calculate project emissions from the proposed turbines. The spreadsheets list ammonia emissions tied to specific events such as a cold startup, shutdown, etc.; however, the estimated annual emissions from the operation scenarios only include ammonia emissions from steady state operation even though each scenario includes events such as cold startups, warm startups, etc. Staff needs to understand why ammonia emissions are listed for startup and shutdown events but are not included in the annual calculations.

Data Request 5

Please provide additional detail to explain the ammonia emission calculations from the turbines included in Appendix 4.1A.

Response to Data Request 5

The ammonia emissions for startups and shutdowns were inadvertently omitted from the calculations presented in Appendix 4.1A. Ammonia slip emissions data was provided by the turbine manufacturer (Siemens) per the Summit-Palmdale 2x1 SCC6-5000F Performance sheet dated 4/22/15. This sheet is presented in the Revised Petition to Amend as Appendix 4.1A-1 Part 1 and the corrected version is also included with this response.

In the corrected version, the cold day case (Case 2) was used to calculate the maximum hourly and daily emissions for NH_3 while for annual emissions, Cases 11 and 12 (ISO days) were used to estimate annual (long term emissions). For purposes of the HRA, the NH_3 emissions for the cold day hour with duct burners operational (at 17.2 lbs/hr) were used to represent all emission hours in order to produce conservative health impact values (i.e., the 17.2 lbs/hr was assumed to occur for 8,000 hours per year for each turbine).

The spreadsheet has been modified to reflect the lbs/event emissions of NH_3 for the cold, warm, hot, and shutdowns events, which results in a calculated NH_3 annual emission rate of 125.32 tpy versus the 124.68 tpy value listed in the original tables.

Data Request 6

Please revise data tables to include ammonia emissions from proposed startup and shutdown, and transient events if appropriate.

Response to Data Request 6

The ammonia emissions for startups and shutdowns will be less than the worst-case assumption, used in the HRA where the hourly NH_3 emissions were set equal to 17.2 lbs/hr. Based on data provided by Siemens, NH_3 does not commence until the catalyst is warm enough to utilize the ammonia effectively. Their assumption is that ammonia injection can commence (i.e., SCR catalyst is warm enough) after approximately 15-minutes, with full NO_X removal after approximately 35-minutes from the turbine start for 'Cold' and 'Warm', and after approximately 30-minutes for 'Hot' startups.

Regarding shutdown, they assume actual ammonia injection continues until the fuel cutoff, at which time ammonia injection is turned off; however, they have found that there is still sufficient ammonia soaking the catalyst such that NO_X reduction continues.

The expected steady-state ammonia slip should be at the guaranteed limit of 5 ppmvd. Siemens recommended using between 5 and 10 ppmvd during initial ammonia injection during startup to be conservative. We assumed an average of 7.5 ppm during the initial injection period to calculate the slip emissions during each startup/shutdown event.

The Siemens ammonia slip assumptions were modified slightly below to conservatively reflect the cold start times for the turbines. Specifically, the cold start was assumed to end at 39 minutes instead of 35 minutes, resulting in a 7.5 ppm slip for 24 minutes (39 minutes total start – 15 minutes with no NH_3 injection = 24 minutes at 7.5 ppm).

So, for a cold start at 39 minutes and assuming Case 2 stack conditions:

- First 15 minutes, NH_3 = 0
- Next 24 minutes, NH_3=7.5 ppm = 25.8 lb/hr
- Next 21 minutes, NH_3 = 5 ppm = 17.2 lb/hr
  = 16.34 lb/hr or 10.32 lb/event

Warm start:

- First 15 minutes, NH_3 = 0 ppm
- Next 20 minutes, NH_3 = 7.5 ppm
- Next 25 minutes, NH_3 = 5 ppm
  = 15.77 lb/hr or 8.59 lb/event

Hot Start:

- First 15 minutes, NH_3 = 0 ppm
- Next 15 minutes, NH_3 = 7.5 ppm
- Next 30 minutes, NH_3 = 5 ppm
  = 15.05 lb/hr or 6.45 lb/event

Shut down:

- 5 ppm for the entire shutdown period of 25 minutes.
  = 7.17 lb/hr or 7.17 lb/event

The total ammonia emissions from startups and shutdowns are estimated to be 1.2 tpy for Scenario 1. The total annual revised emissions of NH_3 for the three proposed scenarios would be as follows:

Scenario 1	125.32 tpy
Scenario 2	68.58 tpy
Scenario 3	79.14 tpy

CONSTRUCTION IMPACT ANALYSIS: BACKGROUND

The proposed project amendment includes significant changes to the construction emissions. In addition, the area of the proposed site has been reduced from approximately 333 acres to 50 acres. Although this would reduce the emissions from some construction activities such as grading, the change in the site size could affect the construction impact analysis given the change in the fence lines. Also, much of the previous project site is now outside the amended project's boundary and its potential use is not known. Staff needs to understand what the construction impacts will be to this area as well as to the larger surrounding area. The applicant's preliminary assessment indicates that health-based ambient air quality standards would be exceeded either because of high background values or due to the combined effect of background, plus project construction impacts. The construction emissions need to be remodeled so that staff can understand the proposed project construction impacts.

Data Request 7

Please provide a complete air quality impact analysis for the proposed PEP construction emissions including updated emission calculations and air quality modeling files and assumptions.

Response to Data Request 7

The revised construction emissions were presented in Response to Data Request 4 above. These emissions were the basis of the revised construction impact modeling, which is included in Appendix DR-7.

Data Request 8

> Please provide the construction modeling plot files detailing the fence line and offsite property air quality impacts to all property within six miles of the new project boundary.

Response to Data Request 8

The construction modeling files attached extend out to six miles from the project boundary in all directions and are included in Appendix DR-2.

CONSTRUCTION, COMMISSIONING AND OPERATION OVERLAP IMPACTS: BACKGROUND

Section 4.1.5 (Air Quality Impact Analysis) and Appendix 4.1E (Construction Emissions and Impact Analysis) discusses the impacts of construction, commissioning and operations. In order for staff to conduct a complete analysis, any potential impacts from overlap of these phases must be included.

Data Request 9

> Please provide detailed schedules for these phases and discuss any periods of overlap for construction, commissioning and operation of all equipment.

Response to Data Request 9

Figure 2-8 (PEP-Preliminary Construction Schedule) is presented in Section 2.5.7 of the Revised Petition to Amend. The total project implementation period is estimated to be 29 months, with site mobilization and construction beginning in month 5. Construction is estimated to take place over a timeframe of 24-25 months. The following table summarizes the preliminary (estimated) construction periods and overlaps based on the applicant's review of the current schedule. The start of commissioning will not overlap

with any major construction activity. Only final electrical or other small construction activities are expected to occur during the commencement of commissioning activities.

Activity/Parameter	Beginning/ending Months	Months overlap
Site mobilization and construction	5 to 26 (21 months total)	none
Commissioning	25 to 26 (2 months total)	1 month
Performance Testing	28	none
Commercial Ops	29	none
*preliminary data only		

A review of the construction emissions calculation spreadsheets provided indicates that the necessary phasing and overlaps have been included in the emissions estimates. The emissions summaries presented in Response to Data Request 4 account for these minor periods of overlap, etc.

Data Request 10

Please discuss all assumptions made in the air quality modeling assessment regarding simultaneous construction, commissioning or operation of all project equipment.

Response to Data Request 10

See Response to Data Request 9 above. No overlap is expected to occur in the simultaneous construction, commissioning or operation of the project equipment. For commissioning activities, as summarized in the application, the worst-case hour and the worst-case day is assumed to be one (1) turbine undergoing first fire and synch checks with the other turbine in emissions and combustion turning (see Table 4.1-30 in the Revised Petition to Amend). No two (2) turbines will be undergoing the same commissioning activity during any one hour or day until the final tuning and testing phase. The commissioning activities and emissions are summarized in Appendix 4.1-A of the Revised Petition to Amend. Simultaneous operation of the auxiliary boiler would not occur until the final phase of commissioning.

PROJECT EMERGENCY ENGINE: BACKGROUND

The proposed PEP includes a diesel-fueled emergency engine. Section 4.1.2.2 (Project Equipment Specifications) identifies the proposed engine as a Caterpillar or equivalent Tier 2 engine rated at 2011 brake horsepower (BHP). The specific engine was not identified; however, engine performance data was included in Appendix 4.1A, Attachment 4.1A-2 Parts 1 and 2 (Fire Pump and Emergency Generator Spec Sheets)

for an identified representative engine rated at 1,853 BHP. Emission calculations included in Table 4.1-11 (Diesel Fire Pump and Generator Engine Emissions) were based off calculations included in Table 4.1A-5 (Emergency Gen Set Emissions Estimates). The spreadsheets list the emissions factors used for the engine emission calculations. These emission factors are different than the regulatory emission factors included in Attachment 4.1A-2 Parts 1 and 2. The source of the emissions factors is not clear and needs to be included to determine if they are representative of the proposed engine. In addition Tables 4.1-11 and 4.1A-5 specify the emission calculations, and the modeled emissions rates are based off of an assumption of 1 readiness test maximum per day lasting 0.5 hours per test.

Sections 4.1.4.2 (Proposed Best Available Control Technology) and Appendix 4.1F (Evaluation of Best Available Control Technology) conclude that a proposed Tier 2 emergency engine will meet current AVAQMD BACT requirements. The AVAQMD has currently not published their analysis of the equipment. In addition, other agencies and the Energy Commission are also required to review the proposed PEP. Per the California Environmental Quality Act (CEQA) the Energy Commission reviews the projects and requires mitigation for impacts. The proposed site for the PEP is considered nonattainment for both the federal and state ambient air quality standards for ozone (O_3) and nonattainment for state particulate matter less than 10 microns in size (PM10) ambient air quality standard therefore staff is reviewing all project components to determine appropriate mitigation.

The City of Lancaster has submitted separate data requests regarding the proposed emergency engine. Staff has not concluded that a Tier 4F engine is considered BACT for all pollutants; however, staff is requiring additional information on the emissions factors used to quantify emission from the proposed engine and the availability of cleaner engines.

Data Request 11

What is the correct diesel-fueled emergency engine size in BHP?

Response to Data Request 11

Both the air section text and the tables in Appendix 4.1A of the Revised Petition to Amend indicate the same BHP ratings for the two diesel-fired emergency engines as follows:

Emergency Generator	2011 bhp
Fire Pump	140 bhp

Data Request 12

Please provide a discussion on the selection of the emergency engine emission factors used to calculate project emissions and assess project impacts.

Response to Data Request 12

The emission factors for the fire pump were obtained by directly assigning the Tier 3 specification limits for a fire pump engine in the 101 to 175 BHP size range. The emergency generator emission data were provided by the project vendor for the engine and are summarized below.

The 2015 EPA emissions for this engine family are:

EPA Engine Certification (2015) (g/bhp-hr)					
Family Name	HC	NOx	NMHC + NOx	CO	PM
FCPXL78.1NZS	0.19	3.78	3.95	0.67	0.09

Note that the emergency generator engine will be better than the Tier 2 and Tier 3 emission limitations for this engine category.

Data Request 13

Please provide a discussion on the availability of cleaner burning emergency engines.

Response to Data Request 13

Both emergency engines will be in compliance with the EPA and CARB tiered emissions standards, and the CARB/AVAQMD Air Toxics Control Measures (ATCM) for

stationary CI engines and will be in compliance with the New Source Performance Standards (NSPS) Subpart IIII.

For the fire pump engine, Tier 3 remains the cleanest burning engine category that has a National Fire Protection Association certification.

For the diesel generator, the engine meets all of the NSPS requirements for a Tier 2 and/or Tier 3 emergency standby generator.

Data Request 14

What is the basis for selecting 0.5 hours per readiness test?

Response to Data Request 14

0.5 hours was selected as the basis for the readiness test to demonstrate compliance with the 1-hour California NO_2 standard.

Data Request 15

Please provide verification that the engine operations during maintenance would be able to comply with a time restriction of 0.5 hours per readiness test.

Response to Data Request 15

The engine will be limited to a 0.5-hour test through the establishment of a permit limit with the AVAQMD. A non-resettable engine hour meter will ensure compliance with this limit.

GREENHOUSE GAS: BACKGROUND

The Energy Commission has adopted regulations that establish a standard for base load generation of 0.5 metric tonnes of carbon dioxide (CO_2) per megawatt hour (MWh) (equivalent to1100 pounds (lbs) CO_2/MWh) for base load generation owned by or under long-term contract to publicly owned utilities. Base load generation is defined as electricity generations from a power plant that is designed and intended to provide electricity at an annualized plant capacity factor of at least 60 percent. Compliance with the emission performance standard is determined by dividing the annual average CO_2 emissions by the annual average net electricity production in MWh.

Data Request 16

Please provide the detailed calculations and a discussion demonstrating compliance with Title 20: Division 2, California Code of Regulations, Chapter 2, Article 4, Section 1230 et. Seq.

Response to Data Request 16

See Response to Data Request 17 below.

GREENHOUSE GAS EMISSIONS: BACKGROUND

On August 3, 2015, the U.S. Environmental Protection Agency (EPA) administrator signed a notice and submitted it for publishing in the Federal Register. This notice was published in the Federal Register on October 23, 2015 and has an immediate effective date. It sets standards to limit emissions of carbon dioxide (CO_2) from new, modified and reconstructed power plants. The New Source Performance Standards Subpart TTTT-Standards of Performance for Greenhouse Gas Emissions for Electrical Generating Units (EGU) (Title 40, Code of Federal Regulations, Part 60.5508) are set under the authority of the Clean Air Act section 111(b) and are applicable to new fossil fuel-fired power plants commencing construction after January 8, 2014. Section 4.1.1 of the AFC stated the project is planning to operate as a base load power plant with an expected facility capacity factor of 60-80%.

According to Subpart TTTT, base load rating is defined as maximum amount of heat input that an EGU can combust on a steady state basis at ISO conditions. For stationary combustion turbines, base load rating includes the heat input from duct burners. Each EGU is subject to the standard if it burns more than 90% natural gas on a 12-month rolling basis, and if the EGU supplies more than the design efficiency times the potential electric output as net-electric sales on a 3 year rolling average basis. Affected EGUs supplying equal to or less than the design efficiency times the potential electric output as net electric sales on a 3 year rolling average basis is considered a non-base load unit and is subject to a heat input limit of 120 lbs CO_2/MMBtu. Each affected 'base load' EGU is subject to the gross energy output standard of 1,000 lbs of CO_2/MWh unless the Administrator approves the EGU being subject to a net energy output standard of 1,030 lbs CO_2/MWh.

Data Request 17

Please provide detailed calculations demonstrating how the plant would comply with the Subpart TTTT requirement.

Response to Data Request 17

A spreadsheet that provides calculations which show compliance with both Subpart TTTT as well as Energy Commission and Title 20: Division 2, California Code of Regulations, Chapter 2, Article 4, Section 1230 et. Seq. standards are included on the CD in Appendix DR-2.

Data Request 18

Please clearly indicate in the demonstration for any EGU potentially subject to the CO_2 energy output emission standard if the demonstration is based on gross energy output or if the facility will be seeking approval for the net energy output standard.

Response to Data Request 18

See to Data Request 17 above. Data presented in the calculation table referenced in Response to Data Request 17 indicates that the turbine/HRSGs will easily comply with the provisions of Subpart TTTT on both a net and gross energy output basis. The facility will be seeking approval based on the Net energy output basis.

EMMISSION REDUCTION CREDITS: BACKGROUND

PEP would be located in Palmdale in northern Los Angeles County and in the AVAQMD within Mojave Desert air basin. AVAQMD is in non-attainment with the state and federal ambient air quality standards for O_3 and the state ambient air quality standard for PM10. PEP would result in emissions that exceed AVAQMD offset triggers for PM10, volatile organic compounds (VOC), nitrogen oxide (NOx) and carbon monoxide (CO). AVAQMD rules require emissions reduction credits (ERCs) to offset the proposed emissions. The California Energy Commission requires mitigation for the emissions of pollutants and/or their precursors that cause significant impacts. Precursors of O_3 and PM10 include VOC, SOx and NOx.

Emission reduction credits (ERCs) would need to be acquired to satisfy AVAQMD laws ordinances, regulations, and standards (LORS) and mitigate the potential proposed

project impacts. PEP is proposing to permit the facility for base load operations. However as stated in Section 4.1.3.2 (Facility Emissions), there is uncertainty if they will be able to acquire the necessary ERCs needed to mitigate the impacts of the proposed operations. Section 4.1.3.4 (Criteria Operations) further describes PEP's proposal to limit facility operations according to match a lower amount of mitigation and proposes the facility be given the ability to potentially increase operations incrementally as more credits are obtained. This stepped approach is not consistent with the AVAQMD permitting process or the Energy Commission licensing process. Projects are required to mitigate their potential impacts and an appropriate demonstration would be required during the licensing process prior to construction or operation.

In addition, the proposed PEP did not identify the specific ERCs that would be used as mitigation for the project. The Revised PTA stated that ERCs could be acquired through one or a combination of options. The options identified in the Amended AFC include: (1) ERCs from the AVAQMD ERC bank, (2) other air district ERC banks either within or outside the local air basin, (3) generation of ERCs through road paving and (4) inter-pollutant offsets. The specifics of which option(s) the applicant is planning to use for mitigation is not included in the Amended AFC. For example, the Amended AFC identified the entire AVAQMD registry as potential sources of ERCs. The registry lists ERCs that have been issued previously by the District. However, this does not mean the ERCs are available for purchase or use as mitigation. Staff needs to be able to review the specific ERCs proposed for mitigation in order to determine if potential impacts are appropriately mitigated under CEQA.

Appendix 4.1G (Offsets/Mitigations) identifies mitigation strategies that are not traditionally used to mitigate emission impacts. The proposed strategies need to be explicitly identified in order for staff and other agencies to determine the effectiveness of each proposal. For example the applicant is proposing to generate PM10 and PM10 precursor offsets, SOx, through paving unpaved roads. This mitigation strategy continues to be legally challenged in other air districts based on inadequate CEQA review. Appendix 4.1G (Offsets/Mitigation) Table 4.1G-2 Road Segments Considered for Paving (PM10 Reduction) lists road segments being considered. It is not clear if all the segments listed in the table are viable candidates for paving. Also, the specific methodology being proposed to quantify the emission reductions and generation of ERCs has not been provided. In addition AVAQMD Rule 1305 (Emission Offsets) states any area and indirect source of actual emission reductions (AERs) must be approved prior to the issuance of any New Source Review (NSR) permit in concurrence with the California Air Resources Board (ARB). AVAQMD Rule 1309 (Emission Reduction Credits) contains standards for granting ERCs and addresses previously unpermitted

emission units. The rule states that ERCs cannot be granted unless historical emissions from that unit are included in the District's emissions inventory.

In addition the PEP is proposing to use ozone precursor ERCs from other surrounding air districts either within or outside the local air basin to mitigate emission impacts. The proposal identified the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) as one of the potential sources of ERCs. The SJVAPCD ERC program uses a tracking system which annually demonstrates that its NSR program is equivalent to federal non-attainment NSR requirements. This includes provisions related to the emission offsets program. The SJVAPCD annually demonstrates the ERC program on a whole is as least as stringent as the federal requirements and the specific ERCs are not adjusted at the time of use. Generally ERCs proposed for use in the AVAQMD would be adjusted at the time of use to reflect any emission reductions in excess of Reasonably Available Control Technology (RACT). Questions remain as to how to handle the ERCs from SJVAPCD since they are adjusted on a programmatic basis. Use of these offsets for mitigation could be subject to review and approval from the ARB and EPA.

All ERCs used for mitigation need to be real, permanent, quantifiable, enforceable and surplus. ERCs proposed to mitigate the project for criteria pollutants or precursors in areas designated as non-attainment must meet the above criteria and must be approved by the appropriate agencies. The Amended AFC includes options for mitigation which would require AVAQMD board, state and federal approvals, as applicable. In addition, other air district's board approval maybe required if ERCs are acquired from air districts other than AVAQMD.

Data Request 19

> Please include a schedule specifying the steps that are being taken to identify and secure emission reduction credits to allow proposed operation. Please include in this discussion specific details on potential offset sources or other emission mitigation programs being pursued and the quantity of offsets being pursued. Include all agency approvals that would be needed and the timing of these approvals.

Response to Data Request 19

Palmdale Energy LLC is currently in negotiations for securing the necessary emission reduction credits to allow the proposed operation of the PEP in accordance with the scenarios identified in the Revised Petition to Amend. Palmdale Energy LLC will file the list of potential ERC holders under confidential cover separately. The list of offsets will

include the NOx and VOC offsets already approved for transfer along with NOx certificates from Mohave and San Juaquin AQMD and VOC and SO2 from San Joaquin AQMD. The transfer of the offsets will require approval of both the transferee AQMD and AVAQMD. Please see Response to Data Request 20 below for a discussion of the timing of surrender of offsets.

Data Request 20

> Please include details on when the applicant is expected to secure emission reductions for the proposed PEP.

Response to Data Request 20

Staff had correctly stated in its Background to this data request:

> *Emission reduction credits (ERCs) would need to be acquired to satisfy AVAQMD laws ordinances, regulations, and standards (LORS) and mitigate the potential proposed project impacts. PEP is proposing to permit the facility for base load operations.*

With respect to the timing of surrendering of ERCs, the AVAQMD issued a letter to Staff[1] during licensing of the Approved Project explaining the timing in response to the same concern raised again by Staff. Specifically, the AVAQMD stated with respect to offset timing:

> The District would not presume to dictate to the Commission on licensing decisions. Nor would the District place requirements on a proposed project beyond District regulatory authority. In accordance with District rules and regulations, the District has: (1) required the applicant to provide proof of the existence of adequate offsets, in the form of transferable credits in good standing within the San Joaquin Valley ERC registry (which can be transferred in accordance with state and local law) and in the form of existing unpaved roads which can be paved to generate PM10 offsets; and (2) placed a requirement (proposed permit condition) on the proposed project to surrender the totality of offsets prior to the commencement of construction.

Palmdale Energy LLC expects a similar requirement in the PDOC and FDOC to be issued by AVAQMD which would then satisfy the requirement that the PEP will be

[1] Letter from Alan DeSalvo, AVAQMD to Matthew Layton, CEC Staff dated June 29, 2010, TN 57467.

properly offset in accordance with AVAQMD rules. This should be sufficient for the Commission in approving the Modified Project as the same approach was used with respect to offset timing for the Approved Project and is consistent with Conditions of Certification AQ-SC18 and AQ-SC19. Palmdale Energy LLC had proposed minor modifications to Condition of Certification AQ-SC18 and AQ-SC19 to reflect the new emission limits from the modified turbine and operational profile.

As described in Response to Data Request 19, Palmdale Energy LLC will be submitting under a Request for Confidentiality, a list of ERC holders with whom it is engaging in negotiations. At this time, Palmdale Energy LLC requests the CEC Staff evaluate the range of ERCs currently identified for its CEQA-equivalent review.

Data Request 21

> Please provide the specific methodology proposed for calculating emission reduction credits from road paving and describe how that methodology is consistent with AVAQMD or other approving agency rules and regulations.

Response to Data Request 21

With respect to roadway segments or specific methodology for calculation of offsets, Palmdale Energy LLC is not proposing anything different than what was evaluated and authorized in the Final Decision for the Approved Project. Therefore, and in accordance with the direction provided by the Committee at the Site Visit, Scoping and Informational Hearing conducted on November 16, 2015, we believe that CEC Staff need not re-evaluate road paving for PM10 offsets as Palmdale Energy, LLC agrees with and has not proposed any modification to the Conditions of Certification[2] pertaining to road paving.

The PEP will propose to pave certain roads located within the air basin in order to generate PM10 ERCs, which will mitigate emissions of PM10 and SO_x and satisfy the State air quality requirements and CEQA. Thus, the total PM10 mitigation package would be for 81.01 tons per year of PM10 and 11.39 tons per year of SO_2, for a total PERC quantity of 92.4. In the current permit application package submitted to the AVAQMD and the CEC four (4) existing unpaved road segments have been identified, totaling approximately 5 miles.

[2] AQ-SC19 addresses road paving for use as PM10 offsets. Palmdale Energy LLC has proposed minor revisions to AQ-SC19 to reflect the decrease in PM10 emissions from the proposed turbine technology and operational profile.

The specific methodology for calculating emission reduction credits from road paving will be described in the Paving Emission Reduction Credits Protocol (Protocol) and will be based on complying with AVAQM Rule 1406. Palmdale Energy LLC is currently having the Protocol prepared which will then be approved by AVAQMD. We expect that the AVAQMD will approval the Protocol in January 2016.

Data Request 22

Please identify and update if applicable the specific road segments that are being proposed including the location and length of the segment proposed corresponding to each location.

Response to Data Request 22

No modifications to the roads authorized for paving for the Approved Project are proposed by Palmdale Energy LLC as described in Response to Data Request 21. The following is the Approved list of specific road segments being proposed.

Segment	From	To	Juirsdic-Tion	Street Type	Segment Length (Miles)	ROW Req.	Segment Footprint (Acre)	Distance From PEP (Miles)
Ave S-6	96th Street E	110th Street E	City of Palmdale	County Road	Approx. 1 .0	40 ft.	4.85	10.5
Ave T-10	87th Street E	96th Street E	City of Palmdale	County Road	Approx. 1 .0	40 ft.	4.85	10.8
Ave S-2	96th Street E	106th Street E	LA County	County Road	Approx. 1 .0	40 ft.	4.85	10.25
Carson Mesa Road	El Sastre	Vincent View RD	LA County	County Road	Approx. 1.85	40	8.24	10.25

Data Request 23

Please provide current calculations quantifying vehicle miles traveled and calculations quantifying the expected emissions from the proposed roadway segments before and after paving.

Response to Data Request 23

No modifications to the roads authorized for paving for the Approved Project are proposed by Palmdale Energy LLC. Please see Response to Data Request 21.

Traffic counts and calculations quantifying expected emissions before and after paving will be performed after the Protocol is approved and prior to submittal of the application for ERCs to the AVAQMD.

Data Request 24

> Please include all supporting data and assumptions used in the emission calculations from the proposed road paving including current traffic counts, surface material silt content, and mean vehicle speed.

Response to Data Request 24

Supporting data and assumptions used in the emission calculations from the proposed road paving including current traffic counts, surface material silt content, and mean vehicle speed will be provided after the traffic counts and silt analysis is performed. This expected to be complete 60 days after the approval of the Protocol.

Data Request 25

> Please discuss ongoing maintenance that would be required for each roadway segment selected and discuss if the road segment would be maintained by the applicant or if agreements have been made to have maintenance performed by the state or local government agency.

Response to Data Request 25

As described in the AVAQMD letter to Staff[3] during licensing of the Approved Project the AVAQMD stated with respect to road paving:

> The applicant has identified sufficient public unpaved roads that can be paved to generate PM10 emission reductions to offset the proposed project's PM10 emissions (including fugitive emissions from vehicles involved in maintenance of solar field equipment), using a District approved calculation methodology. The approved methodology includes

[3] Letter from Alan DeSalvo, AVAQMD to Matthew Layton, CEC Staff dated June 29, 2010, TN 57467.

verifying the existence and status of the unpaved roads, specifies ongoing road surface inspection procedures, and establishes eventual maintenance responsibility (and control) for the paved public road surface. The applicant has identified specific public (Palmdale and County of Los Angeles) road segments and traffic levels. A commitment to maintain the integrity of the paved road surface by the public entity with control over the paved road will be required as an element of each road paving ERC application, in accordance with District Rules 1305 and 1309.

The District is attainment for the federal PM10 standard. Therefore, there is no regulatory requirement to adopt a PM10 plan, road paving rule, or any other preparatory regulatory action prior to responding to an ERC application for emission reductions resulting from the paving of an existing unpaved road. For the same reason USEPA approval is not required for any District action involving PM10 credits (1305(B)(3)(d)). Furthermore, the District is attainment for both the federal and state PM2.5 standards, and therefore the PHPP is not required to offset its PM2.5 emissions.

In accordance with the AVAQMD direction, a commitment to maintain the integrity of the paved road surface by the public entity with control over the paved road will be included in Palmdale Energy LLC's in each road paving ERC application. As required by AQ-SC19, the PM10 ERCs created form road paving would be surrendered prior to construction.

Data Request 26

Please provide details on the Antelope Valley emission inventory for unpaved road dust.

Response to Data Request 26

AVAQMD has not developed an emission inventory for unpaved road dust.

Data Request 27

Please describe the entire CEQA environmental review that would be conducted for each roadway segment identified.

Response to Data Request 27

Palmdale Energy LLC believes that the Commission included a full CEQA analysis in its Final Decision which authorizes road paving to create PM10 ERCs to offset the project's emissions. As described in the Revised Petition to Amend PM 10 emissions from the Modified Project, and therefore the amount of ERCs to offset those emissions, have been reduced significantly. Since Palmdale Energy LLC is not proposing any new roads for paving, the CEQA analysis performed by the Commission for the Approved Project is sufficient to support a decision on the Petition To Amend.

Data Request 28

> Please provide the distance of each proposed roadway segment to the proposed emission source.

Response to Data Request 28

Please see Response to Data Requests 21 and 22.

Data Request 29

> Please provide any documentation from the approving agencies regarding the use and adjustment of ERCs from other air district ERC banks either within or outside the local air basin.

Response to Data Request 29

Please see Appendix DR-29.

Data Request 30

> Please provide correspondence between the EPA, ARB, or AVAQMD regarding the use of ERCs for road paving for PEP.

Response to Data Request 30

Please see Response to Data Request 25. A copy of the full letter referenced therein is included in Appendix DR-30.

CULTURAL RESOURCES (31)

BACKGROUND:

Staff cannot rely upon the record search summary prepared by the previous project owner for its analysis because the record search for the Palmdale Hybrid Power Project (PHPP) is out of date and does not conform to current Energy Commission information requirements. The previous project owner conducted a series of record searches at the South Central Coastal Information Center (SCCIC), the earliest of which was in June of 2007 and the most recent in February of 2009. In the absence of specific cultural resources information requirements for project amendments, staff relies on the cultural resources informational requirements for Applications for Certification (Title 20, Chapter 5, Article 6, Appendix B, (g)(2)) and per guidance from the State Office of Historic Preservation (OHP 1995:2). The information requirements in Appendix B state:

(B) The results of a literature search to identify cultural resources within an area not less than a 1-mile radius around the project site and not less than one-quarter (0.25) mile on each side of the linear facilities. Identify any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum. Literature searches to identify the above cultural resources must be completed by, or under the direction of, individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed.

Copies of California Department of Parks and Recreation (DPR) 523 forms (Title 14 CCR §4853) shall be provided for all cultural resources (ethnographic, architectural, historical, and archaeological) identified in the literature search as being 45 years or older or of exceptional importance as defined in the National Register Bulletin Guidelines, (36CFR60.4(g)). A copy of the USGS 7.5' quadrangle map of the literature search area delineating the areas of all past surveys and noting the California Historical Resources Information System (CHRIS) identifying number shall be provided. Copies also shall be provided of all technical reports whose survey coverage is wholly or partly within 0.25 miles of the area survey for the project under Section (g)(2)(C), or which report on any archaeological excavations or architectural surveys within the literature search area.

(C) The results of new surveys or surveys less than 5 years old shall be provided if survey records of the area potentially affected by the project are more than five (5) years old. Surveys to identify new cultural resources must be completed by (or under the direction of) individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed,

Staff does not think that a new pedestrian survey is necessary for this amendment, despite more than 5 years having passed, because the initial proceeding's geoarchaeological literature review and accompanying archaeological sensitivity analysis remains valid for predicting buried cultural resources. However, since the last record search, it is likely that additional cultural resource studies and findings were documented and evaluated in the record search area. This new information regarding off-site resources will provide staff with a more complete and comprehensive data set from which to draw conclusions regarding any impacts to potentially significant cultural resources that are found during project construction, as well to identify any potential impacts to newly recorded resources along the linear routes. Without current information, staff is hindered in conducting its cultural resources analysis of the PEP.

Data Request 31

> Please conduct a records search at the South Central Coastal Information Center of the California Historical Resources Information System within an area not less than a 1-mile radius around the project site and not less than one-quarter (0.25) mile on each side of the linear facilities, and provide staff with the search results, following the requirements at Title 20, California Code of Regulations, Appendix B.

Response to Data Request 31

Palmdale Energy LLC has engaged AECOM to perform this work which will be submitted under separate cover by December 21, 2015.

HAZARDOUS MATERIALS (32-34)

BACKGROUND

Staff has reviewed the Revised PTA and notes several differences between it and information provided by the owner in the initial proceedings (2008-2011), in the staff's original FSA (dated December 2010) and the Commission's Final Decision (dated August 2011). Staff requests clarification and additional information in order to properly assess the impacts of the hazardous materials proposed for use, storage, and transportation to the facility. A new Off-site Consequence Analysis (OCA) for the use and storage of 19 percent aqueous ammonia may be needed, a revised number and frequency of deliveries of tanker trucks containing aqueous ammonia is missing, and discrepancies regarding the identity and amounts of hazardous materials proposed for use at the site must be resolved.

The Revised PTA (July 2015) states that "an off-site consequence analysis will be performed to assess potential risks to off-site human populations if a spill [of aqueous ammonia] were to occur" (page 4.1-105). It is unclear if this statement is indicating that the past OCA prepared by the project owner and reviewed and approved by the staff in its FSA is obsolete. If it is, a new one must be prepared prior to staff's preparation of the PSA or FSA. If it remains accurate, a statement reflecting that fact is requested.

Data Request 32

> Please provide either an updated revised OCA or a statement that the previous modeling provided by the applicant in the original proceedings remains accurate and thus no new OCA will be needed.

Response to Data Request 32

While the size of the ammonia tank has not changed, the location has been moved approximately 208 feet farther east and 277 feet farther south of the Approved Project's tank. Therefore, a new OCA will be performed and submitted by December 11, 2015.

Data Request 33

> Please provide clarification on the number of aqueous ammonia tanker truck deliveries weekly and yearly or a statement that no change will occur.

Response to Data Request 33

Palmdale Energy LLC has used a quantity of 6,800 gallons per delivery for tanker truck plus pup-trailer for calculating the number of aqueous ammonia deliveries. Palmdale Energy LLC estimates three deliveries per week and up to 160 deliveries annually. The Final Decision identified that 14 truck deliveries per month or approximately 168 deliveries annually was anticipated for the Approved Project.

BACKGROUND

In the Revised PTA, Appendix A, Hazardous Materials Proposed for Use at the PEP, has a number of differences from the approved project list. Specifically, 93 percent sulfuric acid is missing, hydrogen gas is absent, and eight Nalco water treatment chemicals are missing. The absence of sulfuric acid is important because the Revised PTA requests that 93 percent sulfuric acid remain in Condition of Certification ***HAZ-9****, section 8 (Page 4.3-6 of the revised PTA) while proposing to remove another hazardous material that is no longer on the list.*

Data Request 34

> Please provide clarification (purpose, storage method, amount and concentration, etc.) on the proposed use of 93 percent sulfuric acid, hydrogen gas, and the eight Nalco water treatment chemicals.

Response to Data Request 34

With respect to hydrogen gas, the Revised Petition to Amend has correctly proposed its deletion as the PEP will not have hydrogen cooled generators. The generators will be air cooled.

With respect to sulfuric acid, the PEP is proposing to remove it from the Hazardous Materials List as it will not be used for project operations. As the Staff has correctly pointed out, it should also be removed from Condition of Certification HAZ-9 as the Revised Petition to Amend incorrectly failed to request its deletion.

With respect to the original Nalco water treatment chemicals proposed for the Approved Project, Palmdale Energy LLC has reviewed the Hazardous Materials List proposed in the Revised Petition to Amend and believes that all of the Nalco chemicals that the PEP would use are identified in that list. The confusion may be that the chemicals listed as

Permaclean or Permatreat are also Nalco products. No further modification is necessary and Palmdale Energy LLC reconfirms that the list of hazardous materials contained in the Revised Petition To Amend is accurate.

PUBLIC HEALTH (35-44)

Background- Health Risk Assessment (HRA) for Construction Phase

According to the Revised PTA, construction of the Project would take approximately 25 months. Temporary emissions from construction-related activities are discussed in Section 4.1, Air Quality and Appendix 4.1E. However, the applicant did not conduct a health risk assessment (HRA) for construction in the PTA assessing the potential risk to human health from the project's toxic air emissions (i.e. diesel particulate matter [DPM]) during the construction phase.

The applicant also did not conduct a HRA for construction phase for the approved Palmdale Hybrid Power Project (PHPP). In addition, in March 2015 Office of Environmental Health Hazard Association (OEHHA) approved a revision to the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. OEHHA developed age sensitivity factors (ASFs) to take into account the increased sensitivity to carcinogens during early-in-life exposure. This new methodology incorporates the fact that exposure varies among different age groups and exposure occurring in early life has a higher weighting factor.

Staff needs the applicant to conduct a HRA according to the new guidance manual.

Data Request 35

> Please conduct a HRA for the construction period to assess the potential risk to human health from the project's DPM using the Hotspots Analysis and Reporting Program version 2 (HARP2) and approved risk assessment health values.

Response to Data Request 35

A screening health risk assessment was conducted for the PEP construction phase using HARP2. The assessment considered diesel particulate matter (DPM) only. DPM is the surrogate compound for whole diesel exhaust per CARB. With respect to emissions from diesel fueled engines, use of the diesel PM exposure factors noted above are approved by CARB for the characterization of diesel engine exhaust and subsequent risk exposures. The diesel PM exposure factor includes the range of fuel bound, and potentially emitted metals, PAHs, and a wide variety of other semi-volatile substances.

CARB notes the following in the diesel exhaust risk identification documents:

1. The surrogate for whole diesel exhaust is diesel PM. PM10 is the basis for the potential risk calculations.
2. When conducting an HRA, the potential cancer risk from inhalation exposure to diesel PM will outweigh the potential non-cancer health effects.
3. When comparing whole diesel exhaust to speciated diesel exhaust, potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated compounds. For this reason, there will be few situations where an analysis of multi-pathway risk is necessary.

Modeling was conducted using AERMOD with the output and plot files being generated outside of HARP2. DPM emissions were imported into HARP2 via a .csv file as explained in the HARP2 ADMRT module user's guide. The various pathway default values were exclusively used. The input and output files for the HARP2 analysis are provided in electronic format on the CD provided in Appendix DR-2. The only files needed by CEC staff to duplicate the construction screening HRA are as follows: (1) the emissions .csv file, and (2) the period and 1-Hr plot files generated by the dispersion model.

The following health risk values are internal to the HARP2 model and were used without modification in the construction HRA.

1. A cancer inhalation unit risk value of 0.0003 $(ug/m^3)^{-1}$ was used.
2. A cancer chronic inhalation REL of 5.0 $(ug/m^3)^{-1}$ was used.
3. No acute inhalation REL exists for DPM.

Data Request 36

Please provide a discussion of the potential health risks from DPM for the construction phase of this project, including the calculated risk values and their significance.

Response to Data Request 36

Table 37-1 presented in Response to Data Request 37 delineates the summary of the estimated health risks from DPM for the construction phase of the PEP. The results indicate that the DPM health risks are below significance, and are well within the range of DPM health risks evaluated for other similar CEC projects. A discussion of DPM health risks can be found in the following sources:

1. EPA Health Risk Assessment for Diesel Engine Exhaust (EPA 600/8-90/057F, May 2002.
2. CARB-CalEPA, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, April 1998.
1. http://www3.epa.gov/region1/eco/airtox/diesel.html, EPA Region 1 New England (2015)

Palmdale Energy LLC notes the following EPA statement: "The EPA agrees that diesel exhaust is "likely to be carcinogenic to humans by inhalation." In their risk assessment, however, the EPA did not give a quantitative estimate of risk of lung cancer due to diesel exhaust exposures. There is some uncertainty "to definitively conclude that diesel exhaust is carcinogenic to humans." Although rat and mice studies demonstrate mutagenic and chromosomal effects, these studies do not reflect normal human exposure, as previously explained. The EPA decided that the human data from epidemiological studies are too uncertain to derive a quantitative estimate of cancer risk."

Data Request 37

Please provide risk values of: (1) Point of Maximum Impact (PMI), (2) Maximally Exposed Individual Resident (MEIR) and (3) Maximally Exposed Individual Worker (MEIW) associated with construction activities.

Response to Data Request 37

Table 37-1 presents the requested information.

Table 37-1 Summary of PEP Construction Screening HRA

Recp Type	Recp #	UTM E	UTM N	Cancer Risk	Chronic HI	Acute HI
MIR	162	398861.7	3833739	5.97E-7	0.00398	NA
MEIR-North	10223	397665	3835984	2.37E-9	0.000016	NA
MEIR-South	10224	398134	3829028	3.28E-9	0.000022	NA
MEIR-East	10225	404685	3832278	2.71E-9	0.000018	NA
MEIR-West	10226	394220	3832614	2.11E-9	0.000014	NA
MEIW	10227	397889	3834469	4.11E-9	0.000027	NA
Nearest School*	10172	397904	3837306	2.80E-9	0.000019	NA

Nearest Health* Facility	10221	403051	3826908	1.91E-9	0.000013	NA
Nearest Daycare*	10197	391956	3835940	8.00E-10	0.0000053	NA
All risk values adjusted for the construction period of 2 years (OEHHA, 2015). *UTM coordinates adjusted in final modeling file versus AFC Table 4.5-1.						

BACKGROUND- HRA for Operation Phase

California Air Resource Board (ARB) also updated the HARP model to HARP2 in March, 2015. The applicant's HRA for operation was prepared using the updated HARP2. However, some detailed descriptions regarding the parameters used for the model were missing in Section 4.1.7 of the Revised PTA. Moreover, the Project HRA Summary of Table 4.1-44 only provides the risk values at the Point of Maximum Impact (PMI), not values for the maximally exposed residence, off-site workers and the nearest sensitive receptors.

Data Request 38

Please provide the risk values of Maximally Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW), and the nearest sensitive receptors associated with operation activities.

Response to Data Request 38

Table 4.1-37 in the Revised Petition to Amend Public Health discussion is titled "Nearest Sensitive Receptors by Receptor Type". This title is slightly misleading as residential and worker receptors are not considered "sensitive receptors". A more appropriate title would be "Nearest Residential, Worker, and Sensitive Receptors by Receptor Type".

Table 38-1 presents the requested information for the operational health impacts for the nearest residential, worker, and sensitive receptors. Additionally, it should be noted that the cancer risk value presented in the Revised Petition to Amend text has a transposed number, i.e., the value presented is 3.284^{-06}, while the correct value is 3.824^{-06}.

Table 38-1 Summary of PEP Operational HRA Impacts

Recp Type	Recp #	UTM E	UTM N	Cancer Risk	Chronic HI	Acute HI
MIR	17	398702.1	3833866	3.824^{-06}	0.0109	0.0242
MEIR-North	10223	397665	3835984	5.47^{-08}	0.0003	0.0106
MEIR-South	10224	398134	3829028	3.72^{-08}	0.00024	0.0056
MEIR-East	10225	404685	3832278	5.13^{-08}	0.00027	0.0022
MEIR-West	10226	394220	3832614	2.74^{-08}	0.00016	0.0035
MEIW	10227	397889	3834469	5.21^{-08}	0.00064	0.0216
Nearest School*	10172	397904	3837306	5.38^{-08}	0.00028	0.0074
Nearest Health Facility*	10221	403051	3826908	2.06^{-08}	0.00012	0.0024
Nearest Daycare*	10197	391956	3935940	1.12^{-08}	0.000055	0.0029

MEIW risk is simply the 70 year risk adjusted for an exposure period of 25 years per OEHHA (2015).

The impact area cancer burden remains 0.0012.

*UTM coordinates adjusted in final modeling file versus AFC Table 4.5-1.

Data Request 39

Please also specify their HARP2 receptor numbers.

Response to Data Request 39

See Table 38-1 in Response to Data Request 38.

Data Request 40

Please provide all the parameters for all the pathways, including inhalation, soil, fish, home-grown produce, mother's milk, and dermal absorption.

Response to Data Request 40

The parameters for all pathways were the default values within HARP2 for the inhalation, soil, mother's milk, and dermal pathways. The fish ingestion pathway was not evaluated for the PEP desert location. For the home-grown produce pathway the default values for "home/garden" were used. These default values are explained in the HARP2 guidance document and in the OEHHA (2015) guidance document.

Data Request 41

Please provide all the output files (i.e. xxxOutput.txt).

Response to Data Request 41

All of the input and output files for both the modeling and HARP2 analyses are included on the CD provided in Appendix DR-2.

Data Request 42

Please provide all other related files to enable staff to replicate the health risk assessment.

Response to Data Request 42

See Response to Data Request 41. Although all of the input and output files are provided on the CD included in Appendix DR-2, the only files needed by CEC staff to duplicate the operational HRA are as follows: (1) the emissions .csv file, and (2) the period and 1-Hr plot files generated by the dispersion model.

BACKGROUND- Sensitive Receptors

The Revised PTA provides some information on sensitive receptors for this project. A partial list of the nearest sensitive receptors based upon receptor type is listed in Table 4.1-37. Also, Appendix 4.1D delineates data on population by census tract within a 6-mile radius of the site, as well as a comprehensive list of sensitive receptors analyzed in the HRA. However, staff was unable to identify these sensitive receptors from discrete grid receptors. Staff needs the input files which contain the information on grid identification numbers (or HARP2 receptor numbers) and locations of both sensitive receptors and residential receptors to review and verify the applicant's health risk assessment.

Data Request 43

Please specify the HARP2 receptor numbers for all receptors listed in Table 4.1-37 and Table 4.1-D2.

Response to Data Request 43

See Table 38-1 in Response to Data Request 38. Note per Tables 37-1 and 38-1 above, that several of the listed receptors have adjusted coordinates in the modeling input and output files versus the original values in Table 4.1-37 in the Revised Petition To Amend text.

BACKROUND- KML File

*In HARP2, after calculating risk results, the **Export** option allows users to export the risk values of each grid or receptor into a KML file. Then the KML file could be imported into Google Earth to see an aerial image of the grids/receptors. However, staff couldn't generate the KML file since the air dispersion modeling was done separately in AERMOD, not in HARP2.*

Data Request 44

Please provide the exported risk data in KML format.

Response to Data Request 44

A KML file can be generated by any number of available GIS software programs. Alternatively, CEC staff can run AERMOD within HARP as Palmdale Energy LLC has provided all the files necessary in order to rerun the dispersion models.

SOCIOECONOMICS (45-47)

BACKGROUND: Construction Workforce

Section 6.21 on page 6.2-1 of the PEP Revised PTA states that during construction, the project would have a monthly average workforce of 367 and peak workforce of 706. However, Table 5.11-12 in Appendix 6-B states that during construction, the project would have a monthly average workforce of 248 and a peak workforce of 544. Calculating the average and peak number of workers in the table yields an average of 268 and a peak of 544. Staff has the following request.

Data Request 45

Please confirm the average number of monthly workers and peak workforce during the construction period.

Response to Data Request 45

The workforce numbers presented in Section 6.2.1 of the Revised Petition to Amend of peak workforce of 706 workers and average workforce of 339 workers are the estimated workforce numbers inclusive of the combined cycle project construction, transmission line construction, and pipelines (gas, water, waste water) construction.

Data Request 46

Please provide the construction workforce by month during the 25-month construction period. If possible, please also present the construction workforce by trade (e.g. boilermaker, electrician) and month.

Response to Data Request 46

The requested data is included in Appendix DR-46.

BACKGROUND: Construction Schedule

Section 2.1 on page 2-3 states that commercial operation of the modified project is planned for summer 2019/summer 2020. Construction is estimated to take 25 months (Section 6.2 Socioeconomics, pg. 6.2-1). There is no construction schedule in the PTA. From the information above, staff calculates the earliest construction would begin is June 2017 (beginning of Quarter 3) and end June 2019. At the latest, staff calculated

construction would begin in August 2018 (end of Quarter 3) and end August 2020. Staff uses construction scheduling information in the cumulative analysis for Socioeconomics and in communication with other agencies such as law enforcement. Other technical areas would also benefit from this information. Staff has the following request.

Data Request 47

Please confirm the construction schedule (start and end) estimated for the modified project.

Response to Data Request 47

The construction duration is expected to take 25 months and is outlined by craft in Appendix DR-46. The earliest that Palmdale Energy LLC expects to mobilize and begin construction is May 2017 to provide a commercial operation of June 2019.

SOIL AND WATER RESOURCES (48-54)

BACKGROUND

The PEP states that recycled water from the Palmdale Water Reclamation Plant (WRP) would be trucked to the project site until such time that the recycled water supply line is brought to the project's property line. This information raises questions about delays in completion of the recycled water supply line, which may affect reliability of the water supply, traffic, and air quality. Staff is required to evaluate potential impacts related to the timing of recycled water service and alternative methods that may be used to deliver the water supply.

Data Request 48

The recycled water delivery pipeline.

a) Please provide a schedule for pipeline construction, preferred and alternate routes, and the expected completion date for each of the routes.
b) When would the tertiary upgrades be made at Palmdale and Lancaster Water Reclamation Plants (WRP)? Please include the timing for completion in the schedule for recycled water delivery to the project.

Response to Data Request 48

The preferred pipeline route would start at the Project Access Road and connect to the existing Lancaster recycle water near the intersection of Ave M and the Sierra Highway for a distance of 1.5 miles. This construction would take 3 to 4 months and would be completed by month 18 of the construction schedule. Note that this route is same as the first 1.5 miles of the alternative route.

The alternative pipeline route is the currently approved water pipeline route. It is a 7.4 mile route from the PEP to the Palmdale Water Reclamation Plant (WRP). This construction would take 6 to 9 months and would be completed by month 18 of the construction schedule.

Data Request 49

Trucking recycled water to the project construction site.

a) How many truckloads of secondary treated recycled wastewater would be delivered to the project site each day during construction on average and during peak activity?
b) What size (gallons) of water trucks would be used to deliver the water?
c) What are the preferred and alternate routes the water trucks would use to deliver the recycled water?
d) Describe any on-site water storage tanks that would need to be constructed as part of the project to accommodate recycled water deliveries.

Response to Data Request 49

a) The peak delivery would be 25 trucks per day; the average delivery would be 6 trucks per day. The peak would be 50 percent less than the Approved Project.

b) The size of the water trucks would be 10,000 gallons.

c) The preferred route to the PRP to PEP would be north on 30th St. to Ave P, west on Ave. P to the Sierra Highway, North on Sierra Highway to Ave. M and east on Ave. M to the PEP access road. The alternative route would be the same as the route from the PEP to PWRP.

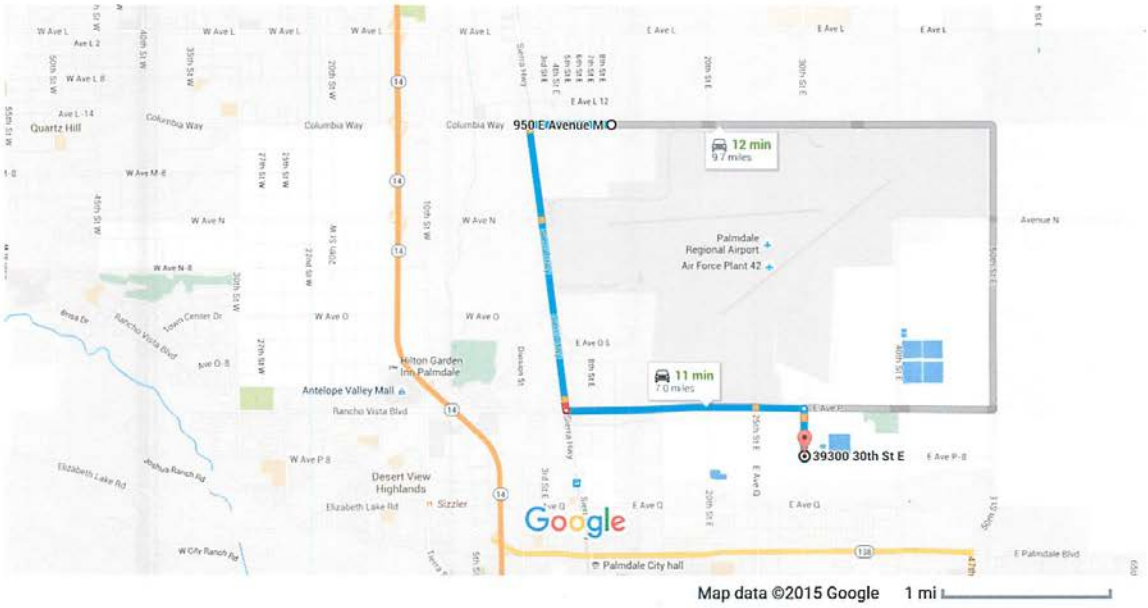
   The preferred route from the PEP to PRP would be east on Ave M. to 50th St.; south on 50th St. to Ave. N.; west on Ave N to 40th St; south on 40th street to Ave P, west on Ave. to P to 30th Street. The alternative route would be the same as the route from the PWRP to PEP.

d) There would be no on-site permanent water tanks constructed for construction water. Temporary water storage would include temporary portable tanks including elevated water trailers with capacities less than 50,000 gallons.

Google Maps

950 E Avenue M, Lancaster, CA 93535 to 39300 30th St E, Palmdale, CA 93550

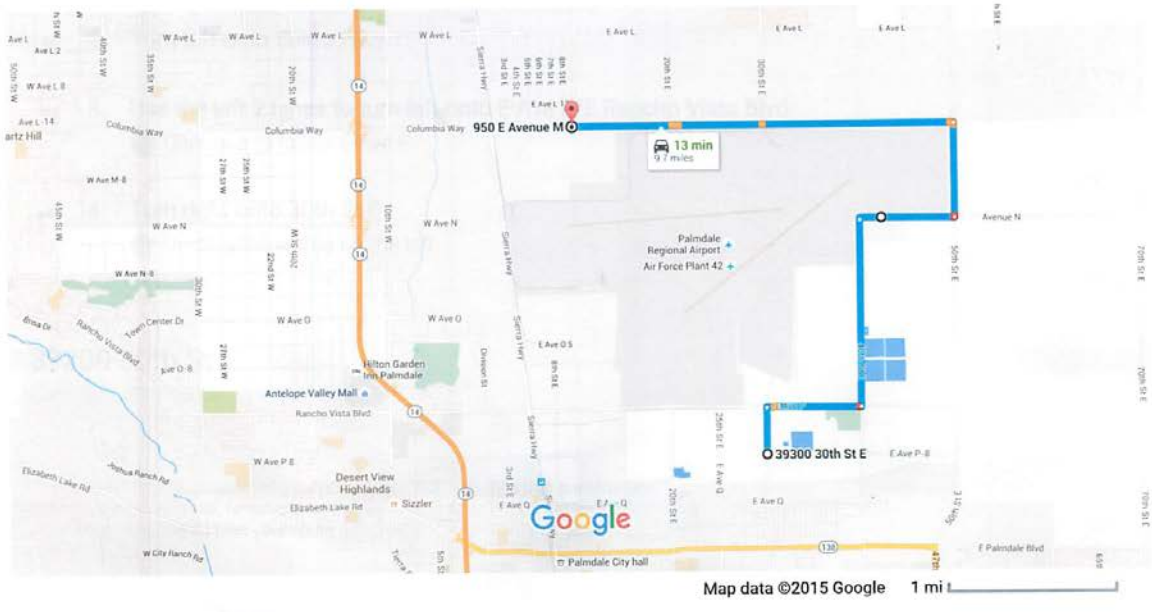
Drive 7.0 miles, 11 min



Google Maps

39300 30th St E, Palmdale, CA 93550 to 950 E Ave M, Lancaster, CA 93535

Drive 9.7 miles, 13 min



https://www.google.com/maps/dir/950+E+Avenue+M,+Lancaster,+CA+93535/39300+30th+St+E,+Palmdale,+CA+935[illegible]@34.6204014,-118.1196241,...

Data Request 50

Trucking recycled water to the operating power plant.

a) If the recycled water supply lines are not complete by the commercial operation date, how many truckloads of recycled water would be delivered to the power plant:
   i) per average day?
   ii) on a maximum day?
b) What size (gallons) of water trucks would be used to deliver the water?
c) Are the preferred and alternate routes that would be used by the water trucks to deliver the water the same routes that were used for construction? If not, please identify new routes.
d) Would any on-site water storage tanks need to be constructed as part of operation of the project to accommodate water deliveries?

Response to Data Request 50

a) The peak delivery would be 47 trucks per day or approximately 3 trucks per hour. The average delivery would be 16 trucks per day or approximately 1 truck per hour.
b) The size of the water trucks would be 10,000 gallons.
c) The preferred and alternative routes would be the same as the routes used in construction.
d) There will be a 1-million gallon raw water storage tank that would be constructed whether the project receives water via truck delivery or via pipeline.

BACKGROUND

As of the date of the Palmdale Hybrid Power Project (PHPP) Final Staff Assessment, Palmdale WRP was not permitted to provide recycled water for uses other than its effluent management site area or to its storage ponds. Revised Lahontan Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDRs) are required in order for the Palmdale WRP to provide recycled water to the power plant.

Data Request 51

Please discuss the schedule for revising Waste Discharge Requirements to be issued by the Lahonton (RWQCB) for the Palmdale WRP.

Response to Data Request 51

Lahontan RWQCB issued on order for Waste Discharge Requirements and Water Recycling Requirement in December 2011. A copy of the order is included in Appendix DR-51.

BACKGROUND

The PEP would change wastewater processing from a zero liquid discharge system to disposal of all wastewater to the city of Palmdale sewer pipeline. This pipeline connects to the Palmdale WRP operated by the Sanitation Districts of Los Angeles County. Staff must evaluate whether the wastewater quality and volume would affect the Palmdale WRP capacity and meet discharge requirements.

Data Request 52

> Please provide the estimated annual volume of wastewater that would be disposed to the sewer and discuss whether the discharge would comply with the Palmdale WRP discharge requirements.

Response to Data Request 52

The estimated annual volume of wastewater that would be discharged to the City of Palmdale sewer would be 220 AFY. Palmdale Energy LLC is preparing an application for a wastewater discharge permit for submittal to the City of Palmdale. When completed, Palmdale Energy LLC will docket a copy and will docket City of Palmdale's final response which is expected to determine that the city of Palmdale can receive and treat PEP's full waste output.

BACKGROUND

The PEP would be using up to 320 acre-feet per year of recycled water. A will-serve letter was given to PHPP by the Los Angeles County Waterworks Districts in January 2006. Since this time, additional contracts have been made for recycled water and a new joint-power authority has been formed (Palmdale Recycled Water Authority). Other changes since 2006 may also have occurred. These changes make the recycled water will-serve letter uncertain.

Data Request 53

Please provide a will-serve letter for the 320 acre-feet of recycled water supply.

Response to Data Request 53

A copy of a Letter Agreement between City of Palmdale and Palmdale Energy LLC for 400 AFY reclaimed water is included in Appendix DR-53. Based on the uncertainty of the long term quality of the reclaimed wastewater, Palmdale Energy LLC has requested 400 AFY instead of the original 320 AFY to avoid having to file an amendment with the CEC after construction.

BACKGROUND

The PEP would be using up to 3.6 acre-feet per year of potable water. A conditional will-serve letter was given to PHPP by the Los Angeles County Waterworks Districts in October 2007. This conditional will-serve letter is eight years old. The validity of this eight year old will-serve letter is uncertain.

Data Request 54

Please provide a will-serve letter for the annual 3.6 acre-feet of potable water.

Response to Data Request 54

We have requested a letter from Los Angeles County Waterworks to confirm the validity of the well-serve letter for potable water and will provide the response when received.

TRANSMISSION SYSTEM ENGINEERING (55-60)

BACKGROUND

Provide a detailed description of the change in design, construction, and operation of any electric transmission facilities, such as generators, transformers, interconnection power lines, substations, switchyards, or other transmission equipment, which will be constructed or modified to transmit electrical power from the PEP to the SCE Vincent Substation.

Data Request 55

Resubmit Figure 3-1a and Figure 3-1b.

1. Show bay arrangement of the necessary equipment which is required to interconnect the project.
2. Provide ratings of the breakers, disconnect switches, relays, buses, and etc.

Response to Data Request 55

Palmdale Energy LLC will provide the requested information by January 15, 2016.

Data Request 56

Provide detail drawings for the take-off structures, pole and tower configurations which were required in interconnecting the transmission lines from the PHPP PTA to the Vincent Substation,

Response to Data Request 56

Palmdale Energy LLC is not proposing any modifications to the pole and tower configurations of the previously Approved Project. It is possible minor modifications might be required once the Phase I CAISO studies are received in January 2016.

Data Request 57

Provide a map showing the approved tie-line route and the proposed route only.

Response to Data Request 57

The requested map is included in Appendix DR-57.

Data Request 58

Provide generator tie-line conductor type, current carrying capacity, and conductor size.

Response to Data Request 58

This information will be provided after the CAISO Phase I study is completed in January 2016.

Data Request 59

Provide the auxiliary load information.

Response to Data Request 59

The estimated auxiliary loads for the facility are dependent on ambient conditions, turbine output, and use of the evaporative coolers and duct burners. At base load with evaporative coolers and duct burners in service, estimated auxiliary loads are approximately 17.5 MW (for ambient temperatures from 59°F to 108°F). Estimated auxiliary loads would be lower with the evaporative coolers and duct burners out of service and at operation at less than base load. Estimated auxiliary loads for several combinations of ambient temperatures, plant load, and evaporative cooler status and duct burner status are provided in Attachment 4.1A-1 of the Revised Petition to Amend.

Data Request 60

Provide the California ISO Phase I and/or Phase II Interconnection Study of the proposed maximum output of 700 MW PEP or a study for the 130 MW net increase to the California ISO control grid. The Study should analyze the system impacts with and without the project during peak and off-peak system conditions, and demonstrate conformance or non-conformance with the utility reliability and planning criteria with the following provisions:

1. Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.
2. Analyze the system for N-0, important N-1 and critical N-2 contingency conditions and provide a list of criteria violations in a table showing the loadings before and after adding the new generation.
3. Analyze Short circuit duties.
4. Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list for voltage violations in the studies.
5. Provide a list of contingencies evaluated for each study.
6. List mitigation measures considered and those selected for all criteria violations.
7. Provide electronic copies of *.sav and *.drw PSLF files.
   Provide power flow diagrams (**MW, % loading & P. U. voltage**) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations appear. Provide the pre and post project diagrams only for an elements largest overload.

Response to Data Request 60

The CAISO study is expected to be completed in January 2016 and this information will be provided upon receipt.

WORKER SAFETY AND FIRE PROTECTION (61-63)

Background

Staff has reviewed the Revised PTA (dated July 2015), the information provided by the applicant in the initial proceedings (2008-2011), staff's FSA (dated December 2010), and the Commission's Final Decision (dated August 2011). Due to recent events at other power plants licensed by the Energy Commission, staff requests clarification and additional information in order to properly assess the impacts on worker safety and the adequacy and ability to meet all LORS for fire protection systems.

Data Request 61

> Please provide an Operations Fire Prevention Plan that includes, among the other standard content, a Standard Operating Procedure (SOP) for investigating and assessing problems and/or failures of the fire suppression and detection systems and procedures to notify the LA County Fire Department (LACFD) and the Compliance Project Manager (CPM) of all fire suppression alarm trips and any impairment of a fire suppression system, planned and unplanned.

Response to Data Request 61

Palmdale Energy LLC will provide a revised Operations Fire Prevention Plan by January 2016.

Data Request 62

> Please describe the backup water supply to the fire suppression system when the dedicated 200,000 gallon on-site reserve is exhausted. If the back-up supply is the potable water main from the LA county Waterworks District #40 pipeline, please describe the engineering system that will be used to connect to this source and the cross-connection prevention methods to be used.

Response to Data Request 62

Palmdale Energy LLC will provide this information when in January 2016.

Data Request 63

Despite noting that some small evaporative coolers will use water (although not standing overnight), section 4.1.7.2.9 states that because the facility will use dry cooling, “Legionella is not an issue of concern” and thus “no mitigations are required at this time”. Please justify this statement in light of the fact that any evaporative cooling system (including the ones proposed for the two CTs) no matter how small is susceptible to the growth of *Legionella pneumophila* unless proper precautions are taken which include and would be part of a cooling water management plan: the avoidance of stagnant water by automatic draining, low water operating temperature *(*rarely goes above 68°F), avoidance of corrosion and scaling, use of a biocide, no production of aerosols that could result in worker exposure, and proper maintenance of the units by qualified personnel.

Response to Data Request 63

The Revised Petition to Amend proposed deletion of Condition of Certification **PUBLIC HEALTH-1** because it had eliminated the cooling tower. In response to Staff’s concern, while we believe the risk of legionella to be significantly lower from the combustion turbine evaporative coolers, Palmdale Energy LLC agrees to remove its suggestion to delete Condition of Certification **PUBLIC HEALTH-1** and looks forward to working with Staff to discuss whether the condition should be modified to more accurately to apply to evaporative coolers as proposed in the Revised Petition to Amend.

APPENDICES

APPENDIX DR-2

MASTER CD OF AIR QUALITY AND PUBLIC HEALTH ELECTRONIC DOCUMENTS AND FILES

(Submitted separately on compact disk)

APPENDIX DR-7
CONSTRUCTION EMISSION AIR QUALITY MODELING ANALYSIS

APPENDIX 4.1E

Construction Emissions and Impact Analysis

Construction Phases

The current proposed project is very similar to the previous project with only one major difference, i.e., the deletion of the solar component. The applicant has chosen to rely upon the construction emissions estimates for the previous project taking into account the following revisions:

- Construction equipment emission factors were updated to reflect 2017 values (the earliest anticipated start year for construction).
- Removal of the emissions estimates and assumptions for the solar component of the previous project.

These revised emissions were used to establish construction related impacts for the power block portion.

Construction of the Project is expected to last approximately 23 months. The construction schedule shows a total construction period of 24-25 months, with site mobilization occurring at the end of month 4, therefore a period of 23 months is conservative for the period emissions estimates. The construction will occur in the following two main phases:

- Site preparation-Phase 1,
- Foundation work, construction/installation of major structures, and installation of major equipment-Phase 2.

The site is approximately 50 acres in size and is located in essentially flat terrain. The site is currently vacant. As such, the site will require minimal grading and leveling prior to construction of the power blocks, support systems, and site buildings. Site preparation (Phase 1) includes initial and finish grading, excavation of footings and foundations, and backfilling operations. Phase 1 will last approximately 1.5 months. After site preparation is finished, the construction (Phase 2) of the foundations and structures is expected to begin. Phase 2 is expected to last for approximately 22 months. Once the foundations and structures are finished, installation and assembly of the mechanical and electrical equipment are scheduled to commence.

Fugitive dust emissions from the construction of the Project will result from:

- Dust entrained during site preparation and finish grading/excavation at the construction site;
- Dust entrained during onsite travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations; and
- Wind erosion of areas disturbed during construction activities.

Combustion emissions during construction will result from:

- Exhaust from the Diesel construction equipment used for site preparation, grading, excavation, and construction of onsite structures;
- Exhaust from water trucks used to control construction dust emissions;

- Exhaust from Diesel-powered welding machines, electric generators, air compressors, and water pumps;
- Exhaust from pickup trucks and Diesel trucks used to transport workers and materials around the construction site;
- Exhaust from Diesel trucks used to deliver concrete, fuel, and construction supplies to the construction site; and,
- Exhaust from automobiles used by workers to commute to the construction site.

Available Mitigation Measures

The following mitigation measures are proposed to control exhaust emissions from the Diesel heavy equipment used during construction of PEP:

- The Applicant will work with the general contractor to utilize to the extent feasible, Environmental Protection Agency (EPA)/Air Resources Board Tier II/Tier III engine compliant equipment for equipment over 100 horsepower.
- Ensure periodic maintenance and inspections per the manufacturers specifications.
- Reduce idling time through equipment and construction scheduling.
- Use California ultralow sulfur diesel fuels (<=15 ppmw Sulfur).

The following mitigation measures are proposed to control fugitive dust emissions during construction of the project:

- The Applicant will have an on-site construction mitigation manager who will be responsible for the implementation and compliance of the construction mitigation program. The documentation of the ongoing implementation and compliance with the proposed construction mitigations will be provided on a periodic basis.
- All unpaved roads and disturbed areas in the Project and Construction Laydown and Parking Area will be watered as frequently as necessary to control fugitive dust. The frequency of watering will be on a minimum schedule of two times per day during the daily construction activity period. Watering may be reduced or eliminated during periods of precipitation.
- On-site vehicle speeds will be limited to 5 mph on unpaved areas within the Project construction site.
- The construction site entrance will be posted with visible speed limit signs.
- All construction equipment vehicle tires will be inspected and cleaned as necessary to be free of dirt prior to leaving the construction site via paved roadways.
- Gravel ramps will be provided at the tire cleaning area.
- All unpaved exits from the construction site will be graveled or treated to reduce track-out to public roadways.
- All construction vehicles will enter the construction site through the treated entrance roadways, unless an alternative route has been provided.

- Construction areas adjacent to any paved roadway will be provided with sandbags or other similar measures as specified in the construction SWPPP to prevent runoff to roadways.
- All paved roads within the construction site will be cleaned on a periodic basis (or less during periods of precipitation), to prevent the accumulation of dirt and debris.
- The first 500 feet of any public roadway exiting the construction site will be cleaned on a periodic basis (or less during periods of precipitation), using wet sweepers or air-filtered dry vacuum sweepers, when construction activity occurs or on any day when dirt or runoff from the construction site is visible on the public roadways.
- Any soil storage piles and/or disturbed areas that remain inactive for longer than 10 days will be covered, or shall be treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions will be covered, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to minimize fugitive dust emissions. A minimum freeboard height of 2 feet will be required on all bulk materials transport.
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition will remain in place until the soil is stabilized or permanently covered with vegetation.
- Disturbed areas, which are presently vegetated, will be re-vegetated as soon as practical.

Estimation of Emissions with Mitigation Measures

Table's 4.1E-1 through 4.1E-3 show the estimated daily and annual construction emissions estimates (as revised by the applicant as discussed above).

Table 4.1E-1 Estimated Daily Construction Emissions (lbs)

Onsite and Offsite Emissions

Project Component	NO_x	CO	VOC	SO_x	PM10	PM2.5
Onsite Exhaust	49.7	34.3	8.2	0.1	2.68	2.44
Onsite Fugitives	-	-	-	-	43.7	9.76
Onsite Total	49.7	34.3	8.2	0.1	46.4	12.2
Offsite	58.7	161.6	16.6	0.1	19.0	5.3

Table 4.1E-2 Estimated Annual Onsite Construction Emissions (TPY)

Project Component	NO_x	CO	VOC	SO_x	PM10	PM2.5
Onsite Exhaust	5.7	4.3	1.0	<0.05	0.3	0.3
Onsite	-	-	-	-	4.9	1.2

Fugitives						

Table 4.1E-3 Daily Emissions Estimates for Offsite Linears (lbs)						
Project Component	**NO_x**	**CO**	**VOC**	**SO_x**	**PM10**	**PM2.5**
Reclaim water line	90.6	164.6	27.5	0.1	41.9	13.8
Natural gas pipeline	90.6	164.6	27.5	0.1	41.9	13.8
Sanitary wastewater line	24.2	51.0	7.8	0.05	10.1	3.4
Potable water line	24.2	51.0	7.8	0.05	10.1	3.4
T-line Segment 1	219.7	156.1	30.0	0.2	84.1	23.6
T-line Segment 2	255.6	195.4	33.8	0.3	309.7	72.4

Construction emissions are well below the federal general conformity levels for those pollutants for which the project area is deemed non-attainment, i.e., ozone (NOx and VOC precursors), therefore a conformity determination for construction emissions is not required.

Analysis of Ambient Impacts from Facility Construction

Ambient air quality impacts from emissions during the construction of the revised Project were undertaken due to the following:

- Deletion of the solar component results in an overall significant reduction in both exhaust and fugitive emissions on a daily and annual basis.
- The construction equipment mix will be somewhat cleaner, from an exhaust emissions standpoint, which will result in a reduction of exhaust emissions as compared to the previous project.

Table 4.1E-4 shows the construction modeling results from the current project. These impacts from the proposed revised project are considerably less than the values presented before for the previous project with the solar component. All impacts due to facility construction emissions alone are considerable less than the California State Ambient Air Quality Standards (CAAQS) and National/Federal Ambient Air Quality Standards (NAAQS). When added to background concentrations, total modeled+background impacts are only exceeded for the state PM10 standards since background concentrations already exceed the CAAQS. All other maximum modeled construction impacts when added to background concentrations are less than the applicable CAAQS and NAAQS. Modeled construction particulate impacts shown are not unusual in comparison to the modeling results for most construction projects; actual impacts for construction sites that use good dust suppression techniques and low-emitting vehicles typically would not be expected to cause exceedances of air quality particulate standards. The input and output modeling files are being provided electronically to the appropriate agencies.

TABLE 4.1E-4 MODELED MAXIMUM CONSTRUCTION IMPACTS (CURRENT PROJECT)

Pollutant	Averaging Time	Maximum Construction Impacts ($\mu g/m^3$)[a]	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)[c]	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2[b]	1-hr CAAQS 1-hr NAAQS Annual	26 26 0.7	98 81 15.1	124 107 15.8	339 - 57	- 188 100
SO_2	1-hour 3-hour 24-hour	0.06 0.04 0.01	16 16 8	16.06 16.04 8.01	655 - 105	196 1300 365
CO	1-hour 8-hour	22 9	2176 1603	2198 1612	23,000 10,000	40,000 10,000
PM10	24-hr CAAQS 24-hr NAAQS Annual	65 65 5.1	185 80 28.3	250 145 33.4	50 - 20	- 150 -
PM2.5	24 Hour Annual	14 1.3	18 7.2	32 8.5	- 12	35 12.0

Notes:

[a] Overall modeled maximum impacts normally associated only with the CAAQS also conservatively used for the NAAQS comparisons. Modeling was performed identical to operational impacts modeling (same receptors, meteorological data, etc.) except that the FASTALL option was utilized. Onsite construction exhaust emissions were modeled as 15 point sources, equally separated by 100-meter intervals with stack parameters typical of this type of equipment. Fugitive dust emissions were modeled as an area source 0.5 meters in height covering the entire area inside the proposed fenceline (an area of 44.1 acres, or 178,484 square meters). Combustion and fugitive emissions were assumed to occur for 10 hours/day (7 AM to 5 PM) consistent with the majority of the months of onsite construction activities (March through October) generating both exhaust emissions and fugitive dust.

[b] NO_2 determined with USEPA Ambient Ratio Method (ARM) based on NO2/NOx ratios of 0.80 and 0.75 for 1-hour and annual averaging times, respectively.

[c] Modeled concentration plus background.

Construction GHG Emissions

GHG emissions from construction activities were also revised as part of the updated analysis discussed above. The following factors resulted in lower GHG emissions in comparison to the previous project.

- Deletion of the solar component results in an overall significant reduction in exhaust emissions on a daily and annual basis.
- The construction equipment mix will be somewhat cleaner, from an exhaust emissions standpoint, which will result in a reduction of exhaust emissions as compared to the previous project.

Table 4.1E-5 Construction Related GHG Emissions Estimates	
Construction Source	**GHG Emissions, mtCO2e**
Combined Cycle Facility	5640
Solar Array Facility (deleted)	0

Reclaimed Water Line	1919
Nat Gas Pipeline	2591
Sewer Line	303
Potable Water Line	121
T-Line Segment 1	3014
T-Line Segment 2	944
Construction Total	**14532**

APPENDIX DR-29
ERC TRANSFER APPROVAL

MINUTES OF THE GOVERNING BOARD
OF THE ANTELOPE VALLEY AIR QUALITY MANAGEMENT DISTRICT
LANCASTER, CALIFORNIA

AGENDA ITEM 7

DATE: December 17, 2013

RECOMMENDATION: Adopt Resolution approving inter-district and inter-basin transfer of offsets pursuant to Health & Safety Code (H&S Code) §40709.6 for applicant Palmdale Energy, LLC, making findings and directing staff action.

SUMMARY: Adopt resolution to approve the transfer of certain offsets credited and registered within the Mojave Desert Air Quality Management District (MDAQMD) and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) to the Antelope Valley Air Quality Management District (AVAQMD) for applicant Palmdale Energy, LLC for potential use as offsetting emissions reductions for the Palmdale Hybrid Power Project.

BACKGROUND: Health & Safety Code (H&S Code) §40709.6 allows increases in air pollutants at a stationary source located within one air district to be offset by emissions reductions credited in another air district under certain circumstances. Upon submission of a request by an applicant for the inter-district and/or inter-basin transfer the Governing Board is required to make specific findings taking into account various factors and approve the transfer by resolution before the transfer can be completed.

Applicant, Palmdale Energy LLC, has submitted a request dated November 8, 2013 to transfer 150 tons per year (tpy) of Oxides of Nitrogen (NOx) Emission Reduction Credits (ERCs) from the Mojave Desert Air Quality Management District (MDAQMD) and 60 tpy of Volatile Organic Compound (VOC) ERCs from San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). The proposed transfer of the NOx ERCs was approved by the MDAQMD Governing Board on October 28, 2013. The proposed transfer of the VOC ERCs was approved by the Air Pollution Control Officer (APCO) of the SJVUAPCD on October 30, 2013. These offsets are proposed to be used by applicant to satisfy the offset requirements for a specific development namely the Palmdale Hybrid Power Project (PHPP). The PHPP is a hybrid natural gas-fired combined cycle and solar thermal generator with a nominal electrical output of 570 mw which has been granted a license by the California Energy Commission (CEC) after substantial public proceedings and environmental review (CEC Docket 08-AFC-9; https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09)

cc: Karen K. Nowak
Bret Banks

I, CRYSTAL GOREE, DEPUTY CLERK OF THE GOVERNING BOARD OF THE ANTELOPE VALLEY AIR QUALITY MANAGEMENT DISTRICT, HEREBY CERTIFY THE FOREGOING TO BE A FULL, TRUE AND CORRECT COPY OF THE RECORD OF THE ACTION AS THE SAME APPEARS IN THE OFFICIAL MINUTES OF SAID GOVERNING BOARD MEETING

Crystal Goree DEPUTY CLERK OF THE BOARD
ANTELOPE VALLEY AIR QUALITY MANAGEMENT DISTRICT

The MDAQMD and the AVAQMD are both located within the Mojave Desert Air Basin (MDAB) as described in 17 Cal. Code Reg. §60109. The MDAQMD has, pursuant to the provisions of Regulation XIV – *Emission Reduction Credit Banking*, determined the type and quantity of emissions reductions by placing them in the ERC bank and issuing certificate #78 memorializing this amount. The transfer of the ERCs from the MDAQMD to the AVAQMD for use as offsets is expected to have a beneficial effect on air quality in that it will reduce the overall potential allowable pollution with in the MDAB by permanently removing a greater amount of NOx than that proposed to be produced by the PHPP at maximum operating capacity in a ratio of 1.3 to 1. (Condition of Certification AQ-SC-18, Final Commission Decision pg. 6.2-45).

The SJVUAPCD is located within the San Joaquin Valley Basin (SJVB) as described in 17 Cal. Code Reg §60107. The San Joaquin Valley Basis has a nonattainment status that is "worse" than that of the MDAB for Ozone and its precursors (40 CFR §81.305 and 17 Cal. Code Reg §60201.) The SJVB is also upwind from the MDAB and transported air pollution from the SJVB has been determined to overwhelmingly impact the air quality of the MDAB (http://www.arb.ca.gov/board/books/010426/01-3-3.pdf, http://www.arb.ca.gov/regact/trans01 /trans01.htm, and http://www.arb.ca.gov/aqd/transport /assessments/assessments.htm.) The SJVUAPCD has pursuant to the provisions of its Rule 2301 determined the type and quantity of emissions reductions by placing them in the ERC bank and issuing certificate S-4051-1 memorializing this amount. The transfer of the ERCs from the SJVUAPCD to the AVAQMD for use as offsets is expected to have a beneficial effect on air quality in that reductions in the overall potential allowable pollution within the SJVB will in turn reduce the amount of pollution transported into the MDAB by permanently removing a greater amount of VOC than that proposed to be produced by the PHPP at maximum operating capacity in a ratio of 1.5 to 1. (Condition of Certification AQ-SC-18, Final Commission Decision pg. 6.2-45).

As part of the licensing process the CEC made extensive analysis of the effect of the PHPP upon both the public health and the local economy which was memorialized in affirmative findings of fact and conclusions of law on each issue (*Section VI. Public Health and Safety,* and *Section VIII. Local Impact Assessment - Socioeconomics*, Final Commission Decision pg. 6.1 et seq. and 8.3 et seq.) Therefore, the transfer and ultimate use of these ERCs for the PHPP is expected to comply with all applicable health and safety, air and water quality standards as well as to provide a degree of regional economic benefits.

This proposed action is part of a larger development project, namely the Palmdale Hybrid Power Project. That development project, including an analysis of the environmental effects of the potential ERC transfer, underwent environmental review pursuant to the certified regulatory program of the CEC in compliance with the provisions of the California Environmental Quality

Act (CEQA). The AVAQMD was a responsible agency as part of this review and thus is able to make responsible agency findings and file a notice of determination to comply with CEQA.

REASON FOR RECOMMENDATION: H&S Code §40709.6 requires a resolution to effectuate the inter-district and inter-basin transfer of these ERCs for use as offsets within the AVAQMD.

REVIEW BY OTHERS: This item was reviewed as to legal form by Karen Nowak, Deputy District Counsel and by Eldon Heaston, Executive Director on or before December 2, 2013

FINANCIAL DATA: No increase in appropriation is anticipated.

PRESENTER: Alan De Salvio, Supervising AQ Engineer.

Upon Motion by LEDFORD, Seconded by DISPENZA, the attached resolution was approved as amended by adding ", or an alternative certificate should the ERCs represented by certificate 2-4051-1 be invalid," after the word 2-4-51-1 on line 2 of page 5 of the resolution by the following vote:

Ayes: 4 LEDFORD, DISPENZA, HAWKINS, RUSSELL
Noes: 3 CRIST, MANN, CHELETTE
Absent:
Abstain:
Vacant:

CRYSTAL GOREE, DEPUTY CLERK OF THE GOVERNING BOARD
BY Crystal Goree
Dated: DECEMBER 17, 2013

RESOLUTION 13-11

A RESOLUTION OF THE GOVERNING BOARD OF THE ANTELOPE VALLEY AIR QUALITY MANAGEMENT DISTRICT APPROVING THE INTER-DISTRICT TRANSFER OF OFFSETS FROM THE MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT AND THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT PURSUANT TO HEALTH & SAFETY CODE §40709.6 FOR APPLICANT PALMDALE ENERGY, LLC, MAKING FINDINGS AND DIRECTING STAFF ACTION.

On December 17, 2013, on motion by Member LEDFORD, seconded by Member DISPENZA, and carried, the following resolution is adopted:

WHEREAS, Palmdale Energy LLC (Applicant) has submitted a request dated November 8, 2013 to transfer 150 tons per year (tpy) of Oxides of Nitrogen (NOx) Emission Reduction Credits (ERCs) from the Mojave Desert Air Quality Management District (MDAQMD) and 60 tpy of Volatile Organic Compound (VOC) ERCs from San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD); and

WHEREAS, Applicant has requested that the ERCs be transferred to the Antelope Valley Air Quality Management District (AVAQMD) pursuant to the provisions of Health & Safety Code §40709.6; and

WHEREAS, Palmdale Energy, LLC intends to use the ERCs once transferred to satisfy the NOx and VOC offset requirement for a specific development namely the Palmdale Hybrid Power Project (PHPP); and

WHEREAS, the PHPP requires such offsets pursuant to the provisions of AVAQMD Regulation XIII, the AVAQMD Authority to Construct Permit and the licensing decision of the California Energy Commission (CEC); and

WHEREAS, Health and Safety Code (H&S Code) §40709.6 allows increases in air pollutants at a stationary source located within one air district to be offset by emissions reductions credited in another district under certain circumstances; and

WHEREAS, for inter-district transfers H&S Code §40709.6(a) requires that both the creating and the receiving districts be located within the same air basin; and

WHEREAS, H&S Code §40709.6(b) requires the district in which the emissions reductions are credited is required to determine the type and amount of emissions reductions; and

//

WHEREAS, H&S Code §40709.6(d) requires the transfer to be approved by resolution of both the governing board of the creating and receiving districts after taking into consideration the impact of the offset transfer on air quality, public health and the regional economy; and

WHEREAS, both the MDAQMD and AVAQMD are located within the Mojave Desert Air Basin (MDAB); and

WHEREAS, the MDAQMD has determined the type and amount of emissions reductions by issuing ERC Certificate #78 pursuant to the provisions of MDAQMD Regulation XIV – *Emission Reduction Credit Banking*; and

WHEREAS, the proposed transfer of the NOx ERCs was approved by the MDAQMD Governing Board on October 28, 2013 after taking into consideration the impact of the offset transfer on air quality, public health and the regional economy; and

WHEREAS, for inter-basin transfers H&S Code §40709.6(a)(1) requires that the source of the ERCs be located in an upwind district with a "worse" nonattainment status than that of the receiving district; and

WHEREAS, for inter-basin transfers H&S Code §40709.6(a)(2) requires that the receiving district be "overwhelming impacted by emissions transported from the upwind district; and

WHEREAS, H&S Code §40709.6(b) requires the district in which the emissions reductions are credited is required to determine the type and amount of emissions reductions; and

WHEREAS, H&S Code §40709.6(d) requires the transfer to be approved by resolution of both the governing board of the creating and receiving districts after taking into consideration the impact of the offset transfer on air quality, public health and the regional economy; and

WHEREAS, H&S Code 40709.6(d) also allows the governing board of an air district to delegate the approval of such transfers to its Air Pollution Control Officer; and

WHEREAS, the SJVUAPCD is located within the San Joaquin Valley Air Basin and the AVAQMD is located within the MDAB; and

WHEREAS, the SJVUAPCD is upwind from the AVAQMD and is designated nonattainment and classified "Extreme" for Ozone and its precursors NOx and VOC (40 CFR §81.305; 17 Cal. Code Reg §§60200 et seq.)

WHEREAS, emissions from the SJVUAPCD overwhelmingly impact the AVAQMD as determined by the California Air Resources Board "transport couples" most recently updated on April 26, 2001 (http://www.arb.ca.gov/board/books/010426/01-3-3.pdf and http://222.arb.ca.gov/aqd/transport/assessments/assessments.htm); and

WHEREAS, the SJVUAPCD has determined the type and amount of emissions reductions by issuing ERC certificate 2-4051-1 pursuant to the provisions of SJVUAPCD Rule 2301; and

WHEREAS, the SJVUAPCD Governing Board has delegated the authority to approve offset transfers to its APCO pursuant to resolution 99-02-04;

WHEREAS, the proposed transfer of the VOC ERCs was approved by the SJVUAPCD APCO on October 30, 2013 after taking into consideration the impact of the offset transfer on air quality, public health and the regional economy; and

WHEREAS, the proposed transfer and ultimate use of ERCs should provide a net air quality benefit in that it will result in the permanent removal of the overall potential allowable pollution in the air basin as well as a decrease in the overall potential for air pollution transport from an upwind area; and

WHEREAS, the proposed transfer and ultimate use of ERCs should similarly not have any adverse public health impacts due to the overall reduction in potential allowable air pollution; and

WHEREAS, the propose transfer and ultimate use of ERCs will provide an economic benefit to the entities selling the ERCs as well as the direct and indirect economic benefits caused by the building and operation of the project for which the ERCs are proposed to be used; and

WHEREAS, the proposed transfer of ERCs is part of a larger development project, namely the PHPP, for purposes of the California Environmental Quality Act (CEQA); and

WHEREAS, the PHPP project is a hybrid natural gas-fired combined cycle and solar thermal generating facility with an nominal electrical output of 570 mw and thus subject to the jurisdiction of the CEC in regards to licensing and monitoring of the siting, construction, operation and closure of the facility pursuant to the provisions of the Warren-Alquist Act (Public Resources Code §§25000 et seq.); and

WHEREAS, the CEC licensing process for power plants is a certified regulatory program pursuant to the provisions of CEQA (14 Cal. Code Reg. 15215(j)); and

WHEREAS, pursuant to the provisions of CEQA (Pub. Res. Code §§21000 et seq.), the State CEQA guidelines (14 Cal. Code Reg. §§15000 et seq.) and the CEC's licensing processes the AVAQMD is a responsible agency for the PHPP project; and

WHEREAS, pursuant to the provisions of CEQA and the State CEQA guidelines the CEC is the lead agency for the PHPP project;

WHEREAS, the CEC produced documents, held hearings and responded to public comments as listed in CEC docket 08-AFC-9 (Https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09); and

WHEREAS, on August 10, 2011 the CEC approved the PHPP by adopting the Presiding Member's Proposed Decision, Errata and Applicant's Request for Clarification to the PMPD Errata and produced its Final Commission Decision containing Findings of Fact, Conclusions of Law and Conditions of Certification with an effective date of August 15, 2011; and

WHEREAS, the CEC's Notice of Decision was filed on August 16, 2011; and

WHEREAS, the AVAQMD has reviewed the applicable documents listed in the CEC docket 08-AFC-09 and the Final Commission Decision and has determined that the Final Commission Decision adequately disclosed and evaluated the impacts of the PHPP project, including but not limited to the reasonably foreseeable impacts of the transfer and use of ERC offsets, and has imposed adequate mitigation measures to the extent feasible; and

WHEREAS, the AVAQMD has considered the Final Commission Decision and after evaluating the environmental impacts associated with the PHPP project has concluded that the Final Commission Decision complies with CEQA, the State CEQA guidelines, and the provisions of the CEC's certified regulatory program; and

NOW THEREFORE BE IT RESOLVED, that the Governing Board of the Antelope Valley Air Quality Management District hereby approves the proposed transfer of up to 150 tpy of NOx from the Mojave Desert Air Quality Management District as certified by the issuance MDAQMD ERC Certificate #78 after consideration of the economic, public health and air quality impacts; and

BE IT FURTHER RESOLVED, that the Governing Board of the Antelope Valley Air Quality Management District hereby approves the proposed transfer of up to 60 tpy of Volatile Organic

Compound (VOC) ERCs from San Joaquin Valley Unified Air Pollution Control District as certified by the issuance of SJVUAPCD ERC certificate 2-4051-1, or an alternative certificate should the ERCs represented by certificate 2-4051-1 be invalid, after consideration of the economic, public health and air quality impacts; and

BE IT FURTHER RESOLVED, that the Governing Board of the Antelope Valley Air Quality Management District, in its limited role as a responsible agency under CEQA, has reviewed and considered the information contained in the CEC's Final Commission Decision, the supporting documentation and the record of the CEC's proceedings as set forth in CEC docket 08-AFC-09. Based upon this review the Governing Board of the Antelope Valley Air Quality Management District finds that as to those potential environmental impacts within the AVAQMD's power and authority as a responsible agency including but not limited to the acceptance of the transfer of ERCs from outside the AVAQMD, that the Final Commission Decision contains a complete, objective and accurate reporting of those potential impacts and that these findings reflect the independent judgment and analysis of the Governing Board of the Antelope Valley Air Quality Management District. The environmental findings as set forth in the Final Commission Decision are located at http://docketpublic.energy.ca.gov/PublicDocuments/Regulatory/Non%20Active%20AFC's/08-AFC-9%20Palmdale%20Hybrid%20PP/2011/Aug/TN%2061876%2008-15-11%20Final%20Commission%20Decision.pdf and are incorporated by reference as if fully set forth herein; and

BE IT FURTHER RESOLVED, that the Governing Board of the Antelope Valley Air Quality Management District, in its limited role as a responsible agency under CEQA including but not limited to the acceptance of the transfer of ERCs from outside the AVAQMD, finds that construction and operation of the project as mitigated by the implementation of the Conditions of Certification contained in the CEC's Final Commission Decision will ensure the protection of environmental quality and that the PHPP project will neither result in, nor contribute substantially to, any significant direct, indirect or cumulative adverse environmental impacts. As such the Governing Board of the Antelope Valley Air Quality Management District concurs with the CEC's Final Commission Decision and hereby adopts the applicable Conditions of Certification as its own and incorporates them herein.

BE IT FURTHER RESOLVED, that the custodian of documents and materials that constitute the record of proceedings on which this resolution and the above findings are based will be located at the AVAQMD Offices, 43301 Division Street, Suite 206, Lancaster, CA 93535-4649 and as published on the internet by the CEC at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09; and

BE IT FURTHER RESOLVED, that this resolution shall take effect immediately upon adoption and that the Clerk of the Board is directed to file a Notice of Determination with the Los Angeles County Clerk's office and the Governor's Office of Planning and Research in compliance with the provisions of CEQA.

PASSED, APPROVED AND ADOPTED by the Governing Board of the Antelope Valley Air Quality Management District by the following vote:

AYES: 4	MEMBER:	HAWKINS, LEDFORD, DISPENZA, RUSSELL
NOES: 3	MEMBER:	CRIST, MANN, CHELETTE
ABSENT:	MEMBER:	
ABSTAIN:	MEMBER:	

STATE OF CALIFORNIA)
) SS:
COUNTY OF LOS ANGELES)

I, Crystal Goree, Deputy Clerk of the Governing Board of the Antelope Valley Air Quality Management District, hereby certify the foregoing to be a full, true and correct copy of the record of the action as the same appears in the Official Minutes of said Governing Board at its meeting of December 17, 2013

Crystal Goree

Deputy Clerk of the Governing Board,
Antelope Valley Air Quality Management District.

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

December 5, 2013

Thomas Johns
Palmdale Energy, LLC
83 S. King Street, Suite 200
Seattle, WA 98104

RE: Inter-District Emission Offset Transfer Request

Dear Mr. Johns:

The San Joaquin Valley Air Pollution Control District (District) has received your revised request dated November 20, 2013 for the approval of an inter-district transfer of a maximum of 60 tons of emission reduction credits (ERC) of VOC from ERC Certificate S-4051-1 from the District to the Antelope Valley Air Quality Management District. As you recall, on October 30, 2013, the District tentatively approved the transfer of up to 52 tons of ERC of VOC from this certificate, requiring only the submission and approval of an application to transfer the ERC to be final.

The prior tentative approval remains valid, even with the revision to 60 tons of ERC, as there will still be no expected impact on air quality or public health, and the impact on the regional economy is still expected to be negligible, since the revised amount of 120,000 pounds of VOC represent approximately 1.03% of VOC ERC available for growth in the region. Therefore, the requirements of Section 40709.6(d) of the California Health and Safety Code are met.

As authorized by District Governing Board Resolution # 99-02-04, the APCO has had authority delegated to him to grant approvals for inter-district transfers of ERC. Based on the original analysis in the District's October 30, 2013, letter and the revised analysis discussed above, the APCO is hereby tentatively approving the transfer of ERC Certificate S-4051-1, up to a maximum of 60 tons, to Palmdale Energy LLC located in the Antelope Valley Air Quality Management District. Approval will be final only after the District has received and approved an application to transfer the ownership of the ERC Certificate. An application form is attached, and can also be found on the District's website at www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm.

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

Mr. Johns
December 5, 2013

Please call me at (559) 230-5900 if you have any questions or would like to discuss this further.

Sincerely,

David Warner
Director of Permit Services

DW/jrs

Cc: Mike Mischel
Director of Public Works
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

San Joaquin Valley Air Pollution Control District

Application for
ERC Transfer of Ownership

[ ] ERC TRANSFER OF OWNERSHIP
[ ] ERC WITHDRAWAL
[ ] NAME CHANGE ONLY (No change in ERC ownership has occurred)
[ ] ERC TRANSFER OF OWNERSHIP & WITHDRAWAL

1. **ERC TO BE ISSUED TO:** **Facility ID: ___-_____ (if known)**

2. **MAILING ADDRESS:** Street/P.O. Box: _____

City: _____ State: _____ Zip Code: _____

3. **CURRENT OWNER:** **Facility ID: ___-_____ (if known)**

4. **MAILING ADDRESS:** Street/P.O. Box: _____

City: _____ State: _____ Zip Code: _____

5. **EXISTING ERC NO(S):**

6. **If withdrawing ERCs, list Permit units being offset:**

7. **REQUESTED ERCs (In Pounds Per Calendar Quarter except CO_2e):**

	VOC	NOx	CO	PM10	SOx	OTHER
1ST QUARTER						
2ND QUARTER						
3RD QUARTER						
4TH QUARTER						

CO_2e _____ metric ton/yr

8. **FOR ERC T/O APPLICATIONS ONLY, LIST THE COST OF ERCs PROPOSED TO BE USED AS OFFSETS, (In Dollars Per Ton) :**

VOC: _____ CO: _____ SOx: _____
NOx: _____ PM10: _____ Other: _____ (Use additional sheets if necessary)

9. SIGNATURE OF APPLICANT (FOR CURRENT OWNER):	TYPE OR PRINT TITLE OF APPLICANT:

10. TYPE OR PRINT NAME OF APPLICANT:	DATE:	TELEPHONE NO:
11. COMPANY EMPLOYING APPLICANT:	FAX NO:	E-MAIL:

FOR APCD USE ONLY:

DATE STAMP	FILING FEE RECEIVED: $ _____ /_____ DATE PAID: PROJECT NO.: _____ FACILITY ID.: _____

Northern Regional Office * 4800 Enterprise Way * Modesto, California 95356-8718 * (209) 557-6400 * FAX (209) 557-6475
Central Regional Office * 1990 East Gettysburg Avenue * Fresno, California 93726-0244 * (559) 230-5900 * FAX (559) 230-6061
Southern Regional Office * 34946 Flyover Court * Bakersfield, California 93308 * (661) 392-5500 * FAX (661) 392-5585

TRANSFER OF OWNERSHIP ERC
LETTER OF RELEASE

_____ , as current holder of record of
(Selling Company Name)
Emission Reduction Credit (ERC) banking certificates (as listed below) issued by the San Joaquin Valley Air Pollution Control District (SJVAPCD), hereby releases all rights of ownership, in whole or in part, as described in the accompanying application, of the below listed ERCs to:

_____
(Acquiring Company Name)
as of _____.
(Date of Sale)

CERTIFICATE NUMBER(S)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(Use Additional Sheets if Necessary)

Signed: _____ **Date:** _____

Name (Print): _____ **Title:**

Company Name: _____

Acquiring Company Contact Name: **Telephone:**

_____ _____

Address:

_____

_____

_____

_____

APPENDIX DR-30

LETTER FROM AVAQMD TO CEC STAFF DATED JUNE 29, 2010

Antelope Valley Air Quality Management District
43301 Division St., Suite 206
Lancaster, CA 93535-4649

661.723.8070
Fax 661.723.3450

Eldon Heaston, Executive Director

June 29, 2010

Matthew Layton
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: June 16, 2010 Letter Regarding Palmdale Hybrid Power Project FDOC (08-AFC-9)

Dear Mr. Layton:

The Antelope Valley Air Quality Management District (District) has reviewed your June 16, 2010 letter on the Final Determination of Compliance (FDOC) as issued on May 13, 2010 for the Palmdale Hybrid Power Project. The FDOC is not a "draft" and the District disagrees that the FDOC does not meet District or the USEPA requirements. The District has prepared the following to address the concerns expressed in your letter.

San Joaquin Valley Emission Reduction Credits

The District disagrees that the FDOC does not contain any information as to whether the San Joaquin Valley Air Pollution Control District (SJVAPCD) ERCs would effectively mitigate the Palmdale Hybrid Power Project emissions. The applicant has identified sufficient ozone precursor emission reductions to offset the proposed project, as required by Rule 1302(C)(5)(b). The applicant has provided proof of a contractual arrangement covering sufficient emission reductions in good standing in the SJVAPCD emission reduction credit registry. The District recognizes that the issuance of emission reduction credits by SJVAPCD confirms those credits as real, quantifiable, permanent, surplus and enforceable, and hence meets USEPA criteria. Emission reduction credits have been transferred from the SJVAPCD into the Antelope Valley and Mojave Desert air districts in the recent past, in accordance with state and local laws and regulations (including ERC regulations, NSR regulations and California Health & Safety Code (H&S Code) §40709.6). The District has no reason to believe the proposed transfer cannot occur, and has no regulatory authority to force purchase and transfer of the SJVAPCD credits at this stage of the proposed project. The applicant has provided sufficient information that the ERCs are available, but the District has no objection to the California Energy Commission including a requirement that the credit transfer must be approved by the SJVAPCD and AVAQMD Boards, as required by state law, prior to the start of construction.

Compliance with California Health & Safety Code §40709.6

The primary statute governing the use of ERCs across air basin and air district boundaries is found in H&S Code §40709.6. As you are aware the San Joaquin Valley is classified non-attainment for the federal eight hour ozone standard and designated extreme while the desert

portion of Los Angeles County within the Mojave Desert Air Basin is classified nonattainment and designated moderate (40 CFR 81.305). For state purposes both the San Joaquin Valley and the Mojave Desert Air Basin are classified nonattainment (17 Cal. Code Regs. §60201). As stated in your letter, the San Joaquin Valley is upwind and contributes overwhelmingly to air pollution within the Mojave Desert Air Basin (*Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California*, CARB March 2001). These facts indicate that the provisions of H&S Code 40709.6(a)(1) and (a)(2) can be, and indeed have been, met.

The fact that there are rules creating a credit bank and setting forth a process for determining the type and quantity of ERCs within the SJVAPCD indicates that the providing district has made the proper determination pursuant to H&S Code §40709.6(b). The net result of this particular subsection is the District must recognize and accept whatever the final determination regarding amount and type of ERCs made by the SJVAPCD as evidenced in the amount of ERCs approved for transfer by the SJVAPCD.

You have indicated concern that the FDOC does not fully determine the effectiveness of transferred ERCs in mitigating the emissions increases from the proposed project as required by H&S Code 40709.6(c)(1). Pursuant to District rules, this determination has been made "in the same manner and to the same extent as the district would do so for fully credited emissions reductions from sources located within its boundaries." The District has properly determined the impact in compliance with the applicable provisions of District Rules 1302 and 1305 and such analysis is reflected in the FDOC. The District is statutorily precluded from performing a different impact analysis for this particular project based solely upon the fact that the proposed ERCs are not located within the District and the air basin, nor would any such additional analysis be warranted.

Your final concern regarding compliance with H&S Code §40709.6 revolves around the technical approval process for transferring credits found in subsection (d). The SJVAPCD Governing Board has delegated the authority to approve such transfers to its Air Pollution Control Officer as provided for by statute. The APCO of the SJVAPCD can approve the transfer by letter specifying the particular ERCs to be transferred, the amount, and making the specific findings. The District Governing Board would likewise need to approve the transfer by resolution at a meeting. Given the fact that these types of transfers have occurred in the recent past and that there have been no substantive changes to the impacts on air quality, public health and the regional economy since those transfers occurred, the District has no reason to believe that the transfer would not be possible.

<u>San Joaquin Valley Origin Offset Ratio</u>

The determination by CARB that emissions from the San Joaquin Valley have an overwhelming influence on ozone concentrations in the Mojave Desert Air Basin does not make distinctions between different portions of the San Joaquin Valley. The District has no distance ratio provision in any rule or regulation, and does not believe a distance ratio can be technically justified given the existing overwhelming transport from the origin air basin. Thus, the state agency specifically charged with analyzing the effects of transported pollutants, and equipped with the expertise to do so, has determined that inter-basin transfers from anywhere in the San Joaquin Valley into the Mojave Desert Air Basin are appropriate and authorized pursuant to state

law. Implicit in this determination is that such transfers would effectively mitigate emission increases in the downwind basin. The FDOC relies upon this analysis and determination made by CARB. This satisfies Rule 1305 and H&S §40709.6 for credit transfers from SJVAPCD into the District. It would be unnecessary and inappropriate for either the District or the CEC to repeat the analysis conducted by CARB, or to usurp its authority to establish transport couplings.

If the CEC staff believes that the analysis conducted by CARB and the District with respect to the location of the offsets is deficient in some specific way, the CEC staff has its own authority, with proper technical justification, to provide specific limitations regarding the locations within the SJVAPCD from which ERCs will be acceptable.

Pursuant to District Rule 1305(B)(5), approval of use of offsets from other districts and outside the air basin require only consultation with CARB and USEPA. The PDOC, revised PDOC and FDOC, including the proposal to utilize inter-basin offsets, have been provided to both CARB and USEPA, which meets the requirement for consultation. Only inter-pollutant trade ratios would require approval by USEPA, and inter-pollutant trading is not being proposed by the applicant.

PM_{10} Offsets

The applicant has identified sufficient public unpaved roads that can be paved to generate PM_{10} emission reductions to offset the proposed project's PM_{10} emissions (including fugitive emissions from vehicles involved in maintenance of solar field equipment), using a District approved calculation methodology. The approved methodology includes verifying the existence and status of the unpaved roads, specifies ongoing road surface inspection procedures, and establishes eventual maintenance responsibility (and control) for the paved public road surface. The applicant has identified specific public (Palmdale and County of Los Angeles) road segments and traffic levels. A commitment to maintain the integrity of the paved road surface by the public entity with control over the paved road will be required as an element of each road paving ERC application, in accordance with District Rules 1305 and 1309.

The District is attainment for the federal PM_{10} standard. Therefore, there is no regulatory requirement to adopt a PM_{10} plan, road paving rule, or any other preparatory regulatory action prior to responding to an ERC application for emission reductions resulting from the paving of an existing unpaved road. For the same reason USEPA approval is not required for any District action involving PM_{10} credits (1305(B)(3)(d)). Furthermore, the District is attainment for both the federal and state $PM_{2.5}$ standards, and therefore the PHPP is not required to offset its $PM_{2.5}$ emissions.

Offset Timing

The District would not presume to dictate to the Commission on licensing decisions. Nor would the District place requirements on a proposed project beyond District regulatory authority. In accordance with District rules and regulations, the District has: (1) required the applicant to provide proof of the existence of adequate offsets, in the form of transferable credits in good standing within the San Joaquin Valley ERC registry (which can be transferred in accordance with state and local law) and in the form of existing unpaved roads which can be paved to

generate PM_{10} offsets; and (2) placed a requirement (proposed permit condition) on the proposed project to surrender the totality of offsets prior to the commencement of construction.

If you have any questions regarding this letter, please call me at (760) 245-1661, extension 6726.

Sincerely,

Alan De Salvio
Supervising Air Quality Engineer

Cc: Steve Williams, Palmdale City Manager
Tony Penna, Inland Energy
Sara Head, AECOM
Karen K. Nowak, District Counsel
Bret Banks, AVAQMD
Chris Anderson

AJD/KKN/CA

CEC FDOC Response.doc

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
For the *PALMDALE HYBRID*
POWER PROJECT

Docket No. 08-AFC-9

PROOF OF SERVICE
(Revised 7/1/2010)

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Public Adviser
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Sabrina Savala, declare that on, July 7, 2010, I served and filed copies of the attached PHPP Antelope Valley AQMD Response to Staff's Comments on FDOC, dated June 29, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/palmdale/index.html]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

x sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

x by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

For filing with the Energy Commission:

___ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Sabrina Savala

APPENDIX DR-46
CONSTRUCTION WORKFORCE BY MONTH

PEP Construction Workforce by Skill

Manpower by Trade/Project Element	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
Construction - Combined-Cycle Component																											
Welders	7	7	17	17	26	38	51	64	72	72	72	72	64	51	51	43	43	34	30	17	13	9	0	0	0	0	0
Carpenters, Bricklayers and Masons	9	9	17	17	26	30	43	51	51	60	51	51	51	43	34	26	17	17	13	9	9	3	0	0	0	0	0
Electricians	10	17	17	17	30	30	30	43	55	64	64	64	55	55	51	34	34	26	26	17	17	9	9	9	9	0	0
Ironworkers	0	5	5	10	10	20	31	41	51	51	51	41	41	31	31	20	20	20	20	3	0	0	0	0	0	0	0
Laborers	9	17	17	26	26	26	26	47	54	60	51	51	51	43	34	26	26	17	17	17	17	9	9	9	9	0	0
Millwrights	2	2	2	5	5	10	10	10	26	26	26	21	21	21	17	13	13	9	9	9	9	4	0	0	0	0	0
Equipment Operators	9	17	26	26	26	26	34	43	51	51	43	43	43	43	43	34	26	26	17	9	9	9	9	9	9	0	0
Plasterers	0	0	0	0	0	0	0	0	0	0	0	0	3	7	7	5	5	5	3	2	2	2	0	0	0	0	0
Painters	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	9	9	9	9	7	7	3	3	3	3	0	0
Pipefitters	7	7	14	20	20	34	43	43	51	51	51	41	41	34	34	27	27	20	20	15	15	10	3	3	3	0	0
Sheetmetal Workers	0	0	0	0	3	3	3	3	3	9	9	9	9	9	5	5	5	3	3	3	0	0	0	0	0	0	0
Sprinklerfitters	0	0	0	0	0	0	0	0	7	7	7	7	7	7	10	10	10	10	5	5	5	5	5	5	5	0	0
Surveyors/Designers	3	3	3	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	5	5	3	3	3	3	3	0	0
Insulation Workers	0	0	0	0	0	0	0	13	13	17	17	17	17	17	17	26	26	26	26	26	17	17	17	17	17	0	0
Supervisors, Planners, etc.	9	17	26	34	43	51	60	68	68	68	60	51	43	43	34	26	21	21	21	17	9	9	9	9	9	0	0
Subtotal	*63*	*100*	*143*	*180*	*224*	*278*	*339*	*434*	*513*	*544*	*510*	*477*	*455*	*411*	*377*	*310*	*289*	*247*	*224*	*160*	*130*	*91*	*66*	*66*	*66*	*0*	*0*
Construction - Pipelines (Gas, Water Supply, Etc.)																											
Unskilled Labor			0	0	0	0	28	28	28	28	42	42	42	42	42	0	0	0	0	0	0	0	0	0	0	0	*0*
Welders			0	0	0	0	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	*0*
Pipefitters			0	0	0	0	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	*0*
Equipment Operators			0	0	0	0	9	9	9	9	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	*0*
Foremen			0	0	0	0	4	4	4	4	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	*0*
Supervisors, Etc			0	0	0	0	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	*0*
Subtotal			*0*	*0*	*0*	*0*	*48*	*48*	*48*	*48*	*72*	*72*	*72*	*72*	*72*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Construction- Transmission Lines																											
General Foremen			3	6	4	4	6	4	1	0	0	0	0	0	3	4	5	4	0	0	0	0	0	0	0	0	*0*
Foreman			14	14	8	8	12	8	2	12	16	10	0	4	13	16	11	8	0	0	0	0	0	0	0	0	*0*
Leadman			19	19	4	4	4	5	6	4	0	1	4	20	20	20	4	4	4	0	0	0	0	0	0	0	*0*
Journey Lineman			20	32	36	36	51	32	8	12	36	18	0	0	30	40	34	24	0	0	0	0	0	0	0	0	*0*
Apprentice Linemen			8	14	16	16	18	8	2	4	12	6	0	0	6	8	10	8	0	0	0	0	0	0	0	0	*0*
Groundman			16	19	20	20	17	10	12	12	12	15	8	8	14	16	10	8	10	0	0	0	0	0	0	0	*0*
Equipment operators			24	36	28	28	33	26	18	23	28	17	12	24	36	40	28	24	10	0	0	0	0	0	0	0	*0*

Cement Truck Drivers			18	18	0	0	0	0	0	12	8	0	0	20	20	20	0	0	0	0	0	0	0	0	0	0	0
Welders			8	2	0	0	0	0	0	0	0	0	0	0	9	12	3	0	0	0	0	0	0	0	0	0	0
Mechanic			4	4	4	4	6	4	1	3	4	3	0	0	3	4	5	4	0	0	0	0	0	0	0	0	0
Skilled Laborers			24	24	0	0	0	0	0	16	8	0	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0
Carpenters			9	9	0	0	0	0	0	4	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0
Subtotal	*0*	*0*	*167*	*197*	*120*	*120*	*147*	*97*	*50*	*102*	*124*	*70*	*24*	*76*	*182*	*208*	*110*	*84*	*24*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total	***63***	***100***	***310***	***377***	***344***	***398***	***534***	***579***	***611***	***694***	***706***	***619***	***551***	***559***	***631***	***518***	***399***	***331***	***248***	***160***	***130***	***91***	***66***	***66***	***66***	***0***	***0***

APPENDIX DR-51

LAHONTON RWQCB DECEMBER 2011 WDR ORDER

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER R6V-2011-0012
WDID 6B190107069

WASTE DISCHARGE REQUIREMENTS AND WATER RECYCLING REQUIREMENTS FOR COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY PALMDALE WATER RECLAMATION PLANT

Los Angeles County

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

1. Discharger

   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 World Airports (LAWA). The District leases the Agricultural Site from LAWA to use recycled waste water for irrigation of crops. The District stores recycled water at the Reservoir Storage Site for reuse at the Agricultural Site.

   This Water Board Order (Order) supersedes and rescinds previous Order Nos. 6-00-57, 6-00-57-A01, 6-00-57-A02, 6-00-57-A03, and 6-00-57-A04.

2. Definitions

   Discharger - For the purposes of this Order, the District is referred to as the "Discharger," and for the purposes of water recycling, the District is the "Producer," "Distributor," and "Primary User." The Discharger is responsible for compliance and monitoring prescribed by waste discharge requirements (WDRs) and water recycling requirements (WRRs) adopted by the Water Board for this Facility.

   Facility – For the purposes of this Order, the Reclamation Plant, Agricultural Site and Storage Reservoir Site are collectively the "Facility."

   Reclamation Plant – For the purposes of this Order, the secondary treatment facility and all supporting infrastructure comprise the "Secondary Treatment Reclamation Plant." The "Tertiary Treatment Reclamation Plant" is the tertiary treatment facility and all supporting infrastructure. The Secondary Treatment Reclamation Plant and the Tertiary Treatment Reclamation Plant are collectively the "Reclamation Plant."

Recycled Water - For the purposes of this Order, recycled water is treated effluent from the Reclamation Plant that complies with the criteria and treatment levels for the production of recycled water and its uses specified in California Code of Regulations, title 22, division 4, chapter 3, article 3, section 60303 et seq. and adopted orders.

User - For the purposes of this Order, a user of recycled water either directly or indirectly manages recycled water-use areas and is subject to the requirements in California Code of Regulations, title 22, section 60301 et seq. and orders adopted by the Water Board. For the purposes of this Order, the District is the Primary User of recycled water and responsible for compliance with water recycling requirements (WRRs) adopted by the Water Board, including monitoring and reporting requirements.

Secondary Users - For the purposes of this Order, the entities who are under contract to manage day-to-day farming operations are "Secondary Users." This Order requires the Discharger to ensure that Secondary Users comply with the Statewide Reclamation Criteria established pursuant to Water Code, section 13521 and the requirements of this Order. The Discharger currently has agreements with two farming entities, Harrington Farms and Antelope Valley Farming LLC. The Discharger is required under the terms of this Order to notify the Water Board of any changes in Secondary Users.

3. Locations

a. Secondary Treatment Reclamation Plant and Agricultural Site

The Secondary Treatment Reclamation Plant and the Agricultural Site are located approximately 2 miles northeast of central Palmdale as shown in Attachment A, which is made part of this Order. The Secondary Treatment Reclamation Plant consists of primary and secondary treatment facilities. The primary treatment facility are located at the 30th Street East site as shown on Attachment B, which is made part of this order. Secondary treatment is provided by oxidation ponds located at both the 30th and 40th Street East sites. The Agricultural Site is located east and north of the 40th Street East site as shown on Attachment C, which is made a part of this Order.

b. Storage Reservoir Site

The Storage Reservoir Site is located approximately 10 miles northeast of the Reclamation Plant and is adjacent to the intersection of 120 Street East and Avenue L as shown on Attachment A.

c. Tertiary Treatment Reclamation Plant

The Tertiary Treatment Reclamation Plant is located adjacent to the primary

treatment facility at the 30th Street East site.

4. Land Ownership and Future Uses of LAWA Owned Land

The Reclamation Plant and Storage Reservoir Site are located on land owned by the Discharger. The Agricultural Site (referred to in previous orders as the Effluent Management Site) is located on land owned by LAWA. LAWA plans on eventually developing the Agricultural Site as the Palmdale Airport. Development of the Palmdale Airport would impact the leased land's current use for treated waste water recycling and would require the Discharger to establish new reuse areas.

5. Order History

The Water Board previously established WDRs for the Discharger under Order No. 6-93-18, which was adopted on March 11, 1993. Order No. 6-90-64, adopted on October 11, 1990, established WRRs for LAWA. Order No. 6-00-57, which established combined WDRs and WRRs, was adopted on June 14, 2000 and amended as described below.

Order No.	Date	Purpose
6-00-57	June 14, 2000	Revised and combined prior WDRs/WRRs
6-00-57-A01	April 14, 2004	Expanded area of Agricultural Site (formerly Effluent Management Site)
6-00-57-A02	July 26, 2004	Named all users of treated waste water
6-00-57-A03	July 13, 2005	Expanded area of Agricultural Site (formerly Effluent Management Site)
6-00-57-A04	August 29, 2007	Added Storage Reservoir Site and Tertiary Treatment Reclamation Plant

Cleanup and Abatement Order (CAO) No. R6V-2003-056 was adopted by the Water Board on November 12, 2003. The CAO requires the Discharger to abate the discharge contributing to nitrate pollution and to cleanup pollution and degradation of groundwater caused by the discharge. Cease and Desist Order (CDO) No. R6V-2004-0039 was adopted by the Water Board on October 13, 2004. The CDO requires the Discharger to reduce and abate land spreading disposal of effluent and sets discharge limits on total nitrogen.

6. Reason for Action

The Water Board is adopting the current WDRs/WRRs to combine previous amendments and to update requirements based on current and planned Reclamation Plant upgrades and water recycling practices.

7. Facility

a. Secondary Treatment Reclamation Plant – The Secondary Treatment Reclamation Plant provides primary and secondary treatment (aerated oxidation ponds) for up to 15 million gallons per day (MGD) of waste water. The Secondary Treatment Reclamation Plant currently treats approximately 10 MGD and serves approximately 140,000 people. Secondary waste water treatment is provided by primary sedimentation tanks, anaerobic digesters, and unlined oxidation ponds. Additional treatment is provided by the oxidation pond aeration system and disinfection facilities (chlorination) as shown in the Facilities Process Schematic included as Attachment D, which is made a part of this Order. The existing oxidation ponds will continue to operate during start-up and testing of the Tertiary Treatment Reclamation Plant.

b. Agricultural Site (formerly Effluent Management Site) - Secondary-level treated, disinfected effluent is currently reused at the Agricultural Site. The Agricultural Site consists of approximately 2,680 acres used for irrigated agriculture in Township 6 North, Range 11 West, San Bernardino Baseline and Meridian: sections 10 and 15 and portions of sections 9, 11, 14, and 16 as shown on Attachment C.

c. Storage Reservoir Site - Two storage reservoirs (Reservoirs Nos. 1 and 2) have been completed and are in use at the Storage Reservoir Site. The two reservoirs have a total storage capacity of approximately 910 million gallons (MG). Secondary treated waste water is stored in the storage reservoirs for use as irrigation water at the Agricultural Site during summer months. After the completion of the Tertiary Treatment Reclamation Plant, the storage reservoirs will be used to store tertiary treated waste water for reuse. Projections indicate that an additional 1,540 MG of storage capacity may be needed by the year 2017. Additional reservoirs are planned to meet this projected need. The Storage Reservoir Site is shown on Attachment E, which is made a part of this Order.

d. Tertiary Treatment Reclamation Plant - The Tertiary Treatment Reclamation Plant is designed to upgrade the level of treatment and to serve an estimated population of 170,000. Construction on the Tertiary Treatment Reclamation Plant began in September 2008. Start-up of the plant is planned for July 2011. Construction will proceed in two steps, Phase I, which will have a treatment capacity of 12 MGD, and Phase II, which will increase the treatment capacity to 15 MGD to meet projected population growth. The effluent generated by the Tertiary Treatment Reclamation Plant will be disinfected tertiary recycled water, as shown in the Tertiary Treatment Reclamation Plant Process Schematic included as Attachment F, which is made a part of this Order.

8. Biosolids

   a. Secondary Treatment Reclamation Plant - Sludge from the anaerobic digesters is dried in the concrete-lined drying beds, stockpiled, and hauled off site for disposal.

   b. Tertiary Treatment Reclamation Plant - The Tertiary Treatment Reclamation Plant design includes dissolved air flotation units, which will thicken waste activated sludge. Filter backwash will be routed to the sedimentation tanks. Existing and new digesters will process both primary sludge and thickened waste activated sludge. Digested sludge will be mechanically dewatered and/or solar dried in existing sludge drying beds before offsite disposal or reuse. The two existing sludge drying beds may continue to be used to dry dewatered sludge cake, to dry sludge generated during digester cleaning operations, and as a backup for mechanical dewatering. Each sludge drying bed is 0.2 acre in size and has a 4-inch thick, asphalt-concrete liner.

9. California Code of Regulations, Title 27 Requirements

California Water Code section 13172 directs the State Water Resources Control Board (State Water Board) to write regulations for waste disposal sites to protect water quality "except for sewage treatment plants..." Those regulations are now incorporated in the California Code of Regulations title 27 for waste disposal sites and surface impoundments. The Reclamation Plant has primary ponds for the treatment of the wastewater. These treatment ponds are exempt from title 27 under section 20090(a), and regulation of the treatment ponds under California Code of Regulations title 23 is appropriate.

The Reservoir Storage and Agricultural sites are not part of the treatment process, but are exempt under title 27 section 20090(h), which applies to recycling from waste. Additionally, the Storage Reservoir and Agricultural sites meet the exception requirements for waste water as contained in section 20090(b), that is:

- This Order issues waste discharge requirements for the sites;
- Discharges to these sites are in compliance with the applicable water quality control plan; and
- These discharges do not meet the specified hazardous waste criteria.

The conditions for exemption under section 20090(b) will be met with the adoption of this Order. Although historic application practices at the Agricultural Site has caused an exceedance of the *Water Quality Control Plan for the Lahontan Region Basin Plan* (Basin Plan) objective for nitrate in groundwater (see Finding No. 16), this Order contains requirements to ensure the Storage Reservoir and Agricultural sites do not create conditions that result in an exceedance of Basin Plan objectives.

Additionally, this Order and prior orders require the Discharger to implement measures that ensure that construction, operation, and monitoring at the Storage Reservoir and Agricultural sites are equivalent to title 27 requirements. The reservoirs have membrane liners designed to prevent releases and a vadose monitoring network to provide an early warning system for potential releases. This Order requires that the application rates at the Agricultural Site not exceed agronomic rates. Additionally, this Order requires the continued operation of the existing vadose zone and groundwater monitoring networks at the Agricultural Site.

10. State Water Board Recycled Water Policy and Recycled Water Criteria

State Water Board Resolution No. 2009-0011, "Adoption of a Policy for Water Quality Control for Recycled Water," references and adopts the "State Water Resources Control Board Recycled Water Policy" (Recycled Water Policy). The Recycled Water Policy provides direction to the State and Regional Water Boards regarding the appropriate criteria to be used in issuing permits for recycled water projects. The Recycled Water Policy describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. This Order implements the Recycled Water Policy.

This Order does not permit landscape irrigation or groundwater recharge; therefore, the relevant paragraphs of the Recycled Water Policy are Paragraph 6, *Salt/Nutrient Management Plans*, which is addressed in requirement I.B.17 of this Order and Paragraph 9, *Antidegradation*, which is addressed in Finding No. 20 of this Order.

11. Recycled Water Criteria

The California Department of Public Health's (DPH) established criteria for using recycled water. These criteria are codified in California Code of Regulations, article 3 of chapter 3 of division 4, title 22, section 60303 et seq. These criteria specify that fodder and fiber crops can be irrigated with a minimum of "undisinfected secondary recycled water." (California Code of Regulations, title 22, § 60304(d)(4).). Section 60304 also specifies that water used for dust control and soil compaction must be "disinfected secondary-23 recycled water[1]." (Califomia Code of Regulations, title 22, § 60307(b)(4) and (6)). Since May 2004, the Discharger has disinfected all effluent with sodium hypochlorite. Therefore, recycled water quality used for fodder and fiber crops meets the higher water quality specified for dust control and construction soil

[1] Disinfected secondary-23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analysis have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

compaction applications. This Order requires producers and users of recycled water to comply with applicable California Code of Regulations, title 22 criteria.

The WRRs specified in this Order are consistent with the current DPH Water Recycling Criteria, which remain in effect except as amended herein.

12. Authorized Water Recycling Sites and Recycled Water Uses

This Order authorizes the Discharger and Secondary Users to:

a. Discharge disinfected secondary-treated effluent to Storage Reservoirs Nos. 1 and 2 until July 25, 2011, and thereafter discharge only tertiary-treated effluent in the reservoirs.

b. Reuse tertiary-treated and disinfected secondary-23 recycled water for non-potable uses at the Discharger's 30th Street East site, 40th Street East site, and Storage Reservoir Site. The non-potable uses include facility washdown and construction-related soil compaction and dust control. All non-potable uses must be in accordance to California Code of Regulations, title 22, section 60301 et seq.

c. Reuse disinfected secondary-level treated effluent at agronomic rates to the Agricultural Site for crop irrigation. The Agricultural Site location is shown in Attachment C and includes the following:

   i. southwest and southeast quarters of Section 9;
   ii. all of Section 10;
   iii. northwest and southwest quarters of Section 11;
   iv. all of Section 14 excluding the northeast quarter of the northeast quarter;
   v. all of Section 15;
   vi. northeast quarter of Section 16.

   Portions of the northeast quarter of Section 14 contain the Little Rock Creek drainage. Agricultural reuse is not authorized in the portion of the Agricultural Site that drains to Little Rock Creek.

13. Effluent Quality

Table 1 summarizes 2009 effluent quality data for the existing Secondary Treatment Reclamation Plant and expected quality for the Tertiary Treatment Reclamation Plant. The data for the Tertiary Treatment Reclamation Plant is based on design data for the plant. As stated in the Discharger's 2025 Facilities Plan/Environmental Impact Report, the Tertiary Treatment Reclamation Plant replaces the secondary treatment with the activated sludge secondary treatment process. This process includes nitrification/denitrification capability. The

combination of this activated sludge secondary treatment process and utilization of agronomic rates is needed to implement the Discharger's *Containment and Remediation Plan*, dated September 15, 2004, which was accepted by the Water Board as an interim action to cleanup groundwater containing excessive nitrates. The tertiary process will produce effluent with higher concentrations of nitrate as N than the secondary process, but the total of nitrogen, in the effluent will be significantly lower.

Table 1: Concentrations in Effluent (Annual Average)

Parameters[2]	Secondary Treatment Reclamation Plant Effluent	Tertiary Treatment Reclamation Plant Effluent (Expected)
total coliform (MPN/100 ml)	<47	<2.2
turbidity (NTUs)	na[3]	<5
suspended solids (mg/L)	86	<5
TDS (mg/L)	590	550
soluble biochemical oxygen demand (mg/L), filtered	<16	<5
ammonia (mg/L as N)	21	1
Kjeldahl nitrogen (mg/L)	33	2
nitrate (mg/L as N)	<0.88	8
nitrite (mg/L as N)	1.1	1

14. Geology and Hydrogeology

The Antelope Valley Groundwater Basin (Department of Water Resource [DWR] Groundwater Basin 6-44) is located in a structural basin between the Garlock and San Andreas faults. Alluvial and lacustrine deposits up to 5,000 feet thick form the water-bearing units that overlie consolidated bedrock. The alluvial materials consist of relatively unconsolidated clay, silt, and sand.

In the Palmdale area of the Antelope Valley Groundwater Basin, the saturated zone is divided into two general hydrogeologic units: the unconfined to semiconfined upper aquifer, referred to as the "Principal Aquifer" and the confined, deeper aquifer, referred to as the "Deep Aquifer." The two hydrogeologic units are separated by a thick, fine-grained lacustrine unit.

The Principal Aquifer is the primary source of groundwater withdrawals in the Groundwater Basin. The depth of the Principal Aquifer in the vicinity of Reclamation

[2] Units: mg/L = milligrams/liter; µg/L = micrograms/liter; N = nitrogen; MPN/100 ml = most probable number/100 milliliters; NTU = nephelometric turbidity units;

[3] Not sampled. There is no turbidity limitation for secondary-23 recycled water.

Plant is approximately 300 feet below ground surface and the groundwater gradient is generally to the north. Water supply wells for the Palmdale Water District are located southwest of the Reclamation Plant and create a cone of depression in that area. The screened intervals for the supply wells are from 500 to 900 feet below ground surface.

The Storage Reservoir Site is underlain by approximately 300 feet of clay, silt, and sand deposits, which overlie fractured granitic bedrock. Groundwater is present in the fractured bedrock, which appears to be a low-yield aquifer. The regional aquifer is present in alluvium approximately 0.5 miles west of the site.

An unnamed fault is located near the upgradient (south) edge of the Storage Reservoir Site.[4] The Discharger's Report of Waste Discharge states the fault is not a potentially (or recently) active fault as defined under the Public Resources Code, division 2, chapter 7.5, section 2622 (Alquist-Priolo Earthquake Fault Zoning Act).

15. Groundwater Quality

Background water quality in the Palmdale area is generally excellent with an average 350 milligrams/liter (mg/L) of total dissolved solids (TDS) and 1.0 mg/L of nitrate as nitrogen (N)[5]. Groundwater monitoring for the Reclamation Plant and Agricultural Site indicates that the background TDS concentrations are less than 300 mg/L and nitrate concentrations are less than 3 mg/L.

The only data on background groundwater quality at the Storage Reservoir Site is from a single sample collected in 2007 from a temporary monitoring well screened in the fractured bedrock. This sample contained TDS at a concentration of 346 mg/L and nitrate as N at a concentration of 0.19 mg/L.

16. Groundwater Quality Degradation

Monitoring wells in the vicinity of the Reclamation Plant and Agricultural Site show elevated TDS and nitrate concentrations that appear to be the result of the use and disposal of treated waste water at application rates higher than agronomic rates. To address these impacts, the Water Board adopted enforcement orders described in Finding No. 5.

Table 2 is based on the 2009 Annual Report for the Reclamation Plant. The table includes annual (four quarters) average concentrations of nitrate and TDS in the Discharger's groundwater monitoring wells that contained nitrate as N, above the

[4]Bloyd, R.M., 1967, Water Resources of the Antelope Valley - East Kern Water Agency, California, U.S. Geological Survey Open-File Report

[5] Duell, L. F. Jr., 1987, Geohydrology of the Antelope Valley Area California and Design for a Groundwater Quality Monitoring Network, U.S. Geological Survey-Water Resources Investigations Report 84-4081.

maximum contaminant level (MCL) of 10 mg/L. Four of these wells also have TDS concentrations above the maximum recommended, secondary MCL of 500 mg/L, but below the upper, secondary MCL.

Table 2: 2009 Average Groundwater Quality in Wells

Well ID	Location	TDS (mg/L)	Nitrate (mg/L)
MW-4	Section 9	612	15.0
MW-22	Section 4	650	12.9
MW-40	Section 17	376	10.4
MW-52	Section10	449	12.0
MW-53	Section 9	714	15.6
MW-54	Section 9	532	10.3

Trends in nitrate and TDS concentrations in these seven wells appear to be relatively stable since 2008 when MW-40 through MW-56 were added to the monitoring network.

Additionally, monitoring data from 2000 to 2009 show that two other monitoring parameters have been detected in groundwater: bis(2-ethylhexyl)phthalate [synonyms: di(2-ethylhexyl)phthalate, DEHP] and total petroleum hydrocarbons (TPH).

DEHP, a priority pollutant, is a plasticizer commonly found in waste water influent. DEHP has a strong affinity to organic carbon and adsorbs to sludge during sewage treatment process. DEHP has been sporadically detected in the groundwater monitoring wells at concentrations above its reporting limit. DEHP reporting limits have ranged from 1 to 5 µg/L. Since 2000, DEHP has, on occasion, been detected at relatively low concentrations in 22 of the groundwater wells that are sampled annually for this constituent. DEHP was detected above its MCL of 4.0 µg/L in MW-2 and MW-4 (respective concentrations of 5.4 and 4.2 µg/L) during the annual sampling event in 2003, but has not been reported in these wells during subsequent events. During the 2009 annual sampling event, DEHP was only detected at trace concentrations (below the practical quantitation limit but above the method detection limit) in two wells. At this time, the source of DEHP detected in groundwater is not known. This Order includes a Monitoring Reporting Program that will further evaluate the occurrence of DEHP in these wells.

TPH has been detected during the annual analysis of groundwater monitoring wells at concentrations as high as 950 µg/L. These detections were reported during the period of 2000 to 2005 when the reporting limit for TPH in groundwater ranged from 50 to 100 µg/L. TPH has not been reported above its reporting limit since 2005 when the Discharger began using a higher reporting limits ranging from 300 of 700 µg/L for

TPH. From 2000 to 2005, TPH has been reported in effluent at concentrations as high as 4,500 µg/L. Since 2005 the reporting limits for TPH in effluent has ranged from 1,070 to 19,400 µg/L. There have been no reported detections in effluent above these varied limits since 2005. This Order includes a Monitoring and Reporting Program that specifies reporting limits for TPH as gasoline and TPH as diesel in groundwater. These required reporting limits will help in the evaluation of TPH in effluent and groundwater beneath the Facility.

17. Receiving Waters

The receiving waters are the groundwaters of the Antelope Valley Groundwater Basin (DWR Basin 6-44).

18. Lahontan Basin Plan

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

19. Groundwater Beneficial Uses

The beneficial uses of the groundwaters of the Antelope Valley Groundwater Basin as set forth and defined in the Basin Plan are:

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

20. Maintenance of High Quality Waters in California

Historical application of treated waste water above agronomic rates at the Agricultural Site has resulted in degradation of groundwater quality with respect to nutrients (i.e., ammonia, Kjeldahl nitrogen, nitrate as N, and nitrate as N) and salts (i.e., TDS) as described in Finding No. 16 of this Order.

The uses of recycled water as permitted in this Order will not result in further degradation of the existing groundwater quality with respect to nutrients. The requirements described under I.B.3 of this Order require that the Discharger apply recycled water at agronomic rates in terms of both water application and nutrient application. Additionally, the Tertiary Treatment Reclamation Plant will generate recycled water with a lower total nitrogen content (i.e., the cumulative content of ammonia, Kjeldahl nitrogen, nitrate as N, and nitrite as N will be reduced from approximately 56 mg/L produced by the Secondary Treatment Reclamation Plant

to approximately 12 mg/L).

The uses of recycled water as permitted in this Order may result in additional degradation of groundwater quality with respect to TDS. However, the degradation will be less than from historical over application of waste water because this Order requires that the Discharge apply recycled water at agronomic rates. Additionally, the Tertiary Treatment Reclamation Plant will generate recycled water with a slightly lower TDS concentrations than the Secondary Treatment Reclamation Plant.

The Antelope Valley groundwater basin is estimated to have 68 million acre-feet of storage, of which 13 million acre-feet is available. TDS concentrations in the groundwater basin range from 200 to 800 mg/L [Department of Water Resources Bulletin 118, 2004], with an average of 300 mg/L. The California Code of Regulations, title 22 specifies a recommended secondary MCL for TDS of 500 mg/l and the secondary MCL upper limit of 1,000 mg/L.

The average TDS concentration in the recycled water is currently 590 mg/L. The TDS concentration is expected to be reduced to approximately 550 mg/l after the Tertiary Treatment Reclamation Plant is operational in July 2011. The expected TDS concentration is only slightly above the secondary MCL of 500 mg/L and significant below the upper secondary MCL of 1,000 mg/L. The application of recycled water from the Tertiary Treatment Reclamation Plant at agronomic rates will minimize further degradation of existing groundwater quality. Additionally, requirements of I.B.17. of this Order requires that the Discharger develop and/or participate in the development of a salt/nutrient management plan for the Antelope Valley that is consistent with Paragraph 6 of the Recycled Water Policy.

State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," states:

"1. *Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that a change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*

2. *Any activity which produces or may produce a waste...and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to*

assure that (a) pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

This Order is consistent with Resolution No. 68-16 for the following reasons.

a. State Water Board, through Resolution No. 77-1, has identified the beneficial use of recycled water for the people for the State, and directs Regional Water Boards to encourage the use of recycled water in water-short areas of the State. The Antelope Valley is located in a water-short area of the State. The current demand for potable water in the Antelope Valley exceeds supply in the region, and by 2035 this demand is expected to double. The people of the State will benefit from the use of recycled water in the Antelope Valley area, where recycled water will supplement and/or replace existing water supplies (e.g., imported surface waters and overdraft of groundwaters).

b. This Order prohibits the use of recycled water that causes a pollution or nuisance.

c. This Order requires the District to implement control measures to minimize degradation of waters of the State. The control measures include (1) applying irrigation within agronomic rates to reduce the potential for runoff and increased nutrients into the groundwater; and (2) developing and implementing a salt/nutrient management plan to reduce the potential for salt and nutrient loading, thereby minimizing the impacts to groundwater quality. The control measures will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State, assure that a pollution or nuisance will not occur, and that the highest water quality consistent with maximum benefit to the people of the State will be maintained.

d. The waste discharge requirements adopted as part of this Order will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State to assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained. The control measures will prevent the groundwater quality within the Antelope Valley from exceeding the standards established in existing applicable policies.

e. The use of recycled water as authorized by this Order will not result in water quality less than that prescribed in applicable policies.

21. California Environmental Quality Act (CEQA)

a. Secondary Treatment Reclamation Plant, Storage Reservoirs and Agricultural Site

This order governs the continued operation of the Reclamation Plant and Agricultural Site. The continued operation of the Reclamation Plant and Agricultural Site are categorically exempt from provisions of the CEQA (Public Resources Code, section 21000 et seq.) in accordance with CEQA Guidelines, section 15301. These are existing uses that involve no expansion of their existing use.

To eliminate the application of treated waste water above agronomic rates at the Agricultural Site, the Discharger is storing secondary treated effluent in two reservoirs at the Storage Reservoir Site. The construction of the storage reservoirs required an addendum to the District's Environmental Impact Report (EIR) for its 2025 Plan. The Notice of Determination for the EIR addendum was issued July 26, 2007. The reservoirs were constructed in 2009 using synthetic liners and construction practices that will limit the amount and rate of leakage from the reservoirs such that there will be no measurable affect on groundwater quality.

b. Tertiary Treatment Reclamation Plant

On October 18, 2005, the District certified an Environmental Impact Report (EIR) (SCH No. 2004091123) for its 2025 Plan, which included the construction of an activated-sludge secondary treatment with nitrification/denitrification capability, tertiary treatment, and reservoir storage. The Water Board has considered the environmental document and incorporated mitigation measures within its jurisdiction into this Order to mitigate the project's significant impacts that relate to water quality. Attachment G, which is made part of this Order, summarizes the project's significant impacts that relate to water quality, the mitigation measures, and the Water Board's findings regarding these measures. This Order and the accompanying Monitoring and Reporting Program will ensure compliance with required mitigation measures. The Water Board will file a Notice of Determination within five days from the issuance of this Order.

22. Notification of Interested Parties

The Water Board has notified the Discharger and interested persons of its intent to revise WDRs/WRRs for the discharge.

23. Consideration of Public Comments

The Water Board, in a public meeting held March 9, 2011, heard and considered all

comments pertaining to the discharge.

24. Consideration of Water Code Section 13241 Factors

Water Code, section 13263 requires that the Water Board, when prescribing WDRs, take into consideration six specific factors in Water Code, section 13241. The Board has considered these factors as follows.

a. Past, Present, and Probable Future Beneficial Uses of Water - The receiving waters are the groundwaters of the Antelope Valley Groundwater Basin. The beneficial uses of the groundwater are described in Finding No. 19. The receiving water limits in this Order are to maintain the most sensitive beneficial uses: Municipal and Domestic Supply (MUN) and Agricultural Supply (AGR).

b. Environmental Characteristics of the Hydrographic Unit under Consideration, Including the Quality of Water Available Thereto - Hydrogeologic characteristics of the Antelope Valley Groundwater Basin are described in Finding No. 14. Because of past and ongoing use of groundwater for domestic and agricultural purposes, the Groundwater Basin is in overdraft. Groundwater quality is described in Finding Nos. 15 and 16. In general, the groundwater quality is sufficient to support the beneficial uses of MUN and AGR.

c. Water Quality Conditions that Could Reasonably Be Achieved Through the Coordinated Control of All Factors, Which Affect Water Quality in the Area - The current and future beneficial uses and existing water quality in the area will be maintained.

d. Economic Considerations - This Order regulates the operation and upgrading the Discharger's Facility. The revenue sources for the upgrades are service charges and connection fees. The current service charge rate approximately $381 per year. The state-wide median cost for waste water collection and treatment is $290 per year.

e. The Need for Developing Housing in the Region - The Discharger is committed to providing treatment capacity for new housing and will expand facilities with sufficient lead time to accommodate population growth. In addition, treated waste water recycling will help offset future demands on the limited supply of fresh water in the Palmdale area.

f. The Need to Develop and Use Recycled Water - The water quality of the effluent after oxidation pond treatment limits potential reuses of the recycled water pursuant to California Code of Regulations, title 22. The Tertiary Treatment Reclamation Plant will upgrade the level of treatment and produce effluent that is acceptable for all uses described in California Code of Regulations, title 22, thus

maximizing potential reuse.

25. Requirement to Submit Technical and Monitoring Reports

A Monitoring and Reporting Program has been developed for this discharge and is incorporated into the requirements of this Order. The Monitoring and Reporting Program is necessary to ensure that the requirements of this Order are sufficient to protect groundwater quality.

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

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The flows of waste water to the oxidation ponds at Secondary Treatment Reclamation Plant and Storage Reservoir Site shall not exceed the following limits:

Average Daily Flow (MGD)[6]	Maximum Daily Flow (MGD)
15.0	37.5

2. The flows of waste water to the Tertiary Treatment Reclamation Plant shall not exceed the following limits:

Plant Development (Finding No. 7d)	Average Daily Flow (MGD)[6]	Maximum Daily Flow (MGD)
Phase I	12.0	30.0
Phase II	15.0	37.5

3. All effluent discharged from the existing Secondary Treatment Oxidation ponds shall not contain concentrations of parameters outside of the following limits:

[6] The arithmetic mean of total daily flow values for each month.

Parameter	Daily Maximum	Monthly Mean[7]	Instantaneous Minimum	Instantaneous Maximum
BOD[8]	45 mg/L	30 mg/L	--	--
dissolved oxygen	--	--	1.0 mg/L	--
pH	--	--	6.0	9.0

4. All effluent supplied to uses that require tertiary recycled water, as specified in California Code of Regulations, title 22, article 3, shall be tertiary-treated effluent and shall not contain concentrations of parameters outside of the following limits:

Parameter	Daily Maximum	Weekly Mean[9]	Monthly Mean[7]	Instantaneous Minimum	Instantaneous Maximum
BOD[10]	30 mg/L	15 mg/L	10 mg/L	--	--
MBAS[11]	2.0 mg/L	--	1.0 mg/L	--	--
dissolved oxygen	--	--	--	1.0 mg/L	--
pH	--	--	--	6.0	9.0

5. Effective as of July 25, 2011, all effluent discharged to the storage reservoirs as described in Finding No. 12.a. shall meet the limits in I.A.4.

6. All discharges of effluent to the Agricultural Site or other authorized water recycling sites shall meet the water quality specified in California Code of Regulations, title 22, article 3 for that particular use of recycled water.

B. Water Recycling Requirements

1. A new Engineering Report must be submitted to the Water Board and DPH for any material modification in the manner or method that recycled water is produced or used.

2. Until a new Engineering Report is submitted, the use of recycled water is limited to irrigation at agronomic rates at the Agricultural Site (described in Finding No. 12.c) and non-potable uses at the Discharger's 30th Street East site, 40th Street East site, and Storage Reservoir Site. The non-potable uses include facility

[7] The arithmetic mean of laboratory results for 24-hour composite samples collected during a calendar month. The mean shall be calculated and reported in accordance with Section I.K.3 of the Monitoring and Reporting Program (MRP).
[8] Biochemical oxygen demand (5 day, 20°C of a filtered sample).
[9] The arithmetic mean of laboratory results for 24-hour composite samples collected during one week (7 days). The mean shall be calculated and reported in accordance with Section I.K.3 of the MRP.
[10] Biochemical oxygen demand (5 day, 20°C of an unfiltered sample).
[11] Methylene blue active substances.

washdown, construction-related soil compaction, and dust control.

3. The Discharger shall not over apply recycled water above crop agronomic needs at the Agricultural Site. For nutrients, the agronomic rate is the rate of application of nutrients to plants that is necessary to satisfy the plants' nutritional requirements while strictly minimizing the amount of nutrients that pass below the root zone of the plants in accordance to the *Annual Cropping Plan* described in the Monitoring and Reporting Program (MRP). For water, the agronomic rate is the rate of application of irrigation water necessary for plant evapotranspiration, to prevent salinization of the root zone, for plant germination, for suppression of wind erosion, for frost protection, and to account for distribution uniformity. All reasonable efforts must be taken to ensure uniform distribution of the recycled water.

4. As described in California Code of Regulations, title 22, section 60304 (d), recycled water used for producing fodder and fiber crops (agricultural fields), ornamental nursery stock (tree farm) and orchards where the recycled water does not come into contact with edible portion of the crop (pistachios) must, at a minimum, meet the requirements of "undisinfected secondary recycled water."

5. Pursuant to California Code of Regulations, title 22, sections 60301.900 and 60301.650, "undisinfected secondary recycled water" must be effluent that is fully oxidized in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

6. Pursuant to California Code of Regulations, title 22, section 60301. 225, "disinfected secondary-23 recycled water" must be effluent that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a MPN of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analysis have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

7. As described in California Code of Regulations, title 22, section 60307(b), recycled water used for dust control and soil compaction during construction must meet the requirements of "disinfected secondary-23 recycled water."

8. The Discharger must comply with all requirements for recycled water use areas as specified in California Code of Regulations, title 22, section 60310. The Discharger must assure that the Secondary Users comply with all requirements for recycled water use areas as specified in California Code of Regulations, title 22, section 60310.

9. The Discharger, as producer of recycled water, must comply with all operational requirements specified in California Code of Regulations, title 22, sections 60325 (Personnel), 60327 (Maintenance), 60329 (Operating records and reports), and 60331 (Bypass).

10. The Discharger, as producer of recycled water, must comply with the general Requirements of Design specified in California Code of Regulations, title 22, article 8.

11. The Discharger, as producer of recycled water, must comply with Reliability Requirements for Full Treatment specified in California Code of Regulations, title 22, article 10, for production of water to meet the recycled water uses allowed in this Order.

12. Discharge of recycled water or runoff commingled with recycled water outside of the authorized Agricultural Site or to Little Rock Creek is prohibited.

13. The spray irrigation of nut bearing or ornamental trees and/or the harvesting of nuts from the ground surface is prohibited.

14. Christmas trees irrigated with recycled water shall be harvested no earlier than 30 days after the cessation of irrigation with recycled water. The trees shall be cut at a point on the trunk that is a minimum of two feet above the ground surface for the protection of worker and public health.

15. The use of recycled water shall not cause pollution or threatened pollution as defined in Water Code, section 13050 (l).

16. The use of recycled water shall not cause nuisance as defined in Water Code, section 13050 (m).

17. The District must develop and/or participate in the development of a salt/nutrient management plan for the Antelope Valley that is consistent with Paragraph 6 of the Recycled Water Policy. The salt/nutrient management plan must be submitted to the Water Board by **May 14, 2014**.

C. Receiving Water Limitations

Discharges from this Facility shall not cause a violation of any applicable water quality standard for the receiving water adopted by the Water Board or the State Water Resources Control Board. If more stringent applicable water quality standards are promulgated or approved, the Water Board will revise and modify this Order in accordance with such more stringent standards.

The Facility's discharge shall not cause the presence of the following substances or conditions in groundwater of the Antelope Valley Groundwater Basin:

1. Non-degradation – State Water Resource Control Board Resolution No. 68-16 "Statement of Policy With Respect to Maintaining High Quality of Waters In California," known as the Non-degradation Objective, requires maintenance of existing high quality in surface waters, groundwaters, and wetlands. Whenever the existing quality of water is better than the quality of water established in the Basin Plan, such existing quality shall be maintained unless appropriate findings are made under Resolution No. 68-16.
2. Bacteria - Groundwaters shall not contain concentrations of coliform organisms attributable to human wastes.
3. Chemical Constituents - Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant level or secondary maximum contaminant level based on drinking water standards specified in the following provisions of California Code of Regulations, title 22: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64433.2-B of section 64433.2 (Fluoride), Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels - Consumer Acceptance Limits), and Table 64449-B of section 64449 (Secondary Maximum Contaminant Levels - Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.
4. Radioactivity - Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits specified in the California Code of Regulations, title 22, chapter 15, article 5, section 64443.
5. Taste and Odors - Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance (Water Code section 13050 (m)) or that adversely affect waters for beneficial uses.

D. Additional Receiving Water Limitations for Groundwater Beneath the Storage Reservoirs

The discharge shall not cause a violation of the water quality objectives listed under I. C. Furthermore, discharge to the storage reservoirs shall not cause a violation of the following additional water quality objectives.

Nitrate and total dissolved solids (TDS) - Groundwater at this site shall not contain nitrate and TDS above background water quality concentrations.

E. Secondary Users

1. The Discharger is responsible for ensuring Secondary Users, as defined in Finding No. 2, comply with the following requirements:
   a. Section I.B (Water Recycling Requirements), I.C (Receiving Water Limitations), and I.G (General Requirements and Prohibitions) of this Order;
   b. California Code of Regulations, title 22, sections 60304, 60307, and 60310.

2. The Discharger must notify the Water Board at least 15 days prior to adding, removing or changing the Secondary Users of recycled water, and the Discharger must ensure that agreements with Secondary Users require compliance with requirements stated herein.

F. General Requirements and Prohibitions

1. The use of recycled water under this Order must be limited to the Authorized Recycled Water Sites and uses defined in Finding No. 12 of this Order.

2. The discharge to waters of the State shall not contain substances in concentrations that are toxic to, or produce detrimental physiological responses in humans, plants, animals, or aquatic life.

3. The source of recycled water must be limited to that described in Finding Nos. 7.a. and 7.d. of this Order.

4. Treated waste water used for dust control or soil compaction must be applied at a rate and amount that does not cause runoff or excessive ponding.

5. Recycled water used to irrigate landscape areas must not be applied at a rate and amount that exceeds the irrigation and nutrient needs of the vegetation.

6. Recycled water must not be applied at a rate and amount that causes ponding or runoff that is other than incidental runoff.

7. Pipelines must be maintained so as to prevent leakage.

8. There shall be no discharge, bypass, or diversion of untreated or treated waste water, sludge, grease, or oils from the transport, treatment, or authorized storage/recycling sites (described in the Finding No. 12) to adjacent land areas or surface waters.

9. Surface flow, or visible discharge of untreated or treated waste water from the authorized storage/recycling sites (described in Findings Nos. 7.c and 12) to adjacent land areas or surface waters is prohibited.

10. All facilities used for collection, transport, treatment, or disposal of waste regulated by this Order shall be adequately protected against overflow, washout, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

11. The vertical distance between the liquid surface elevation and the lowest point of a pond or reservoir dike shall not be less than 2.0 feet.

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

13. The treatment or the discharge shall not cause a nuisance, as defined in Water Code, section 13050, subdivision (m).

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

15. The Discharger shall comply with all existing federal and State laws and regulations that apply to biosolids use and disposal practices. The Discharger shall further comply with all requirements regarding biosolids use and disposal specified in the Clean Water Act, section 405 (d).

16. The Secondary Treatment Reclamation Plant and Tertiary Treatment Reclamation Plant must be designed and operated as described in the conditions of this Order.

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

18. The discharge of waste, as defined in the Water Code, which causes violation of any narrative water quality objective contained in the Basin Plan, including the Non-degradation Objective, is prohibited.

19. The discharge of waste that causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.

20. The use or storage of recycled water that causes a violation of any narrative water quality objective contained in the Basin Plan, is prohibited.

21. The use or storage of recycled water that causes a violation of any numeric water quality objective contained in the Basin Plan, is prohibited.

22. Where any numeric or narrative water quality objective contained in the Basin Plan is already being exceeded, the use of recycled water that causes further degradation or pollution, is prohibited.

II. PROVISIONS

A. Rescission of Waste Discharge Requirements and Water Recycling Requirements

Board Order Nos. 6-00-57, 6-00-57A01, 6-00-57A02, 6-00-57A03, and 6-00-57-A04 are hereby rescinded except for the purposes of enforcement.

B. Monitoring and Reporting

1. Monitoring and Reporting Program - Pursuant to the Water Code, section 13267, the Discharger must comply with the attached Monitoring and

Reporting Program No. R6V-2011-TENATIVE, which is made a part of this Order. Reports requested under the Monitoring and Reporting Program are required to monitor the effects on water quality from known or suspected discharges of waste to waters of the State as a result of releases of treated waste water regulated by this Order.

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

C. Standard Provisions

The Discharger must comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, which is included as Attachment H and is made part of this Order.

D. Secondary User Agreements

The Primary User shall include the following conditions in any oral or written provision for disposition of recycled water:

1. Any Secondary User of recycled waste water from the Primary User hereby authorizes, at all reasonable times, the Primary User or any authorized representative of the Water Board to enter upon the property where the recycled water is being used and to investigate such person's use of recycled water.

2. Any Secondary User of recycled water from the Primary User shall report at least once each month to the Primary User on the irrigation method and the name and final usage of all crops irrigated with recycled water during such period. Such user of recycled water from the Primary User agrees to insert the substance of this clause in any oral or written provision for disposition of recycled water.

E. Additional Storage Reservoirs

Before beginning discharge of treated waste water to any additional reservoirs, the Discharger must provide documentation that the reservoirs and associated monitoring networks were constructed in accordance with the workplan, *Installation Specifications for Proposed Palmdale Reservoir Vadose Zone Monitoring System,* dated August 11, 2008.

F. Operator Certificates

The Reclamation Plant must be supervised by persons possessing a Waste Water Treatment Plant Operator certificate of appropriate grade pursuant to California Code of Regulations, title 23, section 3670 et seq.

G. Monitoring Program Availability

A copy of this Order and the Monitoring and Reporting Program shall be available at all times at the treatment plant for immediate reference by the plant operator.

I, Lauri Kemper, Assistant Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Water Quality Control Board, Lahontan Region, on March 9, 2011.

LAURI KEMPER
ASSISTANT EXECUTIVE OFFICER

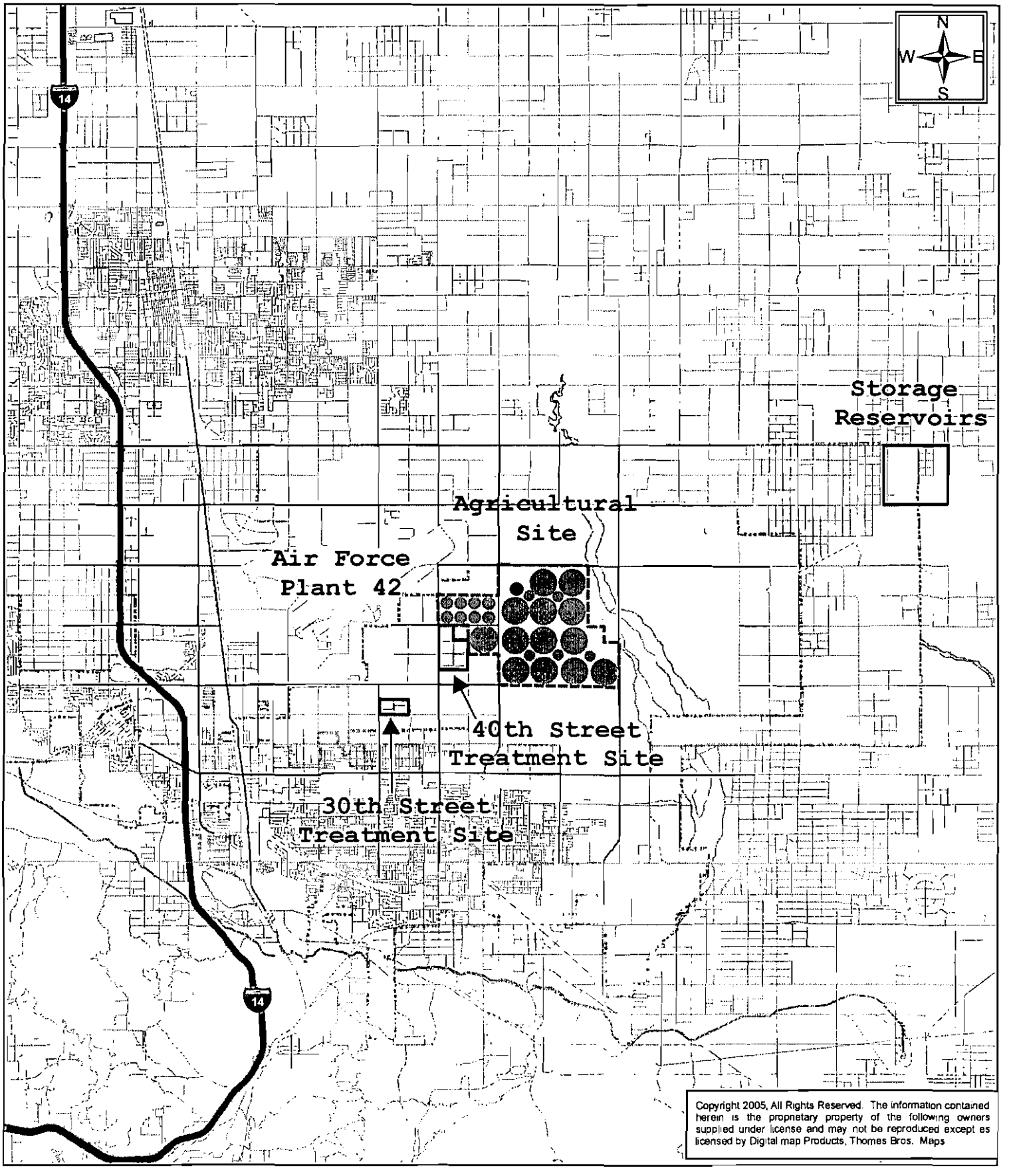
Attachments:

A. General Facilities Locations
B. Secondary Treatment Reclamation Plant
C. Agricultural Site
D. Secondary Treatment Facilities Process Schematic
E. Storage Reservoirs
F. Tertiary Treatment Facilities Process Schematic
G. Water Board Findings on EIR Significant Impacts and Mitigation Measures
H. Standard Provisions for Waste Discharge Requirements

Monitoring and Reporting Program – R6V-2011-0012

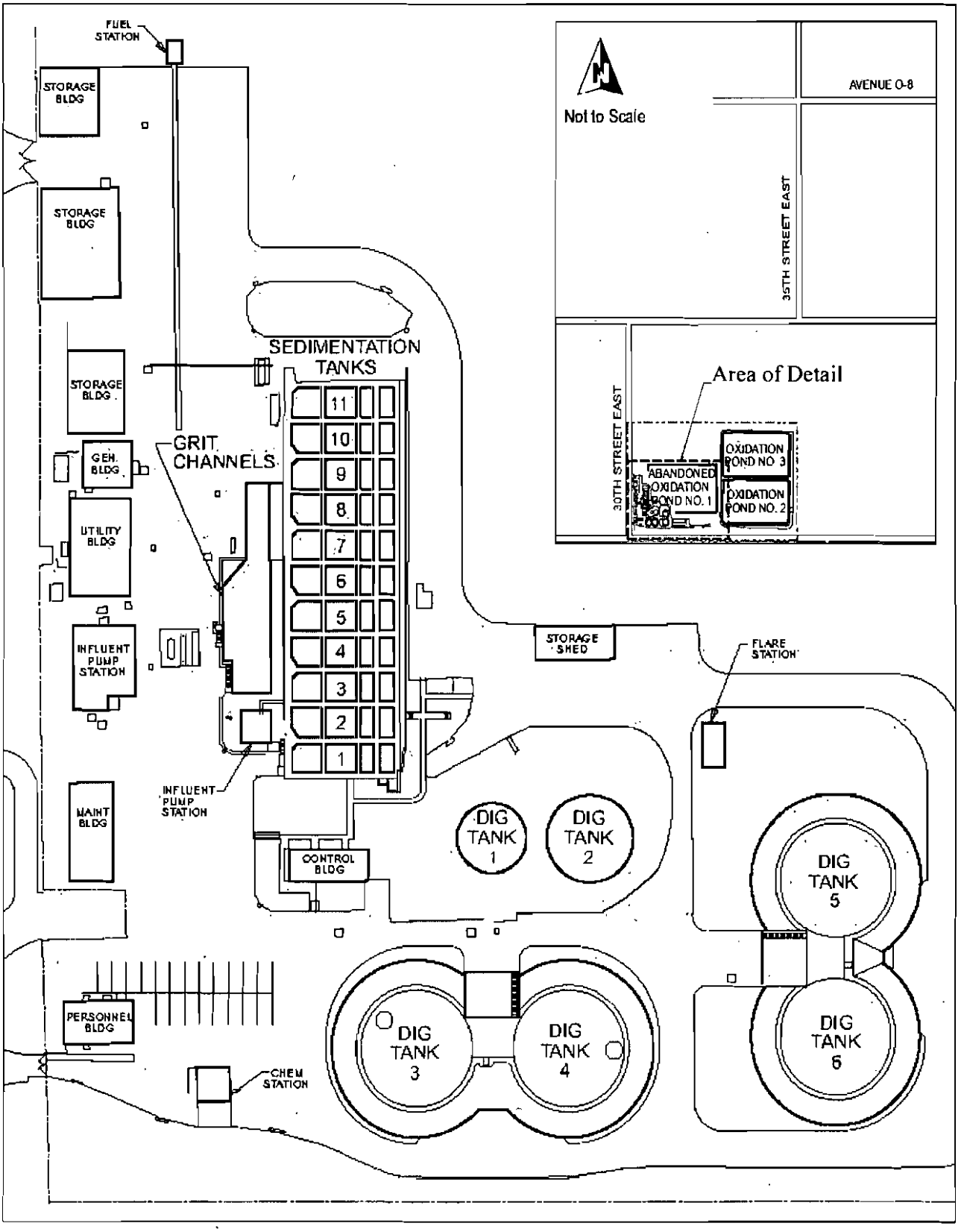
Attachment A

General Facilities Locations

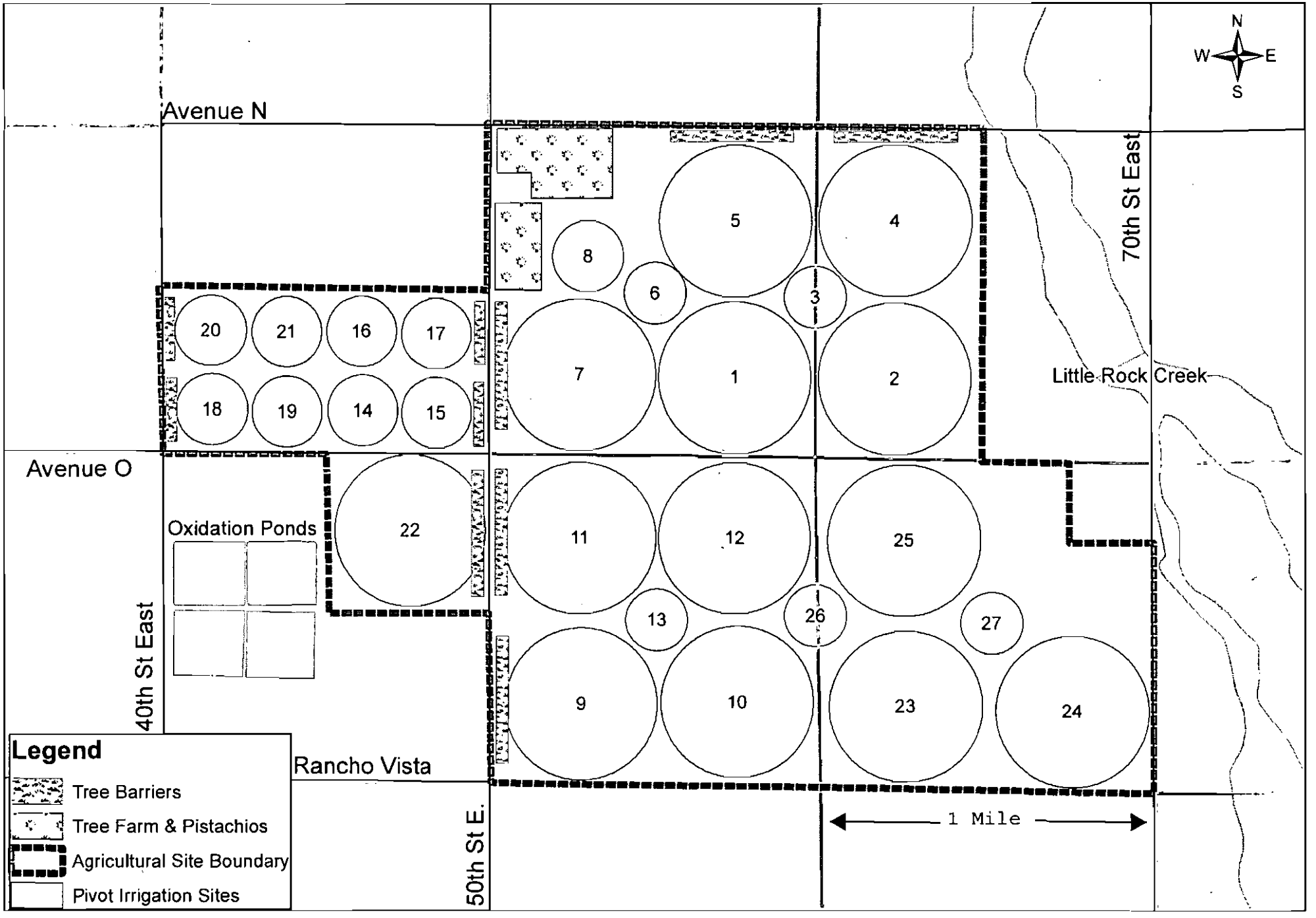


Attachment B

Secondary Treatment Reclamation Plant

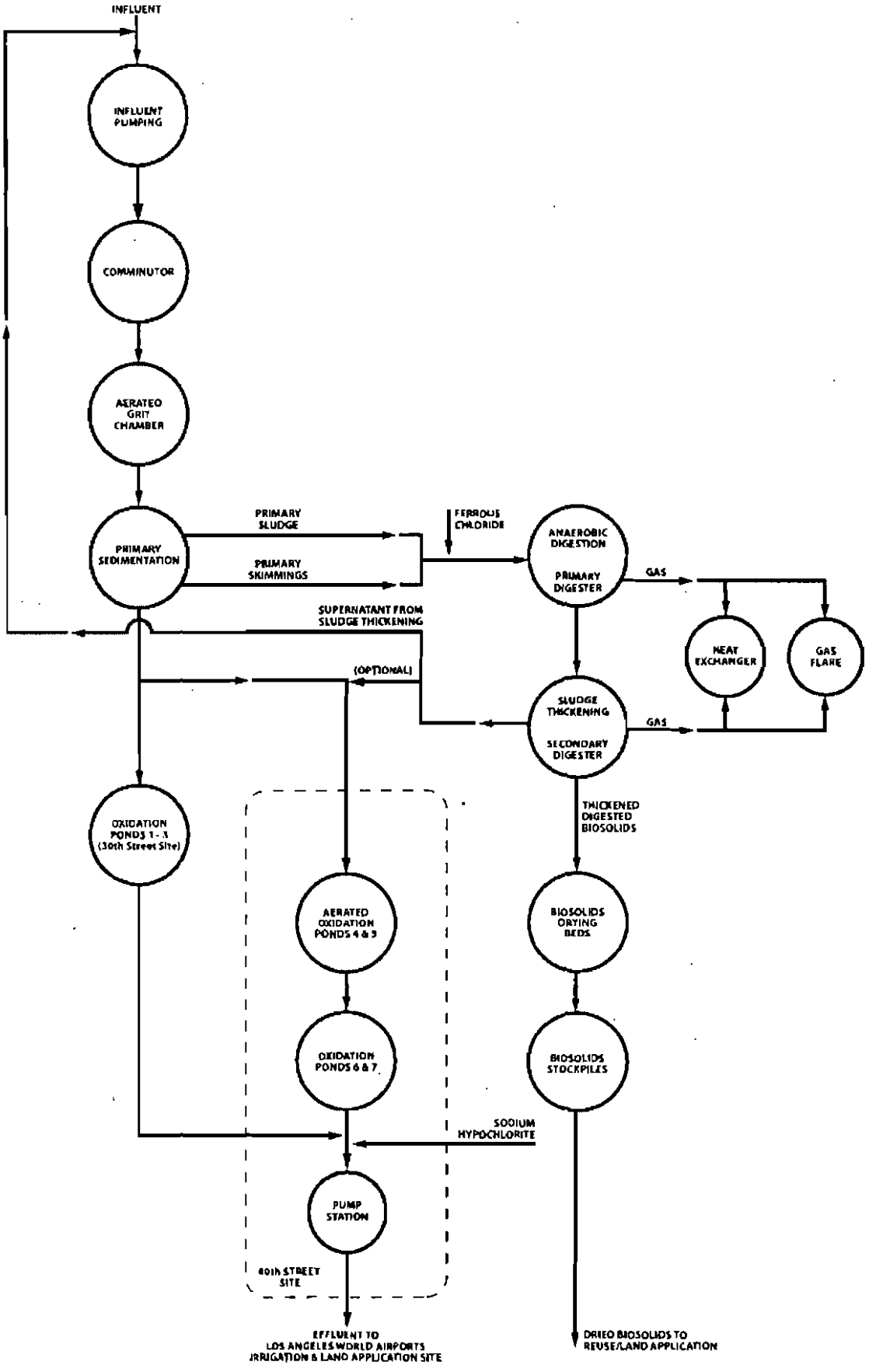


Agricultural Site



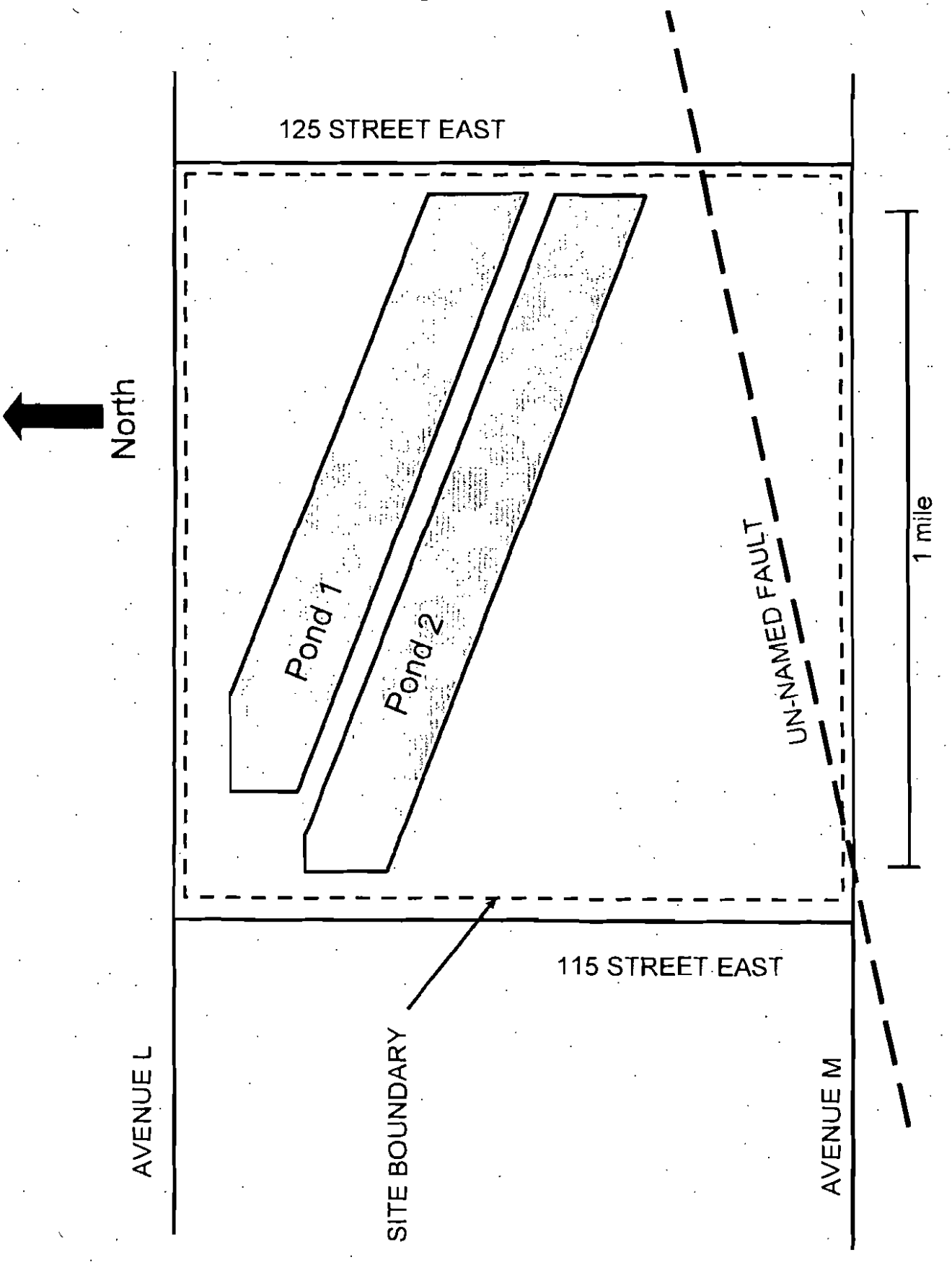
Attachment D

Secondary Treatment Facilities Process Schematic



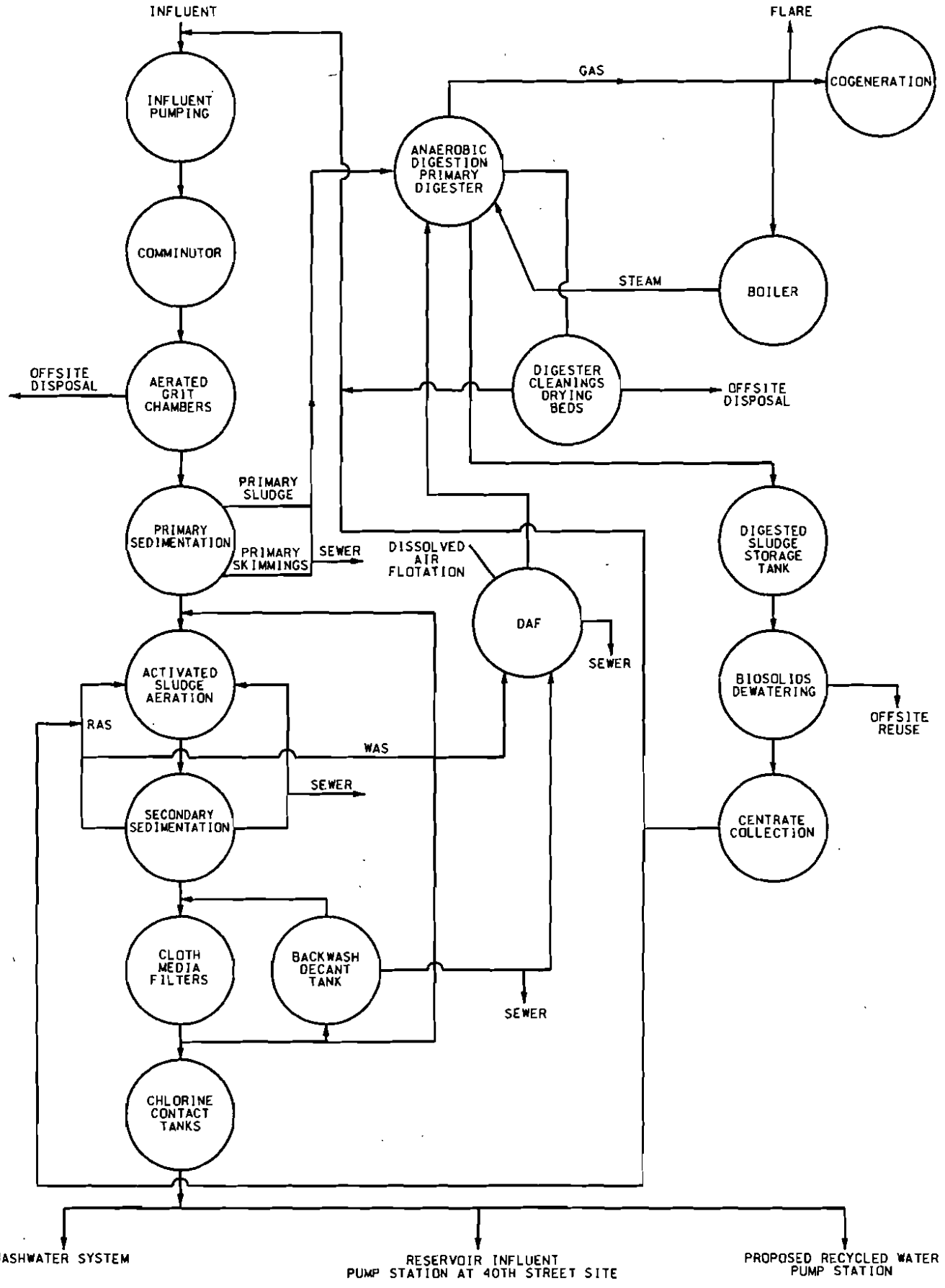
Attachment E

Storage Reservoirs



Attachment F

Tertiary Treatment Facilities Process Schematic



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ATTACHMENT G
WATER BOARD FINDINGS On EIR SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
Impact 14-1: Project construction activities could induce soil erosion and transport contaminants to downstream dry washes and playas.	**Mitigation Measure 14-1:** District shall prepare a State Water Pollution Prevention Project for all construction phases of the proposed project. The objectives of the Storm Water Pollution Prevention Plans are to identify pollutant sources that may affect the quality of storm water discharge and to implement Best Management Practices to reduce pollutants in storm water discharges.	**Mitigation Measure 14-1:** Changes have been required in, or incorporated into the project to avoid or substantially lessen the potential significant environmental effect as identified in the final EIR. Project construction is almost complete and the District has fulfilled this mitigation measure. All District construction-related projects are required to develop and implement a SWPPP.
Impact 14-2: Effluent water infiltrating into the groundwater from the proposed storage reservoirs could degrade water quality.	**Mitigation Measure 14-2:** The District shall line all proposed storage reservoirs (bottoms and sides) with synthetic materials to minimize infiltration of treated effluent into the subsurface.	**Mitigation Measure 14-2:** Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR. The storage reservoirs were lined in accordance to specifications approved by the Water Board. This Order requires any new storage reservoir be lined in accordance to these specifications.
Impact 14-3: Effluent water infiltrating into the groundwater from agricultural or municipal reuse operations could degrade groundwater quality	**Mitigation Measure 14-3:** The District shall implement a Farm Management Plan outlining procedures for ensuring that effluent is applied at agronomic rates to minimize the potential for infiltration. **Mitigation Measure 14-4:** The District shall provide liners to retention basins to prevent substantial infiltration of applied water or, with the Water Board's approval, manage these basins to minimize infiltration to ensure protection of	**Mitigation Measure 14-3:** Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR. The components of this mitigation measure were required under the previous MRP and are required in the current MRP. **Mitigation Measure 14-4**: The District currently has no retention basins. District representatives state that there are no plans to construct retention basins, but if they are necessary in the future, they would

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
	groundwater.	comply with this mitigation measure and WDRs would be revised accordingly. Changes have, therefore, been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the Final EIR.
Impact 14-4: Recycled effluent could run off the site if over-applied or applied during storm events.	**Mitigation Measure 14-5:** The District shall construct a combination of earthen berms, modify existing site grades, and/or construct catch or pump basins at points around the proposed agricultural areas to prevent unauthorized runoff. The improvements would be designed to allow peak flood waters to inundate fields without modifying the flood plain by providing flood access culverts or other design features. The location and description of the improvements will be provided in the Farm Management Plan (FMP).	**Mitigation Measure 14-5**: This mitigation measure pertains to a new agricultural site identified in the Facilities Plan/EIR. These improvements are in place at the current Agricultural Site in accordance with Board Order No. 6-00-57 and this Order. Development of the new site has been delayed because an expansion is not necessary at this time. This Order requires the District to submit a FMP to the Water Board prior to the development of the new site. Changes have, therefore, been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the Final EIR.
Impact 14-5: Improperly abandoned wells could transport recycled water used for irrigation directly to the groundwater aquifer.	**Mitigation Measure 14-6:** The District shall identify and properly abandon groundwater wells in the proximity of the proposed project operations in conformance with Title 22 Article 4 requirements. **Mitigation Measure 14-7:** Title 22 requirements shall be used to determine the appropriate distance between agricultural irrigation activities and separating water wells.	**Mitigation Measure 14-6**: This mitigation measure pertains to new agricultural site identified in the Facilities Plan/EIR. These actions have been completed at the existing agricultural site. Well abandonment is under the jurisdiction of Los Angeles County Department of Public Health. **Mitigation Measure 14-7**: This Impact pertains to a new agricultural site. Development of the new site has been postponed because the existing Agricultural Site meets the District's current needs. The District fulfilled these requirements at the

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
		existing Agricultural Site. If the District develops a new agricultural site, the Order requires it to implement this mitigation measure prior the development of the new agricultural site. Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR.
Impact 14-6: Project facilities located in a floodplain could redirect flood waters and cause localized flooding.	**Mitigation Measure 14-8:** The District shall incorporate engineering considerations in reservoir design to accommodate flood waters to prevent road inundation and minimize scouring.	**Mitigation Measure 14-8:** This mitigation measure is the jurisdiction of Los Angeles County Department of Public Works.

WDR ATTACHMENT H

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

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

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

c. to inspect monitoring equipment or records; and

d. to sample any discharge.

2. Reporting Requirements

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

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

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

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

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

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

3. Right to Revise WDRs

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

4. Duty to Comply

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

5. Duty to Mitigate

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

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

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

8. Property Rights

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

9. Enforcement

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

10. Availability

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

11. Severability

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

12. Public Access

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

13. Transfers

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

14. Definitions

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

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

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. R6V-2011-0012
WDID NO. 6B190107069

FOR

LOS ANGELES COUNTY SANITATION DISTRICT NO. 20
PALMDALE WATER RECLAMATION PLANT

Los Angeles County

The County Sanitation District No. 20 of Los Angeles County (Discharger) owns and operates the Palmdale Water Reclamation Plant (Reclamation Plant) and the Storage Reservoir Site. Effluent from the Reclamation Plant is stored at the Storage Reservoir Site and reused at the Agricultural Site (formerly referred to as the Effluent Management Site), which is owned by the City of Los Angeles World Airports.

This Monitoring and Reporting Program, MRP R6V-2011-0012, applies to the Facility, which includes the Reclamation Plant, Storage Reservoir Site, and Agricultural Site. This MRP supersedes all previous MRPs for this Facility.

The Discharger submitted a Sampling and Analysis Plan (SAP), dated November 3, 2010, which describes sample collection methods, laboratory reporting limits, and quality control and assurance methods. The SAP shall be kept current and revised as necessary based on modified procedures, methods, or locations. All revisions must be submitted to the Water Board at least 30 days before their implementation. The November 3, 2010 SAP must be revised in accordance with WDR R6V-2011-0012 and this MRP and submitted to the Water Board within 30 days of the signature date of this MRP.

I. MONITORING

A. Flow Monitoring for Secondary and Tertiary Treatment Reclamation Plants

The following information on the Secondary and Tertiary Treatment Reclamation Plants (Reclamation Plant) shall be recorded in a permanent logbook and the information submitted according to the required frequency.

1. The total volume, in millions of gallons (MG), of waste water to the treatment facilities for each day.
2. The total volume, in MG, of waste water to the treatment facilities for each month.
3. The maximum instantaneous flow rate, in millions of gallons per day (MGD), of waste water to the treatment facilities that occurs each day.
4. The calculated average flow rate, in MGD, of waste water to the treatment facilities for each month.

5. The total volume, in MG, of recycled water to the Agricultural Site (i.e., land leased from Los Angeles World Airports) for each month.
6. The calculated average flow rates in MGD of recycled water to the Agricultural Site for each month.
7. The flow of recycled water in MGD to each center pivot or other irrigation system at the Agricultural Site shall be recorded, and the volume in MG of recycled water to each center pivot or other irrigation system for each month shall be recorded. This information shall be used to assess the crop agronomic water and nutrient needs.
8. The total volume, in MG, of recycled water to the storage reservoirs for each month.
9. The calculated average flow rates in MGD of recycled water to the storage reservoirs for each month.
10. The volumes, in MG, of recycled water for reuse at the Reclamation Plant and Storage Reservoir Site for each month.
11. The calculated average flow rate, in MGD, of recycled water for reuse at the Reclamation Plant and Storage Reservoir Site for each month.
12. The freeboard (distance from the top of the lowest part of the dike to the water surface in a pond or reservoir) measured once each week in each pond or reservoir. If a pond or reservoir does not contain water, indicate that it is empty.

B. Influent Monitoring

Influent samples taken prior to the primary clarifiers shall be analyzed to determine the magnitude of the Table 1 parameters.

Table 1: Influent Monitoring

Parameter	Reporting Units [i]	Type of Sample	Frequency[ii]
BOD[iii]	mg/L	24-hr composite	W
COD[iv]	mg/L	24-hr composite	W
nitrate nitrogen	mg/L as N	24-hr composite	M
kjeldahl nitrogen	mg/L as N	24-hr composite	M
ammonia nitrogen	mg/L as N	24-hr composite	M
TPH gasoline range[v]	µg/L	grab[vi]	Q
TPH diesel range[v]	µg/L	grab[vi]	Q
total trihalomethanes[vii]	µg/L	grab[vi]	SA
bromodichloromethane	µg/L	grab[vi]	SA
bromoform	µg/L	grab[vi]	SA
chloroform	µg/L	grab[vi]	SA
dichlorobromomethane	µg/L	grab[vi]	SA
total dissolved solids (TDS)	mg/L	24-hr composite	SA
total phenols	µg/L	24-hr composite	A
inorganics[viii]	µg/L	24-hr composite	A

total cyanides	µg/L	grab[vi]	A
volatile organics[viii]	µg/L	grab[vi]	A
semi-volatile organics[viii]	µg/L	24-hr composite	A
pesticides - PCBs[viii]	µg/L	24-hr composite	A

Endnotes are at the end of the MRP.

C. Effluent Monitoring

1. Disinfected Secondary-Treated Effluent

Samples of the disinfected secondary-treated effluent from the existing oxidation ponds shall be collected downstream of all treatment units and analyzed to determine the magnitude of Table 2 parameters.

Table 2: Effluent Monitoring - Disinfected Secondary

Parameter	Minimum Level[ix]/ Units[i]	Type of Sample	Frequency[ii]
total coliform	MPN/100 ml	grab[vi]	D
BOD[iii]	mg/L	24-hr composite	W
total suspended solids	mg/L	24-hr composite	W
COD[iv]	mg/L	24-hr composite	W
dissolved oxygen	mg/L	grab[vi]	W
pH	pH units	grab[vi]	W
temperature	°Celsius	grab[vi]	W
total chlorine residual	mg/L	grab[vi]	W
MBAS[x]	mg/L	24-hr composite	M
TDS	mg/L	24-hr composite	M
chloride	mg/L	24-hr composite	M
sodium	mg/L	24-hr composite	M
sulfate	mg/L	24-hr composite	M
ammonia nitrogen	mg/L as N	24-hr composite	M
kjeldahl nitrogen	mg/L as N	24-hr composite	M
nitrate nitrogen	mg/L as N	24-hr composite	M
dissolved organic carbon[xi]	mg/L	24-hr composite	Q
TPH gasoline range[v]	50 µg/L	24-hr composite	Q
TPH diesel range[v]	100 µg/L	24-hr composite	Q
oil and grease	mg/L	grab[vi]	Q
total trihalomethanes[vii]	80 µg/L	grab[vi]	Q
bromodichloromethane	0.5 µg/L	grab[vi]	Q
bromoform	0.5 µg/L	grab[vi]	Q
chloroform	0.5 µg/L	grab[vi]	Q
dibromochloromethane	0.5 µg/L	grab[vi]	Q
total phenols	6.0 µg/L	24-hr composite	A
inorganics[xii]	µg/L	24-hr composite	A
total cyanides	5.0 µg/L	grab[vi]	A
volatile organics[viii]	µg/L	grab[vi]	A

Table 2: Effluent Monitoring - Disinfected Secondary

Parameter	Minimum Level[ix]/ Units[i]	Type of Sample	Frequency[ii]
semi-volatile organics[viii]	µg/L	24-hr composite	A
pesticides - PCBs[viii]	µg/L	24-hr composite	A
MTBE[xiii]	5.0 µg/L	grab[vi]	A

Endnotes are at the end of the MRP.

2. Disinfected Tertiary-Treated Effluent

Samples of disinfected tertiary-treated effluent shall be collected from the treatment plant and analyzed to determine the magnitude of the parameters listed in Table 3.

Table 3: Effluent Monitoring - Tertiary Treatment

Parameter	Minimum Level[ix]/Units[i]	Type/Method	Minimum Frequency[ii]
flow	MGD	flow meter	continuous
turbidity[xiv]	NTU	turbidity meter	continuous
total chlorine residual	mg/L	chlorine residual meter	continuous
modal contact time[xv]	Minutes	calculated	D
CT value[xvi]	mg-minutes/L	calculated	D
total coliform	CFU/100 ml	grab[vi]	D
dissolved oxygen	mg/L	grab[vi]	W
pH	pH units	grab[vi]	W
temperature	°Celsius	grab[vi]	W
BOD[iii]	mg/L	24-hr composite	M
COD[iv]	mg/L	24-hr composite	M
ammonia nitrogen	mg/L-N	24-hr composite	M
kjeldahl nitrogen	mg/L-N	24-hr composite	M
nitrate nitrogen	mg/L-N	24-hr composite	M
nitrite nitrogen	mg/L-N	24-hr composite	M
chloride	mg/L	24-hr composite	Q
sodium	mg/L	24-hr composite	Q
sulfate	mg/L	24-hr composite	Q
calcium	mg/L	24-hr composite	Q
magnesium	mg/L	24-hr composite	Q
MBAS[x]	mg/L	24-hr composite	Q
TOC[xvii]	mg/L	24-hr composite	Q
TDS	mg/L	24-hr composite	Q
total trihalomethanes[vii]	80 µg/L	grab[vi]	Q
bromodichloromethane	0.5 µg/L	grab[vi]	Q
bromoform	0.5 µg/L	grab[vi]	Q
chloroform	0.5 µg/L	grab[vi]	Q
dichlorobromomethane	0.5 µg/L	grab[vi]	Q

Table 3: Effluent Monitoring - Tertiary Treatment

Parameter	Minimum Level[ix]/Units[i]	Type/Method	Minimum Frequency[ii]
haloacetic acids (five)[xviii]	60 µg/L	grab[vi]	Q
monochloroacetic acid	2 µg/L	grab[vi]	Q
dichloroacetic acid	1 µg/L	grab[vi]	Q
trichloroacetic acid	1 µg/L	grab[vi]	Q
monobromoacetic acid	1 µg/L	grab[vi]	Q
dibromoacetic acid	1 µg/L	grab[vi]	Q
N-nitrosodimethylamine	0.002 µg/L	24-hr composite	Q
bis(2diethylhexyl)phthalate	2 µg/L	24-hr composite	Q
TPH gasoline range[v]	50 µg/L	grab[vi]	Q
TPH diesel range[v]	100 µg/L	grab[vi]	Q
total chromium[viii]	2 µg/L	24-hr composite	A
hexavalent chromium[viii]	2.5 µg/L	grab[vi]	A
total phenols	6.0 µg/L	24-hr composite	A
inorganics[viii]	µg/L	24-hr composite	A
total cyanides	5.0 µg/L	grab[vi]	A
volatile organics[viii]	µg/L	grab[vi]	A
semi-volatile organics[viii]	µg/L	24-hr composite	A
pesticides - PCBs[viii]	µg/L	24-hr composite	A
MTBE[xiii]	5.0 µg/L	grab[vi]	A

Endnotes are at the end of the MRP.

D. Groundwater Monitoring

The groundwater monitoring network is intended to evaluate the effects of the discharge from the unlined secondary oxidation/percolation ponds, historic land disposal, agricultural reuse operations, and corrective actions. The network consists of the wells listed in Tables 4, 5, and 6. The well locations are shown in Attachment A.

Beginning immediately, grab samples shall be collected from the monitoring, supply, and extraction wells in Tables 4, 5, and 6. Additional wells shall be added as necessary to evaluate impacts to groundwater and the corrective actions. The SAP shall be updated accordingly.

Each well in Tables 4 and 5 that is designated to be sampled on both a quarterly and tri-annual basis shall be sampled to determine the magnitude of the parameters shown in Tables 7 and 8 on a quarterly basis (with the exception of the quarterly monitoring parameter, DEHP [bis(2diethylhexyl)phthalate], which will be monitored as described in the following paragraph) and Table 9 parameters on a tri-annual basis.

Quarterly monitoring for DEHP is only required in the following monitoring wells: MW-2, MW-4, MW-16, MW-22, MW-28, and MW-32. After a minimum of four quarters of groundwater monitoring for DEHP, the Discharger may present the

findings and recommendations regarding whether to continue, modify or cease DEHP monitoring. Recommendations to decrease or cease monitoring must be approved by Water Board's Executive Officer prior to implementation.

The Table 4 wells that are designated for tri-annual sampling, but are not designated for quarterly sampling, shall be sampled at a tri-annual frequency to determine the magnitude of the parameters shown in Tables 7, 8, and 9. No sampling is required for the Table 4 wells designated for "Water Level Only" (i.e., MW-17, MW-20, and MW-37). These three wells will be used to collect water level data during each sampling event.

Table 4: Groundwater Monitoring Wells

Well	Screened Interval feet bgs	Location Section #	Frequency[1]	Water Level Only
MW-1	360 – 400	21	Q, Tri-A	
MW-2	480 – 540	20	Q, Tri-A	
MW-4	289 – 334	9	Q, Tri-A	
MW-15R	333 – 363	3	Q, Tri-A	
MW-16	286 – 331	10	Q, Tri-A	
MW-17	245 – 290	12		X
MW-18R	326 – 356	11	Q, Tri-A	
MW-19	290 – 335	3	Q, Tri-A	
MW-20	257 – 295	9		X
MW-21	300 – 339	2	Q, Tri-A	
MW-22	282 – 320	4	Q, Tri-A	
MW-23	268 – 397	16	Q, Tri-A	
MW-24R	325 – 350	15	Q, Tri-A	
MW-25	320 – 349	17	Q, Tri-A	
MW-26	361 – 372	2	Q, Tri-A	
MW-27	390 – 399	2	Q, Tri-A	
MW-28	420 – 430	4	Q, Tri-A	
MW-29	490 – 500	4	Q, Tri-A	
MW-31	483 – 518	19	Q, Tri-A	
MW-32	372 – 395	18	Q, Tri-A	
MW-33	362 – 376	8	Q, Tri-A	
MW-37	318 – 352	1		X
MW-38	281 – 315	24	Tri-A	
MW-39	306 – 345	23	Tri-A	
MW-40	330 – 360	17	Q, Tri-A	
MW-46	510 – 549	20	Q, Tri-A	
MW-51	330 – 339	16	Q, Tri-A	
MW-52	317 – 347	10	Q, Tri-A	
MW-53	295 – 330	9	Q, Tri-A	
MW-54	331 – 356	9	Q, Tri-A	
MW-55	465 – 475	9	Q, Tri-A	
MW-56	325 – 365	3	Q, Tri-A	

Table 4: Groundwater Monitoring Wells

Well	Screened Interval feet bgs	Location Section #	Frequency[11]	Water Level Only
MW-57	339 – 349	5	Q, Tri-A	
MW-58	375 – 390	5	Q, Tri-A	

Endnotes are at the end of the MRP.

The Discharger must monitor the water supply wells listed in Table 5 at the required frequencies, unless factors beyond the Discharger's control prevent sampling, e.g., the supply well has been dismantled or is out of service. Each factor shall be noted in the monitoring report. The Discharger must make an effort to monitor supply wells that are used during the quarter but are not in use on the day that samples are typically collected. Water level measurements are not required for supply wells SW-2, DW 4-2, 17D1 since these wells have a sealed construction that prohibits water level measurements.

Table 5: Groundwater Supply Wells

Well	Screened Interval feet bgs	Location Section #	Frequency/ Parameter[1]
DW4-2	410 – 430 470 - 490 650 – 670	5	Q, Tri-A
17D1	380 – 771	17	Q, Tri-A
LAWA 7	414 – 626	8	Q, Tri-A
SW-2	376 – 706	9	Q, Tri-A

Endnotes are at the end of the MRP.

Samples from the extraction wells shall be analyzed for the first four parameters of Table 8 (i.e., ammonia as nitrogen, Kjeldahl as nitrogen, nitrate as nitrogen, and total dissolved solids [TDS]).

Table 6: Extraction Wells

Well	Screened Interval feet bgs	Location Section #	Frequency/ Parameter[2]
EW-1 (R-10)	320 – 365	16	Q
EW-2 (R-2)	280 – 460	9	Q
EW-3 (R-3)	290 – 435	9	Q
EW-4 (R-4)	290 – 315 335 – 410	16	Q
EW-5 (R-9)	295 – 375	10	Q
EW-6 (R-8)	321 – 340	10	Q

Endnotes are at the end of the MRP.

Table 7: Field Parameters

Parameter	Units[i]
static water depth	feet bgs
electrical conductivity	µS/cm
pH	pH units
Temperature	degrees Celsius
dissolved oxygen	mg/L
Turbidity	NTU
Color	visual

Endnotes are at the end of the MRP.

Table 8: Quarterly Groundwater Monitoring Parameters

Parameter	Minimum Level[ix]/ Units[i]
ammonia nitrogen	0.1 mg/L as N
kjeldahl nitrogen	0.2 mg/L as N
nitrate nitrogen	0.2 mg/L as N
TDS	25 mg/L
MBAS[x]	mg/L
Chloride	mg/L

Parameter	Minimum Level[ix]/ Units[i]
sodium	mg/L
sulfate	mg/L
TOC	mg/L
TPH gasoline range[v]	50 µg/L
TPH diesel range[v]	100 µg/L
DEHP[xix]	2 µg/L

Endnotes are at the end of the MRP.

Table 9: Tri-Annual Groundwater Monitoring Parameters

Parameter	Minimum Level[ix]/Units[i]
ammonia nitrogen	0.1 mg/L as N
kjeldahl nitrogen	0.2 mg/L as N
nitrate nitrogen	0.2 mg/L as N
TDS	25 mg/L
total cyanides	5 µg/L
total phenols	6 µg/L
inorganics[viii]	[viii]
volatile organics[viii]	[viii]
semi-volatile organics[viii]	[viii]
pesticides - PCBs[viii]	[viii]
MTBE[xiii]	2.5 µg/L

Parameter	Minimum Level[ix]/Units[i]
total trihalomethanes[vii]	80 µg/L
bromodichloromethane	0.5 µg/L
bromoform	0.5 µg/L
chloroform	0.5 µg/L
dichlorobromomethane	0.5 µg/L
haloacetic acids (five)[xviii]	60 µg/L
monochloroacetic acid	2 µg/L
dichloroacetic acid	1 µg/L
trichloroacetic acid	1 µg/L
monobromoacetic acid	1 µg/L
dibromoacetic acid	1 µg/L

Endnotes are at the end of the MRP.

Groundwater monitoring wells listed in Table 4 shall be sampled and purged in accordance with USEPA, *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers* or subsequent revisions (http://www.epa.gov/tio/tsp/download/gw_sampling_guide.pdf). Low-stress (also known as low-flow) and well-volume purging shall be in accordance to the methods and stability criteria contained in this guidance. Note, for low-stress

methods, the guidance specifies that well drawdown be minimized and should never exceed 0.33 feet. Well purge methods and extracted water volumes and rates shall be recorded. Although groundwater supply wells (Table 5) and extraction wells (Table 6) are not designed for standard purging and sample collection, reasonable efforts must be made to collect representative samples from these wells.

Groundwater monitoring reports shall contain running graphs and trend analyses of TDS and nitrate (as nitrogen) from historical groundwater monitoring data. The flow direction of groundwater shall be calculated quarterly. A graphical representation of the groundwater flow direction shall be included in the quarterly monitoring reports. Semi-annually, an updated figure(s) showing the groundwater nitrate plume and TDS concentrations shall be included. Because of the large spatial distribution of the monitoring well network, these figures should be presented on 11 by 14 inches or larger format. All Table 4, 5, and 6 monitoring wells must be clearly displayed and labeled on these figures.

E. Groundwater Extraction Operation

The following information shall be collected and reported.

1. Volumes of Extracted Groundwater

The rate, volume and operation of groundwater extraction wells shall be recorded in a permanent log book for each well listed in Table 6 and reported in tabular form in the quarterly reports and summarized in the annual reports.

a. The maximum and average daily pumping rate in gallons per minute (gpm);
b. The total monthly, annual, and cumulative total volumes extracted from each well;
c. The time periods of operation, i.e., the specific days that the extraction well was in operation;
d. Any operational problems or maintenance activities.

2. Nitrate and TDS Mass Removal

The Discharger shall provide estimates of the following information in tabular form and shall describe procedures used to develop these estimates.

a. Estimated total monthly, annual, and cumulative total mass, in pounds, of nitrate as nitrogen and TDS extracted from each well.
b. Estimated total monthly, annual, and cumulative total mass, in pounds, of nitrate and TDS extracted from all wells.

The Discharger shall report this information in the quarterly reports and shall provide summaries of this information and recommendations to further optimize the extraction system in the annual reports.

F. Vadose Zone Monitoring

1. Agricultural Site

Vadose zone monitoring for the Agricultural Site shall be performed at the stations listed in Table 10 and shown on Attachment B. Station numbers refer to the field center pivot number. Vadose zone monitoring shall be for the parameters and frequencies described in Table 11.

Table 10: Vadose Zone Monitoring Stations Agricultural Site

Station ID	Location	Monitoring Depth (feet bgs)			
		Pressure/Vacuum Samplers		Passive Capillary Lysimeter	Soil Moisture Sensor
		Shallow	Deep		
VZ 1	Pivot 1	5	14	4.8	2, 3, 5, 10, & 14
VZ 4	Pivot 4	5	14	5.0	2, 3, 5, 10, & 14
VZ 5	Pivot 5	5	14	5.0	2, 3, 5, 10, & 14
VZ 7	Pivot 7	5	14	4.6	2, 3, 5, 10, & 14
VZ 7A	Pivot 7	5	--	4.7	2, 3, 5, 10, & 14
VZ 7B	Pivot 7	5	--	4.3	2, 3, 5, 10, & 14
VZ 12	Pivot 12	5	14	4.5	2, 3, 5, 10, & 14
VZ 14	Pivot 14	5	14	4.7	2, 3, 5, 10, & 14
VZ 15	Pivot 15	5	14	4.3	2, 3, 5, 10, & 14
VZ 19	Pivot 19	5	14	5.0	2, 3, 5, 10, & 14
VZ P	pistachio orchard	5	14	5.0	2, 3, 5, 10, & 14
VZ 23	Pivot 23	--	--	5.0	2, 3, 5, 10, & 14
VZ 24	Pivot 24	5	14	5.0	2, 3, 5, 10, & 14
VZ 25	Pivot 25	--	--	5.0	2, 3, 5, 10, & 14
VZ 27	Pivot 27	5	14	5.0	2, 3, 5, 10, & 14

Table 11: Vadose Zone Monitoring Parameters & Frequencies Agricultural Site

Parameter	Minimum Level/Units[i]	Frequency[ii]
ammonia nitrogen	0.1 mg/L as N	Q
kjeldahl nitrogen	0.2 mg/L as N	Q
nitrate nitrogen	0.2 mg/L as N	Q
nitrite nitrogen	0.1 mg/L as N	Q
electrical conductivity	µS/cm	Q
Bromoform	0.5 µg/L	A
Chloroform	0.5 µg/L	A
Dibromochloromethane	0.5 µg/L	A
Dichlorobromomethane	0.5 µg/L	A

Endnotes are at the end of the MRP.

2. Storage Reservoir Site

The vadose monitoring system at the Storage Reservoir Site consists of 36 soil moisture sensors and five lysimeters. The monitoring system is designed to provide for early detection of recycled water leakage from the storage reservoirs. The monitoring locations were selected at areas thought to have the greatest risk of leakage, i.e., where pipes protrude through the reservoir liner. The monitoring procedures and data evaluation described in the Discharger's Revised Groundwater Delineation and Monitoring Plan for Proposed Storage Reservoir Site, dated May 30, 2008, and subsequent revisions shall be incorporated into the revised SAP.

Vadose zone monitoring shall be performed at the stations listed in Table 12 and shown on Attachment C. Vadose zone monitoring shall be for the parameters and frequencies described in Table 13.

Table 12: Vadose Zone Monitoring Stations
Storage Reservoir Site

Station ID	Location (see Attachment C)	Monitoring Depth (ft bgs)	
		Pressure/Vacuum Sampler	Soil Moisture Sensor
Storage Reservoir No. 1			
MS-1	east of NW corner	--	3, 5, & 8
MS-2	NW corner	--	3, 5, & 8
MS-3	SW corner	8	3, 5, & 8
MS-4	midpoint of south wall	8	3, 5, & 8
MS-5	SE corner	--	3, 5, & 8
MS-6	NE corner	--	3, 5, & 8
MS-12	midpoint of north wall	8	3, 5, & 8
Storage Reservoir No. 2			
MS-7	NW Corner	--	3, 5, & 8
MS-8	SW Corner	8	3, 5, & 8
MS-9	midpoint of north wall	8	3, 5, & 8
MS-10	SE corner	--	3, 5, & 8
MS-11	NE corner	--	3, 5, & 8

Table 13: Vadose Zone Monitoring Parameters & Frequencies
Storage Reservoir Site

Parameter	Minimum Level/Units[I]	Frequency[II]
ammonia nitrogen	0.1 mg/L as N	Q
kjeldahl nitrogen	0.2 mg/L as N	Q
nitrate nitrogen	0.2 mg/L as N	Q
nitrite nitrogen	0.1 mg/L as N	Q
Conductivity	µS/cm	Q

Endnotes are at the end of the MRP.

G. Biosolids Storage and Disposal

The following information on the biosolids generated at the Reclamation Plant shall be recorded monthly and reported in the quarterly monitoring reports.

1. Total quantity of biosolids generated during the monitoring period;
2. The location where biosolids were dried or stored on site;
3. Cumulative total quantity of biosolids currently on site including the quantity of biosolids added during this monitoring period;
4. Date and quantity of biosolids removed off site, location of use, recipient (including name and address) and biosolids disposal method (including crops grown if applicable) for all biosolids removed off site;

Discharger shall include in each monitoring report the amount and type of all grit and screenings hauled off site for disposal or recycle. The person or company doing the hauling and the legal point of disposal or recycle shall also be recorded.

H. Agricultural Site Monitoring

1. An Annual Cropping Plan shall be submitted by November 15 of each year containing, but not limited to, the following items describing the proposed cropping plan for the upcoming calendar year.
   a. Names, addresses, and telephone numbers of all users of reclaimed waste water at the Agricultural Site.
   b. For each field, provide the following information:
      i. Location using a U.S. Geological Survey 7.5 minute topographic quadrangle map;
      ii. Acreage, crop names, and types (i.e. fodder, seed or other);
      iii. Approximate planting dates;
      iv. Approximate harvest dates;
      v. Irrigation method;
      vi. Volume of water expected to be used based on crop needs (irrigation efficiency, evapotranspiration and need for maintenance leaching). Provide basis for calculations including field data or references;
      vii. Amount of nitrogen expected to be applied to the crop from all sources including estimates of nitrogen available in the root zone;
      viii. Amount of nitrogen expected in the harvested crop per harvest and total amount expected to be removed from the field per year;
      ix. Describe the fate of nitrogen that has been applied or is available in the root zone that is not accounted for in the crops harvested.
2. The following shall be reported in the Agricultural Site Monitoring, Operation, and Chemical Use Report on a quarterly basis.
   a. Monthly analyses and a summary, by a certified soil scientist or qualified agronomist, of the amount of water and nitrogen applied or is available to the crops per irrigated field. The analyses must compare the actual water

and nitrogen applications to those predicted in the Annual Cropping Plan and discuss any significant differences. Additionally, this monthly report must include an evaluation of the actual crop production using normally accepted quantifiable measure of crop growth status to that projected in the Annual Cropping Plan at harvest.

b. For each harvest completed during the quarter, the report must include the total amount of nitrogen harvested based on the results of site-specific plant tissue analyses. Conservative estimates of the amount of nitrogen harvested may be used in lieu of site-specific plant tissue analysis provided the estimate is justified by literature references. The production from the field may be determined by multiplying the number of bales by an average bale weight. The results of this calculation must be compared to the total amount of nitrogen applied to the crop from all sources (recycled water, other water, and fertilizer) or available during production. Any significant differences must be addressed in Farm Management Plan or Annual Cropping Plan.

c. Recycled water balance for the quarter and the crop cycle including: the amount of water applied to each field, water losses due to irrigation efficiency, evapotranspiration, and the amount of water in storage in the vadose zone or available for percolation below the root zone. These values must be compared to the values proposed in the Annual Cropping Plan and any significant differences must be addressed. If recycled water is blended with non-recycled water to meet an increased water demand during warmer seasons or for other reasons, the quantity and percentage of recycled water and the total water applied shall be determined and reported. Nitrogen content of non-recycled water shall also be determined and reported.

3. Monthly, the Discharger shall make a Recycled Water Treatment and Use Report that includes, but is not limited to the following information.

   a. Results of a daily use area inspection (when recycled water is used) to ensure that application of recycled water is consistent with use area criteria specified in California Code Of Regulations, title 22, sections 60304(d) and 60310. Findings of the inspections shall be recorded in a permanent logbook maintained at the Facility.

   b. The Operating Records as required in California Code of Regulations, title 22, section 60329 to demonstrate that all recycled water applied complies with the Department of Public Health's water recycling requirements specified in the Waste Discharge Requirements. The information must include verification that the treatment levels for disinfected secondary recycled water were achieved and that the methods of recycled water application were implemented as required in California Code of Regulations, title 22, section 60304(d).

4. An Agricultural Site Operations Report shall be submitted quarterly, maintained onsite, and made available for inspection by Water Board staff.

I. Chemical Use Monitoring

The Discharger shall record the names and chemical compositions, quantities and dates of application of all chemical fertilizers, herbicides and pesticides applied to any crop grown on the Agricultural Site in a permanent log book. Chemical use information shall be submitted to the Water Board on a quarterly basis.

J. Operation and Maintenance Monitoring

A brief summary of any operational problems and maintenance activities that may affect effluent quality shall be submitted to the Water Board with each monthly monitoring report. This summary shall discuss:

1. Any modifications or additions to the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
2. Any major maintenance conducted on the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
3. Any major problems occurring in the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
4. The calibration of any flow measuring devices.

K. Sampling and Analytical Methods

The Discharger must collect, store, and analyze samples according to the most recent version of appropriate USEPA methods and in accordance with a sampling and analysis plan approved by the Water Board's Executive Officer. A laboratory certified for these analyses by the State of California Environmental Laboratory Program or approved by the Executive Officer must perform all water analyses. All reporting of laboratory results must identify the specific methods of analysis.

1. Definitions

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

   Method Detection Limit (MDL) - MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in Code of Federal Regulations, Title 40, Part 136, Attachment D, revised as of July 3, 1999.

   Minimum Level (ML) - ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure,

assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Not Detected (ND) - Sample results that are less than the laboratory's MDL.

Reporting Level (RL) - RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this MRP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

2. General

Analytical method for each constituent shall be selected to provide the reporting limits specified in this MRP.

3. Reporting Protocols

The Discharger shall report with each sample result the applicable reported ML and the current MDL.

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

a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. The Discharger is to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data

derived from extrapolation beyond the lowest point of the calibration curve.

e. When determining an average of more than one analytical result, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure.

i. The data set shall be ranked from low to high, ranking the reported ND determinations the lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. Priority Pollutants

The inorganics, volatile organics, semi-volatile organics, and pesticides and PCBs to be analyzed shall be from the U.S. Environmental Protection Agency (USEPA) List of Priority Pollutants (Attachment E). Monitoring for the following Attachment E constituents are not required: polychlorinated biphenyls (Constituent Nos. 119 - 125), dioxin (Constituent No. 16), and asbestos (Constituent No. 15). The required MLs are contained in Attachment E.

The Discharger shall follow the chemical nomenclature of priority pollutant constituents as shown in Attachment E. All detection levels for priority pollutants will be equal to or lower than the minimum level specified in Attachment E except for the following exceptions. In the case of hexavalent chromium, use appropriate USEPA methods that will quantify concentrations to least 2.5 µg/L. In the case of mercury for disinfected secondary treatment effluent and groundwater samples, use appropriate USEPA methods that will provide an ML of at least 0.01 µg/L.

5. N-nitrosodimethylamine (NDMA)

For NDMA analyses, the Discharger is considered to be in compliance with requirements pertaining to the method of laboratory analysis (contained in Provision 1.a., 1.b, and 1.c of General Provisions for Monitoring and Reporting (Attachment D), if the discharger uses a modified USEPA method (e.g., Method 1625) in order to achieve a reporting limit of 0.002 µg/L.

II. REPORTING

A. General Provisions

1. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of this MRP (Attachment D).
2. The Discharger shall arrange all reported data in tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance this MRP.
3. The results of any analysis taken more frequently than required for the parameters and locations specified in this MRP shall be submitted to the Water Board in the next monitoring report.
4. The Discharger must attach to any monitoring report provided to the Water Board a certified cover letter containing the information in Attachment F. The information contained in the certified cover letter must clearly identify any violations of this MRP and the Waste Discharge Requirements for the Facility, discuss corrective actions taken or planned, and propose a time schedule for completing identified corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. The Discharger shall notify the Water Board by letter when compliance with requirement has been achieved.
5. The monitoring and reporting required by this program becomes effective on the first day of month after the MRP's signature date. The monitoring and reporting prescribed in MRP 00-57A06 applies to all data collected before the first day of the month after the MRP's signature date.
6. The Discharger shall furnish to the Water Board within a reasonable time, any information that the Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this MRP or to determine compliance with the MRP. Upon request, the Discharger shall also furnish to the Water Board copies of records required to be kept by this MRP. (Water Code, section 13267)

B. Report Content and Submittal Periods

Monthly and annual reporting due dates have been extended from the statewide standard guidelines at the Discharger's justified request. The Discharger must submit monitoring reports according to the following schedule:

1. Monthly monitoring reports shall be submitted to the Water Board by the 15th working day of the second month following each monthly monitoring period. Data that is required on a frequency longer than one month will be incorporated into the monthly report for the month the analyses are required. The following treatment plant reports shall be provided on a monthly frequency.

a. Flow Monitoring
b. Influent Monitoring Report
c. Effluent Monitoring Report
d. Operation and Maintenance Report
e. Recycled Water Treatment and Use Report

2. Quarterly monitoring reports shall be submitted to the Water Board by the 15st working day of the second month following each quarterly monitoring period. This reporting schedule provides the Discharger with an additional 14 days beyond the Water Board's standard reporting schedule because the Discharger has indicated additional time was needed to provide for logistical constraints associated with access to water supply wells and monitoring wells located on land not owned or controlled by the Discharger.

3. The quarterly monitoring period shall end on March 31st, June 30th, September 30th, and December 31st of each calendar year. Data that are required on a frequency longer than one quarter will be incorporated into the quarterly report that coincides with the period for which the analyses are required. The following reports shall be provided on a quarterly frequency.

a. Groundwater Monitoring Report
b. Groundwater Extraction Operations Report
c. Agricultural Site Monitoring Report
d. Agricultural Vadose Zone Monitoring Report
e. Agricultural Site Monitoring, Operations, and Chemical Use Monitoring Report
f. Chemical Use Monitoring Report
g. Storage Reservoir Site Vadose Zone Monitoring Report
h. Biosolids Storage and Disposal Report

4. An annual monitoring report for the period from January through December shall be submitted by March 1st of each year. The report must contain the following:

a. Treatment Plant

i. A summary and evaluation of the monthly and quarterly information in Reporting Requirement II.B.1 and II.B.2, which also includes compliance status;
ii. The names and grades of all the certified operators;
iii. The Annual Federal Biosolids Report (40 Code of Federal Regulations Part 503).

b. Groundwater Monitoring

i. Discussion of groundwater monitoring results, specifically:
- spatial and temporal trends in nitrate and TDS concentrations;
- detection of or increase in any parameters listed in Tables 7, 8, and 9 that may indicate the Discharger's activities have caused additional impacts to groundwater;
- detection of any parameter above its water quality objective.

ii. Summary of groundwater monitoring data and evaluation of adequacy of the existing monitoring well network to:
- establish the lateral and vertical extent of the nitrate/TDS groundwater plume and monitor for future migration;
- monitor for any groundwater quality impacts involving other parameters (as identified in Tables 7, 8, and 9).

iii. If indicated by b.ii, the Discharger shall propose additional monitoring wells and a well completion schedule to ensure the well network will adequately monitor groundwater impacts quality.

iv. If a sample cannot be obtained from any well specified in Tables 4, 5 and 6, the Discharger shall include a explanation of the cause of the problem and describe how the monitoring deficiency will be corrected.

v. If a sample cannot be obtained from any well listed in Table 4 for three consecutive quarterly monitoring events, the Discharger shall propose corrective actions that address the current and anticipated data needs for the groundwater monitoring program and provide a schedule for implementation of the corrective action. The proposed corrective action shall be submitted to the Water Board within 60 days after the third missed sampling event.

vi. A summary of the compliance record and corrective actions needed or taken or planned to bring the discharge into full compliance with this MRP and the Facilities waste discharge requirements.

5. An Annual Cropping Plan as described in I.H.1 shall be submitted on November 15 of each year.

Ordered by: Lauri Kemper Dated: March 9, 2011

LAURI KEMPER
ASSISTANT EXECUTIVE OFFICER

Attachments: MRP - A. Groundwater Monitoring Network
MRP - B. Agricultural Site Vadose Zone Monitoring Locations
MRP - C. Storage Reservoir Site Vadose Zone Monitoring Locations
MRP - D. General Provisions for Monitoring and Reporting
MRP - E. Priority Pollutant List
MRP - F. Sample Monitoring Report Cover Letter

Endnotes:

[i] Units: mg/L = milligrams/liter; µg/L = micrograms/liter; ng/L = nanograms/liter; N = nitrogen; CFU/100 ml = colony forming units/100 milliliters; kg = kilograms; C = centigrade; MGD = million gallons/day; µS/cm = micro-Seimens/centimeter; NTU = nephelometric turbidity units; bgs = below ground surface.

[ii] Frequencies: D = daily; W = weekly; M = monthly; Q= quarterly; SA = semiannually; A = annually; TriA = triannual (every three years).

[iii] BOD = biochemical oxygen demand (5 day, 20°Celsius) of an unfiltered influent sample; filtered sample for final effluent.

[iv] COD = chemical oxygen demand of an unfiltered influent sample; filtered sample for final effluent.

[v] TPH = total petroleum hydrocarbons. Use USEPA Test Method SW 8015 with calibration based on the appropriate fuel standard.

[vi] Grab samples as defined for respective parameters in current SAP. Note, for influent and effluent samples, 1,2,4-trichlorphenol, hexchlorobenzene, hexachlorobutadiene, hexachlorethane, & naphthalene will be collected as 24-hour composites rather than grab samples.

[vii] Total trihalomethanes = sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

[viii] Analyses shall be conducted for analytes with the specified minimum levels listed in Attachment E with the exception of hexavalent chromium , which will have a minimum level of 2.5 µg/L and mercury will have a minimum level of 0.01 µg/L. PCBs = polychlorinated biphenyls.

[ix] The parameter must be reported in the same units as specified for the minimum level. Minimum level is defined in Section I. K .1. of the MRP.

[x] MBAS = methylene blue active substances.

[xi] Dissolved organic carbon of a filtered sample.

[xii] For disinfected secondary effluent monitoring inorganic analyses shall be conducted for analytes with the specified minimum levels listed in Attachment E with the exception of hexavalent chromium, which will have a minimum level of 2.5 µg/L, and mercury, which will have a minimum level of 0.04 µg/L.

[xiii] MTBE = methyl tertiary butyl ether.

[xiv] For each 24-hour period, record and report the average turbidity, amount of time (minutes) the turbidity exceeded 5 NTUs (if any), and the maximum turbidity.

[xv] The modal contact time at the highest and lowest flows shall be recorded and reported for each 24-hour period where there is production of disinfected tertiary treated waste water. The "modal contact time" is the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. For the purpose of this determination, modal contact time shall be derived from a predetermined plot correlating modal contact times to varying flow conditions. (CCR, Title 22, section 60301.600)

[xvi] CT = chlorine residual (mg/L) x modal contact time (minutes). When chlorine is used as the disinfectant in production of disinfected tertiary treated waste water, the lowest CT value shall be calculated for each 24-hour period. To calculate the lowest value, first record the following data for the 24-hour period:

(a) Modal contact time under highest flow and corresponding total chlorine residual at that time.
(b) Lowest total chlorine residual and corresponding modal contact time.
(c) Highest total chlorine residual and corresponding modal contact time.

(d) Modal contact time under lowest flow and corresponding total chlorine residual at that time.

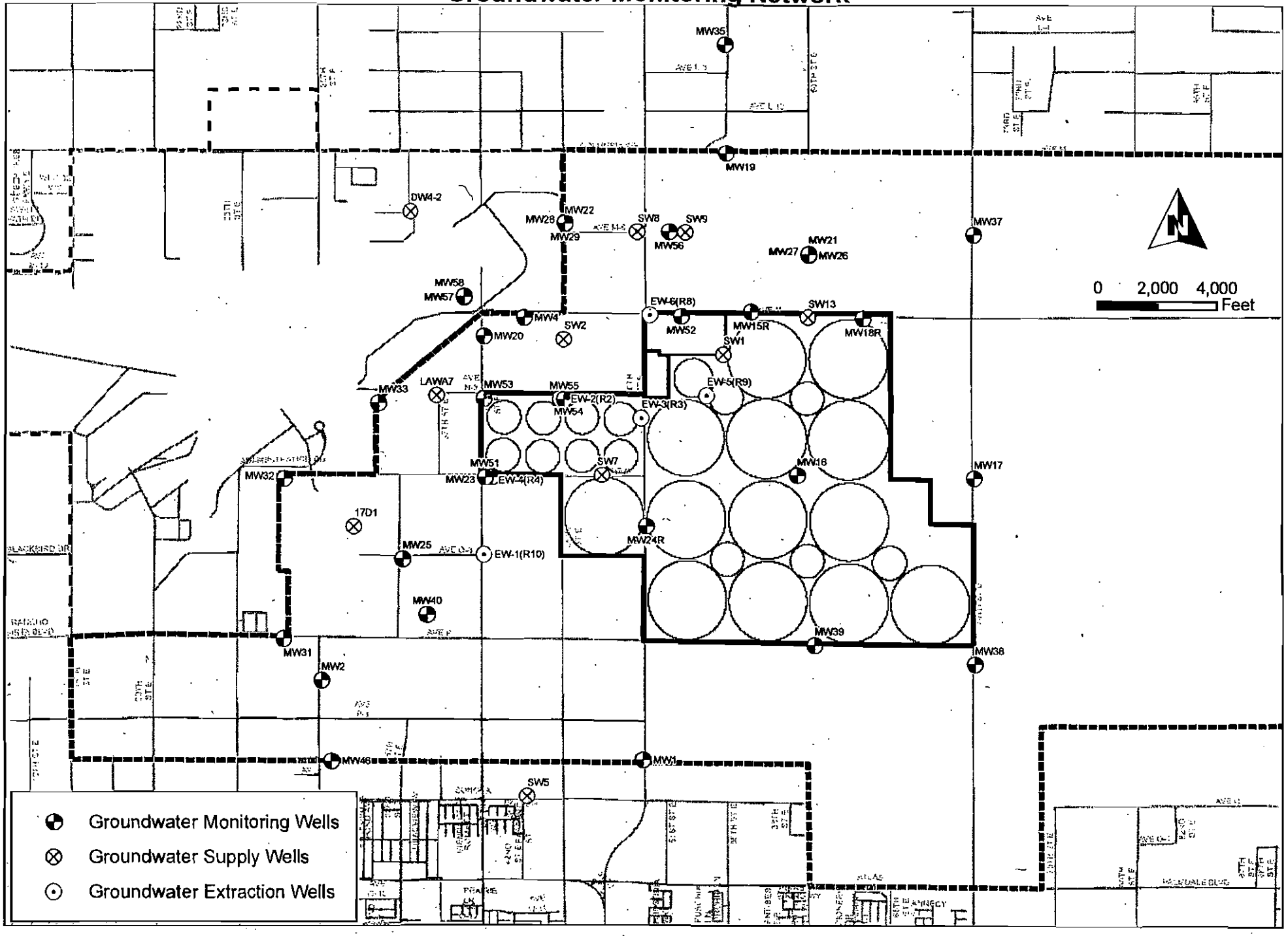
Calculate CT values for each of the four conditions. The lowest of the calculated CT values is the lowest CT for the period.

[xvii] TOC = total organic carbon of an unfiltered influent sample; filtered sample for final effluent.

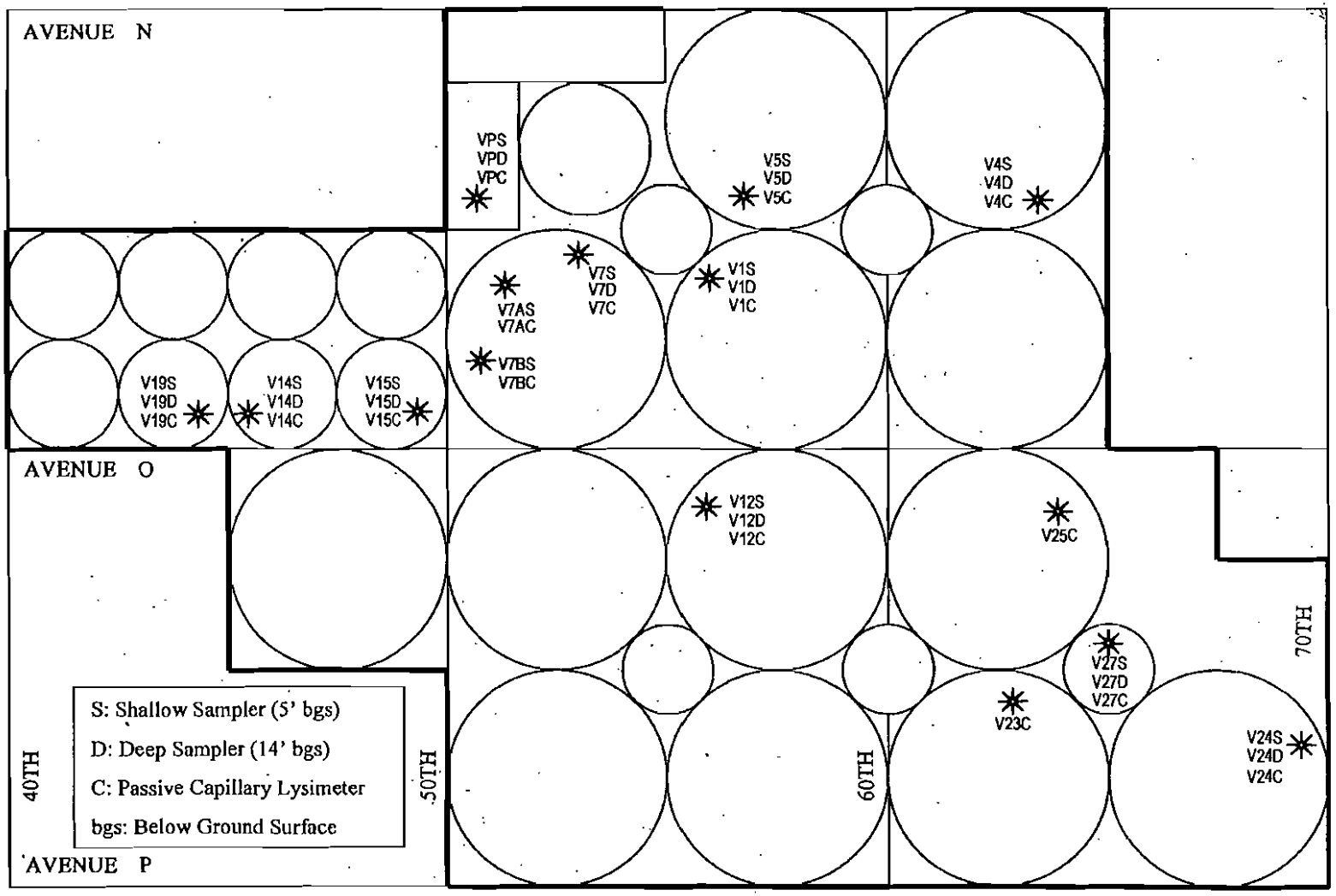
[xviii] Haloacetic acids (five) = sum of monochloriacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid.

[xix] Quarterly monitoring for DEHP [bis(2diethylhexyl)phthalate] is only required in the following monitoring wells: MW-2, MW-4, MW-16, MW-22, MW-28, and MW-32.

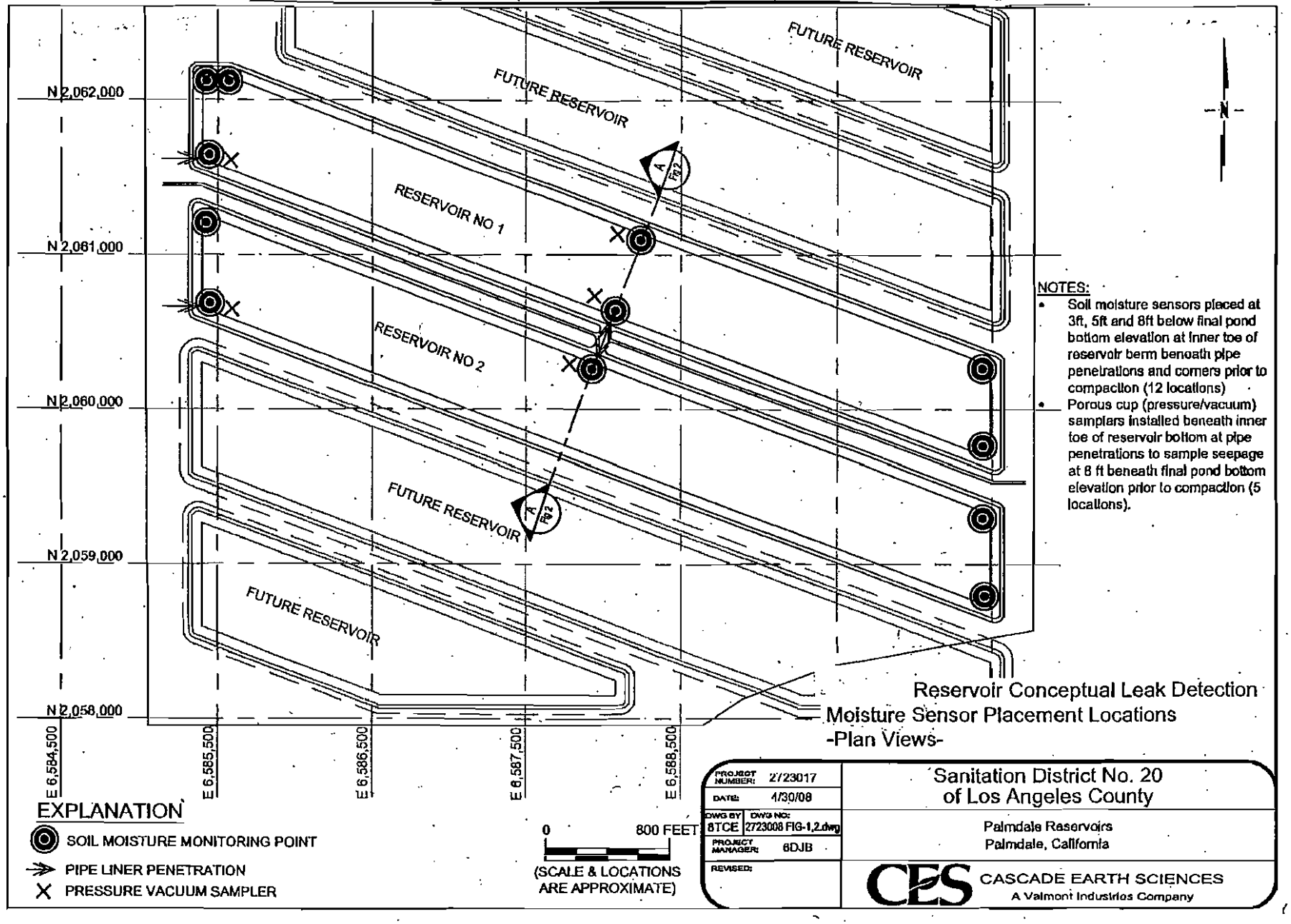
MRP - Attachment A
Groundwater Monitoring Network



MRP - Attachment B
Palmdale Agricultural Site Vadose Zone Monitoring Locations



MRP - Attachment C. Storage Reservoir Site Vadose Zone Monitoring Locations



MRP - ATTACHMENT D

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 Public Health or a laboratory approved by the Water 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 Water 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 Water 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 Water Board.

c. The discharger shall provide a brief summary of any operational problems and maintenance activities to the Water 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 Water 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.

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
INORGANICS				
1	Antimony	7440360	5	6020/200.8
2	Arsenic	7440382	1	6020/Hydride
15	Asbestos	1332214	0.2 MFL >10µm	EPA/600/R-93/116(PCM)
3	Beryllium	7440417	1	6020/200.8
4	Cadmium	7440439	0.25	1638/200.8
5a	Chromium (total)	7440473	2	6020/200.8
5b	Chromium (VI)	18540299	5	7199/1636
6	Copper	7440508	0.5	6020/200.8
14	Cyanide	57125	5	9012A
7	Lead	7439921	0.5	1638
8	Mercury	7439976	0.0005	1669/1631
9	Nickel	7440020	5	6020/200.8
10	Selenium	7782492	5	6020/200.8
11	Silver	7440224	1	6020/200.8
12	Thallium	7440280	1	6020/200.8
13	Zinc	7440666	10	6020/200.8
VOLATILE ORGANICS				
28	1,1-Dichloroethane	75343	1	8260B
30	1,1-Dichloroethene	75354	0.5	8260B
41	1,1,1-Trichloroethane	71556	2	8260B
42	1,1,2-Trichloroethane	79005	0.5	8260B
37	1,1,2,2-Tetrachloroethane	79345	0.5	8260B
75	1,2-Dichlorobenzene	95501	2	8260B
29	1,2-Dichloroethane	107062	0.5	8260B
31	1,2-Dichloropropane	78875	0.5	8260B
101	1,2,4-Trichlorobenzene	120821	5	8260B
76	1,3-Dichlorobenzene	541731	2	8260B
32	1,3-Dichloropropene	542756	0.5	8260B
77	1,4-Dichlorobenzene	106467	2	8260B
17	Acrolein	107028	5	8260B
18	Acrylonitrile	107131	2	8260B
19	Benzene	71432	0.5	8260B
20	Bromoform	75252	2	8260B
34	Bromomethane	74839	2	8260B
21	Carbon Tetrachloride	56235	0.5	8260B
22	Chlorobenzene (mono chlorobenzene)	108907	2	8260B
24	Chloroethane	75003	2	8260B
25	2-Chloroethyl vinyl ether	110758	1	8260B
26	Chloroform	67663	0.5	8260B
35	Chloromethane	74873	2.0	8260B
23	Dibromochloromethane	124481	0.5	8260B
27	Dichlorobromomethane	75274	0.5	8260B
36	Dichloromethane	75092	2	8260B
33	Ethylbenzene	100414	2	8260B
88	Hexachlorobenzene	118741	1	8260B

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
89	Hexachlorobutadiene	87683	1	8260B
91	Hexachloroethane	67721	1	8260B
94	Naphthalene	91203	10	8260B
38	Tetrachloroethene	127184	0.5	8260B
39	Toluene	108883	2	8260B
40	trans-1,2-Dichloroethylene	156605	1	8260B
43	Trichloroethene	79016	2	8260B
44	Vinyl chloride	75014	0.5	8260B
	SEMI-VOLATILE ORGANICS			
60	1,2-Benzanthracene	56553	5	8270C
85	1,2-Diphenylhydrazine	122667	1	8270C
45	2-Chlorophenol	95578	2	8270C
46	2,4-Dichlorophenol	120832	1	8270C
47	2,4-Dimethylphenol	105679	2	8270C
49	2,4-Dinitrophenol	51285	5	8270C
82	2,4-Dinitrotoluene	121142	5	8270C
55	2,4,6-Trichlorophenol	88062	10	8270C
83	2,6-Dinitrotoluene	606202	5	8270C
50	2-Nitrophenol	25154557	10	8270C
71	2-Chloronaphthalene	91587	10	8270C
78	3,3-Dichlorobenzidine	91941	5	8270C
62	3,4-Benzofluoranthene	205992	10	8270C
52	4-Chloro-3-methylphenol	59507	5	8270C
48	4,6-Dinitro-2-methylphenol	534521	10	8270C
51	4-Nitrophenol	100027	10	8270C
69	4-Bromophenyl phenyl ether	101553	10	8270C
72	4-Chlorphenyl phenyl ether	7005723	5	8270C
56	Acenaphthene	83329	1	8270C
57	Acenaphthylene	208968	10	8270C
58	Anthracene	120127	10	8270C
59	Benzidine	92875	5	8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	8270C
63	Benzo(g,h,i)perylene	191242	5	8270C
64	Benzo(k)fluoranthene	207089	2	8270C
65	Bis(2-chloroethoxy)methane	111911	5	8270C
66	Bis(2-chloroethyl)ether	111444	1	8270C
67	Bis(2-chloroisopropyl) ether	39638329	10	8270C
68	Bis(2-ethylhexyl)phthalate	117817	5	8270C
70	Butyl benzyl phthalate	85687	10	8270C
73	Chrysene	218019	5	8270C
81	Di-n-butyl phthalate	84742	10	8270C
84	Di-n-octyl phthalate	117840	10	8270C
74	Dibenzo(a,h)anthracene	53703	0.1	8270C
79	Diethyl phthalate	84662	2	8270C
80	Dimethyl phthalate	131113	2	8270C
86	Fluoranthene	206440	10	8270C
87	Fluorene	86737	10	8270C

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
90	Hexachlorocyclopentadiene	77474	5	8270C
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	8270C
93	Isophorone	78591	1	8270C
98	N-nitrosodiphenylamine	86306	1	8270C
96	N-nitrosodimethylamine	62759	5	8270C
97	N-nitrosodi-n-propylamine	621647	5	8270C
95	Nitrobenzene	98953	10	8270C
53	Pentachlorophenol	87865	1	8270C
99	Phenanthrene	85018	5	8270C
54	Phenol	108952	1	8270C
100	Pyrene	129000	10	8270C
	PESTICIDES – PCBS			
110	4,4-DDD	72548	0.05	8081A
109	4,4-DDE	72559	0.05	8081A
108	4,4-DDT	50293	0.01	8081A
112	alpha-Endosulfan	959988	0.02	8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	8081A
102	Aldrin	309002	0.005	8081A
113	beta-Endosulfan	33213659	0.01	8081A
104	beta-Hexachlorocyclohexane	319857	0.005	8081A
107	Chlordane	57749	0.1	8081A
106	delta-Hexachlorocyclohexane	319868	0.005	8081A
111	Dieldrin	60571	0.01	8081A
114	Endosulfan sulfate	1031078	0.05	8081A
115	Endrin	72208	0.01	8081A
116	Endrin Aldehyde	7421934	0.01	8081A
117	Heptachlor	76448	0.01	8081A
118	Heptachlor Epoxide	1024573	0.01	8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02	8081A
119	PCB-1016	12674112	0.5	8082
120	PCB-1221	11104282	0.5	8082
121	PCB-1232	11141165	0.5	8082
122	PCB-1242	53469219	0.5	8082
123	PCB-1248	12672296	0.5	8082
124	PCB-1254	111097691	0.5	8082
125	PCB-1260	111096825	0.5	8082
126	Toxaphene	8001352	0.5	8081A
16	2,3,7,8-TCDD (dioxin)	1746016	5.00×10^{-6}	8290 (HRGC) MS

MRP - ATTACHMENT F

Date _____ **Monitoring Report Cover Letter**

California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Facility Name: _____

_____

Address: _____

_____

_____

_____

Contact Person: _____

Job Title: _____

Phone: _____

Email: _____

WDR/NPDES Order Number: _____

WDID Number: _____

Type of Report (circle one): Monthly Quarterly Semi-Annual Annual Other

Month(s) (circle applicable month(s)*: JAN FEB MAR APR MAY JUN
JUL AUG SEP OCT NOV DEC

*annual Reports (circle the first month of the reporting period)

Year: _____

Violation(s)? (Please check one): _____ NO _____ YES*

*If YES is marked complete a-g (Attach Additional information as necessary)

a) Brief Description of Violation: _____

_____

_____

_____

_____

b) Section(s) of WDRs/NPDES Permit Violated: _____

_____

_____

_____

APPENDIX DR-53

LETTER AGREEMENT FOR RECLAIMED WATER SUPPLY DATED JULY 10, 2015

Palmdale Energy, LLC
801 2nd Avenue, Suite 1150
Seattle, WA 98104
206.780.3551 phone

July 10, 2015

Mike Mischel
Director of Public Works
City of Palmdale
30300 Sierra Highway, Suite A
Palmdale, CA 93550

Re: Letter Agreement Regarding the Palmdale Energy Project

Dear Mike,

The purpose of this letter is to document the mutual intent of the City of Palmdale and Palmdale Energy, LLC to enter into an agreement regarding the purchase, sale and transportation of reclaimed water in sufficient amounts for operations (Water Transaction) of the Palmdale Energy Project (Project).

As you know, the parties entered into a Purchase and Sale Agreement dated April 30, 2015, under which Palmdale Energy acquired the Project from the City (Agreement). The parties originally had agreed that execution of a term sheet agreement regarding the transportation and sale of reclaimed water for Project cooling would be a condition precedent to closing of the transaction. We understand that the City is in process to secure certain rights to reclaimed water, and specifically that the City expects to have rights (but does not have currently) to reclaimed water including the authority to sell reclaimed water from the Palmdale Water Reclamation Plant and the Lancaster Advanced Waste Water Treatment Plant to Palmdale Energy. The parties desire to close the purchase and sale pursuant to the Agreement, and accordingly, Palmdale Energy hereby waives the condition precedent relating to a water supply term sheet, subject to the agreement of the parties as set forth herein.

Specifically, the parties agree upon the following principles of an agreement regarding water supply at such time as the City has rights to such reclaimed water:

1. The Project will have the right to purchase up to 400 acre feet of reclaimed water annually for a period of not less than 23 years beginning in 2018 with two 10-year options to extend the agreement beyond the initial term.
2. The Parties agree to use commercially reasonable efforts to enter into a long-term contract for purchase and sale and transport of reclaimed water for benefit of the Project by November 30, 2015.
3. Reclaimed water for the Project will require the construction of water pipeline and water loading and transfer facilities for the trucking of water.

4. The City will use commercially reasonable efforts to cooperate with Palmdale Energy and any third-party stakeholders in connection with the development of the facilities for the delivery of reclaimed water for the Project.

In the event any of the water pipeline and delivery facilities are not used exclusively by the Project and instead are used by a third party (including the City of Palmdale), a cost sharing formula will be developed and agreed upon to allocate the capital and operation cost of the facilities based on each party's pro rata use.

We look forward to finalizing the Transaction contemplated in this letter agreement. Please indicate the City's agreement with the signature of a duly authorized representative below.

Best regards,

Richard W. Burkhardt

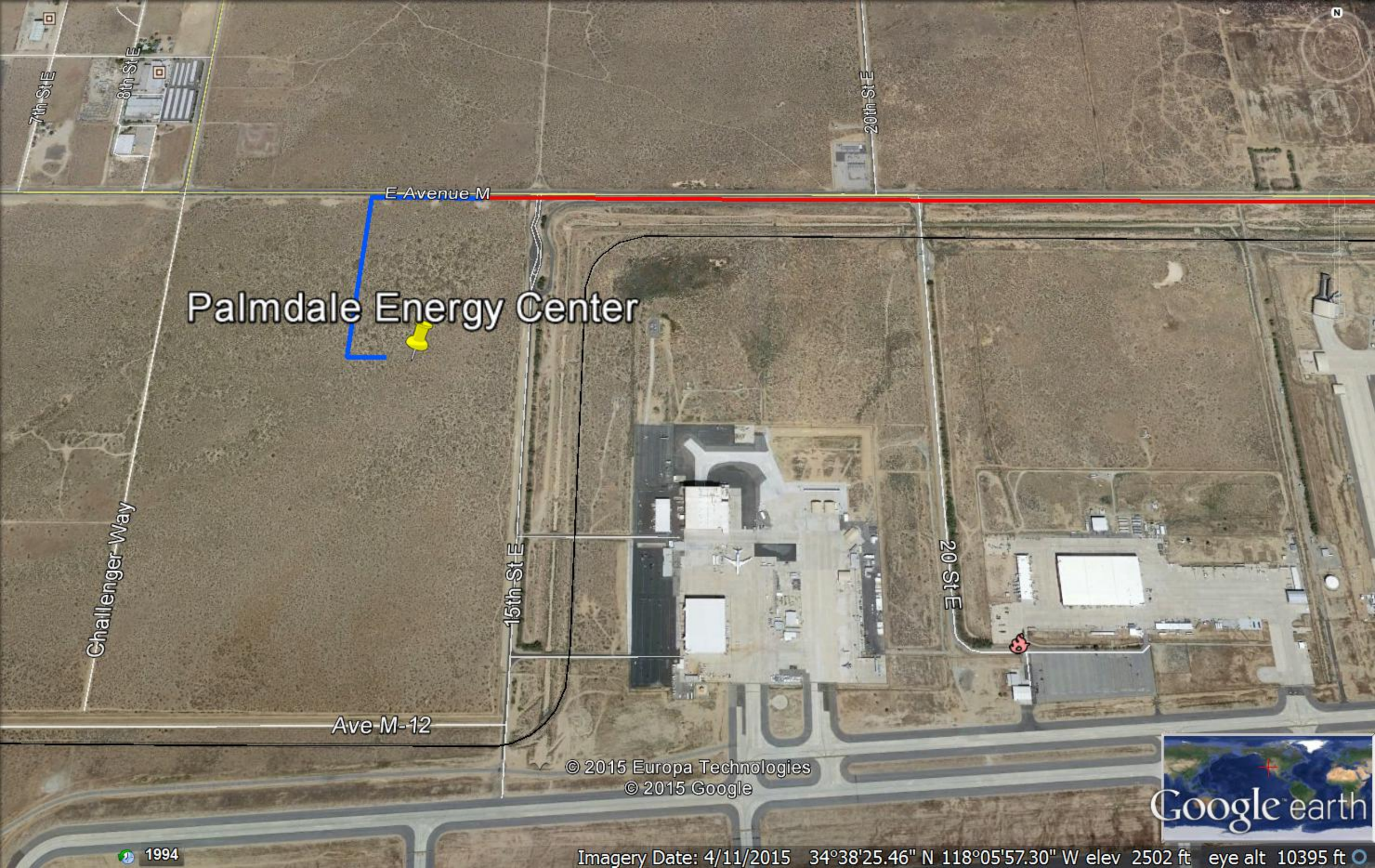
Name: Richard W. Burkhardt
Title: Chief Financial Officer
Date: July 10, 2015

Acknowledged & Agreed by the City of Palmdale:

Name: Mike Mischel
Title: Director of Public Works
Date: July 13, 2015

APPENDIX DR-57
TRANSMISSION LINE ROUTE MAP

Quartz Hill
Highlands
14
Palmdale
Palmdale, CA
E Palmdale Blvd
47th St E
E Ave S
Antelope Center
Littlerock
Pearblossom
© 2015 Europa Technologies
© 2015 Google
Google earth
Imagery Date: 4/11/2015 34°33'37.17" N 118°01'18.33" W elev 2701 ft eye alt 16.00 mi


7th St E
8th St E
20th St E
E Avenue M
Palmdale Energy Center
Challenger Way
15th St E
20 St E
Ave M-12
© 2015 Europa Technologies
© 2015 Google
Google earth
1994
Imagery Date: 4/11/2015 34°38'25.46" N 118°05'57.30" W elev 2502 ft eye alt 10395 ft