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July 15, 2011

VIA HAND DELIVERY

Mr. Eric Solorio, Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Pio Pico Energy Center Project (11-AFC-1)
Applicant's Responses to Staff's Data Requests, Set 1 (#1-59)

Dear Mr. Solorio:

On behalf of Applicant Pio Pico Energy Center, LLC, please find enclosed herewith for docketing one (1) original and twelve (12) paper copies and twelve (12) discs containing electronic copies of Applicant's responses to Staff's Data Requests, Set 1 (#1-59). A paper copy will be served to all those identified on the enclosed Proof of Service.

In addition to the above, please find enclosed herewith two (2) discs containing air quality modeling files. Due to the voluminous nature of this data, none of the files will be served to the parties.

Should you have any questions relating to the responses or this filing, please do not hesitate to contact me.

Respectfully submitted,

Melissa A. Foster

MAF:kjh
Enclosures
cc: See Proof of Service List

Pio Pico Energy Center

Response to CEC Data Request Set #1, 11-AFC-01

Submitted to the

California Energy Commission

July 2011

Submitted by

Pio Pico Energy Center, LLC

With support from

URS

2020 East First Street, Suite 400
Santa Ana, California 92705

BACKGROUND: AIR QUALITY PERMIT APPLICATION

The proposed project will require permits (the Preliminary Determination of Compliance and Final Determination of Compliance) from the San Diego Air Pollution Control District (SDAPCD or "District"). These permits are integrated into the staff analysis. Therefore, staff will need copies of all correspondence between the applicant and the District in a timely manner in order to stay up to date on any permit issues that arise prior to completion of the Preliminary or Final Staff Analysis.

Technical Area: Air Quality

Data Request AQ-1: Please provide copies of all substantive District correspondence regarding the permit application, including e-mails, within one week of submittal or receipt. This request is in effect until the Final Determination of Compliance is issued by the District.

Response: Any relevant communication will be docketed with the Commission as it is submitted or received.

BACKGROUND: CONSTRUCTION EMISSIONS AND MODELING

The AFC Table 5.2-14 to 5.2-15 and Appendix Table G-2.1 to G-2.5 list the categorized emissions during project construction. The modeling of these emissions is described on Appendix page G-2-5. For the modeling of NO_2, CO and SO_2, staff is able to match the emission sources listed in the data tables with those in the modeling inputs. However, in the modeling of PM_{10} and $PM_{2.5}$, both the number of sources and emission rates are inconsistent with those listed in AFC tables and modeling description. In addition, the AFC Table 5.2-15, Appendix Table G-2.2 and G-2.5 list the peak annual emissions during project construction. However, these tables are inconsistent in PM_{10} and $PM_{2.5}$ emissions. More specifically, in Table 5.2-15 and Table G-2.2, the total emissions do not match the sum of the emissions from the sub-categories for PM_{10} and $PM_{2.5}$.

Technical Area: Air Quality

Data Request AQ-2: Please check the calculations of construction PM10 and PM2.5 emissions in Table 5.2-15, Appendix Table G-2.2 and G-2.5 to correct the inconsistency.

Response: Table G-2.5 is correct as submitted. Table G-2.2 should be revised as shown below. Table 5.2-15 should also be revised as shown below.

TABLE G-2.2 (REVISED)
PEAK ANNUAL EMISSIONS DURING PROJECT CONSTRUCTION, TONS PER YEAR

	NO_X	CO	VOC	SO_X	PM_{10}	$PM_{2.5}$
On-site						
Construction equipment	4.7	2.3	0.4	0.0	0.2	0.2
Fugitive dust	--	--	--	--	1.6 ~~2.5~~	0.3 ~~0.6~~
Off-site						
Worker travel, truck deliveries	0.8	2.6	0.3	0.0	0.0	0.0
Total emissions						
Total	5.5	4.9	0.7	0.0	1.9 ~~0.5~~	0.5 ~~1.9~~

TABLE 5.2-15 (REVISED)
MAXIMUM ANNUAL CONSTRUCTION EMISSIONS, TONS PER YEAR

	NO_X	CO	VOC	SO_X	$PM_{2.5}$	PM_{10}
On-site						
Construction equipment	4.7	2.3	0.4	0.0	0.2	0.2
Fugitive dust	--	--	--	--	0.3 ~~2.5~~	1.6 ~~0.6~~
Off-site						
Worker travel, truck deliveries	0.8	2.6	0.3	0.0	0.0	0.0
Total	5.5	4.9	0.7	0.0	0.5	1.9

Notes:
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compound
CO = carbon monoxide
NO_X = nitrogen oxides
SO_X = sulfur oxides

Technical Area: Air Quality

Data Request AQ-3: Please describe how the construction emission sources in the PM_{10} and $PM_{2.5}$ modeling files correspond to those listed in the data tables (AFC Table 5.2-14 to 5.2-15 and Appendix G-2.1 to G-2.5).

Response: The modeling files used the correct emissions, as they are shown in Table 5.2-14 and revised Table 5.2-15.

BACKGROUND: COOLING TOWER EMISSIONS AND MODELING

The operation modeling provided by the applicant presents different operating scenarios of the three turbines during operation. However, staff cannot find any sources corresponding to the cooling tower in the PM_{10} modeling files. Although staff is able to find emission sources corresponding to cooling towers in $PM_{2.5}$ refined modeling, the emission rate in the modeling is 0.03 lb/hr per cell, instead of 0.055 lb/hr as shown in Table G-3.2. In addition, staff found inconsistencies between cooling tower PM emissions in Table 5.2-20, Table G-3.2, and Table G-3.3.

Technical Area: Air Quality

Data Request AQ-4: Please check the calculations in Table 5.2-20, Table G-3.2, and Table G-3.3 to correct the inconsistencies in cooling tower PM emissions.

Response: The PM_{10} modeling referred to by staff was performed to determine the turbine operating conditions (i.e., combination of turbine load and ambient temperature) that results in the highest impact. Because the objective of this preliminary screening is to determine the worst case for the turbine, cooling system impacts were not included in the analysis.

All PM emitted by project equipment (turbines and cooling towers) is conservatively assumed, in this analysis, to be $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions are assumed to be identical. The $PM_{2.5}$ modeling results (which include the cooling system) are therefore also the PM_{10} modeling results.

Table 5.2-20 is correct as submitted. Table G-3.3 should be revised as shown below. Table G-3.2 is correct as submitted.

TABLE G-3.3 (REVISED)
PIO PICO ENERGY CENTER DETAILED CALCULATIONS FOR MAXIMUM HOURLY, DAILY, AND ANNUAL CRITERIA POLLUTANT EMISSIONS

Daily Emission Scenario		NO_X	SO_X	CO	VOC	PM_{10}
Equipment	Hrs/Day	Lb/Hr	Lb/Hr	Lb/Hr	Lb/Hr	Lb/Hr
Gas turbine, baseload (each)	16	8.18	1.90	7.97	2.28	5.5
Gas turbine, shutdowns	4	12.68	1.90	53.51	5.81	5.5
Gas turbine, startups	4	26.63	1.90	21.84	6.53	5.5

Annual Emission Scenario		NO_X	SO_X	CO	VOC	PM_{10}
Equipment	Hrs/Yr	Lb/Hr	Lb/Hr	Lb/Hr	Lb/Hr	Lb/Hr
Gas turbine, baseload (each)	3,335	8.18	0.63	7.97	2.28	5.5
Gas turbine, shutdowns	500	12.68	0.63	53.51	5.81	5.5
Gas turbine, startups	500	26.63	0.63	21.84	6.53	5.5

NOTE: Annual SO_2 emissions based on 0.25 gr/100 scf.

	NO_X			SO_X			CO			VOC			PM_{10}		
	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total
Equipment	Lb/Hr	Lb/Day	TPY	Lb/Hr	Lb/Day	TPY	Lb/Hr	Lb/Day	TPY	Lb/Hr	Lb/Day	TPY	Lb/Hr	Lb/Day	TPY
Gas turbine 1	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.92
Gas turbine 2	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.92
Gas turbine 3	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.92
Cooling tower	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<u>0.7</u> ~~0.0~~	<u>15.8</u> ~~0.8~~	<u>1.4</u> ~~0.1~~
Total	79.9	864.3	70.4	5.7	136.8	4.1	160.5	1286.6	96.4	19.6	257.7	20.7	<u>17.2</u> ~~16.5~~	<u>411.8</u> ~~396.8~~	<u>36.2</u> ~~35.8~~

Technical Area: Air Quality

Data Request AQ-5: Please add emission sources corresponding to the cooling tower in PM_{10} dispersion modeling to account for the impacts due to the cooling towers.

Response: Because PM_{10} emissions are assumed to be identical to $PM_{2.5}$ emissions, PM_{10} impacts are identical to the $PM_{2.5}$ impacts. The $PM_{2.5}$ modeling serves as the PM_{10} modeling.

Technical Area: Air Quality

Data Request AQ-6: Please check the $PM_{2.5}$ emission rate of the cooling tower and update the modeling.

Response: The $PM_{2.5}$ emission rate of the cooling system used in the modeling was an incorrect value of 0.39 lb/hr. The PM modeling has been updated to reflect the correct maximum cooling system emission rate of 0.66 lb/hr.

Using the same methodology and meteorological data as the AFC, the 3-year average of the 98th percentile of the maximum 24-hour $PM_{2.5}$ impact (project plus background) is 25.9 µg/m^3.[1] This is the same value as previously reported in the March addendum to the AFC.

[1] The March addendum was prepared, in part, to transmit modeling results that were based on a complete set of meteorological data for the three years 2006 through 2008. The meteorological data used in the original AFC modeling was incomplete. The $PM_{2.5}$ impacts presented in this response use the same 3 years of data, and the same methodology, as the March addendum, in order to demonstrate that the difference in air cooling system emission rates did not affect the project impacts that were previously reported.
Cumulative impact modeling, discussed below in the responses to Data Request AQ-13, utilized five years of meteorological data (2004-2008). Five years of data are required by EPA for the PSD cumulative analysis. The cumulative impact analysis in support of the AFC was expanded to include the meteorological data for 2004 and 2005, which were not available from the District at the time that the AFC was submitted.

BACKGROUND: MISSING DATA SUBSTITUTION

The supplemental air quality modeling files submitted on March 8, 2011 indicate that dispersion modeling has been rerun using the updated meteorology files provided by the District in early February. The difference between the updated and the original meteorology data files is that the missing data during November–December 2008 have been filled in. Also, staff noticed that raw data files of ozone and NO_2 from the ARB website have missing periods while the data submitted by the applicant are complete. The AFC indicates that these data files are provided by the District who ensures that there will be no gaps in the data.

Technical Area: Air Quality

Data Request AQ-7: Please describe the procedures that the District or the applicant used in missing data substitution for meteorology, ozone and NO_2 files.

Response: The data substitution methodologies used by the District are provided below.[2]

Screening Procedure for Filling Hours with Missing Ozone Background Concentrations

Below is the filling procedure for missing monitored background ozone for purposes of AQIA modeling to determine compliance with the federal1-hour NO_2 standard. The data should be filled in the form as reported by the District monitoring (ppm) and then converted to units of $\mu g/m^3$ for use in AERMOD based on the ambient temperature reported by the monitor. The ambient temperature data gaps can be filled by linearly interpolation between the end points for one, two, or three hours of missing data and data substitution from an alternative temperature monitor(s) for longer gaps (also filled by linear interpolation for up to three hours, if necessary).

For missing ozone concentration data:

1) *Fill any single missing hour with the maximum of the:*
    a. *Preceding hour*
    b. *Succeeding hour*

[2] Email, Steve Moore (SDAPCD) to Eric Walther (Sierra Research), 12/1/2010.

c. Same hour of day on previous day

d. Same hour of day on succeeding day

If there is missing data for either c and/or d, use only the maximum of the available data to fill the missing hour (both a and b are guaranteed to be present since only single missing hours are filled in this step). Note that the most likely scenario for both c and d to be missing is for years when the monitor is calibrated at the same hour each day. In this case, the 30-day rolling average (see step 2) for that hour will also not be available.

2) For hours that are not filled by step 1 (all periods with more than one hour missing), fill the missing hour with the maximum for that hour of day for a 30-day rolling period centered on the hour (ie., for the 15 preceding days and the 15 succeeding days). Note that 30-day rolling period will extend into the preceding and succeeding year at the start or end, respectively, of the modeling period.

3) For hours not filled by step 2, fill the missing data with the maximum of the 30-day rolling period for the preceding or succeeding hour.

4) Any hours not filled by steps 1–3, are likely periods with more than a month of missing data for all hours. These will be filled on a case-by-case basis."

For missing NO_2 concentration data:[3]

1) Fill any single missing hour with the maximum of the:

a. Preceding hour

b. Succeeding hour

c. Same hour of day on previous day

d. Same hour of day on succeeding day

If there is missing data for either c and/or d, use only the maximum of the available data to fill the missing hour (both a and b are guaranteed to be present since only single missing hours are filled in this step). Note that the most likely scenario for both c and d to be missing is for years when the monitor is calibrated at the same hour each day. In this case, the 30-day rolling average (see step 2) for that hour will also not be available.

[3] Email, Steve Moore (SDAPCD) to Steve Hill (Sierra Research), 6/7/2011.

2) *For hours that are not filled by step 1(all periods with more than one hour missing), fill the missing hour with the maximum for that hour of day for a 30-day rolling period centered on the hour (i.e., for the 15 preceding days and the 15 succeeding days). Note that 30-day rolling period will extend into the preceding and succeeding year at the start or end, respectively, of the modeling period.*

3) *For hours not filled by step 2, fill the missing data with the maximum of the 30-day rolling period for the preceding or succeeding hour.*

4) *Any hours not filled by steps 1–3, are likely periods with more than a month of missing data for all hours. These will be filled on a case-by-case basis.*

5) *Check all filled hours for which the filled concentration is higher than the maximum monitored concentration recorded for that day (for a complete day of missing data, the maximum monitored concentration is considered zero for purposes of this comparison). If the filled concentration is higher than the appropriate nth highest daily maximum monitored concentration for the calendar year for determining compliance with federal 1-hour standard (e.g., for 351 or more days of valid data, the 8th highest daily maximum is the appropriate value), then replace filled concentration with the appropriate nth highest daily maximum to fill that hour. Note: This prevents the filling procedure from changing the nth highest daily maximum for the year.*

For missing meteorological data:[4]

The 2008 AERMET data was reprocessed when it was discovered that the NWS TD-3505 data set supplied to the District by NCDC was incomplete, terminating on 11/23/08.

After acquiring a complete file for 2008 from NCDC we re-processed the data, forwarded to you and requested that year be re-modeled.

Our procedure for filling Onsite Surface Data files (Otay Mesa Monitoring Site) is to interpolate data gaps up to 4 hours. Our filling procedure follows EPA guidance presented in the memo, "Procedures for Substituting Values for Missing NWS Meteorological Data for Use in Regulatory Air Quality Models", written by Dennis Atkinson and Russell Lee in 1992.

Larger gaps in the Onsite data files are filled with NWS data (Brown Field Airport) when merged with the TD-3505 data.

[4] Email, Ralph DeSiena (SDAPCD) to Steve Hill (Sierra Research), 6/1/2011.

Onsite data is greater than 98% complete for Otay Mesa for the years 2004, 2006, 2007 and 2008.

Onsite data is greater than 90% complete for 2005, which meters EPA requirements for modeling.

Technical Area: Air Quality

Data Request AQ-8: Please describe if the data substitution procedures satisfy the guidance from the U.S. Environmental Protection Agency (US EPA) or the Air Resources Board.

Response: The District has indicated that its methods are consistent with guidance from U.S. EPA and ARB.

BACKGROUND: OPERATION NO_2 MODELING

Supplemental air quality analysis submitted on March 8, 2011 shows that the total impact during commissioning will exceed the state 1-hour NO_2 standard based on the sum of the worst-case project impact and the worst-case background concentration. Therefore cases with modeled impact > 184 µg/m^3 were selected and listed in table 5.2-26A. The total NO_2 impact would be lower than the state standard if the modeled project impacts are paired with the corresponding measured ambient concentrations. However, staff believes that the cases with highest project impacts and the cases with highest total impacts are not equivalent due to the uncertainty of background values. In addition, staff noticed that the in-stack NO_2/NO_X ratio is chosen to be 0.24 in commissioning and startups modeling and 0.13 in normal operations modeling.

Technical Area: Air Quality

Data Request AQ-9: Please justify the selection of the different in-stack NO_2/NO_X ratios in the modeling of commissioning, startups and normal operations.

Response: The District specified the NO_2/NO_X ratios used in the analysis.[5]

For purposes of the AQIA in a submittal of a new or revised application for the Pio Pico Energy Center, the District tentatively recommends the following in-stack NO_2/NO_X ratios for the LMS100 turbine proposed for the project:

"Normal Operations: 0.13

"Commissioning, Startup, or any other situation when the SCR is not fully operational: 0.24

The District provided the following justification for these values:[6]

The tentative recommendation for normal operations is based on source tests of four natural-gas-fired LM6000PC SPRINT turbines equipped with water injection, SCR, and oxidation catalysts. Preliminarily, these appear to be the closest analogue to the LMS100 as proposed for Pio Pico (i.e., aeroderivative, simple cycle, diffusion flame

[5] Email, Steve Moore (SDAPCD) to Steve Hill (Sierra Research), 12/23/2010 2:36 PM.
[6] Email, Steve Moore (SDAPCD) to Steve Hill (Sierra Research), 12/23/2010 2:36 PM.

combustors, same NO_X controls, oxidation catalysts, and interstage cooling—albeit with water injection for the SPRINTs). The value is an average over the four turbines (rounded up) of the average NO_2/NO_X ratio for each turbine. The average NO_2/NO_X ratios for the four turbines were .0393 (2 tests), .0603 (2 tests), 0.185 (1 test), and 0.205 (1 test), respectively.

For situations when the SCR is not operating, the tentative ratio is based on source tests of 11 natural-gas-fired GE Frame 5 turbines. These turbines all have water injection but no other NO_X controls and no oxidation catalyst. The NO_2/NO_X ratio for these turbines ranges from about 0.18 to 0.285 (averaged over 7–10 source tests of each turbine).

The source tests were all at greater than 80% load.

Technical Area: Air Quality

Data Request AQ-10: Please rank and list the highest total NO_2 impacts (the sum of the modeled project impact and background concentration) during the 3-year period in order to determine the maximum total impact, rather than only listing the cases with project impact > 184 µg/m^3.

Response: The highest total NO_2 impacts have not been calculated for commissioning. Because the maximum background concentration is 154 µg/m^3, any modeled impact below 339-154 = 185 µg/m^3cannot result in an exceedance of the state standard.

All modeling results above 184 µg/m^3 were listed in 5.2.26A, together with the corresponding monitoring data. The table demonstrates that the project's impacts will be below the state standard for these specific meteorological conditions. Since all other modeled impacts are also below the state standard, compliance is demonstrated. While it is possible that commissioning impacts could be higher than the highest value listed in 5.2.26A (310.3 µg/m^3), it is not possible that commissioning impacts would exceed the state standard of 339 µg/m^3.

The maximum combined 1-hour NO_2 impact during commissioning (project plus background) is 292 µg/m^3.

BACKGROUND: CUMULATIVE AIR QUALITY IMPACTS

The AFC (Section 5.2.5 and Appendix G-6) describes a cumulative impact analysis, which only includes a list of foreseeable projects within a 6-mile radius, i.e. the projects that have received construction permits, but are not yet operational, and those that are in the permitting process, or can be expected to be in permitting in the near future. None of these sources were evaluated because their emissions are less than 5 TPY of any pollutant. A complete cumulative impacts analysis should consider all existing and planned stationary sources that affect the baseline conditions. The cumulative analysis needs to identify the major existing and planned projects near the project site, especially the existing power plants (for example, Otay Mesa Generating Project, Calpeak Border Peaker Project and Larkspur Energy Facility Emergency Peaker Project) and consider them in the modeling effort. The impact from the nearby sources may not be reflected in the background data, which were obtained at the Chula Vista station located 9 miles from the project site.

Technical Area: Air Quality

Data Request AQ-11: Please provide a copy of the District's correspondence regarding existing and planned cumulative sources located within six miles of the PPEC site.

Response: See Exhibits 1A through 1E.

Technical Area: Air Quality

Data Request AQ-12: Please provide the list of sources to be considered in the cumulative air quality impact analysis.

Response: The District reviewed the modeling protocol and the initial screening level results prior to the Applicant's preparation of the refined analysis. On the basis of that review, the District determined that no cumulative impact modeling was required under its regulations. After review of the CEC data request, the District has recommended using the following sources to meet CEC's request. These nearby sources are as follows:

- NO_X and $PM_{2.5}$ emissions from Larkspur Energy Facility (a small peaking plant located 2.5 km west of the project site)
- NO_X and $PM_{2.5}$ emissions from Pacific Recovery Corp (landfill gas waste-to-energy facility 9.2 km west of the project site)
- NO_X and $PM_{2.5}$ emissions from Otay Mesa Generating Company (a power plant located adjacent to the project site)
- NO_X and $PM_{2.5}$ emissions from the CalPeak Border facility (a small peaking plant located 2.7 km west of the project site)

Technical Area: Air Quality

Data Request AQ-13: Please provide the cumulative modeling and impact analysis, including PPEC and other identified existing and planned projects within 6 miles of the PPEC site.

Response: A cumulative impacts modeling analysis has been conducted including the non-project sources listed in the response to Data Request AQ-12. The results of the cumulative impact analysis are shown in Table DR13.3.

Modeling in the AFC and the April 2011 addendum were based on a complete set of meteorological data for the three years 2006 through 2008. The cumulative impact analysis presented here also includes the meteorological data for 2004 and 2005, which were not available from the District at the time that the AFC was submitted. Five years of data are required by EPA for the PSD cumulative analysis.

The cumulative impact analysis was performed by modeling the sources shown in Tables DR13.1 and DR13.2. Short-term cumulative impacts (averaging times less than one year) were calculated assuming that each of the non-project sources was operating at maximum allowable hourly emission rates, while PPEC sources were all in startup mode (for NO_X) or operating at maximum 24-hour emission levels (for PM).[7] Annual cumulative impacts were assessed using annual average emissions for all sources.

The stack parameters used for this analysis are also shown in Tables DR13.1 and DR13.2.

Impacts were not assessed at receptors where PPEC impacts were previously demonstrated to be less than the federal PSD Significant Impact Levels, because any projected violations of

[7] The tables show $PM_{2.5}$ emissions. All PM emissions from the sources in the tables (combustion devices and the water cooling system) are assumed to be $PM_{2.5}$. Therefore the PM_{10}emissions equal the $PM_{2.5}$ emissions, and the PM_{10} impacts from these sources are identical to the modeled $PM_{2.5}$ impacts.

an AAQS at those locations would not be caused, or contributed significantly to, by PPEC.

The federal 1-hour NO_2 standard is met if the 3-year average of the 98th percentile highest daily 1-hour average NO_2 concentration, including background, does not exceed 100 ppb. At standard temperature and pressure, this limit is equivalent to 188 µg/m^3. The standard is converted to µg/m^3 for the analysis because the modeling results are in those units.

The procedure for demonstrating compliance with the NAAQS is to determine the highest 1-hour NO_2 concentration, including background, for each calendar day in the year at every receptor. These concentrations are rank-ordered, highest to lowest, and the 98th percentile value (8th highest concentration for a reasonably complete data set) is selected to represent that year. These values are then averaged over the five years included in the analysis. The resulting average must be less than or equal to the standard.

The 5-year average cumulative impact of 179 µg/m^3 is below the 1-hour NO_2 NAAQS of 188 µg/m^3.

Compliance with the state 1-hour AAQS is demonstrated by comparing the highest 1-hour cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 235 µg/m^3 is below the 1-hour NO_2 state AAQS of 0.18 ppm (339 µg/m^3).

Compliance with the annual NO_2 NAAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 38 µg/m^3 is below the annual NO_2 NAAQS of 53 ppb (100 µg/m^3).

Compliance with the annual NO_2 state AAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 38 µg/m^3 is below the annual NO_2 state AAQS of 57 µg/m^3.

The federal 24-hour $PM_{2.5}$ standard is met if the 3-year average of the 98th percentile daily 24-hour average $PM_{2.5}$ concentration, including background, does not exceed 35 µg/m^3.

The procedure for demonstrating compliance with the NAAQS is to determine the 24-hour $PM_{2.5}$ concentration, including background, for each calendar day in the year at every receptor. These concentrations are rank-ordered, highest to lowest, and the 98th percentile value (8th highest concentration for a reasonably complete data set) is selected to represent that year. These values are then averaged over the five years included in the analysis (the original AFC submittal used three years of data. EPA requires use of five years of data for the PSD compliance demonstration, but allows use of the five-year average in the compliance demonstration). The resulting average must be less than or equal to 35 µg/m^3.

The cumulative impact of 29.9 µg/m^3 is below the 24-hour average $PM_{2.5}$ NAAQS of 35 µg/m^3.

Compliance with the annual $PM_{2.5}$ NAAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 14,4 µg/m^3 is below the annual $PM_{2.5}$ NAAQS of 15 µg/m^3.

Compliance with the annual $PM_{2.5}$ state AAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 14.4 µg/m^3 is above the annual $PM_{2.5}$ state AAQS of 12 µg/m^3. It should be noted that, as shown in Table 5.2-38 of the AFC, the maximum background concentration is already above the state standard. Project impacts will be mitigated as required by the CEC.

Compliance with the 24-hour PM_{10} NAAQS is demonstrated by comparing the *second* highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative

impact of 64 µg/m^3 is below the 24-hour PM_{10} NAAQS of 150 µg/m^3.

Compliance with the 24-hour PM_{10} state AAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 64 µg/m^3 is above the 24-hour PM_{10} state AAQS of 50 µg/m^3. It should be noted that, as shown in Table 5.2-38 of the AFC, the maximum background concentration is already above the state standard. Project impacts will be mitigated as required by the CEC.

Compliance with the annual PM_{10} state AAQS is demonstrated by comparing the highest annual cumulative impact with the standard, which is not to be exceeded. The cumulative impact of 28.6 µg/m^3 is above the annual PM_{10} state AAQS of 20 µg/m^3. It should be noted that, as shown in Table 5.2-38 of the AFC, the maximum background concentration is already above the state standard. Project impacts will be mitigated as required by the CEC.

Modeling files in electronic format are being submitted as part of this data response.

TABLE DR-AQ-13.1
EMISSION RATES AND STACK PARAMETERS FOR CUMULATIVE IMPACT MODELING (MAXIMUM NORMAL OPERATING EMISSIONS)

Facility/Source	Stack Height (feet)	Stack Diameter (feet)	Stack Flow (wacfm)	Stack Velocity (ft/sec)	Stack Temp (deg F)	Stack Height (meters)	Stack Diameter (meters)	Stack Flow (m^3/sec)	Stack Velocity (m/sec)	Stack Temp (deg K)	Emission Rates, lb/hr		Emission Rates, g/s	
											NO_X	$PM_{2.5}$	NO_X	$PM_{2.5}$
PPEC														
Turbine 1	100	14.5	645,580	65.16	820	30.48	4.42	304.72	19.86	711.2	26.63	5.5	2.26	0.69
Turbine 2	100	14.5	645,580	65.16	820	30.48	4.42	304.72	19.86	711.2	26.63	5.5	2.26	0.69
Turbine 3	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	26.63	5.5	2.26	0.69
Cooling System	22	13	268,650 (per cell)	33.7	86	6.71	3.96	126.79 (per cell)	10.28	303.0	0	0,055 (per cell)	0	0.0069 (per cell)
Pacific Recovery														
Landfill Engine 1	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	4.1	1.1	0.52	0.14
Landfill Engine 2	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	3.3	1.1	0.42	0.14
Landfill Engine 3	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	2.1	1.1	0.26	0.14
Landfill Engine 4	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	3.3	1.1	0.42	0.14
Calpeak Border														
Unit 1	50	12	786,547	115.91	700	15.24	3.66	371.21	35.33	644.26	7.20	3.3	0.91	0.42
Larkspur 1 and 2														
Larkspur 1	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	8.40	4.07	1.06	0.51
Larkspur 2	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	8.40	4.07	1.06	0.51
Otay Mesa														
Turbine 1	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	15.95	11.5	2.01	1.45
Turbine 2	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	15.95	11.5	2.01	1.45

TABLE DR-AQ-13.2
EMISSION RATES AND STACK PARAMETERS FOR CUMULATIVE IMPACT MODELING (ANNUAL AVERAGE OPERATING EMISSIONS)

Facility/Source	Stack Height (feet)	Stack Diameter (feet)	Stack Flow (wacfm)	Stack Velocity (ft/sec)	Stack Temp (deg F)	Stack Height (meters)	Stack Diameter (meters)	Stack Flow (m^3/sec)	Stack Velocity (m/sec)	Stack Temp (deg K)	Emission Rates, lb/hr		Emission Rates, g/s	
											NO_X	$PM_{2.5}$	NO_X	$PM_{2.5}$
PPEC														
Turbine 1	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	2.72	0.675	0.343
Turbine 2	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	2.72	0.675	0.343
Turbine 3	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	2.72	0.675	0.343
Cooling System	22	13	268,650 (per cell)	33.7	86	6.71	3.96	126.79 (per cell)	10.28	303.0	0	0,027 (per cell)	0	0.0034 (per cell)
Pacific Recovery														
Landfill Engine 1	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	3.0	0.8	0.38	0.10
Landfill Engine 2	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	2.5	0.8	0.31	0.10
Landfill Engine 3	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	1.8	0.9	0.23	0.12
Landfill Engine 4	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	2.9	1.0	0.36	0.12
Calpeak Border														
Unit 1	50	12	786,547	115.91	700	15.24	3.66	371.21	35.33	644.26	7.21	3.3	0.91	0.42
Larkspur 1 and 2														
Larkspur 1	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	5.71	2.766	0.72	0.35
Larkspur 2	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	5.71	2.766	0.72	0.35
Otay Mesa														
Turbine 1	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	11.42	8.23	1.44	1.04
Turbine 2	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	11.42	8.23	1.44	1.04

TABLE DR-AQ-13.3
RESULTS OF COMPLIANCE DEMONSTRATION (CUMULATIVE IMPACT)[1]

Pollutant	Standard	Maximum Cumulative Impact (µg/m³)	5 year Average of 98th Percentile of Total Concentration (µg/m³)	NAAQS (µg/m³)	CAAQS (µg/m³)
NO_2	1-hr, federal		179	188	
NO_2	1-hr, state	235			339
NO_2	Annual	38		100	57
$PM_{2.5}$	24-hr		29.9	35	
$PM_{2.5}$	Annual	14.4		15	12
PM_{10}	24-hr	64		150	50
PM_{10}	Annual	28.6			20

[1] Cumulative impact for annual standards is based on maximum permitted annual emissions from all sources. Cumulative impact for other standards includes PPEC sources in startup mode and the following sources operating at maximum allowable hourly emissions: Larkspur Energy Facility, Pacific Recovery, Otay Mesa Generating Company, CalPeak Border.

BACKGROUND: THERMAL EFFICIENCY AND GREENHOUSE GAS EMISSIONS

Heat rates in the AFC Section 3 are only shown on the basis of the lower heating value (LHV) of the fuel. Energy Commission staff requests that heat input information and thermal efficiency of the proposed power plant be stated in LHV and higher heating value (HHV) terms.

Technical Area: Air Quality

Data Request AQ-14: Please provide the heat rate information for the proposed combustion turbines (in AFC Facility Description, Figure 3.5-2A to 3.5-2D) in terms of higher heating value, to better facilitate comparisons with other power plant data used by staff in determining greenhouse gas impacts.

Response: Please see the table below.

TABLE DR-AQ-14.1
COMBUSTION TURBINE HEAT RATES

	Heat Rates, MMBTU/Hr			
	One Turbine		Three Turbines	
Figure	LHV	HHV	LHV	HHV
3.5-2A	808	896	2,424	2,687
3.5-2B	800	887	2,400	2,661
3.5-2C	791	877	2,373	2,631
3.5-2C	819	908	2,457	2,724

Basis: Fuel HHV:LLV ratio of 1.109.
LHV = Lower heating value.
HHV = Higher heating value.

Exhibit 1A

YEAR	SOURCE_ID	SOURCE_NAME	PO_NUMBER	DEVICE_ID	PERMIT DESCRIPTION	RELEASE_HEIGHT (FT)	STACK_DIAMETER (FT)	STACK_GAS_TEMPERATURE (F)	MATERIAL_NAME	ANNUAL_USAGE (NATURAL GAS MMSCF, DIESEL GAL)	COMPONENT_NAME	HOURLY_MAX_EMISSIONS (LBS/HR)	SumOfEMISSIONS (LBS/YR)
1997	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	4	Nitrogen Oxides (NOx)	0.6528	128
1997	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	4	Particulate Matter (PM10)	0.15504	30
1997	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	300	Nitrogen Oxides (NOx)	13.993545	122
1997	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	300	Particulate Matter (PM10)	0.270825	2
1997	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	251.6	Nitrogen Oxides (NOx)	2.4768	21,638
1997	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	251.6	Particulate Matter (PM10)	1.24416	10,869
1998	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	150	Nitrogen Oxides (NOx)	13.993545	61
1998	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	150	Particulate Matter (PM10)	0.270825	1
1998	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	420	Nitrogen Oxides (NOx)	2.44224	35,616
1998	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	420	Particulate Matter (PM10)	1.24416	18,144
1999	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	150	Nitrogen Oxides (NOx)	13.993545	61
1999	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL	150	Particulate Matter (PM10)	0.270825	1
1999	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	DIESEL	3360	Nitrogen Oxides (NOx)	16.6908	134
1999	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	DIESEL	3360	Particulate Matter (PM10)	2.142	17
1999	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	250	Nitrogen Oxides (NOx)	2.44224	21,200
1999	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	250	Particulate Matter (PM10)	1.24416	10,800
1999	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	156	Nitrogen Oxides (NOx)	12.086	94
1999	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	156	Particulate Matter (PM10)	0.8496	7
2003	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	20.936	Nitrogen Oxides (NOx)	0.1886208	669.95
2003	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	20.936	Particulate Matter (PM10)	0.04479744	159.11
2003	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL #2	52.6	Nitrogen Oxides (NOx)	13.993545	21.34
2003	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL #2	52.6	Particulate Matter (PM10)	0.270825	0.41
2003	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	189.2	Nitrogen Oxides (NOx)	3.3627	19,279.48
2003	6656	CA ST DEPT. OF CORRECTIONS	860159	860159	ONE(1) SOLAR CENTAUR GSC 4500 COMBUSTION TURBINE MODEL GS1-CB-KA, SERIAL NUMBER CG86N28; ELECTRICL GENRATOR RATED AT 2.93 MW; WASTE HEAT RECOVERY;	30.5	3.33	400	NATURAL GAS	189.2	Particulate Matter (PM10)	0.22209	1,273.32
2003	6656	CA ST DEPT. OF CORRECTIONS	972092	1	BAKERY OVEN: 1.5MM BTU/HR, UNIVERSAL OVEN CO., INC., MODEL 28 TRAY TRAVELER(35' X 12' X 8'). MPA/972092	0	0	0	NATURAL GAS	4.04	Nitrogen Oxides (NOx)	0.264	404.00
2003	6656	CA ST DEPT. OF CORRECTIONS	972092	1	BAKERY OVEN: 1.5MM BTU/HR, UNIVERSAL OVEN CO., INC., MODEL 28 TRAY TRAVELER(35' X 12' X 8'). MPA/972092	0	0	0	NATURAL GAS	4.04	Particulate Matter (PM10)	0.020064	30.70
2003	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	54.75	Nitrogen Oxides (NOx)	12.086	33.09
2003	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	54.75	Particulate Matter (PM10)	0.8496	2.33
2007	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	14.835	Nitrogen Oxides (NOx)	0.1886208	475
2007	6656	CA ST DEPT. OF CORRECTIONS	860077	860077	BOILER (21 MM BTU/HR HEAT INPUT): SUPERIOR MODEL 4-5-2506L-GP, NATURAL GAS FIRED WITH DIESEL OIL BACKUP, S/N 9852 (APPL #860077 JJS 0987)(ALC 970870 08/98)	20	2	390	NATURAL GAS	14.835	Particulate Matter (PM10)	0.04479744	113
2007	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL #2	52	Nitrogen Oxides (NOx)	0.4385	23
2007	6656	CA ST DEPT. OF CORRECTIONS	860109	860109	EMERGENCY DIESEL ENGINE GENERATOR SET, CATERPIILLAR MODEL 3512 DITA, 1000 KW, 1471 HP, USING NO. 2 DIESEL FUEL. APPL. 860109/GEA 1087 APPL#860109	13	1.4	0	DIESEL #2	52	Particulate Matter (PM10)	0.013813	1
2007	6656	CA ST DEPT. OF CORRECTIONS	972092	1	BAKERY OVEN: 1.5MM BTU/HR, UNIVERSAL OVEN CO., INC., MODEL 28 TRAY TRAVELER(35' X 12' X 8'). MPA/972092	0	0	0	NATURAL GAS	3.432	Nitrogen Oxides (NOx)	0.264	343
2007	6656	CA ST DEPT. OF CORRECTIONS	972092	1	BAKERY OVEN: 1.5MM BTU/HR, UNIVERSAL OVEN CO., INC., MODEL 28 TRAY TRAVELER(35' X 12' X 8'). MPA/972092	0	0	0	NATURAL GAS	3.432	Particulate Matter (PM10)	0.020064	26
2007	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	26.53	Nitrogen Oxides (NOx)	8.4602	16
2007	6656	CA ST DEPT. OF CORRECTIONS	972887	972887	EMERGENCY ENGINE GENERATOR: 474 HORSEPOWER DETROIT DIESEL ENGINE, SERIAL NUMBER 06VF221173 WITH 275 KW KOHLER 275ROCD. 972887 GDS 5/99	18	0.333	420	DIESEL	26.53	Particulate Matter (PM10)	0.604296	1

Exhibit 1B

Steve Hill

From:	Moore, Steve <Steve.Moore@sdcounty.ca.gov>
Sent:	Friday, December 17, 2010 1:03 PM
To:	Steve Hill; Eric Walther
Cc:	Mar, Albert; Gould, Cynthia; Desiena, Ralph
Subject:	New or Proposed Sources Near Relocated Pio Pico Energy
Attachments:	Facilitywide EASIER NOx PM10 and Location 120910.xlsx; OMEC PDOC Amendment 1b - modeling report.doc; New Apps Query VAX 120910.xlsx; CA State Dept Corrections 121310 Rev.xlsx
Follow Up Flag:	Follow up
Flag Status:	Completed
Expires:	Saturday, December 12, 2020 12:00 AM

Steve and Eric,

Here is a partial response to your public records request dated November 22, 2010, on behalf of Apex Power Ltd. The District databases are not currently set up to provide information on sources within a certain distance of a location. The best we can do is provide addresses and zip codes. In addition, the District is transitioning to a new permit database system for which the query capabilities are not as well developed as for the legacy system, which stoped collecting data on July 31, 2009. The information in the attached spreadsheets was derived from the legacy database and the District's emission inventory database that communicates with the legacy database, but not with the new database. Hence, the data only covers the period up to July 31, 2009. The District is working to provide the additional information, as available.

For emissions, annual and maximum hourly emissions of NOx and PM10 are provided—the District is not in general separately quantify PM2.5 emissions. Please note that the District does not inventory all facilities in the District nor does it inventory every facility that is inventoried every year.

With regard to release parameters, this information is sometimes provided by the facility to the District as part of their emission inventory submittal. However, this information is not directly relevant to emission inventory and is not QA'd and exact stack locations are not provided. A better source for this data would be the individual permit files (the information in which should also be QA'd), which would have to be searched manually if it is necessary to obtain and compile this information. Even those may not have exact stack locations. The District will make permit files available upon request.

Request 1: New Sources.

The spreadsheet "New Apps Query VAX 120910" is filtered on zip codes 91902, 91910, 91913, 91914, 91915, 91978, and 92154 and is based on a query of our legacy database for startup authorizations for new emission units issued after 12/31/2003. If it is determined more or different zip codes need to be included as part of the 6 mile radius, all zip codes are in the spreadsheet. As mentioned above, startups after July 31, 2009, are not addressed. Also not included are open applications under review or with an approved authority to construct but no startup authorization.

Request 2: Existing Sources.

Otay Mesa Power Plant. The Otay Mesa Power Plant does not have an actual emissions inventory data on file at the District. The District intends to conduct an emissions inventory for 2009 operations. However, attached is the District's

approval of the AQIA for the Otay facility which contains relevant emissions and stack release parameters, except for precise stack locations, for which the District is searching its AQIA files.

CA State Dept of Corrections (Donovan Prison). See attached spreadsheet with filename "CA State Dept Corrections 121310 Rev" for the emissions for all the equipment at the facility for all years back to 1997 and the release parameters in the District emission inventory database (a zero means missing data). The combustion turbine at the facility was not operating in 2007, the latest emission inventory year for the facility. However, it is now back in operation and was operating in previous inventory years.

Additional Information About Existing Sources. The spreadsheet "Facilitywide EASIER NOx PM10 and Location 120910" lists all 5 TPY facilities for PM10 or NOx in the emissions inventory database and their locations based on the latest emission inventory for each facility. This may include sources more than 80 km from the proposed location.

In addition to the information requested, other information such as the NO2/NOx ratio in the exhaust stacks may be relevant to the AQIA modeling you are proposing. The District is currently compiling source test data from its files for this purpose and may be in a position to make preliminary recommendations on appropriate NO2/NOx ratios for some equipment in the near future.

If you have any questions concerning the above, please contact me or Albert Mar at 858-586-2738 of our emission inventory group.

Steven Moore
Senior Air Pollution Control Engineer
San Diego County Air Pollution Control District
10124 Old Grove Road, San Diego, CA 92131

858-586-2750

Celebrating 50 years of air quality progress!

Exhibit 1C

YEAR	SOURCE ID	SOURCE NAME	FACILITY ID	APCD DBA	ET_NUM	STREET_NAME	TE_N	CITY	ZIP	POLLUTANT	LBS/YR	TPY
2004	7263	OTAY LANDFILL	88176A	OTAY LANDFILL INC	1700	MAXWELL RD	CA	CHULA VISTA	91910	NOx	41,312	20.7
2004	7263	OTAY LANDFILL	88176A	OTAY LANDFILL INC	1700	MAXWELL RD	CA	CHULA VISTA	91910	PM10	374,918	187.5
2004	8719	SYCAMORE	6257C	SYCAMORE LANDFILL INC	8514	MAST BL	CA	SAN DIEGO	92145	NOx	18,992	9.5
2004	8719	SYCAMORE	6257C	SYCAMORE LANDFILL INC	8514	MAST BL	CA	SAN DIEGO	92145	PM10	836,961	418.5
2005	45	HANSON	255A	HANSON AGGREGATES PACIFIC		7TH & MAIN STS	CA	CHULA VISTA	91911	PM10	33,668	16.8
2005	282	HANSON	282A	HANSON AGGREGATES PACIFIC	550	TULIP N	CA	ESCONDIDO	92025	PM10	18,152	9.1
2006	128	SUPERIOR	128A	SUPERIOR READY MIX CONCRETE	1508	MISSION RD W	CA	ESCONDIDO	92029	PM10	20,077	10.0
2006	5161	HAMILTON	5161A	HAMILTON SUNDSTRAND POWER	4400	RUFFIN RD	CA	SAN DIEGO	92123	NOx	25,156	12.6
2006	5867	HANSON	2558A	HANSON AGGREGATES PACIFIC	5330	OTAY VALLEY RD	CA	CHULA VISTA	91911	PM10	94,221	47.1
2006	7050	MANSON	87161A	MANSON CONSTRUCTION &		PORTABLE	CA	SAN DIEGO	92000	NOx	27,653	13.8
2007	77	HANSON	180A	HANSON AGGREGATES PACIFIC	9229	HARRIS PLANT RD	CA	SAN DIEGO	92145	PM10	20,723	10.4
2007	94	USN NORTH	4821A	USN AIR STATION NORIS		NAS NORTH ISLAND	CA	SAN DIEGO	92135	NOx	18,200	9.1
2007	94	USN NORTH	98395A	USN SUPSHIPS	3600	SURFACE NAVY BL	CA	SAN DIEGO	92136	NOx	16,150	8.1
2007	138	HANSON	138A	HANSON AGGREGATES PACIFIC	9255	CAMINO SANTA FE	CA	SAN DIEGO	92121	PM10	31,078	15.5
2007	221	USMC BASE /	98193A	USMC BASE MILITARY SCHOOLS		CAMP PENDLETON	CA	CAMP	92055	NOx	12,361	6.2
2007	221	USMC BASE /	98263A	USMC BASE UNPERMITTED		CAMP PENDLETON	CA	CAMP	92055	NOx	23,213	11.6
2007	7270	HANSON	88183A	HANSON AGGREGATES PACIFIC	720	TWIN OAKS VALLEY RD	CA	SAN MARCOS	92069	PM10	43,346	21.7
2007	9165	HANSON	9165A	HANSON AGGREGATES PACIFIC	8514	MAST BL	CA	SANTEE	92071	PM10	58,810	29.4
2007	10705	CA	10705A	CALIFORNIA COMMERCIAL	9229	HARRIS PLANT RD	CA	SAN DIEGO	92145	PM10	24,809	12.4
2007	94343	AGRI SERVICE	94343A	AGRI SERVICE	3210	OCEANSIDE BL	CA	OCEANSIDE	92057	PM10	10,933	5.5
2007	96429	J CLOUD INC	96429A	J CLOUD INC	2094	WILLOW GLEN DR	CA	EL CAJON	92019	PM10	12,836	6.4
2008	5985	ENCINA WASTE	5985A	ENCINA WASTEWATER AUTHORITY	6200	AVENIDA ENCINAS	CA	CARLSBAD	92009	NOx	13,893	6.9
2008	19	NATIONAL	253A	NATL STEEL & SHIPBUILDING A	2798	HARBOR DRIVE	CA	SAN DIEGO	92113	NOx	25,833	12.9
2008	19	NATIONAL	253A	NATL STEEL & SHIPBUILDING A	2798	HARBOR DRIVE	CA	SAN DIEGO	92113	PM10	46,319	23.2
2008	68	HANSON	396A	HANSON AGGREGATES PACIFIC	12533	HY 67	CA	LAKESIDE	92040	PM10	37,129	18.6
2008	251	PACIFIC GAS	1034A	PACIFIC GAS TURBINE CENTER INC	7007	CONSOLIDATED WY	CA	SAN DIEGO	92121	NOx	25,794	12.9
2008	556	HANSON	556A	HANSON AGGREGATES PACIFIC	2266	WILLOW GLEN DR	CA	EL CAJON	92019	PM10	10,036	5.0
2008	1969	SOUTHERN	1969A	SOUTHERN CALIFORNIA EDISON		HY 101 NUCLEAR GEN	CA	SAN ONOFRE	92672	NOx	54,449	27.2
2008	2631	KYOCERA	2631B	KYOCERA AMERICA INC	8611	BALBOA AV	CA	SAN DIEGO	92123	NOx	33,865	16.9
2008	4346	CW MC GRATH	4346A	CW MCGRATH INC	1720	JAMACHA RD	CA	EL CAJON	92019	PM10	11,765	5.9
2008	4845	USN 32ND ST	98395A	USN SUPSHIPS	3600	SURFACE NAVY BL	CA	SAN DIEGO	92136	NOx	12,858	6.4
2008	5924	GAS RECOVERY -	5924B	GAS RECOVERY SYSTEM INC	1615	SAN ELIJO RD	CA	SAN MARCOS	92069	NOx	32,232	16.1
2008	6257	GAS RECOVERY -	6257A	GAS RECOVERY SYSTEMS INC	8514	MAST BL	CA	SANTEE	92071	NOx	40,798	20.4
2008	7630	LARKSPUR	7630A	LARKSPUR ENERGY FACILITY	9355	OTAY MESA RD	CA	SAN DIEGO	92154	PM10	14,089	7.0
2009	73	CABRILLO	333A	CABRILLO POWER I LLC ENCINA	4600	CARLSBAD BL	CA	CARLSBAD	92008	NOx	109,233	54.6
2009	73	CABRILLO	333A	CABRILLO POWER I LLC ENCINA	4600	CARLSBAD BL	CA	CARLSBAD	92008	PM10	95,187	47.6
2009	171	GROSSMONT	171A	GROSSMONT DISTRICT HOSPITAL	5555	GROSSMONT CENTER	CA	LA MESA	91942	NOx	78,277	39.1
2009	351	S. D. STATE	351A	SD STATE UNIVERSITY	5500	CAMPANILE DR	CA	SAN DIEGO	92182	NOx	50,891	25.4
2009	1795	SOLAR	1869A	SOLAR TURBINES INC	4200	RUFFIN RD	CA	SAN DIEGO	92123	NOx	188,865	94.4
2009	1795	SOLAR	1869A	SOLAR TURBINES INC	4200	RUFFIN RD	CA	SAN DIEGO	92123	PM10	15,025	7.5

Exhibit 1C

YEAR	SOURCE ID	SOURCE NAME	FACILITY ID	APCD DBA	ET_NUM	STREET_NAME	TE_N	CITY	ZIP	POLLUTANT	LBS/YR	TPY
2009	3680	S. D. CITY PT.	3680A	SD CITY OF PT LOMA	1902	GATCHELL RD	CA	SAN DIEGO	92106	NOx	90,358	45.2
2009	3680	S. D. CITY PT.	3680A	SD CITY OF PT LOMA	1902	GATCHELL RD	CA	SAN DIEGO	92106	PM10	22,428	11.2
2009	5640	QUALCOMM,	5640A	QUALCOMM INC	5555	MOREHOUSE DR	CA	SAN DIEGO	92121	NOx	53,009	26.5
2009	96224	MINNESOTA	96224A	MINNESOTA METHANE SAN DIEGO	4949	EASTGATE MALL	CA	SAN DIEGO	92121	NOx	50,618	25.3
2009	96224	MINNESOTA	96224A	MINNESOTA METHANE SAN DIEGO	4949	EASTGATE MALL	CA	SAN DIEGO	92121	PM10	17,077	8.5
2009	96387	MINNESOTA	96387A	MINNESOTA METHANE SAN DIEGO	5244	CONVOY ST	CA	SAN DIEGO	92111	NOx	84,497	42.2
2009	96387	MINNESOTA	96387A	MINNESOTA METHANE SAN DIEGO	5244	CONVOY ST	CA	SAN DIEGO	92111	PM10	29,748	14.9
2009	27	CANYON ROCK -	103A	CANYON ROCK	7500	MISSION GORGE RD	CA	SAN DIEGO	92120	PM10	71,732	35.9
2009	56	VULCAN -	89125A	VULCAN MATERIALS CO WESTERN	5745	MISSION CENTER RD	CA	SAN DIEGO	92108	PM10	88,606	44.3
2009	72	DYNEGY SOUTH	334A	DYNEGY SOUTH BAY LLC	990	BAY BL	CA	CHULA VISTA	91911	NOx	71,493	35.7
2009	72	DYNEGY SOUTH	334A	DYNEGY SOUTH BAY LLC	990	BAY BL	CA	CHULA VISTA	91911	PM10	73,515	36.8
2009	118	CP KELCO	203A	CP KELCO US INC	2025	HARBOR DR E	CA	SAN DIEGO	92113	NOx	77,600	38.8
2009	118	CP KELCO	203A	CP KELCO US INC	2025	HARBOR DR E	CA	SAN DIEGO	92113	PM10	12,750	6.4
2009	149	APPLIED	15A	APPLIED ENERGY LLC MCRD		MCRD BLD 566 END OF	CA	SAN DIEGO	92133	NOx	80,755	40.4
2009	149	APPLIED	15A	APPLIED ENERGY LLC MCRD		MCRD BLD 566 END OF	CA	SAN DIEGO	92133	PM10	25,650	12.8
2009	167	SOLAR	368A	SOLAR TURBINES INC	2200	PACIFIC HY	CA	SAN DIEGO	92101	NOx	33,159	16.6
2009	290	RCP BLOCK &	290A	RCP BLOCK & BRICK INC	9631	MAGNOLIA AV N	CA	SANTEE	92071	PM10	11,663	5.8
2009	415	APPLIED	415A	APPLIED ENERGY LLC NAVAL	3970	SURFACE NAVY BL	CA	SAN DIEGO	92136	NOx	112,419	56.2
2009	415	APPLIED	415A	APPLIED ENERGY LLC NAVAL	3970	SURFACE NAVY BL	CA	SAN DIEGO	92136	PM10	44,506	22.3
2009	478	BAE SYSTEMS	344A	BAE SYSTEMS SAN DIEGO SHIP		FOOT OF SAMPSON ST	CA	SAN DIEGO	92113	NOx	14,607	7.3
2009	517	UCSD CAMPUS	402A	UCSD	9500	GILMAN DR DEPT 0089	CA	SAN DIEGO	92093	NOx	18,738	9.4
2009	517	UCSD CAMPUS	402A	UCSD	9500	GILMAN DR DEPT 0089	CA	SAN DIEGO	92093	PM10	19,504	9.8
2009	1976	UNION-	1976A	SAN DIEGO UNION TRIBUNE LLC	350	CAMINO DE LA REINA	CA	SAN DIEGO	92108	NOx	15,977	8.0
2009	4824	USMC AIR	4824A	USMC MCAS MIRAMAR		USMC MIRAMAR	CA	SAN DIEGO	92145	NOx	175,379	87.7
2009	4824	USMC AIR	4824A	USMC MCAS MIRAMAR		USMC MIRAMAR	CA	SAN DIEGO	92145	PM10	10,561	5.3
2009	4824	USMC AIR	4824D	USMC MCAS MIRAMAR 3RD MAW	45249	MIRAMAR WY BLDG	CA	SAN DIEGO	92145	NOx	42,424	21.2
2009	4835	USN HOSPITAL	4835A	USN HOSPITAL 2 PWC		NAVY HOSPITAL	CA	SAN DIEGO	92134	NOx	21,328	10.7
2009	5270	APPLIED	54A	APPLIED ENERGY LLC NORTH		QUAY & ROGERS RD	CA	SAN DIEGO	92135	NOx	44,090	22.0
2009	5270	APPLIED	54A	APPLIED ENERGY LLC NORTH		QUAY & ROGERS RD	CA	SAN DIEGO	92135	PM10	30,948	15.5
2009	6068	PACIFIC	6068A	PACIFIC RECOVERY CORP		OTAY LANDFILL	CA	CHULA VISTA	91911	NOx	89,171	44.6
2009	6068	PACIFIC	6068A	PACIFIC RECOVERY CORP		OTAY LANDFILL	CA	CHULA VISTA	91911	PM10	31,056	15.5
2009	6306	VULCAN	6306A	VULCAN MATERIALS WESTERN	10051	BLACK MOUNTAIN RD	CA	SAN DIEGO	92126	PM10	54,235	27.1
2009	8013	SDG&E	8013A	SDG&E PALOMAR ENERGY CENTER	2300	HARVESON PL	CA	ESCONDIDO	92029	NOx	190,822	95.4
2009	8013	SDG&E	8013A	SDG&E PALOMAR ENERGY CENTER	2300	HARVESON PL	CA	ESCONDIDO	92029	PM10	75,246	37.6
2009	8469	GOAL LINE LP -	92022A	GOAL LINE LP	555	TULIP ST N	CA	ESCONDIDO	92025	NOx	37,856	18.9
2009	8469	GOAL LINE LP -	92022A	GOAL LINE LP	555	TULIP ST N	CA	ESCONDIDO	92025	PM10	51,956	26.0
2009	8717	S. D. COUNTY -	5924C	SD CO OF PUB WKS SAN MARCOS		SAN MARCOS LANDFILL	CA	SAN MARCOS	92069	NOx	19,143	9.6
2009	86072	S. D. CITY -	86072A	SD CITY OF SO CHOLLAS LANDFILL	2781	CAMINITO CHOLLAS	CA	SAN DIEGO	92105	NOx	12,552	6.3
2009	88196	S. D. CITY -	88196C	SD CITY OF MIRAMAR LANDFILL	5180	CONVOY ST	CA	SAN DIEGO	92111	PM10	164,444	82.2
2009	89296	S. D. METRO	89296A	SD METRO PUMPING STATION #2	4077	HARBOR DR N	CA	SAN DIEGO	92106	NOx	27,262	13.6

Exhibit 1D

AP_NUM	EQUIP_DESC	JIP_DESC_SEQ_N	ID_NUM	ID_CODE	AP_TYPE	SA_ISSUED_DATE	M_DBA	L_DBA	L_ST_NUM	L_ST_NAME	L_CITY	L_STATE	L_ZIP
976949	VAPOR DEGREASER	1	8052	A	N	28-Apr-04	TOP BRASS CO	TOP BRASS CO	2731	VIA ORANGE WY #112	SPRING VALLEY	CA	919780000
978687	EMERGENCY GENERATOR MODEL #50075 S/N 263377	1	8989	A	N	06-Jan-04	SUNRISE DEVELOPEMENT INC	SUNRISE DEVELOPEMENT INC	3302	BONITA RD	BONITA	CA	919020000
978744	MARINE COATING ON SHIPS & SUBMARINES GRACO MODEL 243283 BG, BRUSH & ROLLER	1	8974	A	N	19-May-04	Q E D SYSTEMS INC	Q E D SYSTEMS INC	1330	30TH ST #D	SAN DIEGO	CA	921540000
978829	INSTALLATION OF NEW ODOR CONTROL SYSTEM TO AN EXISTING SEWER PUMP STATION	1	98322	A	N	30-Mar-04	SD CITY OF METRO	SD CITY DEPT OF METRO	1800	BOUNDRY AV	SAN DIEGO	CA	921540000
978838	INTERNAL COMBUSTION ENGINE MODEL 200I W/CATALYST SYSTEM	1	9058	A	N	25-Feb-04	2300 BOSWELL LLC	VERALLIANCE PROPERTIES INC	2300	BOSWELL RD	CHULA VISTA	CA	919140000
978839	INTERNAL COMBUSTION ENGINE W/CATALYST SYSTEM MODEL 2001	1	9058	A	N	25-Feb-04	2300 BOSWELL LLC	VERALLIANCE PROPERTIES INC	2300	BOSWELL RD	CHULA VISTA	CA	919140000
978902	EMERGENCY GENERATOR FORD MODEL ESG-642	1	9071	A	N	09-Mar-04	TARGET CORP	TARGET STORE T1815	910	EASTLAKE PY	CHULA VISTA	CA	919150000
979038	CONCRETE BLOCK MANUFACTURING PLANT	1	9101	A	N	28-Feb-05	RCP BLOCK & BRICK INC	RCP BLOCK & BRICK INC	2480	BRITANNIA BL	SAN DIEGO	CA	921540000
979101	3 GASOLINE & 2 DIESEL TANKS, 6 NEW SINGLE-HOSE MPD DISPENSERS W/ BLENDERS	1	9107	A	N	23-Jun-04	LA CIMA OIL CO INC	LA CIMA OIL INC	8289	OTAY MESA RD	SAN DIEGO	CA	921540000
979299	SOIL REMEDIATION	1	9173	A	N	17-Feb-04	RPMS-CA	ATC ASSOCIATES INC	605	3RD AV	CHULA VISTA	CA	919100000
979471	WOOD PARTS/PRODUCTS APPLICATION STATION	1	9242	A	N	28-Sep-04	SAN DIEGO FURNITURE	SD FURNITURE	3137	BEYER BL #C	SAN DIEGO	CA	921540000
979477	TWO (2) BLEEKER BROS. MODEL F-12-7-10,10'L X 12'W X 6'10"H, PAINT SPRAY BOOTH	1	9246	A	N	30-Jan-07	WOOD CRAFT CO	WOOD CRAFT CO	1520	CORPORATE CENTER DR	SAN DIEGO	CA	921540000
980002	CONCRETE BATCH PLANT, DRY, TRANSIT MIXED	1	9435	A	N	30-Sep-05	ROBERTSONS	ROBERTSONS	7961	AIRWAY RD	SAN DIEGO	CA	921540000
980013	MOBILE FUEL BARGE; CAPACITY OF 9,800 GAL OF DIESEL & 800 GAL OF GAS	1	87109	A	N	06-May-04	THE MARINE GROUP LLC	MARINE GROUP LLC THE	997	G ST	CHULA VISTA	CA	919100000
980026	GASOLINE SITE	1	9440	A	N	15-Jun-05	EASTLAKE PETROLEUM LP	EASTLAKE PETROLEUM LP	950	EASTLAKE PY	CHULA VISTA	CA	919140000
980106	REPLACE EXISTING USTS RE-PIPE NEW PHASE 2 EVR PHASE 1 NEW DISPENSERS AND UNDER	1	1282	A	N	12-Apr-04	GASCO SELF SERVE	GASCO SELF SERVE	899	3RD ST	CHULA VISTA	CA	919100000
980156	INTERNAL COMBUSTION ENGINE - DETROIT DIESEL, MODEL #12V2000-R1237K36,	1	9472	A	N	04-Mar-05	CHULA VISTA CITY OF	CHULA VISTA CITY OF POLICE	315	4TH AV	CHULA VISTA	CA	919100000
980216	IC ENGINE MODEL BF4M1013EC	1	9497	A	N	28-Apr-04	PROFIL INSTITUTE FOR CLINICAL	PROFIL RESEARCH	855	THIRD AV	CHULA VISTA	CA	919100000
980246	HEALEY ORVR PHASE 11 VAPOR RECOVERY SYSTEM 8 NOZZLES 3 GRADES	1	9496	A	N	17-Jan-05	TESORO SOUTH COAST	USA GASOLINE PROFIT CENTER	1382	PALOMAR ST E	CHULA VISTA	CA	919130000
980851	AUTOMOTIVE APPLICATION STATION	1	2279	A	N	03-Mar-05	SUPERIOR AUTO BODY	SUPERIOR AUTO BODY	363	E ST	CHULA VISTA	CA	919100000
981018	BALANCE PHASE I & II VAPOR RECOVERY	1	9750	A	N	29-Aug-05	CHEVRON	CHEVRON #301124	2115	OLYMPIC PY	CHULA VISTA	CA	919150000
981076	WOOD PARTS/PRODUCTS APPLICATION STATION	1	9774	A	N	11-Mar-05	JEER MANUFACTURING	JEER MANUFACTURING	2311	BOSWELL RD #1	CHULA VISTA	CA	919140000
981189	GASOLINE SERVICE SITE	1	9817	A	N	16-Dec-05	JUST 4 FUN LLC	JUST 4 FUN LLC	2535	OTAY CENTER DR	SAN DIEGO	CA	921540000
981204	SOLVENT CLEANING PROCESS LINE: SOLVENT CLEANING <5 SQ FT FOLLOWED BY DRYING	1	8134	A	N	14-Jul-04	PARKER HANNIFIN	PARKER HANNIFIN INC	7664	PANASONIC WY	SAN DIEGO	CA	921540000
981205	SOLVENT CLEANING PROCESS LINE: SOLVENT CLEANING >5 SQ FT FOLLOWED BY DRYING	1	8134	A	N	14-Jul-04	PARKER HANNIFIN	PARKER HANNIFIN INC	7664	PANASONIC WY	SAN DIEGO	CA	921540000
981206	SOLVENT APPLICATION OPER: DETACHMENT OF RUBBER SEALERS FROM METAL PARTS	1	8134	A	N	04-Apr-05	PARKER HANNIFIN	PARKER HANNIFIN INC	7664	PANASONIC WY	SAN DIEGO	CA	921540000
981207	SOLVENT APPLICATION OPER: DETACHMENT OF RUBBER SEALERS FROM METAL PARTS	1	8134	A	N	04-Apr-05	PARKER HANNIFIN	PARKER HANNIFIN INC	7664	PANASONIC WY	SAN DIEGO	CA	921540000
981208	SOLVENT APPLICATION OPER: DETACHMENT OF RUBBER SEALERS FROM METAL PARTS	1	8134	A	N	04-Apr-05	PARKER HANNIFIN	PARKER HANNIFIN INC	7664	PANASONIC WY	SAN DIEGO	CA	921540000
981324	APPLICATION STATION HVLP SPRAY GUN ACCUSPRAY SERIES 10	1	9856	A	N	12-Oct-04	OTAY MESA SALES	OTAY MESA SALES	1596	RADAR RD	SAN DIEGO	CA	921540000
981326	DEGREASER MODEL PL36-A SN ICR90-B4	1	9857	A	N	15-Jul-04	CROWER CAMS & EQUIPMENT	CROWER CAMS & EQUIPMENT	6180	BUSINESS CENTER CT	SAN DIEGO	CA	921540000
981327	DEGREASER MODEL PL36-A SN ICGF7	1	9857	A	N	15-Jul-04	CROWER CAMS & EQUIPMENT	CROWER CAMS & EQUIPMENT	6180	BUSINESS CENTER CT	SAN DIEGO	CA	921540000
981328	DEGREASER MODEL PL36-A SN ICGF7	1	9857	A	N	15-Jul-04	CROWER CAMS & EQUIPMENT	CROWER CAMS & EQUIPMENT	6180	BUSINESS CENTER CT	SAN DIEGO	CA	921540000
981329	DEGREASER MODEL PL36-A SN IATT7	1	9857	A	N	15-Jul-04	CROWER CAMS & EQUIPMENT	CROWER CAMS & EQUIPMENT	6180	BUSINESS CENTER CT	SAN DIEGO	CA	921540000
981330	DEGREASER MODEL PL36A SN ICR90-B4	1	9857	A	N	15-Jul-04	CROWER CAMS & EQUIPMENT	CROWER CAMS & EQUIPMENT	6180	BUSINESS CENTER CT	SAN DIEGO	CA	921540000
981475	GASOLINE SERVICE SITE	1	4163	A	N	28-Sep-06	ATTISHA ENTERPRISES	ATTISHA ARCO	765	E ST	CHULA VISTA	CA	919100000
981531	RECYCLE CRUSHING PLANT MODEL 62040 SN 1181	1	9101	A	N	19-Aug-05	RCP BLOCK & BRICK INC	RCP BLOCK & BRICK INC	2480	BRITANNIA BL	SAN DIEGO	CA	921540000
981540	IC ENGINE MODEL 6081AF001 SN RC6081A154970	1	9902	A	N	27-Dec-05	REYNOLDS COMMUNITIES	REYNOLDS COMMUNITIES	4655	DEL SOL BL	SAN DIEGO	CA	921540000
981556	AUTOMOTIVE APPLICATION STATION	1	9911	A	N	01-Nov-04	UNITED STATES BORDER PATROL	US BORDER PATROL	7682	POGO ROW	SAN DIEGO	CA	921540000
981629	CONCRETE BATCH PLANT PO 980222 FROM PORTABLE TO STATIONARY	1	9941	A	N	19-Aug-05	SUPERIOR READY MIX CONCRETE	SUPERIOR READY MIX CONCRETE	6935	CACTUS CT	SAN DIEGO	CA	921540000
981661	MARINE COATING OPERATION	1	9949	A	N	19-Oct-06	PACIFIC YACHT REFITTERS INC	PACIFIC YACHT REFITTERS INC	997	G ST	CHULA VISTA	CA	919100000
981766	IC ENGINE MODEL 6068TF250	1	9979	A	N	27-Mar-06	HOME DEPOT THE C/O 3E	THE HOME DEPOT	725	PLAZA CT	CHULA VISTA	CA	919100000
981873	GASOLINE SERVICE SITE	1	9175	A	N	17-Nov-05	CHULA VISTA CITY OF	CHULA VISTA CITY OF FIRE STATION	1640	SANTA VENETIA ST	CHULA VISTA	CA	919130000
981912	CENTRAL MIXED CONCRETE BATCH PLANT AND SILOS; REX MODEL 120DRP528	1	8137	A	N	23-Nov-05	ASSOCIATED READY MIXED	ASSOCIATED READY MIXED	1696	CACTUS RD	SAN DIEGO	CA	921540000
982042	SAND AND AGGREGATE BAGGING UNIT	1	9101	A	N	10-May-05	RCP BLOCK & BRICK INC	RCP BLOCK & BRICK INC	2480	BRITANNIA BL	SAN DIEGO	CA	921540000
982263	CUMMINS DIESEL ENGINE MODEL DGDA 170 HP RATING CARB CERT# U-R-002-0223	1	10116	A	N	10-Mar-06	CHULA VISTA CITY OF	CITY OF CHULA VISTA PUBLIC	800	AGUA VISTA DR	CHULA VISTA	CA	919140000
982471	500 GAL AST	1	5193	A	N	01-Sep-05	BONITA GOLF CLUB	BONITA GOLF CLUB	5540	SWEETWATER RD	BONITA	CA	919020000
983125	SMALL COLD SOLVENT DIP TANKS/REMOTE RESERVOIR CLEANERS	1	8934	A	N	21-Jun-05	US BORDER PATROL	US BORDER PATROL IMMIGRATION	7685	POGO ROW	SAN DIEGO	CA	921540000
983376	IC ENGINE, CATERPILLAR, S/N GZS00307, MODEL 3516B, DIESEL, 2847 HP	1	95596	A	N	10-Mar-06	OTAY WATER DISTRICT	OTAY WATER DISTRICT	1230	EASTLAKE PY	CHULA VISTA	CA	919150000
983720	TARPAULIN FUMIGATION USING METHYL BROMIDE	1	10777	A	N	14-Apr-06	HARBOR PEST CONTROL	HARBOR PEST CONTROL	8515	AVENIDA DE LA FUENTE	SAN DIEGO	CA	921546257
983937	PORTABLE ASBESTOS MASTIC REMOVAL APPLICATION STATION	1	10670	A	N	29-Dec-05	CLANCY CONTRACTING SERVICES	CLANCY CONTRACTING SERVICES	825	HOLLISTER ST #M	SAN DIEGO	CA	921540000
984040	I/C ENGINE - CATERPILLAR MODEL C-18 DITA; S/N WJH00262, 630 HP, DIESEL.	1	10497	A	N	15-Jun-07	OTAY WATER DISTRICT	OTAY WATER DISTRICT	1502	WUESTE RD	CHULA VISTA	CA	919150000
984092	MARINE COATING APPLICATION	1	8974	A	N	03-May-07	Q E D SYSTEMS INC	Q E D SYSTEMS INC	1330	30TH ST #D	SAN DIEGO	CA	921540000
984176	GASOLINE DISPENSING FACILITY	1	10758	A	N	09-Sep-08	PILOT TRAVEL CENTERS LLC	PILOT TRAVEL CENTERS LLC	1497	PIPER RANCH RD	SAN DIEGO	CA	921540000
984293	SELF SERVE. GASOLINE DISPENSING FACILITY. 10,000 GALLON AST. AVIATION FUEL ONLY	1	4965	A	N	02-Apr-07	FIRST FLIGHT	FIRST FLIGHT CORP	6810	CURRAN ST	SAN DIEGO	CA	921540000
984435	IC ENGINE GENERAL MODEL 0046267; S/N 4356149, 80HP, NATURAL GAS.	1	10835	A	N	25-Aug-06	US BORDER PATROL	CUSTOMS AND BORDER		ARNIE'S POINT	CHULA VISTA	CA	919140000
985041	SPRAY BOOTH M&W MODEL MWTR431616.	1	11104	A	N	10-Jul-07	SAN DIEGO TRUCK BODY &	WORK TRUCKS UNLIMITED	2500	SWEETWATER SPRINGS BL	SPRING VALLEY	CA	919780000
985175	OLYMPIAN DIESEL ENGINE MODEL D60P2 S/N GABL001576 HP RATING 98.4	1	11157	A	N	27-Jun-07	MISSION IMPRINTABLES	MISSION IMPRINTABLES	6060	BUSINESS CENTER CT #200	SAN DIEGO	CA	921540000
985439	LINDUS MODEL PM60 DRY CLEANING MACHINE	1	85104	A	N	09-Jul-07	SATURN CLEANERS	SATURN CLEANERS	655	SATURN BL #E	SAN DIEGO	CA	921540000
985469	ABRASIVE BLASTING POT/MACHINE MODEL 1-9 DEZ S/N 27040070 HP 9.39	1	10670	A	N	16-Jun-08	CLANCY CONTRACTING SERVICES	CLANCY CONTRACTING SERVICES	825	HOLLISTER ST #M	SAN DIEGO	CA	921540000
985516	IC ENGINE CLARKE/JOHN DEERE MODEL JU4H-UF40, S/N PE4045T652489, 94HP DIESEL	1	11259	A	N	18-Feb-08	THE PRUDENTIAL INSURANCE CO	PRUDENTIAL INSURANCE CO OF	1440	INNOVATIVE DR	SAN DIEGO	CA	921540000
985975	SOIL VAPOR EXTRACTION EQUIP. SOIL-THERM MODEL 2002-LR-EN	1	11378	A	N	09-Apr-08	AMI ADINI & ASSOCIATES INC	AMI ADINI & ASSOCIATES INC	77	BROADWAY (PORTABLE)	CHULA VISTA	CA	919100000
986927	JOHN DEERE DIESEL ENGINE MODEL 6068HF285K S/N PE66068L039363 HP RATING 197	1	11661	A	N	02-Jun-09	HAMANN CONSTRUCTION	INNOVATIVE COLD STORAGE II	7350	BRITANNIA CT	SAN DIEGO	CA	921540000
987439	MARINE COATING OPERATION	1	11773	A	N	17-Mar-09	VT MILCOM	VT MILCOM	2232	VERUS ST	SAN DIEGO	CA	921540000
987548	REPLACEMENT EMERGENCY STANDBY DIESEL 30K W ENGINE FOR PO #983068	1	10367	A	N	19-Mar-09	FEDERAL AVIATION	FEDERAL AVIATION		PGY BLDG	CHULA VISTA	CA	919130000

April 23, 2003

Exhibit 1E

To: Arthur Carbonell
Mechanical Engineering Section

From: Ralph DeSiena
Monitoring and Technical Services Section

Subject: Otay Mesa Generating Co., LLC
Application No. 978379

An Air Quality Impact Analysis (AQIA) was performed for the Otay Mesa Generating Project 510 MW natural gas-fired, combined cycle electric generating project by Sierra Research for Otay Mesa Generating Company, LLC in support of requested modifications to the Final Determination of Compliance (FDOC). The FDOC was previously revised in April 2002 (Amendment 1A) and included a revised site layout, increased stack heights, reduced PM10 emissions, and the addition of two wet surface air coolers. Additional design changes that affect the air quality impact assessment were included in a new submittal dated July 2002 (Amendment 1B). Design changes that were included are:

- The facility layout was modified, resulting in changes in stack and structure locations.
- The stacks for the two turbines are now separated and raised in height an additional 16 feet to the new stack height of 160 feet.
- 388.1 MMBtu/hr (HHV) duct burners will be added to each HRSG.
- The addition of an auxiliary boiler.

The facility potential to emit emissions per this amendment, as compared to the original project, are as follows:

POLLUTANT	**ORIGINAL**	**AMENDMENT**	**CHANGE**
Nitrogen oxides	100 TPY	100 TPY	0 TPY
Carbon monoxide	281.8 TPY	316 TPY	+34 TPY
Sulfur dioxide	39.4 TPY	12.8 TPY	-26.6 TPY
Particulate matter	159.6 TPY	99.5 TPY	-60.1 TPY
Volatile organic compounds	29.2 TPY	47.5 TPY	+18 TPY

The facility is a major stationary source and PSD source for Particulate Matter (PM10), Nitrogen oxides (NO_x), and Carbon Monoxide (CO).

Exhibit 1E

Dispersion modeling was conducted for ongoing operational emissions of NO_2, CO, SO_2, and PM10. The applicant and their consultant (Sierra Research) worked closely with the District in developing modeling and analysis procedures in support of demonstrating compliance with all applicable requirements. Various modeling techniques were employed including ISCST3, ISC_OLM, and AERMOD. Table 1 summarizes the model and meteorological data employed for impact analysis of the various pollutants and averaging times.

TABLE 1
AIR QUALITY MODEL
AND METEOROLOGICAL DATA
USED FOR AQIA

POLLUTANT	AVERAGE PERIOD	MODEL	MET DATA
NO_2	1 Hour	ISC_OLM	MIRAMAR 92-94
NO_2	Annual	ISCST3	MIRAMAR 92-94
CO	All	ISCST3	MIRAMAR 92-94
PM10	24 Hour	AERMOD	OTAY 94-96
PM10	Annual	ISCST3	MIRAMAR 92-94

To ensure the impacts analyzed were for maximum emission levels and worst-case dispersion conditions, a screening procedure was used to determine the inputs for the maximum impact modeling. The screening analysis showed that impacts were maximized for each pollutant when the turbines operated at 100% load with duct firing at low ambient temperature conditions. The turbine emissions and stack parameters during these operating conditions are summarized in Table 2.

TABLE 2
TURBINE EMISSIONS AND STACK PARAMETERS
PRODUCING WORST CASE IMPACTS
DURING NORMAL OPERATING CONDITIONS

Stack Diameter (Feet)	Stack Height (Feet)	Exhaust Temp (deg K)	Exhaust Velocity (m/s)	NOx lb/hr	SO_2 lb/hr	CO lb/hr	PM10 lb/hr
18.5	160	354.1	19.26	15.95	1.55	29.1	11.5

During ongoing operations, turbine shutdown and startups will occur. Facility impacts were evaluated with one turbine in startup operating at the emission and stack parameters (60% load) in Table 3 and one turbine at peak load as defined in Table 2.

TABLE 3
TURBINE EMISSIONS AND STACK PARAMETERS
DURING STARTUP CONDITIONS

Stack Diameter (Feet)	Stack Height (Feet)	Exhaust Temp (deg K)	Exhaust Velocity (m/s)	NOx lb/hr	SO_2 lb/hr	CO lb/hr	PM10 lb/hr
18.5	160	347.0	12.78	239.9	0.9	2706	7.5

Exhibit 1E

An auxiliary boiler was added to the facility in this amendment. The auxiliary boiler may be operated while 1 turbine is operating in peak mode, while the other turbine is in startup mode. The auxiliary boiler emissions and stack parameters during these ongoing operating conditions are summarized in Table 4.

TABLE 4
AUXILIARY BOILER EMISSIONS AND STACK PARAMETERS
DURING A TURBINE STARTUP

Stack Diameter (Feet)	**Stack Height** (Feet)	**Exhaust Temp** (deg K)	**Exhaust Velocity** (m/s)	**NOx** lb/hr	**SO_2** lb/hr	**CO** lb/hr	**PM10** lb/hr
2.5	85	435.9	27.0	0.96	0.06	3.26	1.65

The maximum facility impacts were determined by evaluating impacts while both turbines were operating under various load and ambient conditions with and without duct burners firing. Additionally, facility modeling was performed with 1 turbine at peak load, 1 turbine in startup mode, and the auxiliary boiler operating. Maximum predicted short-term impacts for NO_2 and CO are seen with 1 turbine in startup mode since these emissions are elevated. SO_2 and PM10 emissions are not elevated during turbine startups and, therefore, maximum impacts for these pollutants are seen while both turbines are operating at peak load conditions. The maximum predicted facility impact for any of the various on-going operation scenarios modeled is presented in Table 5. Worst case background pollutant concentrations were added to the predicted maximum pollutant impacts and compared to Federal and California Ambient Air Quality Standards.

TABLE 5
MODELED MAXIMUM IMPACTS
FOR ONGOING FACILITY OPERATION

Pollutant	**Averaging Period**	**Maximum Modeled Impact[6] ($\mu g/m^3$)**	**Background[1] ($\mu g/m^3$)**	**Total Predicted Concentration ($\mu g/m^3$)**	**CAAQS ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
NO_2	1-Hour	201[5]	205	406	470	------
NO_2	Annual	0.65[2]	37.6	38.25	------	100
SO_2	1-Hour	9.1	392.6	401.7	655	-----
SO_2	3-Hour	7.7	183.2	190.9	-----	1300
SO_2	24-Hour	1.5	62.8	64.3	105	365
SO_2	Annual	0.08	10.5	10.58	-----	80
CO	1-Hour	9025	8245	17270	23,000	40,000
CO	8-Hour	1797	4398	6195	10,000	10,000
PM10	24-Hour	4.8[4]	103	107.8	50[3]	150
PM10	Annual[8]	0.98	32	33	-----	50
PM10	Annual[7]	0.98	29	30	30[3]	-----

[1] Maximum concentration observed at the Chula Vista Monitoring station (1993-1997).
[2] The predicted annual NO_x increase is 0.87 $\mu g/m^3$. Using the ARM default value of 0.75, this is reduced to 0.65 $\mu g/m^3$.
[3] The project area is designated as non-attainment for the state PM_{10} standards.
[4] Value from AERMOD.
[5] Value from ISC_OLM.
[6] Values from ISCST3 modeling unless noted otherwise.
[7] Geometric mean
[8] Arithmetic mean

The results of the modeling indicate that ongoing facility operation will not result in exceedances of Federal and California standards with the exception of the California 24-Hour standard for PM10, for which the project area is designated non-attainment. Since background PM10 values exceed this standard in the project vicinity, modeling was performed to determine whether operation of the facility would result in additional violations of the California 24 Hour PM10 standard.

Since the maximum predicted impact for the facility was 4.8 $\mu g/m^3$, AERMOD modeling was performed for all days in the 1994-1996 period that PM10 background concentrations were greater than 45 $\mu g/m^3$ but less than or equal to 50 $\mu g/m^3$ (California Standard). The results are presented in Table 6. The results demonstrate that ongoing facility operations would not cause additional violations of the California 24-hour Ambient Air Quality Standard for PM10.

TABLE 6
MODELING RESULTS FOR DAYS
WITH CHULA VISTA 24-HOUR PM10 CONCENTRATIONS
GREATER THAN 45 µg/m^3 BUT LESS THAN THE CAAQS

Date of High Background	Chula Vista Background ($\mu g/m^3$)	Highest Daily Prediction ($\mu g/m^3$)	Total PM10 ($\mu g/m^3$)
August 31, 1995(day 243)	46	1.8	47.8
November 5, 1995(day 309)	46	2.5	48.5
November 30, 1995(day 334)	46	1.0	47.0
October 6, 1996(day 280)	48	1.2	49.2
October 18, 1996(day 292)	46	2.0	48.9

During the initial commissioning period, CO and NO_x emissions are expected to be much higher since the control system will not yet be optimized. 1-Hour CO, 8-Hour CO, and 1-Hour NO_x emissions were modeled to determine whether the Federal and California Ambient Air Quality Standards for CO and NO_2 would be violated during commissioning. SO_2 and PM10 emissions are not elevated during this period and, therefore, were not evaluated.

Since emissions will vary during this period dependent upon control equipment status, and whether one or both turbines are operating, an assumption was made to assume that the total emissions were released from a single stack for this modeling. It was also assumed that the auxiliary boiler would not be operating at this time. The turbine emissions and stack parameters during the commissioning period operation are summarized in Table 7.

TABLE 7
TURBINE EMISSIONS AND STACK PARAMETERS
DURING COMMISSIONING

Stack Diameter (Feet)	Stack Height (Feet)	Exhaust Temp (deg K)	Exhaust Velocity (m/s)	NOx lb/hr	SO_2 lb/hr	CO lb/hr	PM10 lb/hr
18.5	160	365.3	13.53	1133	N/A	27063	N/A

Exhibit 1E

The maximum predicted facility impacts modeled for the commissioning period are presented in Table 8 below. Worst case background pollutant concentrations were added to the predicted maximum pollutant impacts and compared to Federal and California Ambient Air Quality Standards. The ISC_OLM model was used to determine NO_2 maximum 1-Hour predicted concentrations. The ISCST3 model was used to determine the predicted 1-Hour and 8-Hour CO impacts.

TABLE 8
MODELED MAXIMUM IMPACTS
FOR COMMISSIONING PERIOD FACILITY OPERATION

Pollutant	Averaging Period	Maximum Modeled Impact[3] ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Predicted Concentration ($\mu g/m^3$)	CAAQS ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
NO_2	1-Hour	405[2]	21[1]	426	470	------
CO	1-Hour	8035	8245	16280	23,000	40,000
CO	8-Hour	3882	4398	8280	10,000	10,000

[1] NO_2 concentration observed at the Chula Vista Monitoring station for max impact hour (993040104).
[2] Value from ISC_OLM.
[3] Values from ISCST3 modeling unless noted otherwise.

The results demonstrate that facility operations during the commissioning period will not cause violations of California or Federal Ambient Air Quality Standard for CO or NO_2.

In conclusion, the Air Quality Impact Analysis results demonstrate that facility operations during the commissioning period and normal ongoing operations will not cause violations of either the California or Federal Ambient Air Quality Standards for CO, NO_2, SO_2, and PM10.

Ralph DeSiena
Air Pollution Meteorologist
San Diego Air Pollution Control District

BACKGROUND

The AFC (page 5.6-16) states that 3.7 acres of waters of the US and 0.1 acre of waters of the US with US Army Corp-defined wetlands occur within the study area. Temporary impacts to 0.1 acre of non-wetland waters of the US will occur. However on page 5.6-19 it is stated that the project will not adversely impact any federal or state protected waters. Staff requires further information to be able to evaluate the impacts of the project, and determine if any mitigation is required.

Technical Area: Biological Resources

Data Request BIO-15: Please provide additional information on temporary impacts to waters of the US. Describe the type of impact, equipment to be used, construction methods and processes, and expected duration of temporary impacts.

Response: The current PPEC, as refined by the June 8, 2011 AFC Refinement, will not impact Waters of the US[1]. The current disturbance footprint, including all linear features (i.e., the Modified Gas Line Route A option, Gas Line Route B option, Transmission Line Route A, and Transmission Route B), will avoid all Waters of the US. Accordingly, no impacts, temporary or otherwise, to Waters of the US are expected from any project activities. Detailed methods, field survey dates and results are provided in Appendix J-2, Preliminary Jurisdictional Determination Report of the AFC (February 2011).

[1] The original Gas Line Route A analyzed in the February 2011 AFC would have resulted in temporary impacts to Waters of the US. The gas line route was refined and analyzed in the AFC Refinement (June 2011), and the modified route, Modified Gas Line Route A, will avoid impacts to Waters of the US.

Technical Area: Biological Resources

Data Request BIO-16: Please provide maps of scale roughly at 1:100 feet (or finer) that depict areas to be impacted, including the 0.1 acre of non-wetland waters impacted, and the location of the 3.7 acre of waters of the US. Please use aerial maps with topographic overlay. Please clarify the location of non-wetland waters totaling 0.1 acre, and the US Army Corp-defined 0.1 acre wetland.

Response: The current PPEC, as refined by the June 8, 2011 AFC Refinement, will not impact Waters of the US[2]. The current disturbance footprint, including all linear features (i.e., Modified Gas Line Route A option and Gas Line Route B option, Transmission Line Route A option, and Transmission Route B option), will avoid all Waters of the US. Accordingly, no impacts, temporary or otherwise, to Waters of the US are expected from any project activities. Detailed methods, field survey dates are provided in Appendix J-2, Preliminary Jurisdictional Determination Report of the AFC (February 2011).

[2] The original Gas Line Route A analyzed in the February 2011 AFC would have resulted in temporary impacts to Waters of the US. The gas line route was refined and analyzed in the AFC Refinement (June 2011), and the modified route, Modified Gas Line Route A, will avoid impacts to Waters of the US.

Technical Area: Biological Resources

Data Request BIO-17: Please describe proposed best management practices to be used, and restoration activities to be performed, or other applicable mitigation, to minimize and restore temporary impacts to waters.

Response: The current PPEC, as refined by the June 8, 2010 AFC Refinement, will not impact waters of the US[3]. The current disturbance footprint, including all linear features (i.e., the Modified Gas Line Route A option and Gas Line Route B option and all other linears), will avoid all waters of the US. Accordingly, no impacts, temporary or otherwise, to waters of the US are expected from any project activities. Detailed methods, field survey dates are provided in Appendix J-2, Preliminary Jurisdictional Determination Report of the AFC (February 2011).

[3] The original Gas Line Route A analyzed in the February 2011 AFC would have resulted in temporary impacts to Waters of the US. The gas line route was refined and analyzed in the AFC Refinement (June 2011), and the modified route, Modified Gas Line Route A, will avoid impacts to Waters of the US.

Technical Area: Biological Resources

Data Request BIO-18: Please provide an update of consultation progress with the US Army Corp of Engineers, the Regional Water Quality Control Board for Section 401 permit.

Response: The current PPEC, as refined by the June 8, 2011 AFC Refinement, will not impact waters of the US[4]. The current disturbance footprint (including the Modified Gas Line Route A option and Gas Line Route B option and all other linears), will avoid all waters of the US, including Clean Water Act (CWA) Section 404 waters. Accordingly, no impacts, temporary or otherwise, to waters of the US are expected from any project activities.

Facility placement and design, including all linear facilities avoid all special aquatic resource areas (including waters of the U.S. and State). The final design spans all potential jurisdictional features and avoids impacts regulatory permitting (e.g., 404, 401, and 1600). Detailed methods, field survey dates and results are provided in Appendix J-2, Preliminary Jurisdictional Determination Report of the AFC (February 2011). Accordingly, no CWA Section 401 certification from the Regional Water Quality Control Board or CWA Section 404 permit are will be required for project activities. The Preliminary Jurisdictional Determination Report will be provided to the Army Corps of Engineers for concurrence that the project avoids all special aquatic resources areas and no impacts, temporary or otherwise, to Waters of the US are expected from any project activities

[4] The original Gas Line Route A analyzed in the February 2011 AFC would have resulted in temporary impacts to Waters of the US. The gas line route was refined and analyzed in the AFC Refinement (June 2011), and the modified route, Modified Gas Line Route A, will avoid impacts to Waters of the US.

BACKGROUND

Page 5.6-4, Table 5.6-1, describes acreages of vegetative communities mapped within the study area, which includes a 1,000-foot buffer surrounding the project. Staff is unable to distinguish between onsite and offsite resources; and therefore cannot complete its analysis of project impacts.

Technical Area: Biological Resources

Data Request BIO-19: Please differentiate between vegetation type location onsite and vegetation type mapped within the study area buffer zone. Clarifications should be made to tables throughout the AFC that depict vegetation acreage, and an additional map should be created. This map can be based off Figure 5.6-4, Vegetation Communities/Land Cover Type, but should be plotted onto a topographic map, and clearly showing project vegetation types, and vegetation types within the study area buffer zone.

Response: The vegetation types for the onsite and study area buffer zone are included in the below tables. An additional vegetation map has been plotted onto a topographic map, clearly showing project vegetation types, and vegetation types within the study area buffer zone (Figure 5.6.5)

TABLE 5.6-10
VEGETATION TYPE LOCATION ONSITE
INCLUDING LINEARS AND LAYDOWN AREA

Vegetation Community Type	Acres
Non-Native Grassland	2.7
Riparian	0.00
Developed/Disturbed	23.0

TABLE 5.6-11
VEGETATION WITHIN THE STUDY AREA BUFFER ZONE

Vegetation Community Type	Acres
Non-Native Grassland	433.2
Riparian	5.6
Developed/Disturbed	365.6

BACKGROUND

Tables 5.6-2 and 5.6-3 lists plant and wildlife species observed within the study area, respectively. The blue gray gnatcatcher was observed within the study area; however, in Table 5.6-5, a similar species with similar habitat requirements, the coastal California gnatcatcher, is listed as "absent" the potential of occurrence on the project. Staff requires clarification of the information used to eliminate species from further review within the AFC.

Technical Area: Biological Resources

Data Request BIO-20: For both tables 5.6-2 and 5.6-3 please differentiate observations of species within the study area from species observed within the project site. Please provide a textual description of species eliminated from further review and considerations used in eliminating species from further analysis within the AFC. Please provide literature references, personal communications, or any other information source used in making determinations of presence or absence.

Response: The new tables below include the species observations within the study area and within the project site.

TABLE 5.6-12
PLANT SPECIES OBSERVED ONSITE INCLUDING LINEARS AND LAYDOWN AREA

Scientific Name	Common Name
FLOWERING PLANTS	
MONOCOTS	
Poaceae	Grass Family
Avena barbata *	Slender wild oat
Avena fatua *	Wild oat
Bromus diandrus * †	Ripgut brome
Bromus hordeaceus *	Soft chess
*Bromus japonicus**	Japanese broom
Bromus madritensis *	Foxtail chess
Bromus sp.* †	Brome grass
Cynodon dactylon *	Bermuda grass
Elymus condensatus	Giant wild rye
Lolium multiflorum *	Italian wild rye
DICOTS	
Aizoaceae	Fig-Marigold Family
Carpobrotus edulis	Iceplant
Apocynaceae	Dogbane Family
Nerium oleander	Oleander
Asteraceae	Aster Family
Ambrosia psilostachya	Ragweed
Heterotheca grandiflora	Telegraph weed
Lactuca serriola *	Prickly lettuce
Sonchus oleraceus *	Sow thistle
Brassicaceae	Mustard Family
Brassica nigra *	Black mustard
Hirschfeldia incana *	Shortpod mustard
Chenopodiaceae	Goosefoot Family
Salsola tragus *	Russian thistle
Convolvulaceae	Morning Glory Family
*Convolvulus arvensis**	Bindweed

TABLE 5.6-12 (CONTINUED)
PLANT SPECIES OBSERVED ONSITE INCLUDING LINEARS AND LAYDOWN AREA

Scientific Name	Common Name
Euphorbiaceae	Spurge Family
Ricinus communis *	Castor bean
Fabaceae	Pea Family
Melilotus alba *	White sweetclover
Trifolium repens *	White clover
Malvaceae	Mallow Family
Malva parviflora *	Cheeseweed
Myrtaceae	Myrtle Family
Eucalyptus sp. *	Eucalyptus tree
Solanaceae	Nightshade Family
Nicotiana glauca *	Tree tobacco
Verbenaceae	Verbena Family
Lantana sp.*	Lantana

* Non-native (California Invasive Plant Council, 2006),

TABLE 5.6-13
OBSERVED WILDLIFE SPECIES OBSERVED ONSITE INCLUDING LINEARS AND LAYDOWN AREA[5]

Scientific Name	Common Name
REPTILES	
Phrynosomatidae	Spiny Lizards
Sceloperous occidentalis	Western fence lizard
BIRDS	
Columbidae	Pigeons and Doves
Zenaida mcroura	Mourning Dove
Falconidae	Falcons
Falco sparverius	American Kestrel
Icteridae	New World Blackbirds and Orioles
Sturnella neglecta	Western Meadowlark
Trochilidae	Hummingbirds
Calypte anna	Anna's Hummingbird
Tyrannidae	Tyrant Flycatchers
Tyrannus vociferans	Cassin's Kingbird
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	Northern Mockingbird
Corvidae	Jays and Crows
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
Emberizidae	American Sparrows
Zonotrichia leucophrys	White-crowned Sparrow
Fringillidae	Finches
Carpodacus mexicanus	House Finch
Sciuridae	Squirrels
Otospermophilus beecheyi	California ground squirrel (sign)

[5] Wildlife species observed may utilize the project site and the buffer zone.

TABLE 5.6-14
OBSERVED PLANT SPECIES OBSERVED WITHIN THE STUDY AREA BUFFER ZONE[6]

Scientific Name	Common Name
FLOWERING PLANTS	
MONOCOTS	
Arecaceae	Palm Family
Washingtonia sp.	Fan palm
Cyperaceae	Sedge Family
Cyperus eragrostis	Tall umbrella-sedge
Poaceae	Grass Family
Avena barbata *	Slender wild oat
Avena fatua *	Wild oat
Bromus diandrus * †	Ripgut brome
Bromus hordeaceus *	Soft chess
*Bromus japonicus**	Japanese broom
Bromus madritensis *	Foxtail chess
Bromus sp.* †	Brome grass
Cynodon dactylon *	Bermuda grass
Elymus condensatus	Giant wild rye
Lolium multiflorum *	Italian wild rye
Piptatherum miliaceum	Smilo grass
Polypogon monspeliensis *	Annual beard grass
Typhaceae	Cattail Family
Typha domingensis	Southern cattail
DICOTS	
Aizoaceae	Fig-Marigold Family
Carpobrotus edulis	Iceplant
Anacardiaceae	Sumac Family
Rhus ovata	Sugar bush
Schinus molle *	Pepper tree

[6] Wildlife species observed may utilize the project site and the buffer zone.

TABLE 5.6-14 (CONTINUED)
OBSERVED PLANT SPECIES OBSERVED WITHIN THE STUDY AREA BUFFER ZONE

Scientific Name	Common Name
Apiaceae	Carrot Family
Foeniculum vulgare *	Sweet fennel
Apocynaceae	Dogbane Family
Nerium oleander	Oleander
Asteraceae	Aster Family
Ambrosia psilostachya	Ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	Mugwort
Baccharis pilularis	Coyote brush
Baccharis salicifolia	Mule fat
Conyza canadensis	Common horseweed
Encilia californica	California encilia
Heterotheca grandiflora	Telegraph weed
Isocoma menziesii var. *menziesii*	Goldenbush
Iva hayesiana **	San Diego marsh elder
Lactuca serriola *	Prickly lettuce
Picris echioides *	Bristly ox-tongue
Sonchus asper *	Prickly sow thistle
Sonchus oleraceus *	Sow thistle
Stephanomeria exigua	Wreath-plant
Brassicaceae	Mustard Family
Brassica nigra *	Black mustard
Hirschfeldia incana *	Shortpod mustard
Cactaceae	Cactus Family
Cylindropuntia sp.	Cholla
Opuntia littoralis	Coastal prickly pear
Chenopodiaceae	Goosefoot Family
Atriplex semibaccata *	Australian saltbush
Salsola tragus *	Russian thistle

TABLE 5.6-14 (CONTINUED)
OBSERVED PLANT SPECIES OBSERVED WITHIN THE STUDY AREA BUFFER ZONE

Scientific Name	Common Name
Convolvulaceae	Morning Glory Family
*Convolvulus arvensis**	Bindweed
Euphorbiaceae	Spurge Family
Chamaesyce polycarpa	Small seeded spurge
Eremocarpus setigerus	Doveweed
Ricinus communis *	Castor bean
Fabaceae	Pea Family
Melilotus alba *	White sweetclover
Trifolium repens *	White clover
Geraniaceae	Geranium Family
Erodium botrys *	Longbeak stork's bill
Erodium cicutarium *	Redstem stork's bill
Lamiaceae	Mint Family
Marrubium vulgare *	Common horehound
Malvaceae	Mallow Family
Malva parviflora *	Cheeseweed
Myrtaceae	Myrtle Family
Eucalyptus sp. *	Eucalyptus tree
Onagraceae	Evening Primrose Family
Oenothera elata	Hooker's evening primrose
Polygonaceae	Buckwheat Family
Rumex crispus *	Curly dock
Primulaceae	Primrose Family
Anagallis arvensis *	Scarlet pimpernel
Rosaceae	Rose Family
Heteromeles arbutifolia	Toyon
Salicaceae	Willow Family
Salix exigua	Sandbar willow
Salix lasiolepis	Arroyo willow

TABLE 5.6-14 (CONTINUED)
OBSERVED PLANT SPECIES OBSERVED WITHIN THE STUDY AREA BUFFER ZONE

Scientific Name	Common Name
Solanaceae	Nightshade Family
Nicotiana glauca *	Tree tobacco
Tamaricaceae	Tamarisk Family
Tamarix ramosissima	Mediterranean tamarisk
Urticaceae	Nettle Family
Urtica dioica	Stinging nettle
Verbenaceae	Verbena Family
Lantana sp.*	Lantana

* Non-native (California Invasive Plant Council, 2006).

TABLE 5.6-15
OBSERVED WILDLIFE SPECIES WITHIN THE STUDY AREA BUFFER ZONE

Scientific Name	Common Name
REPTILES	
Phrynosomatidae	Spiny Lizards
Sceloperous occidentalis	Western fence lizard
BIRDS	
Accipitridae	Hawks, Kites, and Eagles
Buteo jamaicensis	Red-tailed hawk
Ardeidae	Herons and Egrets
Ardea alba	Great egret
Columbidae	Pigeons and Doves
Zenaida mcroura	Mourning dove
Falconidae	Falcons
Falco sparverius	American kestrel
Icteridae	New World Blackbirds and Orioles
Sturnella neglecta	Western meadowlark
Polioptilidae	Gnatcatchers
Polioptila caerulea	Blue gray gnatcatcher
Trochilidae	Hummingbirds
Calypte anna	Anna's hummingbird
Tyrannidae	Tyrant Flycatchers
Sayornis nigricans	Black phoebe
Tyrannus vociferans	Cassin's kingbird
Tytonidae	Barn owls
Tyto alba	Barn owl
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	Northern mockingbird
Corvidae	Jays and Crows
Corvus brachyrhynchos	American crow
Corvus corax	Common raven

TABLE 5.6-15 (CONTINUED)
OBSERVED WILDLIFE SPECIES WITHIN THE STUDY AREA BUFFER ZONE

Scientific Name	Common Name
Emberizidae	American Sparrows
Zonotrichia leucophrys	White-crowned sparrow
Fringillidae	Finches
Carpodacus mexicanus	House finch
MAMMALS	
Canidae	Foxes, Dogs, Wolves, and Coyotes
Canis familiaris	Domestic dog (sign)
Canis latrans	Coyote (sign)
Leporidae	Rabbits and Hares
Sylvilagus sp.	Cottontail (sign)
Sciuridae	Squirrels
Otospermophilus beecheyi	California ground squirrel (sign)

The project was also assessed for its potential to support special-status species based on habitat suitability comparisons with reported occupied habitats. Data and information from resource management plans and relevant documents to determine the locations and types of biological resources that have the potential to exist within and adjacent to the project study area; resources were evaluated within one mile and ten miles of the project pursuant to California Energy Commission's (CEC) evaluation guidelines. The materials reviewed included the following:

- County of San Diego, Biological Mitigation Ordinance (1996)
- County of San Diego in Conjunction with the United States Fish and Wildlife Service (USFWS). Multiple Species Conservation Program
- USFWS Critical Habitat Mapper and File Data (USFWS, 2010a and 2010b)

- USFWS Carlsbad Field Office Species List for San Diego County
- The California Natural Diversity Database (CDFG, 2010)
- California Native Plant Society Electronic Inventory (CNPS, 2010)

The following definitions were also utilized to characterize the potential for occurrence for special-status species:

- **Absent [A] –** Species distribution is restricted by substantive habitat requirements, which do not occur within the project footprint, and no further survey or study is necessary to determine likely presence or absence of this species.
- **Low [L] –** Species distribution is restricted by substantive habitat requirements, which are negligible within the project footprint, and no further survey or study is obligatory to determine likely presence or absence of this species.
- **Habitat Present [HP] –** Species distribution is restricted by substantive habitat requirements, which occur within the project footprint, and further survey or study may be necessary to determine likely presence or absence of species.
- **Present [P] –** Species or species sign were observed to be present in the project footprint.

As an example, the California gnatcatcher ([CAGN] *Polioptila californica californica*), which is closely associated with coastal sage scrub habitat; particularly in those areas dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum* fasciculatum) (Braden et al. 1997), was not observed in the study area. The project site includes non-native developed/disturbed habitats which will not support CAGN. Furthermore, construction of the project will not result temporary and permanent impacts special-status species because of the permanent removal of non-native developed/

disturbed habitats. As a result, the CAGN is characterized with Absent [A]. The blue gray gnatcatcher ([BGGN] *Polioptila caerulea*) which is not a special status species, was observed in the study area; however it was not observe within project site. The BGGN is closely associated to variety of native habitats including coastal sage scrub and mature forest. The project site includes non-native developed/disturbed habitats which will not support BGGN. Each species potential for occurrence is detailed further in Table 5.6-5 in the AFC (February 2011).

BACKGROUND

Page 5.6-17 references surveys and literature review that supports the assertion that the project study area does not contain denning or nesting sites for common and or special status species, and that no active nesting raptor or passerine birds were observed in the study area. Staff needs further information to complete analysis of the projects' conformance with the Migratory Bird Treaty Act, and with Fish and Game codes relative to protection of furbearing mammals.

Technical Area: Biological Resources

Data Request BIO-21: Please provide citations for literature, and describe survey results that support assertion that no denning or nesting sites for special status species occur within the study area. Discuss the potential of the surrounding adjacent landscape to support populations of special status species.

Response: Prior to beginning field surveys, URS Corporation (URS) consulted resource specialists (CDFG and USFWS) and reviewed available information from resource management plans and relevant documents (see below) to determine the locations and types of biological resources that have the potential to exist within and adjacent to the project study area. Resources were evaluated within one mile and ten miles of the project pursuant to California Energy Commission's (CEC) evaluation guidelines. The materials reviewed included the following:

- County of San Diego, Biological Mitigation Ordinance (1996)
- County of San Diego in Conjunction with the United States Fish and Wildlife Service (USFWS) and California Department of Fish & Game (CDFG). Multiple Species Conservation Program
- USFWS Critical Habitat Mapper and File Data (USFWS, 2010a and 2010b)
- USFWS Carlsbad Field Office Species List for San Diego County

- The California Natural Diversity Database (CDFG, 2010) (See Appendix J-3)
- California Native Plant Society Electronic Inventory (CNPS, 2010)
- Aerial Photographs (Digital Globe 2009)
- Biological Database for California Department of Transportation (Caltrans) State Route (SR)-11 Project (URS, 2005)

The majority of the study area has been previously disturbed and the region includes developed areas containing commercial and public infrastructure. The project's proposed ground disturbance footprint is relatively flat and insulated from the adjacent drainage and open space by an existing road (Paseo De La Fuente) and existing ornamental landscaping. However, the Route B Transmission Line option will span the drainage, but no impacts are expected. Facility placement and design, including all linear facilities avoid all special aquatic resource areas (including waters of the U.S. and State). The final design spans all potential jurisdictional features and avoids impacts regulatory permitting (e.g., 404, 401 and 1600). Additionally, the industrial park developer graded the property in first quarter 2011 as described in the 2009-2010 County of San Diego Grading Permit 2700-1555.

The literature review and field survey data suggests that there are no denning or nesting sites that may support special status species within the Project footprint. The Project footprint lacks suitable habitat that would typically support special status species or receive state or federal Endangered Species Act (ESA) protections. Therefore, there is no reasonable presumption of adverse impact to any special status species or their habitats as a result of Project implementation. The surrounding adjacent landscape includes developed areas (e.g., Roads, Otay Mesa Generating Project), disturbed areas, non-native grasses and ornamental landscaping. Native habitats do exist east of the project site behind the existing Otay Mesa

Generating Project. These native habitats may support populations of special status species; however, the PPEC is separated from all native habitats by the existing Otay Mesa Generating Project, and open space. Please see Figure 5.6-2 in the AFC presenting the CNDDB query results for all of the special status species observations in the region. Additionally, no impacts are expected to species protected by the Migratory Bird Treaty Act and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3504, 3505, et seq.) including fur bearing mammals because of the permanent removal of non-developed/disturbed native habitat.

BACKGROUND

Page 5.6-20 of the AFC states that potential collision hazards may exist with the 100-foot tall stacks, and that several raptors, such as red-tailed hawk, Cooper's hawk, and barn owls may potentially collide with the stacks. With the information currently provided, staff is currently unable to ascertain if collisions will be an impact of the project. Analysis of any necessary minimization techniques, as well as the project's conformance with applicable federal guidelines (Migratory Bird Protection Act) and voluntary guidelines which are jointly issued by the USFWS and the Avian Power Line Interaction Committee, will not be possible until required information is supplied, including information on the T-line poles and towers.

Technical Area: Biological Resources

Data Request BIO-22: Please provide information that was used to determine the potential for collisions. Document existing known raptor nest sites and distance to the project site, and how the location of the stacks within the surrounding ecosystem, and design details of the stacks may or may not contribute to the potential of collisions.

Response: The literature used to determine the potential for collisions included the following:

- Avian Powerline Interaction Committee (APLIC). 2006. Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C and Sacramento, California.
- Brown, W. M. 1993. Avian collisions with utility structures: Biological perspectives. In: Proceedings: avian interactions with utility structures. Intern. Workshop, Miami, FL. Sponsored by APLIC and EPRI.
- Rich, C., and T. Longcore (Eds.). 2006. *Ecological Consequences of Artificial Night Lighting*. Island Press.

No known raptor nest sites were observed within the project footprint and 1,000 foot buffer during the November 2010 field surveys. Project operational impacts include potential collision hazards associated with the three approximately 100-foot-tall

stacks. Migratory birds generally fly at an altitude that would avoid ground structures, except when crossing over topographic features (e.g., ridge tops) or when inclement weather forces them closer to the ground. Topographic or ecological features are not present that would likely attract birds to the project area. Raptor and other migratory bird species that are protected by the Migratory Bird Treaty Act (MBTA) are expected to occur in the general area and could potentially collide with the stacks during inclement weather (e.g., fog and rain). Smaller birds are assumed to be more agile and are less likely to collide with project facilities. Collisions are also more probable near wetlands, within valleys that are bisected by power lines or stacks, and within narrow passes where power lines run perpendicular to flight paths (APLIC 1996). These features are not present near or on the proposed Project site. Therefore, it is unlikely that the Project's structures would pose a significant collision threat to resident or migratory bird populations.

Because of the relatively low structure heights (three approximately 100-foot-tall stacks), the potential for wildlife collisions is considered less than significant. In addition, placement of downward-facing lighting on the stacks to reduce attracting wildlife would minimize the potential for collisions. Accordingly, mitigation measure BIO-8 was proposed in the AFC to ensure the design is in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Raptor Protection on Power Lines. With implementation of this mitigation, significant avian mortality due to electrocution by PPEC transmission structures is not expected to occur.

Technical Area: Biological Resources

Data Request BIO-23: Please also identify potential mitigation measures, including best management practices available to lessen the effects. Please also discuss how power lines and poles or towers may be adapted to prevent raptors from attempting to perch or nest upon them, which can result in electrocutions, provide specifications of the power lines, and describe if the project will be in conformance with the voluntary Avian Power Line Interaction Committee guidelines.

Response: Potential impacts to wildlife resulting from electrocution by transmission lines will be mitigated by incorporating the construction design recommendations provided in Suggested Practices for Raptor Protection on Power Lines, as described in Mitigation Measure BIO-8 on page 5.6-27 of the AFC. Specifically, the phase conductors shall be separated by a minimum of 150 cm (60 in). In addition to the aforementioned separation requirements, Condition of Certification BIO-8 (included below) states that bird perch diverters and/or specifically designed avian protection materials should be used to cover electrical equipment where adequate separation is not feasible (APLIC 2006). With implementation of this design feature and adherence to BIO-8, significant avian mortality due to electrocution by PPEC transmission structures is not expected to occur.

As set forth on pages 5.6-27 and 5.6-28 of the AFC, BIO-8 provides, in part:

BIO-8 Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures to avoid or minimize impacts to the local biological resources, including:

1. Design, install, and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources.

2. Design, install, and maintain transmission lines and all electrical components in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC, 2006) to reduce the likelihood of electrocutions of large birds.
3. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat.

BACKGROUND

Pages 5.6-18-5 and 6-19 provides details of construction impacts, and references a short-term loss of habitat, and states that the project may only temporarily and incrementally increase habitat fragmentation on a regional level. Information provided is insufficient to allow staff to conduct analysis of indirect effects of construction activities, such as noise, lighting, and vibrations, or to support the claim of temporary/incremental habitat fragmentation.

Technical Area: Biological Resources

Data Request BIO-24: Please provide information on extent and/or duration of any proposed construction and operational nighttime lighting, noise impacts and attenuation across the site and into the study area, and vibratory effects. Current background noise levels and anticipated project-related noise levels (both construction-related and operational) must be described within the biological section of the AFC, as well as available species-specific thresholds. Please conduct a literature review and consult with CDFG and the USFWS to identify noise threshold standards for wildlife, particularly special-status wildlife species.

Response: Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take place from February 2013 to May 2014. Although operation would create additional noise, light and vibration, significant impacts to biological resources are not expected. The existing Otay Mesa Generating Project, located adjacent to the project site, provides an elevated ambient level of noise and lighting to which local wildlife, including nocturnal species, have acclimated.

The closest receptor **(**approximately 4,700 southwest of the project site**)** included existing noise levels ranging from 62 dBA to 74 dBA. The average hourly L_{eq} during the entire measurement period was 72dBA. The average daytime, evening, and nighttime hourly L_{eq} values were 73 dBA, 69 dBA, and 69 dBA, respectively (Section 5.12 of the AFC). The higher noise levels are due to high volumes of traffic near the

along Otay Mesa Road and the existing Otay Mesa Generating Project.

The impact of noise involves a number of parameters, but one of the most apparent is the potential for masking of wildlife communication. Wildlife depends on calls and song for species identification, mate attraction, and territorial defense. Hearing in all forms of wildlife is not analogous to hearing in mammals. For example, birds show a high degree of frequency selectivity and vocalize in a much higher frequency level than most traffic noise produces. Studies evaluating the potential for masking of bird song by traffic noise have concluded that continuous noise levels above 60 decibels A-weighted (dBA) equivalent sound level (Leq) within habitat areas may affect the suitability of habitat use (SANDAG, 1988). Many regulatory agencies (e.g., CDFG, USFWS) suggest that the application of 60 dBA Leq hourly levels to be considered a significant impact for special status species at the edge of suitable habitat. The existing noise exposure at the closest sensitive receptor is already above 60 dBA and the existing noise plus the project does not change the noise exposure as a result of the proposed project. As such, any individual species present in the area or in adjacent/ surrounding areas are assumed to have acclimated and developed tolerance to substantial noise, light, and other effects resulting from the presence of an active power plant and its access roads. Temporary noise levels associated with site clearing are estimated to be 89 dBA at a distance of 50 feet during the daytime. Nonetheless, because of the recent industrial park developer grading, special status species are not expected to occur within the site.

Vibration from an operating power plant could be transmitted by two mechanisms: through the ground (groundborne vibration) and through the air (airborne vibration). The operating components of a simple-cycle power plant consist of high-speed gas turbines, compressors, and various pumps. All of these pieces of equipment must be carefully balanced to operate smoothly. Permanent vibration sensors are attached to the turbines and generators. Similar facilities (e.g., Panoche

Energy Center) have not resulted in ground or airborne vibration impacts, and it is not anticipated that the Project will produce groundborne or airborne vibration. The only potential power plant construction operation likely to produce vibration that could be perceived off site would be pile driving. Pile driving will not be required for construction of PPEC. Therefore, no vibration impacts are anticipated.

The mitigation measures included in the AFC (Section 5.6.5) are expected to reduce operation and construction impacts from noise, light, and vibration to a less-than-significant level.

Technical Area: Biological Resources

Data Request BIO-25: Please identify specific mitigation/minimization measures to be implemented to limit impacts of construction effects, including but not limited to lighting, noise, vibratory effects, or any other indirect effect caused by construction. These would include any use of directional lighting, limits to extent of lighting or particularly noisy equipment during special status species breeding time periods.

Response: All proposed short term construction lighting, noise, vibratory impacts on wildlife species near the proposed Project are assumed to insignificant as a result of the existing developed areas containing commercial and public infrastructure, including existing electric generation uses (e.g., Otay Mesa Generating Project). Existing energy facilities adjacent to the proposed site provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. Furthermore, the following Mitigation Measures will be implemented during construction:

Visual Resources-1: The project owner shall prepare a Lighting Plan for Compliance Project Manager (CPM) and CEC visual resources staff review and approval. The Lighting Plan shall include the following components:

- External lighting shall incorporate commercially available fixture hoods and shielding that direct light downward or toward the area to be illuminated.
- Light fixtures shall not cause obtrusive spill light beyond the project boundary.
- All lighting shall be of minimum necessary brightness consistent with operational safety and security.
- Direct lighting shall not illuminate the nighttime sky.

NOISE-3: The project owner shall submit to the CPM for review and approval a noise control program and a statement, signed by the project owner's project manager, verifying that

the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal/OSHA standards.

NOISE-5: Heavy equipment operation and noisy construction work relating to any project features shall be restricted to an eight hour period between the times delineated below:

- Any Day: 7:00 a.m. to 7:00 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

BIO-1: The project owner will assign a Designated Biologist to the project. The project owner will submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the California Energy Commission (CEC) Compliance Project Manager (CPM) for approval.

The Designated Biologist must meet the following minimum qualifications:

- Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
- Three years of experience in field biology or current certification of a nationally recognized biological society, such as the Ecological Society of America or the Wildlife Society; and
- At least one year of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed Designated Biologist or alternate has the appropriate training and

background to effectively implement the Conditions of Certification.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

BIO-2: The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities.

The Designated Biologist may be assisted by the approved Biological Monitor(s), but the Designated Biologist will be the contact for the project owner and CPM. The Designated Biologist shall:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification;
2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner;
3. Be available to supervise, conduct, and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each

day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e., parking lots) for animals in harm's way;

6. Notify the project owner and the CPM of any noncompliance with any biological resources Condition of Certification;
7. Respond directly to inquiries of the CPM regarding biological resource issues;
8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and
9. Train the Biological Monitors as appropriate and verify their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits.

During project operation, the Designated Biologist will submit record summaries in the Annual Compliance Report, unless their duties are ceased as approved by the CPM.

BIO-3: The project owner's Designated Biologist will submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume will demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Biological Monitor(s) training by the Designated Biologist will include familiarity with the Conditions of Certification and the BRMIMP, WEAP, and all permits.

BIO-4: Designated Biologist and Biological Monitor Authority. The project owner's Construction/Operation Manager will act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification.

If required by the Designated Biologist and/or Biological Monitor(s), the project owner's Construction/ Operation Manager will halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist will:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the Construction/Operation Manager when to resume activities;
3. Notify the CPM if there is a halt of any activities and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage; and
4. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor will act on behalf of the Designated Biologist

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within 5 working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

BIO-5: Worker Environmental Awareness Program. The project owner will develop and implement a CPM-approved WEAP by which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure, is informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation through which supporting written material and electronic media (video or DVD) is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures;
5. Identify whom to contact if there are further comments and questions about the material discussed in the program;
6. Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and
7. The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

The project owner will provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The project owner will submit two copies of the CPM-approved materials at least ten days prior to site and related facilities mobilization.

The signed training acknowledgement forms will be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel will be kept on file for six months following the termination of an individual's employment.

BIO-6: The project owner will submit two copies of the proposed BRMIMP to the CPM (for review and approval) and implement the measures identified in the approved BRMIMP.

The BRMIMP will be prepared in consultation with the Designated Biologist and will identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner.
2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts.
3. All biological resources mitigation, monitoring, and compliance measures required in local agency permits, such as site grading and landscaping requirements.
4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure.
5. All required mitigation measures for each sensitive biological resource.
6. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources.
7. A detailed description of measures that will be taken to avoid or mitigate temporary disturbances from construction activities.
8. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction. This includes the installation of prominently colored fencing or similar materials wherever the limits of grading are adjacent to native/non-native vegetation communities or other biological resources. Fencing will remain in place during all construction activities. Temporary fencing will also be shown on all grading plans

and project specifications. Barriers and signage will be installed to direct public access to appropriate locations.

9. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities – one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen.
10. Duration for each type of monitoring and a description of monitoring methodologies and frequency.
11. Performance standards to be used to help decide if/when proposed mitigation is or is not successful.
12. All performance standards and remedial measures to be implemented if performance standards are not met.
13. A preliminary discussion of biological resources-related facility closure measures.
14. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval.
15. A copy of all biological resources related permits obtained.

The CPM will determine the BRMIMP's acceptability within 45 days of receipt. If any permits have not yet been received when the BRMIMP is submitted, these permits will be submitted to the CPM within five days of their receipt, and the BRMIMP will be revised or supplemented to reflect the permit condition within ten days of their receipt by the project owner. Ten days prior to site and related facilities mobilization, the revised BRMIMP will be resubmitted to the CPM.

The project owner will notify the CPM no fewer than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM to ensure no conflicts exist.

Implementation of BRMIMP measures will be reported in the Monthly Compliance Reports by the Designated Biologist (i.e., survey results, construction activities that were monitored, species observed). Within 30 days after completion of project construction, the project owner will provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed; a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases; and which mitigation and monitoring items are still outstanding.

BIO-7: The project owner shall implement the following measures to manage their construction site and related facilities in a manner to avoid or minimize impacts on the local biological resources.

1. Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS and CDFG. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals by the Designated Biologist or Biological Monitor.
2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week from the project site.
3. Prohibit feeding of wildlife by staff and subcontractors.
4. Prohibit nonsecurity-related firearms or weapons from being brought to the project site.
5. Prohibit pets from being brought to the project site.
6. Report all inadvertent deaths of special-status species to the appropriate project representative.
7. Injured animals shall be reported to CDFG, and the project owner shall follow instructions that are provided by CDFG.

The USFWS Office shall be notified in writing within three working days of the accidental death or injury to special-status species during project-related activities.

8. Contact USFWS and CDFG for specific notification procedures.
9. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used.

BIO-8: Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures to avoid or minimize impacts to the local biological resources, including:

1. Design, install, and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources.
2. Design, install, and maintain transmission lines and all electrical components in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC, 2006) to reduce the likelihood of electrocutions of large birds.
3. Eliminate any California Exotic Pest Plants of Concern (Cal-IPC, 2007) List A species from landscaping plans.
4. Prescribe a road sealant that is nontoxic to wildlife and plants.
5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat.
6. Use straw wattles or silt fences to prevent sediment from reaching irrigation and drainage canals.
7. Fence buffer zones during construction to minimize habitat disturbance.

8. Restore temporarily impacted areas to approximate original site conditions.

BIO-11: If federally protected species (e.g., San Diego fairy shrimp) are identified within the proposed ground disturbance footprint, the applicants will comply with the state and federal Endangered Species Acts will ensure that impacts to special-status species would be less than significant with mitigation.

BIO-12: In order to comply with the Migratory Bird Treaty Act and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3504, 3505, et seq.), any vegetation clearing would take place outside of the typical avian nesting season (i.e., February 1st – August 31st), to the maximum extent practical. If this is not possible, prior to ground-disturbing activities, construction, and so forth within the Action Area, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey shall occur not more than 72 hours prior to initiation of project activities and any occupied passerines and/or raptor nests occurring within or adjacent to the Action Area will be delineated. To the maximum extent practicable, a minimum buffer zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

BACKGROUND

Page 5.6-20 of the AFC describes air emissions as an operational impact associated with the project. The project's anticipated NO_X emissions may contribute to the ongoing (cumulative) degradation of endangered species habitat located near the project site. NO_X emissions are a concern of USFWS and CDFG, and staff will be pursuing the issue with those agencies, and share information with the applicant as it becomes available.

Technical Area: Biological Resources

Data Request BIO-26: Please quantify the existing baseline total nitrogen deposition rate in the vicinity of the project in kg/ha/yr. The geographical extent of the nitrogen deposition mapping should be directed by the results, i.e. extend geographically to where the deposition is considered below any stated threshold of significance for vegetation communities. Conduct a literature review and consult with CDFG and USFWS to identify appropriate thresholds. Thresholds for nitrogen deposition by vegetation type are available within the March 2007 California Energy Commission PIER report, titled "Assessment of Nitrogen Deposition: Modeling and Habitat Assessment," available at: http://www.energy.ca.gov/2006publications/CEC-500-2006-032/CEC-500-2006-032.PDF, and the May 2006 2007 California Energy Commission PIER report, titled "Impacts of Nitrogen Deposition on California Ecosystems and Biodiversity, available at: http://www.energy.ca.gov/2005 publications/CEC-500-2005-165/CEC-500-2005-165.PDF.

Response: The National Atmospheric Deposition Program (NADP) monitoring network[7] provides long-term monitoring records of nitrogen wet deposition across the United States. In California, the NADP monitoring sites are mostly located within National Forest and National Park lands. An isopleth data map from the NADP National Trends Network at the University of Illinois Urbana-Champaign (Figure DR 26.1) shows average wet nitrogen deposition rates in the western and southeastern United States of generally less than 3.0 kilograms per hectare

[7] National Atmospheric Deposition Program (NADP). 2010. National Trends Network. University of Illinois, Urbana-Champaign. http://nadp.sws.uiuc.edu/. Accessed June 2011.

per year (kg/ha/yr). Interpolating these data to the vicinity of the PPEC, the baseline value would be between one and two kg/ha/yr in 2009.

The closest nitrogen deposition monitoring location to the PPEC project site is Converse Flats, California, which is approximately 110 miles north of the PPEC site. Direct data measurements from the Converse wet deposition monitoring station show a four-year average from January 2007 through December 2010 of 1.44 kg/ha/yr with a maximum annual average of 1.61 (2008) and a minimum annual average of 1.11 (2009). The value for 2010 was 1.51 kg/ha/yr. The four-year average of 1.44 kg/ha/yr is the best available estimate of background nitrogen wet deposition for the PPEC that is based on verifiable measurements.

The Clean Air Status and Trends Network (CASTNET) reports total, dry, and wet deposition rates for many sites in the United States, including the same Converse Flats site. Over the period 2005 through 2009, reported total nitrogen deposition averaged 4.2 kg/ha/yr with a maximum annual average of 4.97 (2006) and a minimum annual average of 3.06 (2009).[8] No value was reported for 2010. The five-year average of 4.2 kg/ha/yr is the best available estimate of background total nitrogen deposition for the PPEC that is based on verifiable measurements.

CEC staff used a nitrogen deposition rate of 5 kg/ha/yr as a threshold of significance for sensitive habitats in the FSA for the Oakley Generating System project.[9]

[8] http://epa.gov/castnet/javaweb/charts/CON186_totn.png, accessed June 2011.
[9] CEC, Final Staff Assessment, Oakley Generating Station, March 2011, p. 4.2-44.

Technical Area: Biological Resources

Data Request BIO-27: The analysis should specify the amount of total nitrogen deposition in kg/ha/yr in special status habitats, vegetation types, and critical habitat, for wet and dry deposition. Please provide the complete citation for references used in determining this number.

Response: As discussed above, a threshold for significance for sensitive areas of 5 kg/ha/yr is proposed for this analysis.

Project-only nitrogen deposition modeling results are shown in Figure DR-BIO-27.1. This figure shows the area where project total nitrogen deposition rates are predicted to exceed 0.1 kg/ha/yr, which is 2% of the proposed threshold of significance for sensitive areas.

Technical Area: Biological Resources

Data Request BIO-28: Please provide an isopleths graphic over USGS 7.5 minute maps (or equally detailed maps) of the direct nitrogen deposition rates caused by the project. This will be a graphical depiction of the projects' nitrogen deposition.

Response: Wet, dry, and combined deposition rates were calculated using AERMOD. Emission and stack parameters are shown in Table DR-BIO-27.1 The requested isopleth graphic is shown in Figure DR-BIO-27.1. This figure shows the area where project total nitrogen deposition rates are predicted to exceed 0.1 kg/ha/yr, which is 2% of the proposed threshold of significance for cumulative impacts in sensitive areas.

TABLE DR-BIO-28.1
EMISSION RATES AND STACK PARAMETERS FOR NITROGEN DEPOSITION MODELING
(ANNUAL AVERAGE OPERATING EMISSIONS)

Facility/Source	Stack Height (feet)	Stack Diameter (feet)	Stack Flow (wacfm)	Stack Velocity (ft/sec)	Stack Temp (deg F)	Stack Height (meters)	Stack Diameter (meters)	Stack Flow (m^3/sec)	Stack Velocity (m/sec)	Stack Temp (deg K)	Emission Rates, lb/hr		Emission Rates, g/s	
											NO_X	NH_3	NO_X	NH_3
PPEC														
Turbine 1	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	5 ppm	0.675	0.381
Turbine 2	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	5 ppm	0.675	0.381
Turbine 3	100	14.5	645,580	65.16	802	30.48	4.42	304.72	19.86	711.2	5.36	5 ppm	0.675	0.381
Pacific Recovery														
Landfill Engine 1	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	3.0		0.38	0.00
Landfill Engine 2	16	1.5	6,410	60.50	894	4.88	0.46	3.03	18.44	752.04	2.5		0.31	0.00
Landfill Engine 3	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	1.8		0.23	0.00
Landfill Engine 4	18	1.5	17,588	166.00	900	5.49	0.46	8.30	50.60	755.37	2.9		0.36	0.00
Calpeak Border														
Unit 1	50	12	786,547	115.91	700	15.24	3.66	371.21	35.33	644.26	7.21	10 ppm	0.91	1.90
Larkspur 1 and 2														
Larkspur 1	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	5.71	10 ppm	0.72	1.46
Larkspur 2	60	12	599,868	88.40	850	18.29	3.66	283.11	26.94	727.59	5.71	10 ppm	0.72	1.46
Otay Mesa														
Turbine 1	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	11.42	10 ppm	1.44	2.61
Turbine 2	160	18.5	1,019,118	63.19	178	48.77	5.64	480.97	19.26	354.10	11.42	10 ppm	1.44	2.61

Technical Area: Biological Resources

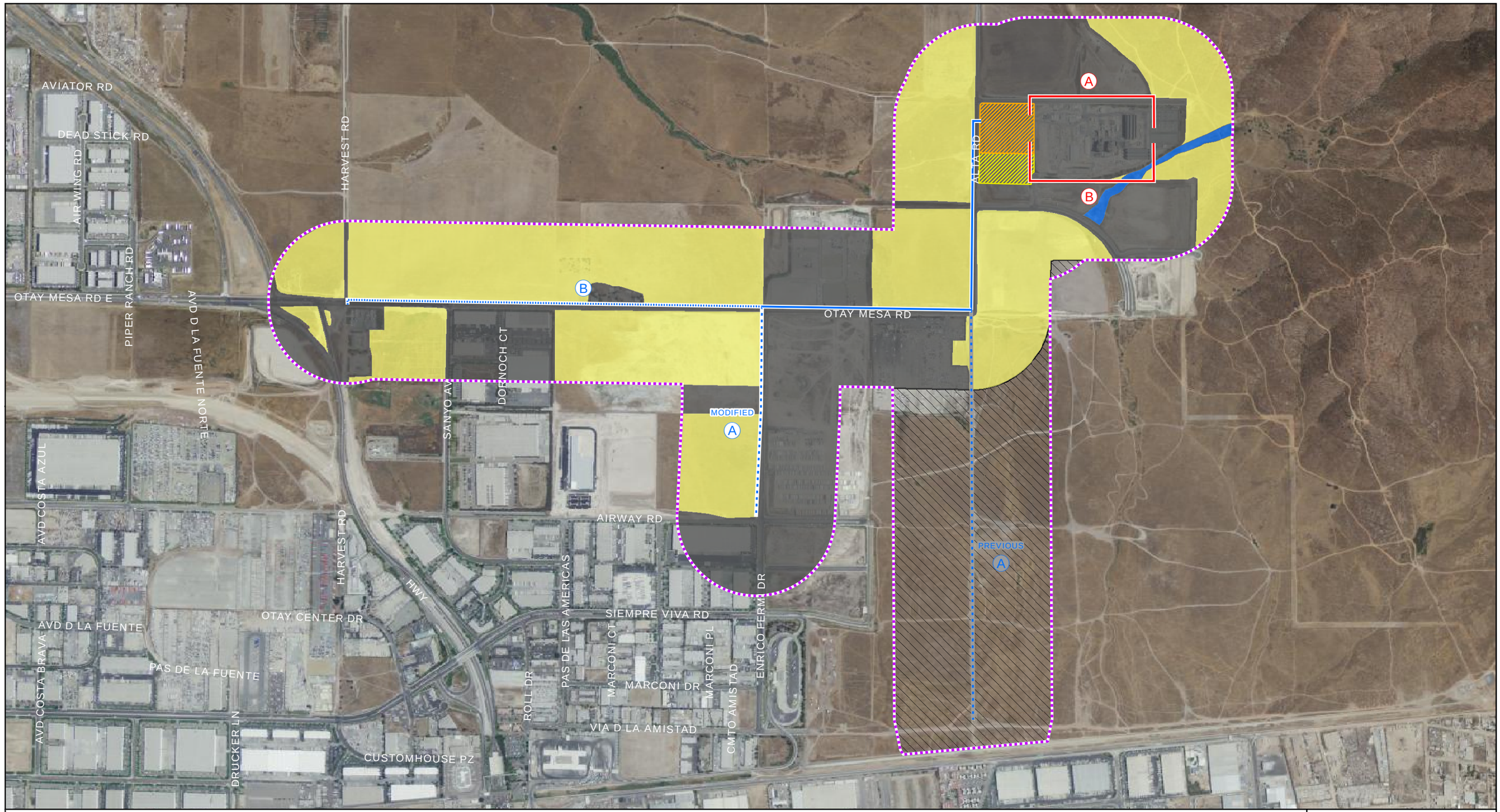
Data Request BIO-29: Please also provide a cumulative impact analysis of the nitrogen deposition values in kg/ha/yr. Provide an isopleths graphic over USGS 7.5-minute maps of the direct nitrogen deposition values in the cumulative analysis and specify the cumulative nitrogen deposition rate in kg/ha/yr at any affected special status habitat, vegetation type, or critical habitat. The geographical extent of the cumulative nitrogen deposition mapping should be directed by the results, i.e. extend geographically to where the deposition is considered below any stated threshold of significance.

Response: Applicant is currently working on the cumulative impact analysis of the nitrogen deposition values in kg/ha/yr and the requested corresponding isopleths graphic. Applicant anticipates providing staff with a supplemental response to BIO-29 within the next few weeks.

Technical Area: Biological Resources

Data Request BIO-30: Please describe potential mitigation to decrease cumulative nitrogen deposition impacts to less than significant levels for any affected resources, particularly Quino checkerspot critical habitat, special status vegetation types, or other special status habitat. Levels of significance should be determined using the references cited in data request 12, or as otherwise specified and agreed-upon by the California Energy Commission, CDFG, and USFWS.

Response: As noted in Response BIO-29, Applicant is currently working on the cumulative impact analysis of the nitrogen deposition values in kg/ha/yr and the requested corresponding isopleths graphic. Depending on the results from that analysis, Applicant will determine if any potential mitigation measures are necessary, and, if so, will provide staff with a supplemental response to BIO-30 within the next few weeks.



Legend

- Biological Study Area
- Not Included in Final Design
- Project Site
- Laydown Area
- 230 kV Transmission Line (Route A and Route B)
- Natural Gas Line
- Modified Route A Natural Gas Line
- Previous Route A Natural Gas Line
- Route B Natural Gas Line
- Developed/Disturbed
- Riparian
- Non-Native Grassland

N

0 600 1,200 Feet

FIGURE 5.6-5
VEGETATION COMMUNITIES/
LAND COVER TYPES

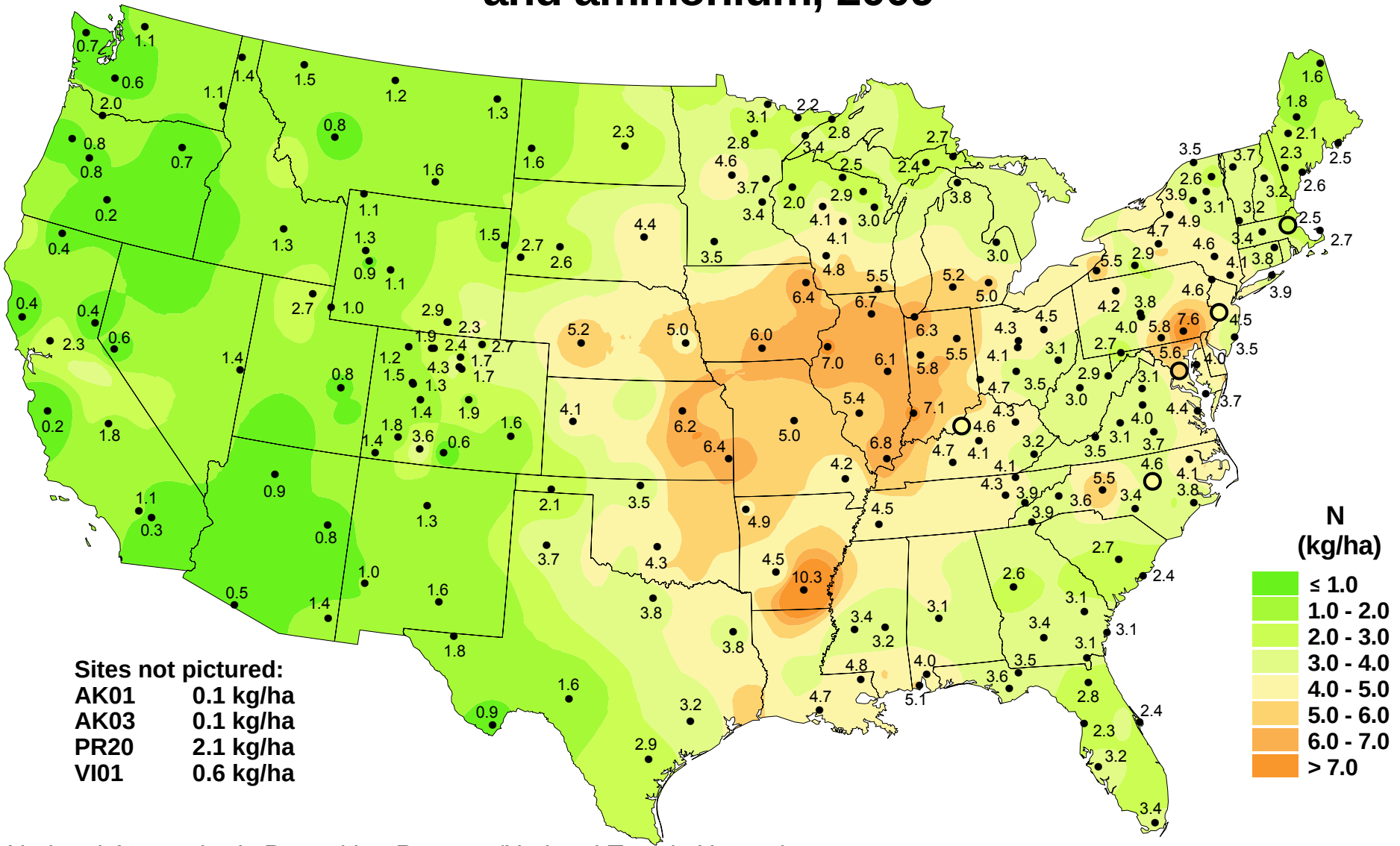
PIO PICO
ENERGY CENTER

PROJECT NO.: 29874827
DATE: DECEMBER 2010

URS

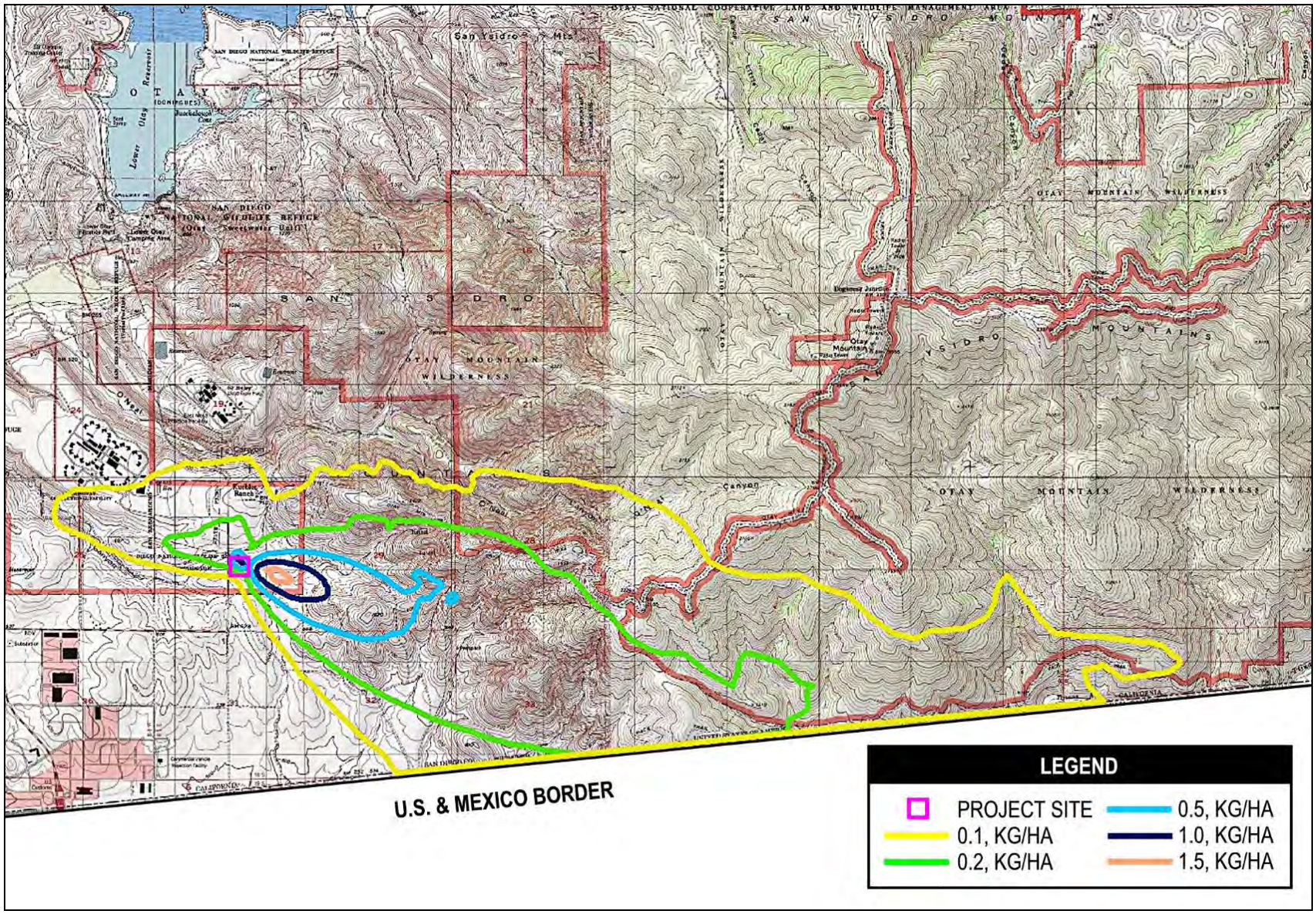
Figure DR 26.1

Inorganic nitrogen wet deposition from nitrate and ammonium, 2009



National Atmospheric Deposition Program/National Trends Network
http://nadp.sws.uiuc.edu

FIGURE DR-BIO 27.1
PPEC TOTAL NITROGEN DEPOSITION, KG/HA/YR



BACKGROUND

The applicant states that 44 previous cultural resources studies have occurred within the project site, laydown area, and/or transmission and gas line corridors (8 studies within the project/laydown areas and 36 within the transmission/gas line corridors), collectively referred to here as the "project area of analysis." While maps were included in the AFC to depict the geographic locations of the previous survey areas, it is difficult to discern from these maps where these survey areas relate to the various portions of the project area of analysis. Absent a reasonable understanding of these relationships, staff would be unable to use the older technical data to derive any useful characterizations of the past cultural resources inventories of the project area of analysis and vicinity or to subsequently construct a cultural resources baseline to assess the results of the current inventory effort.

Technical Area: Cultural Resources

Data Request CUL-31: In order for staff to more meaningfully understand the degree of prior survey coverage in the project area of analysis, please indicate the percentage of previous cultural resources survey coverage that has occurred in each portion of the project area of analysis (i.e., how much of the project site, laydown, natural gas line, transmission line, etc. have been previously surveyed).

Response: Upon reviewing the global information system (GIS) previously conducted survey areas on file, it was determined that the entire project area of analysis has been 100 percent surveyed by studies prior to this assessment. See attached Exhibit 2 as reference.

BACKGROUND

An accurate and thorough description of the various depths and extent of ground disturbance that would be necessary to construct the various components of the proposed project is critical to a meaningful analysis of that project's potential to effect cultural resources that may occur below the ground surface.

Technical Area: Cultural Resources

Data Request CUL-32: Staff requests that the applicant more clearly describe the depth and extent of ground disturbance anticipated in all portions of the project area of analysis, as indicated below:

Plant Site: Please indicate the maximum depth of ground disturbance anticipated for the construction of the plant site.

Laydown Area: Please indicate the maximum depth of ground disturbance anticipated for the laydown area.

Natural Gas Pipeline: Please indicate the maximum depth and width of the trench to be excavated for the natural gas pipeline. In addition, please indicate precisely where the trench will be placed – down the center of the existing road, or along either side of the road? Will the pipeline occur entirely within the road's right-of-way, or will it extend onto adjacent private property?

Transmission Line: Please indicate the maximum depth and width of the trench to be excavated for the portion of the transmission line that is proposed to be routed underground. Also, please describe the width and depth of any subsurface disturbance involved in the placement of the overhead power line (for instance, what is the extent of ground disturbance involved in the placement of the power poles?).

Sewer Pipeline, Storm Water Line, and Water Supply Line: Please depict the locations of the connections for these facilities on Figure 1-2, or provide an additional figure that depicts the locations of these connections, relative to the project site and the facilities to which they will be connected.

Also, please indicate the maximum depth and width of the trenches to be excavated for these connections.

Response: The following information is provided in response to data request CUL-32.

Plant Site: The maximum depth of ground disturbance for the construction area of the plant site is 9.4 feet for the buried electrical duct bank.

Laydown Area: The maximum depth of ground disturbance anticipated for the laydown area is 1 foot for grading.

Natural Gas Pipeline: The natural gas line (Modified Route A and Route B options) would be designed, constructed, and operated by San Diego Gas and Electric (SDG&E). For both Modified Route A and Route B options, the expected trench dimensions for the natural gas supply line would be 2 feet wide by a minimum of 4.75 feet deep. The trench could be deeper in locations depending on any substructures that may be encountered. The tie-in location would require an excavation of approximately 8 feet wide by 20 feet long by approximately 8 to 9 feet deep.

Transmission Line: Route A for the transmission line includes a segment that will be constructed underground. The dimensions of the trench for the underground portion of the transmission line associated with Route A, is approximately 6 feet deep and a maximum width of 8 feet. The extent of ground disturbance for the transmission power poles will be 6 feet diameter by 20 feet deep for the tangent structures (maximum of 3) and 8 feet diameter by 30 feet deep for the dead end structures (quantity 3).

Sewer Pipeline, Storm Water Line, and Water Supply Line: The connections for the water supplies will be installed by the land developer from existing pipes under Alta Road to metering/connection points just inside the property line of the site. This work will be completed prior to construction of the Pio Pico Energy facility. The water connection locations are

shown on the attached Exhibit 3, Alta Consultants drawing CG-4754 Sheet 23. Excavation depths to connect to the lines are approximately 3 feet for the water lines and 10 feet for the sewer line. The storm water line is already installed from the onsite retention pond to piping in Calzada De La Fuente as part of the land developer's grading and drainage plan.

Technical Area: Cultural Resources

Data Request CUL-33: If any component of the proposed project's construction would result in subsurface disturbances greater than three feet (approx. one meter) below surface, please provide a report, based on the available Quaternary science and geoarchaeological literature, of the historical geomorphology of the project areas, including a description of the development of the landforms on which the project areas are proposed with a focus on the character of the depositional regime of each landform since the Late Pleistocene epoch. The discussion should include data on the geomorphology, sedimentology, pedology, hydrology, and stratigraphy of the project areas, and the near vicinity; relate landform development to the potential in the project areas for buried archaeological deposits; and include maps overlaying the above data on the project areas. The report must be prepared by a professional geoarchaeologist who, at a minimum, meets the U.S. Secretary of Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and demonstrates the completion of graduate-level coursework in geoarchaeology, physical geography, geomorphology, or Quaternary science, or education and experience acceptable to cultural resources staff. Please submit the resume of the proposed geoarchaeologist for staff review and approval prior to implementation of the geoarchaeological analysis of the project areas. The report of the findings should be submitted to the Energy Commission under confidential cover.

Response: The response to Data Request 33 (which also addresses Data Request 34) was prepared by Mr. Jay Rehor, who is a qualified geoarchaeologist (see Exhibit 4 for Mr. Rehor's résumé). Mr. Rehor prepared a geoarchaeological assessment report based on existing Quaternary science and geoarchaeological, of the historical geomorphology of the project areas that also includes a description of the development of the landforms on which the project areas are proposed with a focus on the character of the depositional regime of each landform since the Late

Pleistocene epoch. The report also includes data on the geomorphology, sedimentology, pedology, hydrology, and stratigraphy of the project areas, and the near vicinity, and relates landform development to the potential in the project areas for buried archaeological deposits; and include maps overlaying the above data on the project areas.

The geoarchaeological assessment report contains confidential cultural resources location information; therefore, report distribution should be restricted to those with a need to know. Cultural resources are nonrenewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 625.

Technical Area: Cultural Resources

Data Request CUL-34: In the absence of sufficient extant Quaternary science and/or geoarchaeological literature pertinent to the reconstruction of the historical geomorphology of the project area, as requested above, please have the approved geoarchaeologist design a primary geoarchaeological field study of the project areas, submit a research plan for staff approval, conduct the approved research, and provide a report of the findings. The primary study should, at a minimum, include the following elements:

- A map of the present landforms in the project area at a scale of not less than 1:24,000; the data sources for the map may be any combination of published maps, satellite or aerial imagery that has been subject to field verification, and the result of field mapping efforts;
- A sampling strategy to document the stratigraphy of the portions of the landforms in the project areas where the construction of the proposed project will involve disturbance at depths greater than 3 feet;
- Data collection necessary for determinations of the physical character, the ages, and the depositional rates of the various sedimentary deposits and paleosols that may be beneath the surface of the project areas to the proposed maximum depth of ground disturbance. Data collection at each sampling locale should include a measured profile drawing and a profile photograph with a metric scale, and the screening of a small sample (3 5-gallon buckets) of sediment from the major sedimentary deposits in each profile through ¼- inch hardware cloth. Data collection should also include the collection and assaying of enough soil humate samples to reliably radiocarbon date a master stratigraphic column for each sampled landform; and
- An analysis of the collected field data and an assessment, based on those data, of the likelihood of the presence of buried archaeological deposits in the project areas, and, to

the extent possible, the likely age and character of such deposits.

Response:

It was determined by the geoarchaeologist that there exists sufficient Quaternary science and geoarchaeological (geotechnical) literature pertinent to the reconstruction of the historical geomorphology of the project area available to provide an accurate assessment of the study area, therefore data request 34 was not necessary. The results are included in the geoarchaeological assessment report.

The geoarchaeological assessment report contains confidential cultural resources location information; therefore, report distribution should be restricted to those with a need to know. Cultural resources are nonrenewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 625.

BACKGROUND

An integral part of the cultural resources analysis is a pedestrian survey of 100 percent of the project area of analysis to inventory cultural resources. The applicant states, "Due to private property restrictions (e.g., owner permission, fencing, gates, signage), a portion of the archaeological survey area was inaccessible for the intensive pedestrian survey. These areas included the northeast of the proposed transmission line corridors, as well as the entire proposed natural gas line corridor to the west" (Page 7-1 of the revised technical report, March 2011). The CHRIS record search identified a number of previously recorded archaeological sites adjacent to or within the un-surveyed portions of the project area of analysis. Staff needs the results of the pedestrian survey for the as yet un-surveyed portions of the project area of analysis to better understand the nature of the existing resources within the project limits and assess the project's likelihood to affect potentially significant archaeological sites. Staff is unable to provide a comprehensive cultural resources analysis until the results of the archaeological survey for all portions of the project area of analysis have been provided.

Technical Area: Cultural Resources

Revised Data Request CUL-35: Staff would not require that the applicant survey the buffer areas outside the right-of-way with the following stipulations:

1. Staff requests that the applicant provide a parcel map, which depicts the roadway right of-way and adjacent parcels along the areas where the proposed gas line route would be constructed.
2. Staff requests that the applicant submit a written statement, which confirms that the maximum limit of construction for the proposed gas line route (including all digging, clearing, grubbing, parking, driving, or any other construction related ground disturbance) will remain within the roadway right-of-way only.
3. The applicant would be required to conduct archaeological surveys *within the roadway right-of-way* in which the proposed gas line would be constructed. The results of the survey are to be provided to staff as

an addendum to the Cultural Resources Technical Report.

4. Staff requests that the applicant provide project plans depicting the footprint of the proposed linear facility and the extent of construction work (including, the location and width of the trench, any staging/laydown areas, and vehicle access, such as parking/driving).

5. Staff will prepare a condition of certification that limits all construction or related activities to the roadway right-of-way only for the construction of the proposed gas line. Additional surveys would be required if the applicant later determines that additional land/area beyond the right-of-way limits is necessary to perform the construction of the linear facility.

Response

The following information is provided in response to revised data request CUL-35:

1. A parcel map, which depicts the roadway ROWs and adjacent parcels where the proposed gas line route (for both option routes A and B) would be constructed is provided in the addendum to the Cultural Resources Technical Report under confidential filing (see attached Figure 3 of the addendum).

2. As stated previously, the natural gas line would be designed, constructed, and operated by SDG&E. The Applicant cannot make any assurance that SDG&E's activities such as parking, driving or other construction-related ground disturbance will stay entirely within the roadway ROW. However, SDG&E has indicated that at present, SDG&E's intention is to remain within the roadway ROW unless the agency with permitting authority requires an alternative location/route..

3. On June 21, 2011 archaeologists (Rachael Nixon MA, RPA and Sarah Mattiussi) on behalf of the applicant, conducted archaeological surveys *within the roadway right-of-way* in which the proposed gas lines would be

constructed. The results of the survey were negative and a detailed discussion and results of these surveys are provided to staff as an addendum to the Cultural Resources Technical Report under confidential filing.

The addendum to the Cultural Resources Technical Report (which includes responses to Data Requests 35, 36 and 37) contains confidential cultural resources location information; therefore, report distribution should be restricted to those with a need to know. Cultural resources are nonrenewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 625.

4. As mentioned above, the gas line would be designed, constructed, and operated by SDG&E. SDG&E will construct the gas pipeline under a lane of the existing roadway or within the roadway shoulder and within the selected gas line route (for both option routes A and B). See Figure 3 in the addendum to Cultural Resources Technical Report submitted under confidential filing.
5. This portion of revised CUL-35 does not require a response from the applicant, therefore none has been provided.

BACKGROUND

The degree of ground surface visibility during a pedestrian cultural resources survey is an important factor in the identification and/or relocation of archaeological resources and for developing a preliminary assessment as to the project's likelihood to affect potentially significant cultural resources. The applicant states, "Although archaeological resources were previously recorded within the survey area, the URS archaeological team identified no cultural resources within the project site, laydown area, transmission and underground gas line corridors, or within the survey buffer" (p.8-1 of the revised technical report, March 2011). However, as stated by the applicant in the methodology section of the report, "Overall visibility was poor over the bulk of the archaeological survey area due to low growing vegetation. Visibility ranged from 5 – 10 percent on approximately 80 percent of the ground surface while the remaining ground surface had high visibility" (p. 7-3, revised technical report, March 2011). Results based on a visibility range of 5 – 10 percent over 80 percent of the project area does not provide staff with sufficient evidence to dismiss the previously-identified sites from the cultural resources inventory or to conclude that these sites would not be significantly affected by the project.

Technical Area: Cultural Resources

Data Request CUL-36: Please either resurvey those areas of poor visibility when/if the vegetation cover permits improved surface visibility of mineral soil (at least 50 percent visibility), or develop and implement an alternative survey method (e.g., systematic surface scrapes along survey transects) that enables improved surface visibility of mineral soil (at least 50 percent visibility) within areas of dense ground cover to more accurately conclude whether or not cultural resources are present or absent within the project area of analysis. Please provide the results of the resurvey efforts or alternative survey method(s) in an addendum to the cultural resources technical report.

Response: On June 21, 2011 archaeologists (Rachael Nixon MA, RPA and Sarah Mattiussi) on behalf of the applicant, conducted archaeological surveys within the gas line (A and B) *roadway right-of-way*, and revisit/resurvey of the Transmission Line corridors (A and B plant site, and laydown area). The overall visibility within the gas line *roadway right-of-way* and transmission lines survey corridors was very good (over 50

percent) and the plant site and lay down area has been graded, therefore visibility in the areas was 100 percent. The results of the surveys were negative and a detailed discussion and results of these surveys are provided to staff as an addendum to the Cultural Resources Technical Report under confidential filing.

The addendum to the Cultural Resources Technical Report (which includes responses to Data Requests 35, 36 and 37) contains confidential cultural resources location information; therefore, report distribution should be restricted to those with a need to know. Cultural resources are nonrenewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 625.

BACKGROUND

The locations and extent of prior disturbances within the project area of analysis is an important factor in assessing the integrity of any cultural resources identified. The applicant states, "It appears that those portions of the sites previously recorded within the PPEC archaeological survey areas have been mitigated by previous projects" (p. 8-1, revised technical report, March 2011). The applicant refers to a number of excavation reports that document the testing and/or mitigation that has occurred at sites whose boundaries overlap with the Pio Pico project area (p. 7-5–7-7, revised technical report, March 2011). However, there is no discussion about where the previous testing/mitigation work took place within the site areas, relative to the current Pio Pico project area. Nor is there any discussion of where the previous project construction (for which the testing/mitigation work was conducted) occurred relative to the current Pio Pico project area. Staff needs this information to assess the integrity of the area specifically within the project limits and for evidencing any conclusions drawn or decisions made regarding potential effects, or lack thereof, to cultural resources within the project area.

Technical Area: Cultural Resources

Data Request CUL-37: For each archaeological site that occurs wholly or partially within the project limits, please provide evidence that describes/depicts where the previous test excavation and/or mitigation work occurred *relative to the current Pio Pico project limits*, as well as where the boundaries of the previous construction projects (for which the excavations were conducted) are located, *relative to the current Pio Pico project limits* (assuming this info is available in the reports cited from the literature search), in order to demonstrate if the portions of the previously recorded resources within the project area of analysis have, in fact, been mitigated and/or destroyed by previous projects, or if such work occurred outside the current project area of analysis.

Response: Response to CUL-37 is included in the addendum to the Cultural Resources Technical Report. The addendum to the Cultural Resources Technical Report (which includes responses to Data Requests 35, 36, and 37) contains confidential cultural resources location information; therefore, report distribution should be restricted to those with a need to

know. Cultural resources are nonrenewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 625.

Jay Rehor, RPA

Senior Archaeologist

Areas of Expertise

Prehistoric Archaeology
Geoarchaeology
Lithic Technology
GIS
CEQA/NEPA Compliance

Years of Experience

With URS: 4 Year
With Other Firms: 7 Years

Education

BA/Anthropology & Earth Sciences/2000/University of California, Santa Cruz
MA/Cultural Resources Management/2008/ Sonoma State University

Registration/Certification

2008/Registered Professional Archaeologist (RPA)/2010

Overview

Mr. Rehor has over 11 years of experience in archaeology and cultural resources management, participating in and directing projects throughout California and Hawaii. As a Senior Archaeologist for URS, he has directed cultural resources programs in support of numerous major NEPA and CEQA-driven projects. Mr. Rehor has extensive experience in prehistoric and historic data collection and analysis, required for determinations of significance under CEQA/NHPA eligibility criteria and the successful development of mitigation measures. His particular technical expertise includes the application of geomorphology and soils data to the study of buried archaeological sites in California.

Project Specific Experience

Federal Projects

Co-Principal Investigator/Field Director/Geoarchaeological Specialist, California High Speed Rail, Fresno to Bakersfield, CA. Developed, co-wrote, and implemented an Archaeological Investigation and Evaluation Plan, Archaeological Research Design and Testing Plan, and Geoarchaeological Testing Plan for an approximately 150-mile section of the California High Speed Rail project. All work was conducted for Section 106 and CEQA compliance, and contributed to completion of EIR/EIS.

Principal Investigator/Geoarchaeological Specialist, Horton Street Landing, Emeryville, CA. Due to concerns regarding nearby significant prehistoric resources, developed a minimally invasive subsurface testing plan to identify stratigraphic context and resource sensitivity. Implemented an archaeological testing and evaluation plan in those locations identified as potentially sensitive.

Task Manager/Geoarchaeological Specialist, HECA, Elk Hills, Kern County, CA. Developed and completed an archival assessment of the impacts of a unique Hydrogen Energy facility on buried archaeological (geoarchaeological) resources, for successful completion of California Energy Commission (CEC) Data Requests.

Geoarchaeological Specialist, Canyon Power Plant, Santa Ana, CA. Developed and completed an archival review and geoarchaeological testing program to assess the potential effects of a proposed natural gas power plant on buried cultural resources within a dynamic alluvial plain environment, and to meet lead agency requirements for impact assessment.

Geoarchaeological Specialist, SES Solar 2 Project, El Centro, CA. Developed and completed an archival and field-based

geoarchaeological/geomorphological assessment of solar collection facility project impacts on BLM lands (Plaster City Limited Use OHV area, El Centro). Findings were used to identify specific project impacts with the potential to affect buried cultural resources and make appropriate mitigation recommendations.

Task Manager, Lake Isabella Dam Kern Canyon Fault Study, United States Army Corps of Engineers (USACE). Coordinated cultural resources reviews and consultation with the USACE and USFS to avoid adverse impacts to cultural resources, as part of the Lake Isabella Dam fault study and retrofit.

Task Manager/Geoarchaeological Specialist, San Francisco General Hospital Rebuild, San Francisco, CA. Developed and implemented a combined geoarchaeological and Extended Phase I research design and subsurface investigation. Using continuous-core profiles and mechanical trenching, accurately documented the subsurface geomorphology and archaeological sensitivity of the project area, including dating of identified paleosols. This data, in conjunction with historical research, was used to develop mitigation protocol.

Field Director, Calaveras Dam Replacement Project, San Francisco Public Utilities Commission, Milpitas, CA. Directed field reconnaissance, Phase II site assessments, supervised a geoarchaeological assessment of project components, and worked with Project Manager and client to mitigate project impacts to a less than significant level.

Project Manager, Tesoro Golden Eagle Refinery Remediation, Martinez, CA. Successfully implemented Section 106 compliance for Waste Management Unit remedial actions, including cultural resources survey, reporting, and geoarchaeological sensitivity analysis based on geophysical borings and existing geologic data.

Field Director, Bakersfield National Cemetery Section 106 Compliance, Veterans Administration, Arvin, CA. Directed an extended Phase I survey and site testing plan to assess project impacts to cultural resources and assist the VA in meeting Section 106 responsibilities. Coordinated with Native American stakeholders/ monitors and coauthored final report.

Field Director, Knoxville OHV Impact Survey and Assessment, BLM, Knoxville, CA. Coordinated field activities and authored final report for a multiphase study of over 60 miles of Off Highway Vehicle roads and trails. The report included an assessment of the geomorphic visibility of archaeological sites within the project area and implications for regional settlement pattern interpretation.

Jay Rehor, RPA

Crew Leader, Angel Island Immigration Station Restoration Project, Angel Island, California State Parks, CA. Directed field activities for Phase III prehistoric excavation in advance of construction for the Angel Island immigration station interpretive redevelopment, including an intensive geoarchaeological trenching program to assess landform development and site integrity.

Non-Compliance Projects

Educator/Crew Leader, Año Nuevo State Park, 2001, $NA: As part of the Cabrillo College Archaeology Technology Program, supervised the excavation of numerous historic and prehistoric sites within the park, facilitated teaching archaeological methods to students, and worked closely with Parks personnel and Native American consultants to successfully complete project goals.

Researcher/Author, Ritzville Preservation Trade School Feasibility Study, Ritzville, WA, Washington State University, 2006, $NA: Coauthored a study for Washington State University and the city of Ritzville Public Development Authority investigating the feasibility of development of a historic preservation trade school in conjunction with a planned urban renewal project.

Field Researcher/Author, Benton District Historic Resources Survey and Inventory, Santa Rosa, CA, City of Santa Rosa, 2004, $NA: Coauthored survey report and National Register Nomination for the Benton Historic Preservation District, at the request of the city of Santa Rosa Planning Department.

Crew, Early *Homo* Investigations, Flores, Indonesia, 1999: Worked as part of a joint Australian–Indonesian team investigating stratified volcanic deposits for evidence of early hominid occupation of the outer Indonesian islands. Assisted Indonesian geologists with geoarchaeological mapping and analysis of ca. 900k-year-old land surfaces.

Professional Societies/Affiliates

Society for American Archaeology
Society for California Archaeology
International Committee on Monuments and Sites (US/ICOMOS)

Awards

2000/Friends of Long Marine Laboratory Student Research Award/ Long Marine Laboratory, Santa Cruz
2005/ Kress Foundation grant for US/ICOMOS Summer Internship
2011/ URS Corporation award for Innovative Practice

Languages

Basic skills in Spanish and Bahasa Indonesia

Specialized Training

1999/Geologic field school
2000/Archaeological field school (Cabrillo College)

Jay Rehor, RPA

2000/Lithic Identification, Illustration, and Analysis
2004/Geomorphological survey
2005/Advanced GIS
2008/Chevron Loss Prevention
2009/Trench Safety, Competent Person Training
2009/Transportation Worker Identification Credential (TWIC)
2010/40-Hr. HAZWOPER/2007/2008
2010/ AEG course "Soil Stratigraphy for Trench Logging"

Security Clearance

Federal Transportation Worker Identification Credential (TWIC)

Publications

Enlivening Post-Industrial Space: The San Lorenzo Exploration Park. In *Report and Conclusions of the International Seminars and Workshops for Young Heritage Professionals*, Nevisprint, Edinburgh, 2005.

Chronology

5/07 – Present: URS Corporation, Archaeologist, Oakland, CA
1/05 – 5/07: Anthropological Studies Center, Sonoma State University, Archaeologist, Rohnert Park, CA
6/04 – 9/04: Pacific Legacy, Inc., Archaeologist, Berkeley, CA
9/00 – 6/01: Archaeological Services of Hawaii, Archaeologist, Wailuku, Maui, HI

Contact Information

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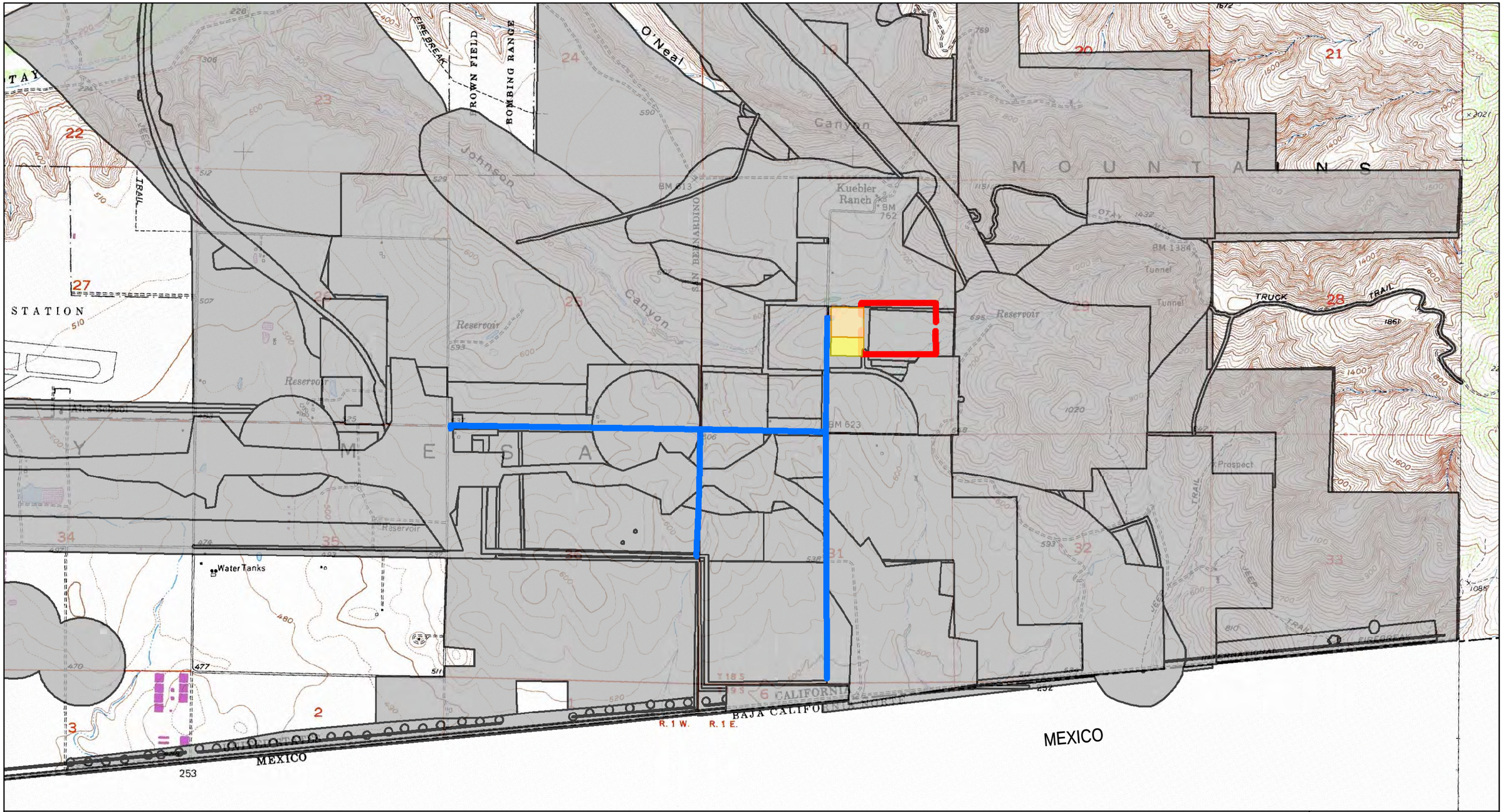


Legend

- Project Site
- Laydown Area
- Natural Gas Lines 50ft Buffer
- Transmission Lines 50ft Buffer
- Previously Recorded Site (Reports 1,2 and 3)

N

0 1,000 2,000 Feet

EXHIBIT 3
PREVIOUSLY CONDUCTED STUDIES
PERCENT COVERAGE (REPORTS 1, 2 AND 3)

PIO PICO
ENERGY CENTER

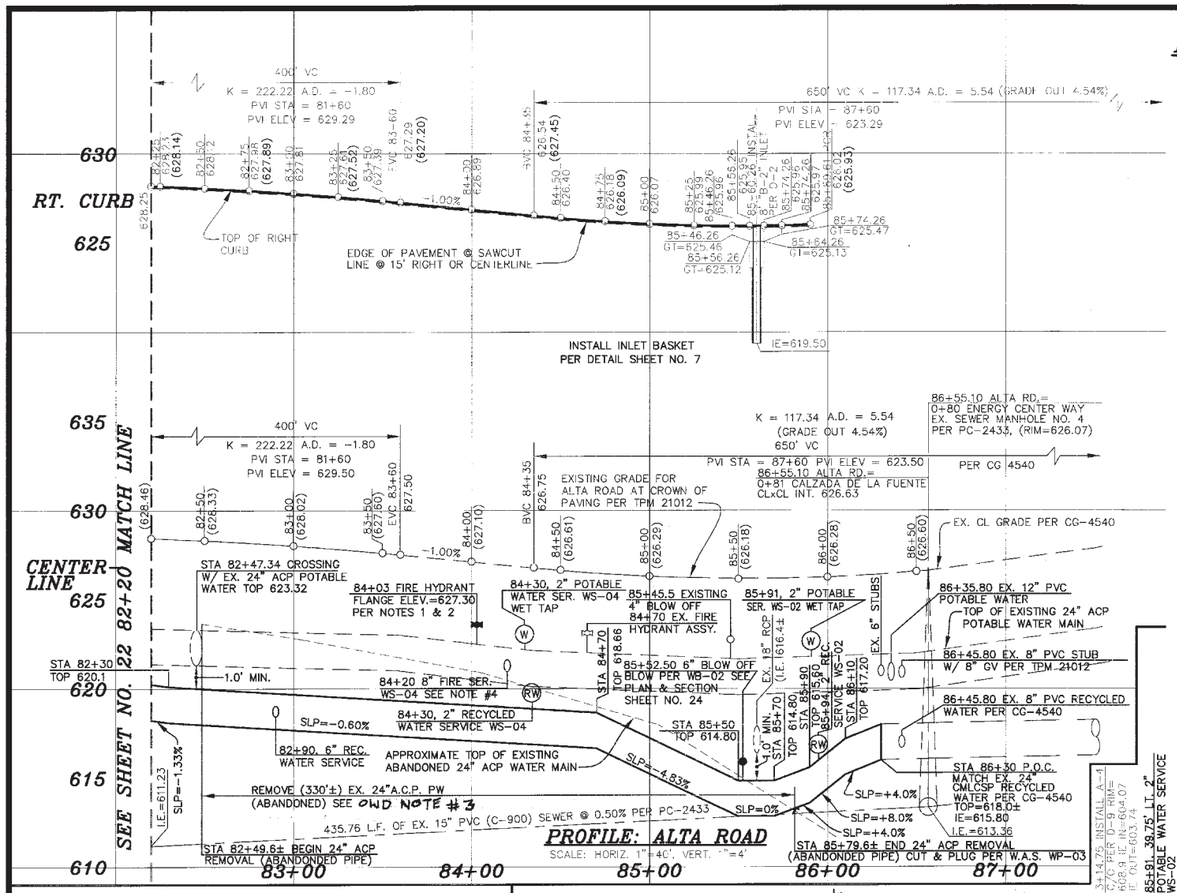
PROJECT NO.: 29874835
DATE: JUNE 2010

URS

Source: Archaeological Sites (Resource Center, 2010), USGS 24K Digital Raster Graphic Mosaics (Cal-Atlas 2003).

T/Ladd/PioPico/711-261

IMPROVEMENT PLANS FOR MUP 98-001-W1



RECYCLED WATER

NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
①	N05°19'19"E	--	130.86'	24" CMLCSP
②	DELTA=04°24'27"	780.00'	60.00'	24" CMLCSP
③	N00°54'52"E	--	60.00'	24" CMLCSP
④	DELTA=07°09'43"	640.00'	80.00'	24" CMLCSP
⑤	DELTA=07°09'43"	640.00'	80.00'	24" CMLCSP

O.W.D. NOTES:

1. WET TAP CONNECTIONS TO BE DONE BY OTAY WATER DISTRICT PERSONEL CONTRACTOR TO PROVIDE MATERIAL EXCAVATE, POUR THRUST BLOCKS, BACKFILL, AND PAVE.

2. INSTALL 6" WET TAP PER NOTE #1 AND 6" RWGV FLG X FLG WITH 30 SF THRUST BLOCK AND 8" 90°BEND WITH 9 SF THRUST BLOCK PER W-01.

3. ALL ACP PIPE THAT IS REMOVED MUST BE DOCUMENTED AS REMOVED, TRANSPORTED AND DISPOSED OF PER THE MOST RECENT EPA STANDARDS.

4. FUTURE 8" FIRE SERVICE PER WF-05. INSTALL 8" WET TAP AND 8" RWGV FLG X FLG WITH 30 SF THRUST BLOCK AT RIGHT-OF-WAY INSTALL 8" END CAP AND 2" TEMPORARY BLOW-OFF PER W3-01 WITH 12.9 SF THRUST BLOCK.

ENGINEER OF WORK

FIRM: ALTA CONSULTANTS
ADDRESS: 4901 MORENA BLVD., SUITE 409 SAN DIEGO, CA. 92117
PHONE: (858) 581-6101, FAX: (858) 581-6138

BARTOLOME J. PASTOR 3-15-11
BARTOLOME J. PASTOR DATE
R.C.E 38606, EXP. DATE 3/31/13

REGISTERED PROFESSIONAL ENGINEER BARTOLOME J. PASTOR No.38606 Exp.3/31/13 CIVIL STATE OF CALIFORNIA

CAUTION!! PROTECT EXIST. 69KV POWER POLES AND TRANSMISSION LINES THROUGHOUT CONSTRUCTION

ALTA CONSULTANTS
PLANNING ENGINEERING SURVEYING
4901 Morena Blvd. Ste. 409 San Diego, CA 92117 (858) 581-6101 Fax (858) 581-6138
JOB NO. 184-111, DATED MARCH 14, 2011

EXHIBIT 4

OTAY WATER DISTRICT AS BUILT		
SIGNATURE	DATE	
PRINTED NAME	P.E. NO.	
REGISTRATION EXPIRATION	DISCIPLINE	

OTAY WATER DISTRICT
PROJECT # D0720-090089 REVIEWED BY:
PERMIT # PLP-10-006 P.T. 871-860 DATE: 3/17/11
REVIEWED BY: DATE

SEWER APPROVED CHANGES				OTAY WATER DISTRICT CHANGES				COUNTY APPROVED CHANGES			
NO	DESCRIPTION	APPROVED BY	DATE	NO	DESCRIPTION	APPROVED BY	DATE	NO.	DESCRIPTION	APPROVED BY	DATE

PERMITS
REZONE PERMIT NO. N/A
SPECIAL USE PERMIT NO. MUP 98-001-W1
GRADING PERMIT NO. L-15563
WDID # 9 37C359443

BENCH MARK
DESCRIPTION: STREET WELL MONUMENT
LOCATION: INTERSECTION OF OTAY MESA RD. & ALTA RD.
RECORD FROM: COUNTY OF SAN DIEGO
ELEVATION: 622.00 DATUM: NAVD88

PRIVATE CONTRACT

SHEET	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	SHEETS
23		34

IMPROVEMENT PLANS FOR:
OTAY WATER DISTRICT WATER FACILITIES
ALTA ROAD (PORTION)
FOR MUP 98-001-W1
CALIFORNIA COORDINATE INDEX: 146-1794

RECOMMENDED FOR APPROVAL	APPROVED: BOARD OF SUPERVISORS COUNTY ENGINEER
ENGINEER OF WORK: Bartolome J. Pastor R.C.E. 38606	CHECKED BY: APPROVAL DATE: 4/11/11
	IMPROVEMENT PLAN NO. CG-4754

ENGINEER'S NAME ALTA CONSULTANTS
PHONE NO. (858) 581-6101

PLP-10-006 PROJECT # D0720-090089 CCA-IP-23R.DWG

BACKGROUND

The Application for Certification (AFC) states that but for the Energy Commission's exclusive authority to license the project, the Pio Pico Energy Center (PPEC) would require the following land use action by the County of San Diego:

- A processing of a Major Permit to allow development of a power plant within the Heavy Industrial designation and Specific Plan zone.

Staff has made a direct inquiry via a letter to the County of San Diego requesting that the county provide the Major Permit findings it would make regarding PPEC and what conditions the county would attach to the project were it the permitting agency.

Technical Area: Land Use

Data Request LAND-38: Please provide the condition(s) the County of San Diego would attach to the Major Permit to allow development of a power plant within the Heavy Industrial designation and Specific Plan zone.

Response: Based on the CEC's direct inquiry via letter (dated June 3, 2011) with the County of San Diego, Data Request 38 has been withdrawn.

BACKGROUND: HOUSING

The project area for housing purposes is identified on page 5.10-2 of the Application For Certification (AFC) as including unincorporated San Diego County, and the cities of Chula Vista, Imperial Beach, National City, and San Diego. The AFC states on page 5.10-3 that San Diego County has one of the stronger hotel and lodging markets in the United States because of the county's popularity as a tourist and convention destination. The AFC also reports the project area has a total supply of 412,450 lodging rooms and was projected to have an average occupancy of 65.4 percent in 2009.

While hotel and motel availability is discussed in the AFC, there is no discussion on alternative lodging choices in the project area, such as recreational vehicle (RV) parks and campgrounds. So staff can analyze the potential project impacts related to the adequate supply of housing and lodging, additional information is needed, as identified below.

Technical Area: Socioeconomics

Data Request SOCIO-39: Please provide updated data (2010-2011) on the number of lodging rooms in the project area and average occupancy rate.

Response: Updated data for the number of lodging rooms in the project area (i.e., San Diego South Bay area, which includes the cities of Chula Vista, Imperial Beach, National City, and San Ysidro) in 2011 is not yet available; however, the number of lodging rooms in San Diego County as a whole increased 1.6 percent from 2009 to 2010 for an annual supply of 13,183,435 lodging rooms, and is estimated to increase 0.3 percent from 2010 to 2011 to a forecasted annual supply of 13,221,030 lodging rooms. The average estimated occupancy rate for San Diego County was 69.6 percent for 2010 with a market occupancy forecast of 71.9 percent for 2011.

Source: Colliers PKF Consulting. 2010. Expectations in a Time of Uncertainty: 2011 Southern California Lodging Forecast.

Technical Area: Socioeconomics

Data Request SOCIO-40: Please provide the names and number of available spaces at campgrounds and RV parks available for the project's use.

Response: Refer to Table 5.10-14 below, which provides the names and number of available spaces at campgrounds and RV parks within San Diego County available for the project's use. Since the potential exists for workers to use campgrounds and RV parks located within closest proximity to the project site, facilities within approximately 15 miles of the project site are denoted with an asterisk in Table 5.10-14, to identify the facilities most reasonably used by construction workers. In sum, there are approximately nine campground and RV facilities located approximately 15 miles from the project site, which provide a total of 122 campground spaces and 1,176 RV spaces.

TABLE 5.10-14
SAN DIEGO COUNTY CAMPGROUNDS AND RV PARKS AND CAPACITIES

Location/Name	Campground Spaces	RV Spaces	Total Number of Spaces
County Facilities[1]			
Agua Caliente County Park	141	10	151
Dos Picos County Park	70	--	70
Guajome County Park	35	--	35
Lake Morena County Park	96	--	96
Potrero County Park	46	--	46
Sweetwater Summit Regional Park*	42	--	42
Vallecito County Park	44	15	59
William Heise County Park	108	--	108
Privately-owned Facilities[2]			
All Seasons RV Park	--	151	151
Bernardo Shore RV Park*	--	124	124
Butterfield Ranch Resorts	102	106	208
Campland on the Bay RV and Tent Camping Resort	100	500	600
Champagne Lakes RV Resort	5	90	95
Chula Vista RV Resort*	--	237	237
Circle RV Resort	--	165	165
Diamond Jack's RV Ranch*	--	35	35
El Rey Trailer Plaza*	--	214	214
Escondido RV	--	127	127
Farm House*	--	8	8
KQ Ranch Resort	--	200	200
La Pacifica RV Resort*	--	179	179
Lake Cuyamaca	14	40	54
Lilac Oaks Campground	60	--	60
Mission Bay RV Resort	--	259	259
Oak Creek RV Resort	--	120	120
Oak Knoll Campground	8	38	46
Oceanside RV Park	4	141	145

TABLE 5.10-14 (CONTINUED)
SAN DIEGO COUNTY CAMPGROUNDS AND RV PARKS AND CAPACITIES

Location/Name	Campground Spaces	RV Spaces	Total Number of Spaces
Paradise by the Sea RV Resort	--	102	102
Pinecrest Vintage Trailer Retreat	--	100	100
Pinezanita RV Park and Campgrounds	150	51	201
Rancho Los Coches RV Park	--	142	142
Sacred Rocks Reserve PV Park	9	151	160
San Diego RV Resort*	--	180	180
San Diego Metro KOA*	80	199	279
Santa Fe Park RV Resort	--	129	129
Santee Lakes	19	290	309
Stagecoach Trails RV Park and Resort	--	235	235
Vacationer RV Park	--	147	147
Woods Valley Kampground and RV Park	--	89	89
Total Spaces	1,133	4,574	5,707

[1] County of San Diego Parks and Recreation. Website: http://www.sdcounty.ca.gov/parks/Camping/info.html. (accessed June 10, 2011).

[2] RV Parks & Campgrounds; California RV Parks – California Campgrounds. Website: http://www.rv-clubs.us/california_rv_campgrounds.html#SanDiegoCounty (accessed June 10, 2011).

* Sites Located within an estimated reasonable driving distance. Roughly from the project site north to La Mesa, CA.

BACKGROUND: SCHOOLS

On page 5.10-17, the AFC states that the current statutory school fees in effect at the end of the 2009-2010 fiscal year applicable to new commercial or industrial development are $0.19 and $0.26 per square foot of covered and enclosed, non-residential space for the San Ysidro Elementary School District and Sweetwater Union High School District, respectively. According to the AFC, the statutory school fees would be charged based on the "chargeable covered and enclosed space", which is defined as the covered and enclosed space determined to be within the perimeter of the industrial structure during plan review prior to issuance of building permits.

Technical Area: Socioeconomics

Data Request SOCIO-41: Please provide an estimation of the total applicable square footage and calculated school impact fee for the project.

Response: Based on the preliminary project design, there would be approximately 13,850 square feet of covered and enclosed building area. Therefore, based on the preliminary project design, the estimated school fees are $2,631.50 for the San Ysidro Elementary School District and approximately $3,601.00 for the Sweetwater Union High School District.

BACKGROUND: FISCAL RESOURCES

On page 5.10-16, the AFC states that new development is assessed a Fire Mitigation Fee, which would generate additional funding required by the San Diego Rural Fire Protection District fire protection needs, including the development of the planned new facility. The project would be assessed a fee of $0.46 per square foot of covered and enclosed, non-residential space, based on the final design for construction prior to issuance of the project building permit. While Figure 3.1-3A, the Site Arrangement figure, shows the layout of the facility, it is not clear that all of the covered and enclosed spaces are identified.

So that staff can report fiscal resources the project would generate and be assessed, additional information is needed, as identified below.

Technical Area: Socioeconomics

Data Request SOCIO-42: Please provide an estimation of the total applicable square footage and calculated fire mitigation fee for the project.

Response: Based on preliminary project design, there would be approximately 13,850 square feet of covered building area. Therefore, based on preliminary project design the estimated fire protection fee is $6,371.00.

BACKGROUND:

In the Traffic and Transportation section of the AFC (pg. 5.11-7), under 5.11.1.2, subsection Bus Routes and Transit Facilities, it is stated the "the Metropolitan Transit System (MTS) operates only one bus route within the East Otay Mesa Area. MTS Route 905 does not directly serve the project site; the route originates from Iris Avenue Trolley Station, which stops at Otay Mesa Road & Heritage Road, Airway Road & Britannia Boulevard, Seimpre Viva Road & Drucker Land and its final destination at the Otay Mesa Border Crossing".

Technical Area: Traffic and Transportation

Data Request TRAF-43: Please provide a map detailing the stops along MTS Route 905 and provide the distance in miles of the above mentioned roads from the project site.

Response: Figure 5.11-10 shows MTS Route 905 in context to the project site as well as the distances from the bus stops to the project site.

BACKGROUND:

In the Traffic and Transportation section of the AFC (pg. 5.11-7), under 5.11.1.2, subsection Rail and Light Rail Facilities, there is a statement that "the Metropolitan Transit System (MTS) Trolley System's Green and Orange Lines currently do not serve or reach the East Otay Mesa Area.

Technical Area: Traffic and Transportation

Data Request TRAF-44: Please describe the distance in miles, the above mentioned Green and Orange Line Stations are to the proposed project site.

Response:

MTS Green Line Station

Opened in July 2005, the Green Line is the newest trolley line operating between Old Town San Diego and Gillespie Field in the City of Santee. From a geographical standpoint, the nearest MTS Green Line is the Grossmont Transit Center in the City of La Mesa located approximately 21.4 miles (via SR 125 and local streets) northwest of the PPEC project site.

MTS Orange Line Station

From a geographical standpoint, the nearest MTS Orange Line Station is the Encanto/62nd Street Station located approximately 18 miles (via SR 125 and local streets) northwest of the PPEC project site.

BACKGROUND:

In the Traffic and Transportation section of the AFC (pg. 5.11-7), under 5.11.1.2, subsection Airports, there is a statement that "two existing airports are currently operating around the vicinity of the PPEC project site. Brown Field is located approximately three miles due west and Tijuana's Rodriquez International Airport is also located approximately three miles southwest of the PPEC project site".

Technical Area: Traffic and Transportation

Data Request TRAF-45: Aerial photographs of the proposed site vicinity indicate an airfield north of the proposed project site named "John Nichols Field". In addition, the airfield has a business called "Taking Off At Skydive – San Diego". Please include a description of the orientation of the runway and traffic patterns for the John Nichols Field in the analysis of airports that are operating around the vicinity of the PPEC project site and any impacts to the airfield operations if the PPEC project site was to be built.

Response:

John Nichols Field – is a privately-owned airport operated by the San Diego Sports Center. John Nichols Field is located 10 miles east of the City of Chula Vista and approximately 6.5 miles northeast of the project site. "Skydive San Diego, Inc.," which is a privately-owned, full-service skydiving facility, operates at the John Nichols Field. Skydive San Diego aircraft jumpships take off from the John Nichols Field, and jumpers land on the facility premises.[1]

Runway Orientation – the runways are oriented east-west.

Air Traffic Patterns – generally the landing approach is from the east and takeoffs towards the west, however prevailing wind strongly influences the direction aircraft takeoff and land.

Potential Impacts to Airfield Operations – The proposed PPEC project is located approximately 6.5 miles southwest of John Nichols Field and is not within John Nichols Field's takeoff and landing flight path and will not interfere with

[1] Source: Skydive San Diego. Website (http://skydivesandiego.com/) accessed on July 8, 2011.

airfield operations. The proposed PPEC is not anticipated to impact John Nichols Field's operations.

BACKGROUND:

The applicant has recently submitted information regarding eliminating the Alta Road route for natural gas and moving it over one block to Enrico Fermi Drive.

Technical Area: Traffic and Transportation

Data Request TRAF-46: Please submit updated traffic counts for the new stretch of roadway. In addition, please verify the new route with adjacent streets included, if any.

Response: New traffic count data was collected on May 17, 2011 on Enrico Fermi Drive between Otay Mesa Road and Airway Road. The Average Daily Traffic (ADT) shows 1,862 vehicles per day. The traffic count data is present in Exhibit 5.

The new proposed gas line route, Modified Route A, originates at the PPEC site, extending southbound within the Alta Road right of way (ROW), westbound within the Otay Mesa Road ROW, and finally southbound within the Enrico Fermi Drive ROW towards the San Diego Gas & Electric (SDG&E) tie-in point near Airway Road.

BACKGROUND:

As noted on page 5.13-5, the "Brownfield Airport is owned and operated by the City of San Diego. It is a general aviation airport used by local residents with small planes and is also a port-of-entry for private aircraft coming into the United States through Mexico". It further states on page 5.13-5, "Although aircraft using the Brown Field Airport may fly over the project site, according to the Brown Field Airport Land Use Compatibility Plan, the PPEC site is not within a flight activity zone or area of influence".

Technical Area: Traffic and Transportation

Data Request TRAF-47: Please provide information regarding the types of aircrafts, and the traffic/flight patterns of the Brown Field Airport. Please discuss if the U.S. Border Patrol uses the Brown Field Airport. In addition, please determine if the Brown Field Airport has existing/future skydiving and/or parachuting.

Response: **Types of Aircraft –** According to the City of San Diego's website information, the types of general aviation aircraft that operate at Brown Field include: private, corporate, charter, air ambulance, law enforcement, fire rescue, flight training, cargo, skydiving, banner towing, and airships. The majority of local operations at the airport are conducted by small, single-engine aircraft according to the Brown Field Municipal Airport Land Use Compatibility Plan (January 2010). The itinerant operations at the airport are preformed mostly by business jets and Border Patrol helicopters. The Brown Field Municipal Airport Master Plan Update (May 2010) indicates that there were 227 aircraft based at the airport in 2008. These aircraft included 185 single-engine piston, 21 multi-engine piston, 2 multi-engine turbo-prop, 14 jets, and 5 helicopters.

Traffic/Flight Patterns – The traffic flight patterns are generally east-west in direction following the runway orientation. The project site is not located within the Traffic Pattern Zone (Zone 6), as identified on the Compatibility Policy Map: Safety, within the Brown Field Municipal Airport Land Use Compatibility Plan (January 2010). A copy of this map is provided as Exhibit 6.

US Border Patrol – the US Border Patrol Search Trauma and Rescue (BORSTAR) operates out of the Brown Field Airport.

Skydiving and Parachuting Activities – The City of San Diego's website (http://www.sandiego.gov/airports/brown/index.shtml) identifies skydiving as a service at Brown Field Municipal Airport, and Pacific Coast Skydiving and Tactical Air Operations are listed as airport businesses. A follow-up call to airport operations indicated that skydiving is an existing use that is anticipated to continue.

Pacific Coast Skydiving operates out of Brown Field Airport. Tactical Air Operations, which is the contracted Military Static Line and Freefall School for the United States Navy, although based at John Nichols Field Airport uses the Trident Field east of the Brown Field Airport as their landing area for their static line course.

BACKGROUND:

As noted on page 5.11-8, the issue of both visible and invisible thermal plumes from industrial stacks has lately been brought to the forefront regarding aviation safety. The AFC provides no discussion of potential plume impacts or analysis of plume velocity, heat dispersal, or other plume characteristics that might contribute to low altitude turbulence in AFC §5.0 (Traffic & Transportation). Analyses of the velocity, shape, and dispersal of the exhaust plumes are necessary for staff to determine the potential impact of plumes generated by the Pio Pico Energy Center on aircraft flying in the immediate vicinity of the project.

Technical Area: Traffic and Transportation

Data Request TRAF-48: Please provide a detailed plume analysis for the thermal plumes generated by the Pio Pico Energy Center exhaust stacks, including:

a) Frequency of plume generation, velocity, shape, continuity, and dispersal of plume(s), up to and including 2000 feet agl.

b) Meteorological impacts on plume formation and behavior. Provide the name of the computer model used and its inputs and outputs.

c) Potential impacts to air mass stability and aircraft operations in the area affected by the plumes. Please consider elements such as aircraft type, speed, and altitude; low visibility; cool temperatures; and calm winds when evaluating potential aviation impacts.

Response: The closest airport to the PPEC site is the Brown Field Municipal Airport located approximately three miles to the west. As discussed in Section 5.11.1.1 of the AFC, the PPEC project site is located in an advisory avoidance area for both inbound and outbound aircraft at Brown Field Municipal Airport due to the high terrain (up to 3,500 feet) east of the project site. Because low-flying aircraft are already advised to avoid flying over the project site, it is very unlikely that adverse impacts would occur to low-flying aircraft due to project-related turbulence in the airspace above the site.

Nonetheless, a plume velocity analysis was conducted to assess the turbulence resulting from air plume velocities from the PPEC's gas turbine exhausts (see table below). The analysis assumed worst-case meteorological conditions (cool temperatures and calm winds) and all three turbines operated at full load, when the maximum upward plume velocity would be generated. The methodology used to calculate plume vertical velocities is the Spillane Approach. This methodology has been used by CEC to evaluate exhaust stack plume velocities.[2]

The Spillane approach uses the following equations to determine vertical velocity for single stacks during dead calm wind (i.e. wind speed = 0) conditions:

(1) $(V*a)^3 = (V*a)^3 + 0.12*F_o*[(z-z_v)^2-(6.25D-z_v)^2]$

(2) $(V*a)_o = V_{exit}*D/2*(T_a/T_s)^{0.5}$

(3) $F_o = g*V_{exit}*D2*(1-T_a/T_s)/4$

(4) $Z_v = 6.25D*[1-(T_a/T_s)^{0.5}]$

Where:

V = vertical velocity (m/s), plume-average velocity

a = plume top-hat radius (m, increases at a linear rate of a = $0.16*(z- z_v)$

F_o= initial stack buoyancy flux m4/s3

z = height above ground (m)

z_v= virtual source height (m)

V_{exit}= initial stack velocity (m/s)

D = stack diameter (m)

Ta= ambient temperature (K)

T_s= stack temperature (K)

g = acceleration of gravity (9.8 m/s^2)

[2] See, for example, Final Staff Assessment, Eastshore Power Project (November 2007), Appendix TT-1.

For multiple stack plumes, where the stacks are equivalent, the multiple-stack plume velocity during calm winds was calculated using a simplified fashion, presented in the Best Paper as follows:

(5) $V_m = V_{sp} * N^{0.25}$

For purposes of this analysis, a plume average vertical velocity of 4.3 m/s was considered the critical velocity of concern to light aircraft.[3] The gas turbine plume velocity drops below 4.3 m/s at approximately 2500 feet AGL, at which height the dimensions of the merged plumes from the gas turbines are approximately 720 feet by 380 feet. The thermal plume from single turbine drops below a vertical velocity of 4.3 m/s 1100 ft AGL.

FAA regulations require the project owner to notify the FAA if the height or outward or upward slope of a proposed new structure is more than 200 feet AGL at the site. No such structure exists.

[3] This is based on CEC staff's review of a 2004 safety circular (AC 139-05(0)), prepared by the Australian Government Civil Aviation Safety Authority, which noted "aviation authorities have established that an exhaust plume with a vertical velocity in excess of 4.3 meters per second (m/s) may cause damage to an aircraft airframe or upset an aircraft when flying at low levels" (CASA 2004). In their safety study on thermal plumes, the FAA noted that they "do not necessarily approve/disapprove or warrant the data contained in the CASA AC 139-05." The safety team accepted "the information and data contained in AC 139-05 as a valid representation of hazardous exhaust velocities" (FAA 2006).

BACKGROUND:

The California Energy Commission received a letter dated March 18, 2011 from the City of San Diego (Docket # 60382) requesting "the analysis of traffic impacts on City facilities should be performed per the City of San Diego Traffic Impact Study Manual".

Technical Area: Traffic and Transportation

Data Request TRAF-49: Please provide an analysis of construction traffic impacts that may affect City of San Diego roadways during construction of the Pio Pico project site. Analysis should be consistent with the City of San Diego Traffic Impact Study Manual and any other applicable LORS, such as the City's circulation element.

Response: The following requirements are specified in the City of San Diego Traffic Impact Study Manual and were used in the assessment of construction traffic impacts to the roadways and intersections with shared jurisdiction with the City of San Diego.

City of San Diego Analysis Requirements

Table 5.11-21 summarizes the City of San Diego traffic impact evaluation scenario requirements as compared to their equivalent or more conservative CEC analysis scenarios presented in the AFC.

TABLE 5.11-21
CITY OF SAN DIEGO EVALUATION SCENARIO REQUIREMENTS

City of San Diego Analysis Scenarios[1]	CEC AFC Documentation Analysis Scenarios	Comment (Action Item)
Existing Conditions	Existing Conditions	Equivalent (No new analysis)
Existing Conditions with Approved Projects (when Applicable)	Near Term Pre-Construction Conditions (No Project)	Equivalent (No new analysis)
Existing Conditions with Approved Projects and Site Traffic	Near Term Pre-Construction Conditions with PPEC Project Construction	Equivalent (No new analysis)
Buildout Community Plan Conditions	Not provided in the AFC but has been analyzed as part of this Data Request. URS will use the 2020 Buildout plus Project Conditions of the Otay Business Park Traffic Study for study intersections. For roadway segments URS will use the 2030 plus Project Buildout Conditions of the Otay Business Park Traffic Study.	(Provided in this Data Request as new analysis)
Buildout Community Plan Conditions with Additional Site Traffic (if project deviates from the Community Plan)	Not Applicable (since the project is consistent and does not deviate with the allowed land uses within the Specific Plan)	Not required (However, provided in this Data Request as new analysis)

[1] City of San Diego Traffic Study Manual, July 1998.

Additional Traffic Analysis Results

Roadway Segment Analysis

As shown in Table 5.11-22 only two of the six study roadway segments are partly (shared with the County of San Diego) within the operational jurisdiction of the City of San Diego.

TABLE 5.11-22
STUDY ROADWAY SEGMENTS

Roadway	Segment	Jurisdiction
SR 125	North of SR 905	Caltrans
SR 905 (Otay Mesa Road)	La Media Road and Piper Ranch Road	Caltrans
Otay Mesa Road	SR 905 and Sanyo Avenue	Northside (County), Southside (City)
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	Northside (County), Southside (City) .25 mile east of Sanyo Road
Otay Mesa Road	Enrico Fermi Drive and Alta Road	County
Alta Road	Otay Mesa Road and Paseo De La Puente	County

Notes:
SR = State Route.

Furthermore, the segment of Otay Mesa Road from Piper Ranch Road to the future Lone Star Road alignment is classified as a Prime Arterial Road to Sanyo Drive and Major Road to Lone Star Drive in the East Otay Mesa Business Park Specific Plan, Circulation Element which encompasses these roadway segments.

In response of this Data Request, the two aforementioned City of San Diego roadways were evaluated consistent with the City of San Diego Traffic Study Manual specifically the roadway capacities described in Table 5.11-23 below.

The results of the roadway segment traffic analysis using the City of San Diego Traffic Guidelines are summarized in Table 5.11-24 below.

As shown in Table 5.11-24, the roadway segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive is

currently at LOS E according to the City of San Diego Roadway LOS Table, and is forecast to operate at LOS F with or without the proposed PPEC project. These findings are primarily attributable to the lower LOS capacities assigned to City of San Diego roadway classes described in Table 5.11-23 as compared to the County of San Diego LOS capacity tables.

TABLE 5.11-23
CITY OF SAN DIEGO SEGMENT DAILY CAPACITY
AND LEVEL OF SERVICE STANDARDS

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

Although the poor LOS affects only a limited segment (.25 mile) of Otay Mesa Road partially within the City's jurisdiction, the roadway capacities were also conservatively evaluated based on their currently existing roadway cross-sections. As specified in the East Otay Mesa Business Park Specific Plan, Circulation Element which encompasses the aforementioned roadway segments, Otay Mesa Road is planned with the following cited configuration from the Specific Plan:

"**Otay Mesa Road:** Otay Mesa Road is shown in the City of San Diego's most recent Circulation Element for the Otay Mesa Community as a four-lane Major between the terminus of SR-905 and SR-125/Harvest Road. The County General Plan includes the road as a six-lane Prime Arterial between Piper Ranch Road and Enrico Fermi Drive. The road continues east to Lone Star Road as a four-lane Major…"

TABLE 5.11-24
ROADWAY SEGMENT LOS

Roadway	Segment	Cross-Section Classification	Time Period	Traffic Volume	Level of Service (LOS)
Existing Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	Daily	13,882	A
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	Daily	9,021	E
2013 No Project Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	Daily	15,550	B
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	Daily	10,105	F
2013 Peak Project Construction Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	Daily	16,080	B
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	Daily	10,635	F
2014 No Project Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	Daily	16,105	B
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	Daily	10,465	F
2014 Peak Project Operations Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	Daily	16,130	B
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	Daily	10,490	F
2030 (Buildout) No Project Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	6-Lane Prime	Daily	20,165	A
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	4-Lane Major	Daily	20,630	B
2030 (Buildout) with Project Operations Conditions					
Otay Mesa Road	SR 905 and Sanyo Avenue	6-Lane Prime	Daily	20,190	A
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	4-Lane Major	Daily	20,655	B

Notes:
SR = State Route

With the implementation of the Specific Plan improvements, the roadway capacities will increase resulting in improvements from LOS F to LOS B conditions.

Intersection Analysis Results

Tables 5.11-25 and 5.11-26 summarize the results of the additional intersection traffic analysis conducted for the PPEC Project compliance to City of San Diego evaluation scenario requirements. The following intersections are within or partly under the jurisdiction of the City of San Diego.

TABLE 5.11-25
PEAK-HOUR INTERSECTION LOS – YEAR 2020
NO PROJECT CONDITIONS

	A.M. Peak Hour		P.M. Peak Hour	
Intersection	LOS	Average Delay (sec)	LOS	Average Delay (sec)
La Media Road/SR 905	C	30.0	C	32.1
SR 125 SB Off Ramp/SR 905	B	18.7	A	6.9
SR 125 NB On Ramp/SR 905	A	2.1	A	7.1
Sanyo Avenue/Otay Mesa Road	C	24.9	D	41.6

NB = northbound LOS = level of service
SB = southbound Sec = seconds per vehicle

TABLE 5.11-26
PEAK-HOUR INTERSECTION LOS – YEAR 2020
(BUILDOUT) WITH PROJECT CONDITIONS

	A.M. Peak Hour		P.M. Peak Hour	
Intersection	LOS	Average Delay (sec)	LOS	Average Delay (sec)
La Media Road/SR 905	C	30.0	C	32.2
SR 125 SB Off Ramp/SR 905	B	18.7	A	6.8
SR 125 NB On Ramp/SR 905	A	2.1	A	7.1
Sanyo Avenue/Otay Mesa Road	C	24.9	D	42.7

NB = northbound LOS = level of service
SB = southbound Sec = seconds per vehicle

As shown in Table 5.11-25 and Table 5.11-26, the result of the traffic impact analysis shows that the addition of project operation traffic by Year 2020 (Buildout) conditions does not show any change in intersection level of service (LOS) and no or only marginal change in intersection delay resulting in no significant adverse impact associated with the proposed project.

To summarize, project construction traffic affecting City of San Diego roadways have been evaluated in the AFC (February 2011), and are consistent with City of San Diego Traffic Impact Manual requirements and applicable City LORS, including the City's Circulation Element. The results of these analyses indicate that the Project would result in no significant construction traffic impacts.

Project operation traffic affecting the City of San Diego roadways have been evaluated in the AFC (February 2011) and in the above analyses, including evaluation of 2020 and 2030 Buildout Project operations conditions, and are consistent with City of San Diego Traffic Impact Manual requirements and applicable City LORS, including the City's Circulation Element. The results of these analyses indicate that the Project would result in no significant operational traffic impacts.

EXHIBIT 5
ENRICO FERMI DRIVE TRAFFIC COUNTS
(BETWEEN OTAY MESA ROAD AND AIRWAY ROAD)

Prepared by NDS/ATD

VOLUME

Enrico Fermi Dr S/o Otay Mesa Rd

Day: Tuesday
Date: 5/17/2011

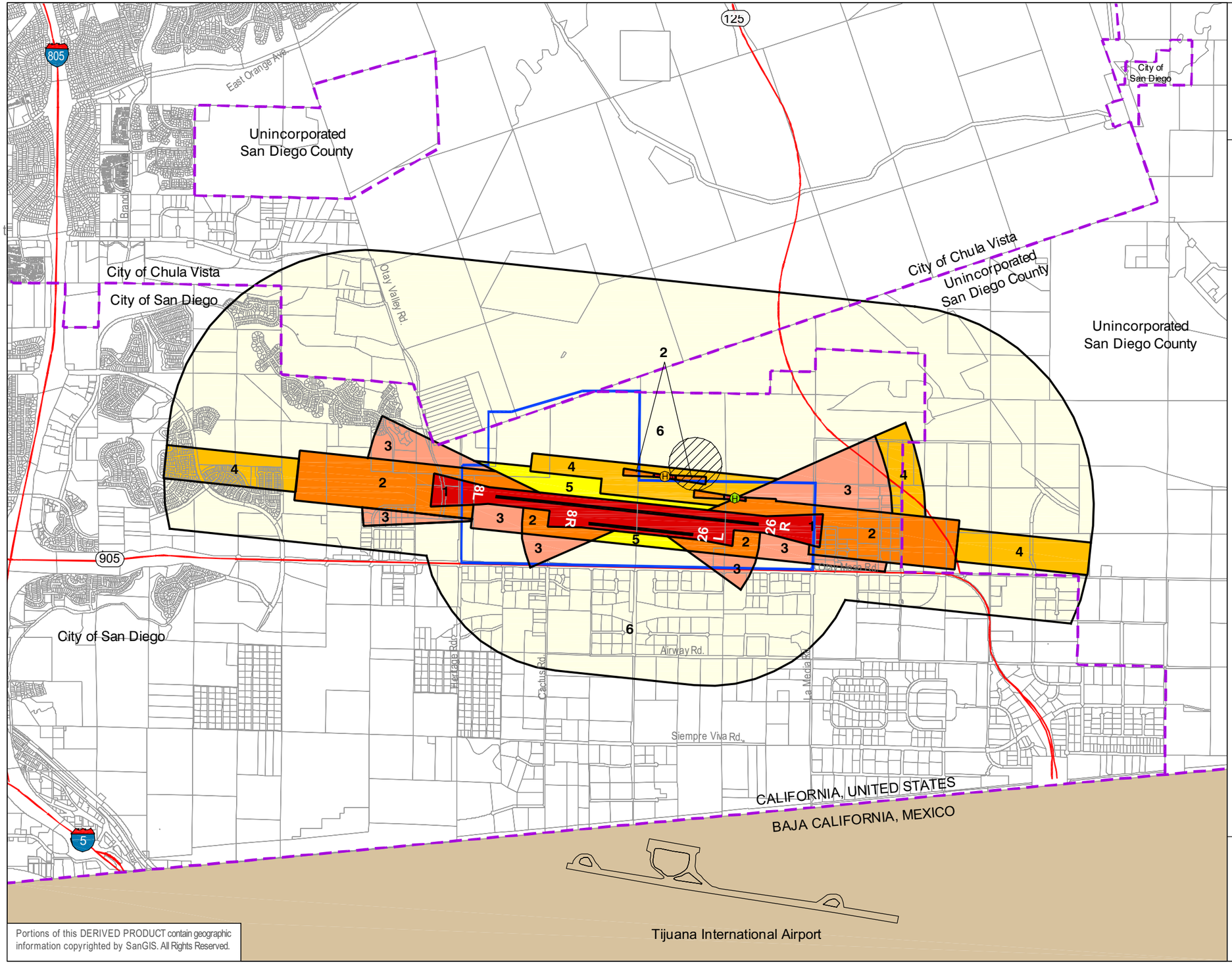
City: San Diego
Project #: CA11_4143_001

DAILY TOTALS	NB	SB	EB	WB	Total
	1,095	767	0	0	1,862

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	22		13				35	
00:15	1		1				2		12:15	17		18				35	
00:30	2		1				3		12:30	18		15				33	
00:45	0	3	0	2			0	5	12:45	17	74	17	63			34	137
01:00	1		0				1		13:00	12		16				28	
01:15	0		0				0		13:15	13		13				26	
01:30	0		0				0		13:30	15		10				25	
01:45	0	1	0				0	1	13:45	14	54	16	55			30	109
02:00	0		0				0		14:00	19		11				30	
02:15	0		1				1		14:15	19		21				40	
02:30	0		0				0		14:30	20		20				40	
02:45	0		0	1			0	1	14:45	14	72	17	69			31	141
03:00	1		0				1		15:00	13		18				31	
03:15	0		1				1		15:15	12		14				26	
03:30	0		0				0		15:30	10		13				23	
03:45	0	1	0	1			0	2	15:45	13	48	12	57			25	105
04:00	1		0				1		16:00	20		14				34	
04:15	0		0				0		16:15	28		15				43	
04:30	0		0				0		16:30	24		15				39	
04:45	0	1	1	1			1	2	16:45	31	103	18	62			49	165
05:00	3		2				5		17:00	28		22				50	
05:15	0		2				2		17:15	23		16				39	
05:30	1		1				2		17:30	24		18				42	
05:45	3	7	2	7			5	14	17:45	22	97	11	67			33	164
06:00	4		3				7		18:00	15		12				27	
06:15	14		4				18		18:15	10		2				12	
06:30	15		8				23		18:30	17		8				25	
06:45	33	66	11	26			44	92	18:45	8	50	6	28			14	78
07:00	24		16				40		19:00	9		2				11	
07:15	21		13				34		19:15	9		0				9	
07:30	29		16				45		19:30	7		1				8	
07:45	25	99	25	70			50	169	19:45	8	33	0	3			8	36
08:00	18		17				35		20:00	3		3				6	
08:15	21		13				34		20:15	2		1				3	
08:30	25		18				43		20:30	4		1				5	
08:45	16	80	12	60			28	140	20:45	1	10	0	5			1	15
09:00	14		14				28		21:00	1		1				2	
09:15	25		9				34		21:15	1		1				2	
09:30	33		13				46		21:30	0		0				0	
09:45	29	101	12	48			41	149	21:45	0	2	0	2			0	4
10:00	18		15				33		22:00	1		0				1	
10:15	29		15				44		22:15	0		0				0	
10:30	28		12				40		22:30	0		0				0	
10:45	25	100	17	59			42	159	22:45	0	1	0				0	1
11:00	25		21				46		23:00	1		0				1	
11:15	22		20				42		23:15	0		1				1	
11:30	20		19				39		23:30	0		0				0	
11:45	24	91	20	80			44	171	23:45	0	1	0	1			0	2
TOTALS		550		355				905	TOTALS		545		412				957
SPLIT %		60.8%		39.2%				48.6%	SPLIT %		56.9%		43.1%				51.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,095	767	0	0	1,862

AM Peak Hour	09:30	11:00					10:15		PM Peak Hour	16:15	14:15					16:15		
AM Pk Volume	109	80					172		PM Pk Volume	111	76					181		
Pk Hr Factor	0.826	0.952					0.935		Pk Hr Factor	0.895	0.905					0.905		
7 - 9 Volume	179	130	0	0			309		4 - 6 Volume	200	129	0	0			329		
7 - 9 Peak Hour	07:00	07:45					07:00		4 - 6 Peak Hour	16:15	16:45					16:15		
7 - 9 Pk Volume	99	73	0	0			169		4 - 6 Pk Volume	111	74	0	0			181		
Pk Hr Factor	0.853	0.730	0.000	0.000			0.845		Pk Hr Factor	0.895	0.841	0.000	0.000			0.905		



AIRPORT LAND USE COMMISSION
SAN DIEGO COUNTY

LEGEND

- Airport Property Boundary
- Parcel Line
- Highways
- Municipal Boundary
- Existing Heliport/Helipad
- Future Heliport/Helipad
- No Overflights Below 1,500' MSL

Safety Zones

- Zone 1 - Runway Protection Zone
- Zone 2 - Inner Approach/Departure Zone
- Zone 3 - Inner Turning Zone
- Zone 4 - Outer Approach/Departure Zone
- Zone 5 - Sideline Zone
- Zone 6 - Traffic Pattern Zone

north

0 3,000

Notes: 1. See Table III-2 for criteria applicable within each safety zone.
2. MSL = Mean Sea Level

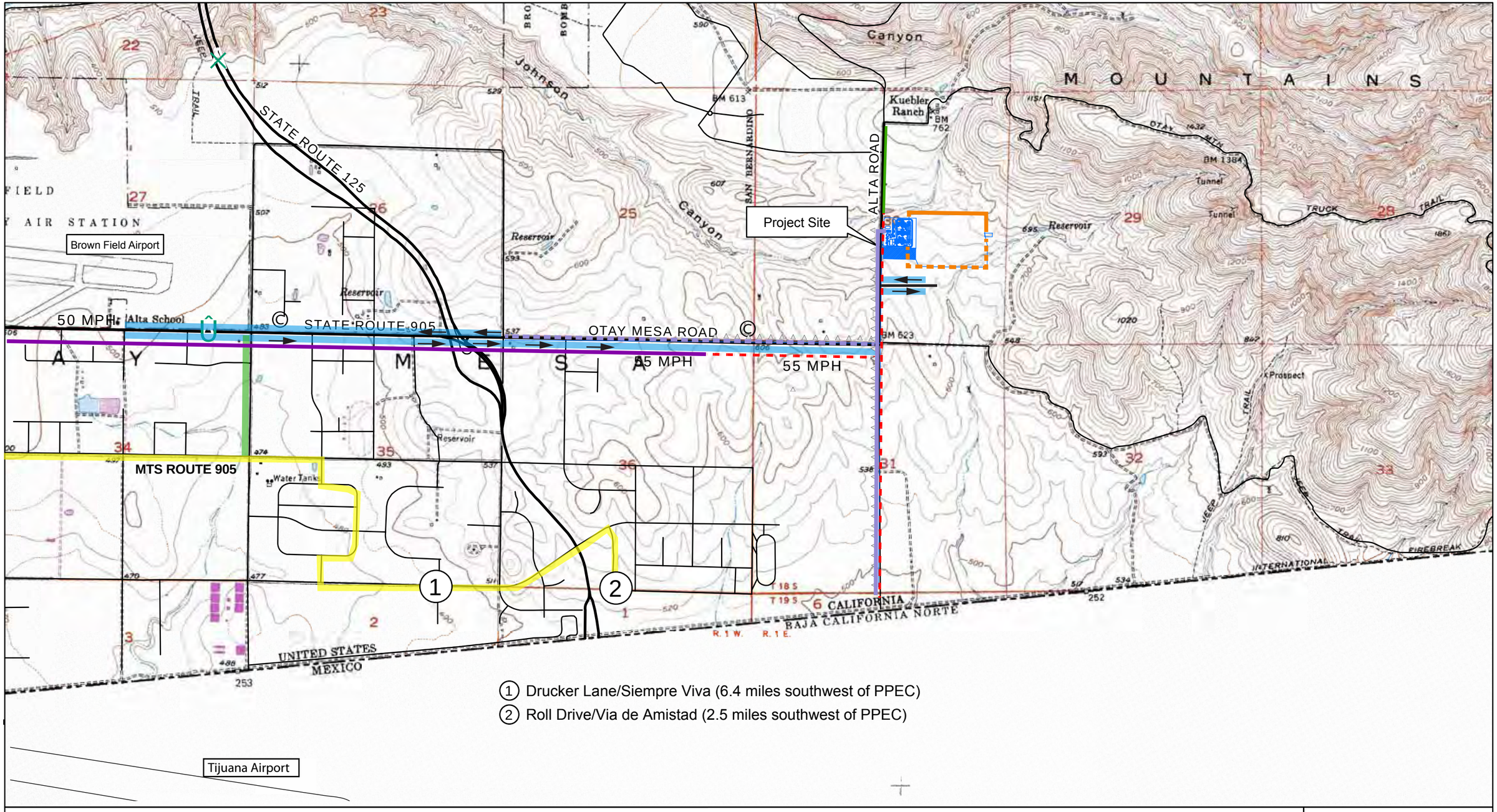
Sources: Parcels - San Diego Geographic Information Source (SanGIS), 2008; Safety Zones - Mead & Hunt, Inc., 2008.

Prepared by: Ricondo & Associates, Inc., October 2009.

Exhibit III-2

Compatibility Policy Map: Safety

Exhibit 6
(Response to Data Request TRAF-46)



Legend

- Potential Project Site, Linears, and Laydown Area
- Existing Bike Lane
- Bike Detour (During Road Construction)
- MTS Bus Route 905

EAST OTAY MESA SPECIFIC PLAN

- State Route Right-of-Ways
- Prime Arterial Road (C.E.)
- Major Road (C.E.)
- 4-Lane Collector Road (C.E.)
- 4-Lane Road (S.P.)
- 2-Lane Road (S.P.)
- Other Roads

N

0 1,000 2,000 Feet

FIGURE 5.11-10
MTS ROUTE 905
BUS STOP LOCATIONS

PIO PICO
ENERGY CENTER

PROJECT NO.: 29874827
DATE: DECEMBER 2010

URS

Source: CalAtlas (USGS 7.5' Topographic Quadrangle), Otay Mesa (1975)

BACKGROUND:

The California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." The Application for Certification (AFC) requires discussion of the "energy resource impacts which may result from the construction or operation of the power plant." For the identification of impacts on the transmission system resources and the indirect or downstream transmission impacts, staff relies on the System Impact Study and the related Facilities Study for insuring the interconnecting grid meets the California Independent System Operator (California ISO) reliability standards. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause a violation of reliability standards, the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete Phase I or Phase II Interconnection Study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

The Supplement to the AFC indicated that the Phase I Interconnection Study for Pio Pico Energy Center (PPEC) project was completed and the report was issued on November 15, 2010. The Phase II Interconnection Study is underway.

Technical Area: Transmission System Engineering

Data Request TRANS-50: Staff requests the complete Phase I and/or Phase II Interconnection studies of the proposed 300 MW PPEC to proceed with the preliminary staff analysis.

Provide the California ISO Phase I and/or Phase II Interconnection Studies of the proposed 300 MW PPEC 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:

a) Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.

b) 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.

c) Analyze Short circuit duties.

d) Analyze the 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.

e) Provide a list of contingencies evaluated for each study.

f) List mitigation measures considered and those selected for all criteria violations.

g) Provide electronic copies of *.sav and *.drw PSLF files.

h) 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:

Applicant provided a redacted version of the California Independent System Operator ("CAISO") Cluster 2 Phase I Interconnection Study ("Study") and related Appendices B-K to Eric Solorio, CEC Project Manager, on July 11, 2011. Due to the confidential nature of information included in Appendix A of the Study, Applicant submitted Appendix A to the CEC Executive Director under an Application for Confidential Designation on July 11, 2011.

In response to part (g), above, access to electronic copies of .sav and .drw PSLF data files is restricted by CAISO. In order to obtain such information, individual non-disclosure agreements ("NDA") with the CAISO are required. Although

Applicant has an NDA with CAISO, the NDA does not allow for secondary distribution of such data. Pursuant to Applicant's discussions with CAISO staff, the CEC has executed the necessary NDA with CAISO to access the data requested in item (g). Should the CEC have any difficulty in accessing the requested data, the CAISO requests that CEC staff contact Susan Montana in the CAISO Legal Department at 916-351-4400 for assistance.

Applicant anticipates CAISO completion of the Phase II Interconnection Study in September 2011. Upon receipt of the Phase II Interconnection Study, Applicant will provide to the CEC pursuant to an Application for Confidential Designation, if appropriate.

BACKGROUND:

The project parcel is located within the boundaries of the East Otay Mesa Specific Plan (EOMSP). EOMSP, Chapter Three, includes regulatory provisions for Site Planning Standards, Table 3.2-1, and Landscaping Standards, Table 3.2-2. These tables are found on pages 103-118 in the plan and outline site development standards, including but not limited to: Fencing, Walls and Hedges, General Landscape Notes, Building Setback Landscaping, Parking Lot Landscaping, Screening, Minimum Standards (including manufactured slopes steeper than 3:1) and Irrigation. Page 5.12-27 of the AFC notes that the PPEC will "work with both the County and the CEC to develop a landscaping plan in compliance with the Plan as the PPEC moves through regulatory review."

Technical Area: Visual Resources

Data Request VIS-51: Provide a conceptual landscape plan for the project site addressing the Standards in Chapter 3 as noted above. Indicate on the plan how the project will meet the Site Planning Standards and Landscaping Standards of the East Otay Mesa Specific Plan identified above. The plan should be prepared at a standard measurable scale on an 11 x 17 sheet (or larger and should include the following:

a) Specify fence and wall materials, and finishes on the plan;

b) Show plant selections in groups according to type, growth habit and placement;

c) Indicate individual trees on plan and include habit, purpose and whether evergreen or deciduous. Tree species may be identified but are not required;

d) Provide slope profiles expressed in ratio form and indicate on plan; and

e) Label setbacks, property lines, easements and show a north arrow and graphic scale.

Response: The Project parcel is located within the boundaries of the East Otay Mesa Specific Plan (EOMSP). Section 3.2.2 "Landscaping Standards," of the EOMSP states that "Landscape plans for all development in East Otay Mesa shall

be submitted and approved pursuant to Sections 86.701 through 86.729 of the San Diego County Code." A conceptual landscape plan has been prepared for the Project, and has been provided as Figure 5.13-18, which has been prepared in consideration of EOMSP landscaping standards. As the proposed project is currently in the conceptual phase, more specific landscaping features will be incorporated into the landscaping plans during the project final design phase.

BACKGROUND:

The project parcel appears to be located in a High Fire Hazard Severity Zone of State Responsibility Area. (California Department of Forestry and Fire Protection-Cal Fire, http://www.fire.ca.gov/fire_prevention/fhsz_maps/fhsz_maps_sandiego.php). State regulations pertaining to building in Fire Hazard Zones are found in Title 14, Natural Resources Division 1.5- Department of Forestry, Chapter 7- Fire Protection, Subchapter 2 SRA Fire Safe Regulations, Articles 1-5. Specifically, Article 5, Fuel Modification Standards, regulates setbacks, roads and defensible space on projects within a fire hazard area. Within Article 5, Regulation 1299 - Defensible Space, provides guidance for implementation of Public Resources Code 4291(a) and (b), and minimize the spread of fire within a 100 foot zone around a building or structure.

Technical Area: Visual Resources

Data Request VIS-52: Provide a discussion of how these regulations apply to the proposed project. If findings indicate the regulations apply, indicate on the conceptual landscape plan where fire hazard setbacks are designated and how defensible space will be created as part of the landscape plan.

Response: Based on the size of the proposed Project (9.9 acres) and the fact that the Project is located adjacent to undeveloped land consisting of native vegetation, the regulations found in Title 14, Chapter 7 of the California Code of Regulations would apply to the Project **if the Project were located in an incorporated area of the County**. However, according to the County of San Diego website, residents in San Diego County's unincorporated communities only have to show they meet the County's fire code, because the state certification officially recognizes the County's code as equal to or better than the state's standards. (www.sdcounty.ca.gov). Therefore, the state regulations, referenced above, do not apply to the proposed Project.

Technical Area: Visual Resources

Data Request VIS-53: Provide a discussion of any local ordinances that apply to fire-hazard areas as they affect site design and landscaping. Incorporate these regulations, if any, into the conceptual landscape plan.

Response: The Project is currently in the conceptual design phase. As part of the final design phase, the Project will incorporate applicable local ordinances that apply to fire-hazard areas as they affect site design and landscaping.

Applicable local ordinances that will be considered during the final design phase include several policies, standards, ordinances, and codes that pertain to architectural and landscaping standards designed to control fire hazards. These regulations include the East Otay Mesa Specific Plan, the San Diego County Water Conservation in Landscaping Ordinance 10032, and the County of San Diego 2009 Consolidated Fire Code. These regulations are excerpted below.

(1) East Otay Mesa Specific Plan

Policy UD-6: On-site landscaping along public streets should be compatible and complementary with the streetscape design of the public right-of-way.

Implementation: Compatibility of on-site landscaping with the public streetscape will be reviewed during the discretionary review process. Issues that should be considered include visual compatibility, water usage, root systems, invasive species, and fire-prone characteristics. This policy should be implemented in a way that provides adequate flexibility to accommodate new standards.

2.3.6 Public Landscaping

Plant Materials

Self-sustaining plant material shall meet two requirements: (1) It shall be drought tolerant and fire-wise; and (2) It shall require little or no maintenance.

3.2.2 Landscaping Standards

Landscape plans for all development in East Otay Mesa shall be submitted and approved pursuant to Sections 86.701 through 86.729 of the San Diego County Code. Every lot improved with a building or other substantial structure, interim or permanent, shall install the approved landscape and irrigation before final inspection of the structure(s), and shall be maintained thereafter as per the project's approved Landscaping and Irrigation Maintenance schedule. Drought tolerant, non-invasive, and fire-wise landscaping is required throughout East Otay Mesa. Plant material as specified in the County's Water Conservation in Landscaping Ordinance and Design Manual shall be used. Other shrubs, trees, and ground covers not listed may also accomplish the desired goals of the Specific Plan, and if they do so, are encouraged also.

Table 3.3-2 contains requirements for landscaping. The portions of this table that apply to controlling fire hazards are provided below.

TABLE 3.3-2
LANDSCAPING STANDARDS

BUILDING SETBACK LANDSCAPING	
Facing Gateway Roads (Prime Arterials)	On-site tree species and planting pattern shall be a single row of Fern Pine trees spaced 25 feet apart alternating with a single row of evergreen canopy trees spaced 25 feet apart, or as directed by the local fire district.
Facing Major Roads (non-Gateway)	On-site trees shall be coordinated with parkway trees to create an alternating pattern of evergreen trees based on 1 tree per 30 feet of street frontage, or as directed by the local fire district.

Note: East Otay Mesa is serviced by the Rural Fire Protection District (RFPD) of San Diego County. This district, which is independent of County government, has the primary responsibility for fire protection and emergency medical service in all but a small portion of the northern area of East Otay Mesa (a portion of the planning area generally west of Paseo de Las Americas, between Lone Star Road and Otay Mesa Road, is not located within a structural fire protection district).

(2) San Diego County Water Conservation in Landscaping Ordinance 10032

As indicated in the EOMSP, one of the landscaping requirements is that "Plant material as specified in the County's Water Conservation in Landscaping Ordinance and Design Manual shall be used". The following provides a summary of the language in the Landscape Ordinance that applies to controlling fire hazards.

SEC. 86.703. APPLICABILITY.

(a) The following projects in the unincorporated area of the County for which the County issues a building permit or a discretionary permit after the chapter's effective date shall be required to obtain an outdoor water use authorization as part of the permitting process:

(1) A project for an industrial, commercial, civic or multi-family residential use where the landscaped area is 1000 square feet or more.

SEC. 86.709. OUTDOOR WATER USE AUTHORIZATION.

(3) The (landscape and irrigation) plan shall provide for use of mulch as follows:

(D) Highly flammable mulch material, such as straw or small or mini size wood chips, shall not be used in a "Hazardous Fire Area," as that term is defined in the County Fire Code.

(c) The landscape and irrigation plan shall be designed as follows:

(17) The plan shall address fire safety issues and demonstrate compliance with State and County requirements for defensible space around buildings and structures and shall avoid the use of fire prone vegetation.

(3) County of San Diego 2009 Consolidated Fire Code

The 2009 County Consolidated Fire Code includes the County amendments to the 2007 California Fire Code and the ordinances of the 16 unincorporated County fire protection districts (the Project is located in the San Diego Rural Fire Protection District). The following provides a summary of the language in the County Fire Code that applies to controlling fire hazards.

SECTION 503. FIRE APPARATUS ACCESS ROADS.

SEC. 503.1 GENERAL.

Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from the closest point of fire department vehicle access. Fire apparatus access roads shall be provided and maintained in compliance with this section and the most recent edition and any amendments thereto, of public and private road standards as adopted by the County of San Diego (San

Diego County Standards for Private Roads and Public Roads, San Diego County Department of Public Works).

Sec. 503.1.1 Buildings and facilities.

Approved fire apparatus access roads shall be provided for every facility, building or portion of building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exceptions: The fire code official may increase the 150 foot minimum where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with sections 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.

Sec. 503.1.2 Dead-end roads.

The maximum length of a dead-end road, including all dead-end roads accessed from that dead-end road, shall not exceed the following cumulative lengths, regardless of the number of parcels served:

Zoning for Parcel Services by Dead End Road	Cumulative Length of Dead End Road
Parcels zoned for 5 acres to 19.99 acres	2,640 feet

All lengths shall be measured from the edge of the roadway surface at the intersection where the road begins to the end of the road surface at its farthest point. Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1,320 foot intervals. Each dead-end road shall have a turnaround constructed within 150 feet of its terminus.

Sec. 503.2.1 Dimensions.

(a) Fire apparatus access roads shall have an unobstructed improved width of not less than 24 feet. Any of the following, which have separated lanes of one-way traffic: fire access roadways, gated entrances with card readers, guard stations or center medians, are allowed, provided that each lane is not less than 12 feet wide. (b) All fire apparatus access roads shall

have an unobstructed vertical clearance of not less than 13 feet 6 inches. Vertical clearances or road widths shall be increased when, in the opinion of the fire code official, vertical clearances or road widths are not adequate to provide fire apparatus access.

Exception: Upon approval of the fire code official, vertical clearances or road width may be reduced as long as the reduction does not impair access by fire apparatus. In cases where the vertical clearance has been reduced approved signs shall be installed and maintained indicating the amount of vertical clearance.

Sec. 503.2.3 Surface.

Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus (not less than 50,000 lbs.) and shall be provided with an approved surface so as to provide all-weather driving capabilities.

Sec. 503.2.3.1

Surfacing materials. The minimum surfacing materials required for fire apparatus access roads shall vary with the slope of the roadway as follows:

0–10% Slope 4” Decomposed Granite

11–15% Slope 2” Asphaltic Concrete

16–20% Slope 3” Asphaltic Concrete

The paving and sub-base shall be installed to the standards specified in Section I-M of the County of San Diego Off-street Parking Design Manual.

AMENDMENT TO SECTION 503.2.3.

The Julian-Cuyamaca, Pine Valley and San Diego Rural Fire Protection Districts adopt the following code amendment:

Sec. 503.2.3 Surface.

Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus (not less than 50,000 lbs. unless authorized by the FAHJ) and shall be provided with an approved paved surface so as to provide all-weather driving capabilities.

Sec. 503.2.4 Turning radius.

The turning radius of a fire apparatus access road shall comply with the County public and private road standards approved by the Board of Supervisors.

Sec. 503.2.5 Dead ends.

All dead-end fire access roads in excess of 150 feet in length shall be provided with approved provisions for turning around emergency apparatus.

Sec. 503.2.7 Grade.

The gradient for a fire apparatus access roadway shall not exceed 20.0%. Grades exceeding 15.0% shall not be allowed without mitigation measures. Minimal mitigation shall be the installation of a fire sprinkler system and a road surface that conforms to section 503.2.3.1. The fire code official may require additional mitigation measures where he deems appropriate. The angle of departure and angle of approach of a fire access roadway shall not exceed seven degrees (12 percent) or as approved by the fire code official.

Sec. 503.3 Marking.

When required by the fire code official, approved signs or other approved notices shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signs or notices shall be maintained in a clean and legible condition at all times and shall be replaced or repaired when necessary to provide adequate visibility. All new public roads, all private roads within major subdivisions and all private road easements serving four or more parcels shall be named. Road name signs shall comply with County of San Diego Department of Public Works Design Standard #DS-13.

Sec. 503.4.1 Roadway design features.

Roadway design features (speed bumps, speed humps, speed control dips, etc.) which may interfere with emergency apparatus responses shall not be installed on fire access roadways, unless they meet design criteria approved by the fire code official.

Sec. 503.5 Required gates or barricades.

The fire code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways.

Sec. 503.5.1. Secured gates and barricades.

When required, gates and barricades shall be secured as approved by the fire code official. Roads, trails and other accessways that have been closed and obstructed in the manner prescribed by section 503.5 shall not be trespassed on or used unless authorized by the owner and the fire code official.

Sec. 503.6 Security gates.

No person shall install a security gate or security device across a fire access roadway without the fire code official's approval. An automatic gate across a fire access roadway or driveway shall be equipped with an approved emergency key-operated switch overriding all command functions and opening the gate.

SECTION 503. PREMISES IDENTIFICATION.

Sec. 505.1 Address numbers.

Approved numbers and/or addresses shall be placed on all new buildings and at appropriate additional locations, plainly visible and legible from the street or roadway fronting the property when approaching from either direction. The numbers shall contrast with their background and shall meet the following minimum size standards: 12" high with a 1" stroke for industrial buildings. Additional numbers shall be required where deemed necessary by the fire code official, such as rear access doors, building corners and entrances to commercial centers. The fire code official may establish different minimum sizes for numbers for various categories of projects.

Sec. 505.2 Street or road signs.

Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs.

SEC. 96.1.506.1.2. EMERGENCY KEY ACCESS.

Sec. 506.1.2 Emergency key access.

All central station-monitored fire detection systems and fire sprinkler systems shall have an approved emergency key access box on site in an approved location. The owner or occupant

shall provide and maintain current keys for any structure for fire department placement in the box and shall notify the fire department in writing when the building is re-keyed.

SEC. 96.1.508.2. TYPE OF WATER SUPPLY.

Sec. 508.2 Type of water supply.

Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems, as approved by the fire code official, capable of providing the required fire flow in a reliable manner.

Sec. 508.2.1 Private fire service mains.

Private fire service mains and appurtenances shall be installed in accordance with NFPA 24.

Sec. 508.2.2 Water tanks.

Water tanks for private fire protection, when authorized by the fire code official, shall comply with Table 508.2.2.

TABLE 508.2.2
WATER TANK REQUIREMENTS

Building Size (Square Feet)	**Water Flow (Gallons Per Minute)**	**Capacity (Gallons)**	**Duration (Minutes)**
Up to 1,500	250	5,000	20
Over 1,500	250	10,000	40
Note: When the exposure distance is one hundred feet (100') or less from an adjacent property, or where additional hazards or calculated fire flow exists, the required water storage may be modified by the fire code official.			

1. Tank elevation shall be equal to or higher than the fire department connection on the premises.
2. Supply outlet shall be at least 4 inches in diameter from the base of the tank to the point of outlet at the fire department connection. The fire department connection shall be at least one 4-inch National Standard Thread (male), reduced to one 2½ inch National Standard Thread (male). Additional outlets may be required.
3. LocatiCUL-on of fire department outlet shall be shown on the plot plan when submitted to the FAHJ. Consideration will be given to topography, elevations, and distance from structures, driveway access, prevailing winds, etc.

4. The outlet shall be located along an access roadway and shall not be closer than 50 feet or further than 150 feet from the structure.
5. All exposed tank supply pipes shall be of an alloy or other material listed for above ground use. Adequate support shall be provided.
6. Water storage tanks shall be constructed from materials approved by the fire code official and installed per manufacturer recommendations.
7. The fire code official may require any necessary information to be submitted on a plot plan for approval.
8. Vessels previously used for products other than water shall not be allowed.

SEC. 96.1.508.3. FIRE FLOW.

Sec. 508.3 Fire flow.

Fire flow requirements shall be based on Appendix B of the County Fire Code or the standard published by the Insurance Services Office, "Guide for Determination of Required Fire Flow". Consideration should be given to increasing the gallons per minute to protect structures of extremely large square footage and for such reasons as: poor access roads, grade and canyon rims, hazardous brush and response times greater than five minutes by a recognized fire department or fire suppression company. In hazardous fire areas, the main capacity for new subdivisions shall not be less than 2,500 gallons per minute, unless otherwise approved by the fire code official. If fire flow increases are not feasible, the fire code official may require alternative design standards such as: alternative types of construction that provide a higher level of fire resistance, fuelbreak requirements, which may include required irrigation, modified access road requirements, specified setback distances for building sites addressing canyon rim developments and hazardous brush areas, and other requirements as authorized by this chapter and as required by the fire code official.

SEC. 96.1.508.5.1. FIRE PROTECTION WATER SUPPLIES-REQUIRED INSTALLATIONS.

Sec. 508.5.1 Required installations.

The location, type and number of fire hydrants connected to a water supply capable of delivering the required fire flow shall be provided on the public or private street, or on the site of the premises to be protected or both. Fire hydrants shall be accessible to the fire department apparatus by roads meeting the requirements of section 503.

Sec. 508.5.1.1 Location of fire hydrants.

Fire hydrants shall be located as required by the fire code official using the following criteria and taking into consideration departmental operational needs. Hydrants shall be located at intersections, at the beginning radius of cul-de-sacs and at intervals identified in the following tables and criteria. Hydrants located across heavily traveled roadways shall be not considered as serving the subject property.

Sec. 508.5.1.1.2 Requirements for multi-family, commercial and industrial zones.

In multi-family, commercial and industrial zones, fire hydrants shall be installed at intersections, at the beginning radius of cul-de-sacs and every 300 feet of fire apparatus access roadways, regardless of parcel size.

Exception: When the fire code official determines that fire protection methods greater than this code requires are provided on a parcel the fire code official may modify the requirements of this section.

Sec. 508.5.1.1.3 Fire hydrant construction and configuration.

All fire hydrants shall be of bronze construction, including all internal parts except seats. Alternative materials may be used if approved by the fire code official and the local water district having jurisdiction. The stems shall be designed and installed in a manner that will ensure that they will not be projected outward from the main body by internal water pressure due to disassembly. The number and size of fire hydrant outlets shall be as follows:

1. One 4 inch and one 2½ inch NST outlet.
2. One 4 inch and two 2½ inch NST outlets.

In some instances, the fire code official may require a fire hydrant to have any other combination of 4 inch and 2½ inch outlets.

Sec. 508.5.1.2 Waterline extensions.

The fire code official may require a waterline extension for the purpose of installing a fire hydrant if a water main is 1,500 feet or less from the property line.

SEC. 96.1.901.4.5. FIRE DEPARTMENT CONNECTIONS.

Sec. 901.4.5. Fire department connections.

Fire hose threads used in connection with fire-extinguishing systems shall be National Standard Thread or as approved by the FAHJ. The location of fire department hose connections and control valves shall be approved by the fire code official.

SEC. 96.1.903.2 AUTOMATIC SPRINKLER SYSTEMS-WHERE REQUIRED.

Sec. 903.2 Where required.

Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in this section. Table 903.2 summarizes these requirements.

TABLE 903.2
SUMMARY OF FIRE SPRINKLER REQUIREMENTS

Fire District	Commercial
San Diego Rural	1
1. Buildings where the required fire flow exceeds 1,500 gallons per minute, as described in section 903.2.	

SEC. 1418. FUEL MODIFICATION ZONE REQUIREMENTS

Sec.1418.1 Fuel modification zone during construction.

Any person doing construction of any kind which requires a permit under this code or the County Building Code shall install a fuel modification zone prior to allowing any combustible material to arrive on the site and shall maintain the zone during the duration of the project.

SECTION 4703. FIRE PROTECTION PLAN

Sec. 4703.1 When required. The Department of Planning and Land Use or the fire protection district may require an applicant for a parcel map, subdivision map, specific plan or major

use permit for any property located in a wildland-urban interface fire area[1] to submit a Fire Protection Plan (FPP) as part of the approval process.

SECTION 4707. DEFENSIBLE SPACE

Sec. 4707.1 Structure setbacks from property lines.

The building official shall establish the minimum setbacks for locating a structure on a lot in a wildland-urban interface fire area. The setbacks may be greater than the minimum setbacks provided in the County Zoning Ordinance, when necessary to protect a structure from an unreasonable hazard from a wildfire.

Sec. 4707.1.1 General fire setbacks.

Buildings and structures shall be setback a minimum of 30 feet from property lines and open space easements unless the County Zoning Ordinance requires a greater minimum. When the property line abuts a roadway the setback shall be measured from the centerline of the roadway.

Exception: When both the building official and the FAHJ determine that the hazard from a wildland fire is not significant or when the terrain, parcel size or other constraints on the parcel make the required setback infeasible, the building official may allow the setback to be less than 30 feet from the property line when allowed by the Zoning Ordinance.

Sec. 4707.2.1 Fuel modification of combustible vegetation from sides of roadways.

(a) The Fire Authority Having Jurisdiction (FAHJ) may require a property owner adjacent to a public or private road to modify combustible vegetation in the area within 20 feet from each side of the road to establish a fuel modification zone. The FAHJ has the right to enter private property to insure the fuel modification zone requirements are met.

(b) A property owner adjacent to a public or private road or driveway constructed after the effective date of this chapter shall modify combustible vegetation in the area within 30 feet from each side of the road or driveway to establish a fuel modification zone.

Exception: The FAJH may reduce the width of the fuel modification zone if it will not impair access.

[1] A Wildland-Urban Interface Fire Area is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code sections 4201 through 4204 and Government Code sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

Sec. 4707.2.2 Community fuel modification.

The FAHJ may require a developer, as a condition of issuing a certificate of occupancy, to establish one or more fuel modification zones to protect a new community by reducing the fuel loads adjacent to a community and structures within it. The developer shall assign the land on which any fuel modification zone is established under this section to the association or other common owner group that succeeds the developer as the person responsible for common areas within the community.

Sec. 4707.3 Maintenance of defensible space.

Any person owning, leasing, controlling, operating or maintaining a building or structure required to establish a fuel modification zone pursuant to section 4707.2 shall maintain the defensible space. The FAHJ may enter the property to determine if the person responsible is complying with this section. The FAHJ may issue an order to the person responsible for maintaining the defensible space directing the person to modify or remove non-fire resistant vegetation from defensible space areas, remove leaves, needles and other dead vegetative material from the roof of a building or structure, maintain trees as required by section 4707.3.1 or to take other action the FAHJ determines is necessary to comply with the intent of sections 4703 et seq.

Sec. 4707.3.1 Trees.

Crowns of trees located within defensible space shall maintain a minimum horizontal clearance of 10 feet for fire resistant trees and 30 feet for non-fire resistive trees and shall be pruned to remove limbs located less than 6 feet above the ground surface adjacent to the trees. Dead wood and litter shall be regularly removed from trees. Ornamental trees shall be limited to groupings of 2-3 trees with canopies for each grouping separated horizontally as described in Table 4707.3.1

TABLE 4707.3.1
DISTANCE BETWEEN TREE CANOPIES

Distance Between Tree Canopies by Percent Slope (1)	
Percent of Slope	**Required Distances Between Edge of Mature Tree Canopies (2)**
0-20	10 feet
21-40	20 feet
41 plus	30 feet

(1) Adapted from Wildland Home Fire Risk Meter, Simmerman and Fischer, 1990.
(2) Determined from canopy dimensions as described in Sunset Western Garden Book (Current Edition)

SECTION 4710. CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE

Sec. 4710.1 Construction methods for exterior wildfire exposure.

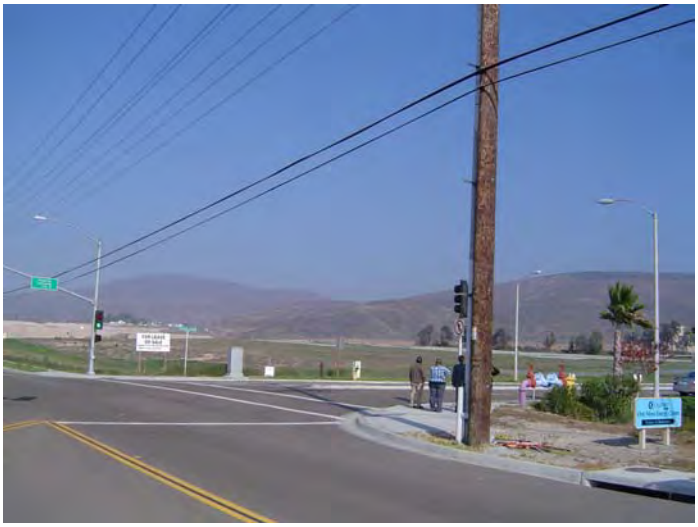
The construction methods for exterior wildfire exposure in a wildland-urban interface fire area shall be as provided in Chapter 7A of the County Building Code.

BACKGROUND:

In consultation with Commission staff on-site on December 14, 2010, Key Observation Points (KOPs) were selected for the proposed project. KOP-4, found in the AFC as Figure 5.13-16 and -17, was intended to represent the view toward the project site from the intersection of Alta Road and Paseo de la Fuentes Road from the perspective of northbound motorists on Alta Road stopped at the traffic signal. This was confirmed by Commission staff on December 15, 2010 by e-mail and a sample photograph was included showing the viewpoint from within the traffic lanes of the roadway. The KOP-4 photograph of existing conditions and simulation submitted by the applicant provides a view of the project site from the perspective of a pedestrian standing on the southern sidewalk of Paseo de la Fuentes Road. This does not accurately reflect the motorist's view of the project site that was the objective. KOP-4 is the view that is most visible and will be seen by the highest number of viewers of any of the four KOPs. It may also have the most visual sensitivity of the four KOPs. It is important to have the KOP best represent the motorist's view, as motorists will by far outnumber the number of pedestrians viewing the project site from this position.

Technical Area: Visual Resources

Data Request VIS-54: Reproduce and resubmit KOP-4 Existing View and Simulated View to fully represent the motorist's perspective as discussed on- site. Staff has previously provided one sample photograph as a guide. This view should be from the travel lanes in the roadbed, not on the sidewalk.



Photograph e-mailed to URS staff on 12-15-10.

Response: Data Request 54 pertains to reproducing and resubmitting KOP-4, Existing View and Simulated View. Refer to: Figure 5.13-18 showing the motorists' existing perspective on Alta Road, approaching the intersection of Alta Road and Paseo de la Fuente and looking northeast towards the project site; and, Figure 5.13-19, showing the simulated project view.

BACKGROUND:

The East Otay Mesa Specific Plan provides Architectural Standards for Industrial Development (EOMSP Table 3.2-3). The standards address design features of buildings such as form, mass and texture, rooflines, entrances, windows, rooftop equipment, accessory buildings, outdoor storage areas and exterior building materials.

Technical Area: Visual Resources

Data Request VIS-55: Provide a discussion explaining how the proposed project meets (or does not meet) the standards as outlined in Table 3.2-3.

Response: As the proposed Project is currently in the conceptual phase, the specific architectural design features associated with the project building and parking areas have not been developed at this time. However, the design features discussed in Table 3.2-3 (below) of the EOMSP, will be incorporated into the final design of the proposed Project, as applicable.

TABLE 3.2-3

Architectural Standards – Industrial Development

Industrial Development	Technology Business Park, Light Industrial, Heavy Industrial and Mixed Industrial
BUILDING DESIGN	
Form, Mass and Texture	▪ Architectural façade treatments shall be used to provide visual interest and break up the scale of industrial buildings, particularly on facades that face the street or a courtyard used by pedestrians. ▪ Plan offsets on the street-facing elevation(s) shall be incorporated to avoid buildings with straight, unbroken facades. No building shall be longer than 200 lineal feet without some modulation of the façade. Changes in material may occur at plan offsets. ▪ Offsets, projections, overhangs, horizontal and vertical color bands, windows, false window panels, recesses and cornice detailing are devices that shall be used to increase areas of shade and shadow and prevent blank walls (Figure 3.2-2). ▪ When a corner of a building is located adjacent to an intersection or driveway, the corner shall be articulated using any of the strategies identified in Figure 3.2-3. A right angle corner with no articulation is prohibited. Façade modulations (inverted, revealed or towered corners) should be used to create a special treatment on corner sites (adjacent to a public right-of-way). ▪ Variations in texture should be used to add scale and visual interest. These may include patterns, sandblasted surfaces, exposed aggregate and different types or colors of materials.
Reveals	▪ Exterior walls shall provide architectural reveals to break up the wall surface. At a minimum, reveals shall occur at every structural bay (Figure 3.2-4). ▪ Reveals of varying size and direction shall be required. For example, on long horizontal walls, vertical reveals shall be utilized accentuating the height of a building and lessening its horizontal impact.
Roofline Articulation and Roof Forms	▪ Long continuous parapets shall be broken to add hierarchy, scale and visual interest. This can be achieved by adding architectural elements of greater height at appropriate locations, stepping the height of the parapet at appropriate intervals, or adding tower and/or shed roof forms. ▪ Distinctive roof forms shall be used to distinguish entry points. ▪ Flat roof buildings should incorporate shed roofs or trellises covering exterior walkways or loggias to scale down the structure and provide visual relief.

TABLE 3.2-3 (Continued)

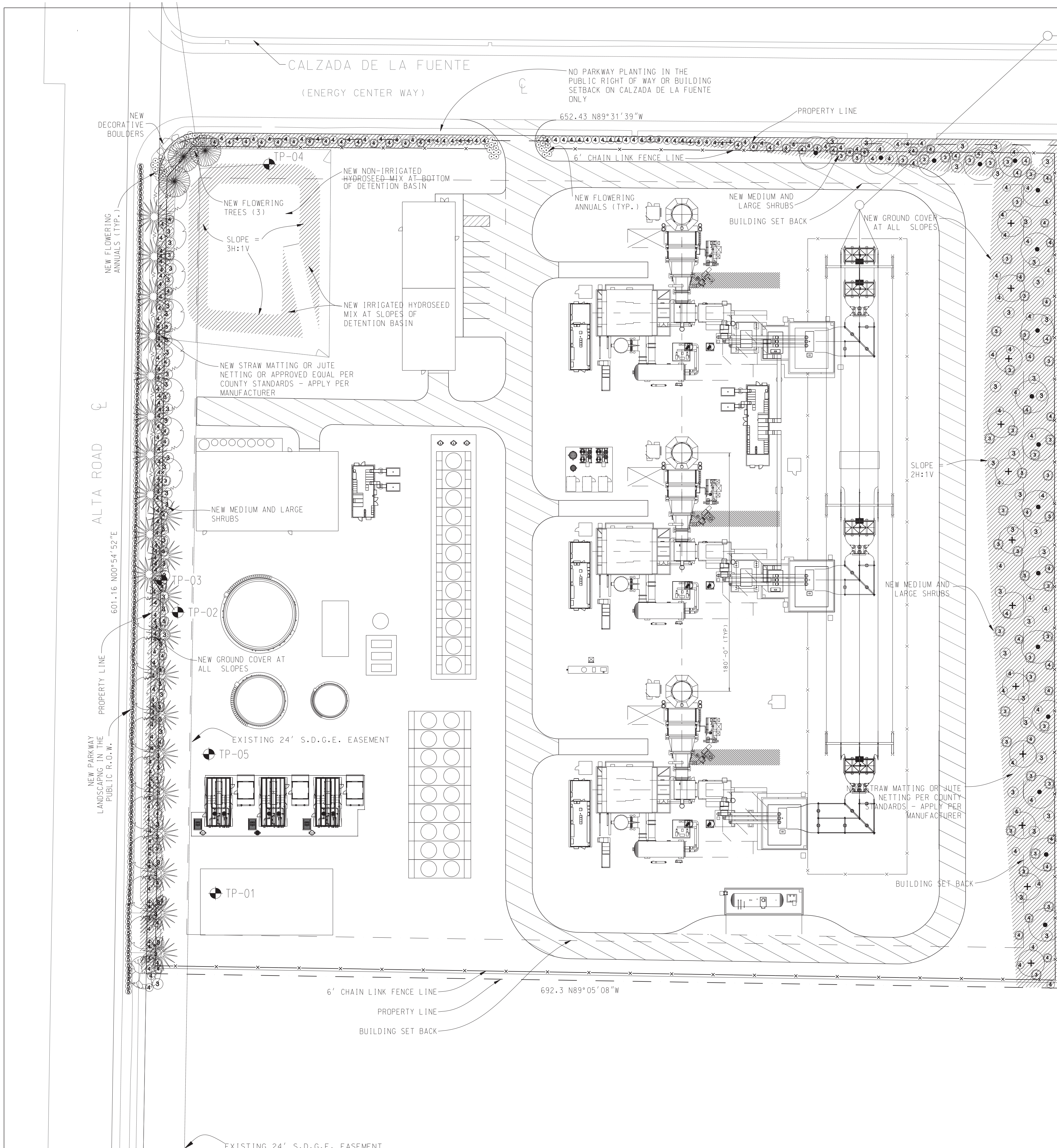
Architectural Standards – Industrial Development

Industrial Development	Technology Business Park, Light Industrial, Heavy Industrial and Mixed Industrial
BUILDING DESIGN	
Form, Mass and Texture	▪ Architectural façade treatments shall be used to provide visual interest and break up the scale of industrial buildings, particularly on facades that face the street or a courtyard used by pedestrians. ▪ Plan offsets on the street-facing elevation(s) shall be incorporated to avoid buildings with straight, unbroken facades. No building shall be longer than 200 lineal feet without some modulation of the façade. Changes in material may occur at plan offsets. ▪ Offsets, projections, overhangs, horizontal and vertical color bands, windows, false window panels, recesses and cornice detailing are devices that shall be used to increase areas of shade and shadow and prevent blank walls (Figure 3.2-2). ▪ When a corner of a building is located adjacent to an intersection or driveway, the corner shall be articulated using any of the strategies identified in Figure 3.2-3. A right angle corner with no articulation is prohibited. Façade modulations (inverted, revealed or towered corners) should be used to create a special treatment on corner sites (adjacent to a public right-of-way). ▪ Variations in texture should be used to add scale and visual interest. These may include patterns, sandblasted surfaces, exposed aggregate and different types or colors of materials.
Reveals	▪ Exterior walls shall provide architectural reveals to break up the wall surface. At a minimum, reveals shall occur at every structural bay (Figure 3.2-4). ▪ Reveals of varying size and direction shall be required. For example, on long horizontal walls, vertical reveals shall be utilized accentuating the height of a building and lessening its horizontal impact.
Roofline Articulation and Roof Forms	▪ Long continuous parapets shall be broken to add hierarchy, scale and visual interest. This can be achieved by adding architectural elements of greater height at appropriate locations, stepping the height of the parapet at appropriate intervals, or adding tower and/or shed roof forms. ▪ Distinctive roof forms shall be used to distinguish entry points. ▪ Flat roof buildings should incorporate shed roofs or trellises covering exterior walkways or loggias to scale down the structure and provide visual relief.

TABLE 3.2-3 (Continued)

Architectural Standards – Industrial Development

Industrial Development	Technology Business Park, Light Industrial, Heavy Industrial and Mixed Industrial
CLIMATIC CONSIDERATIONS	
	▪ Site development (such as window locations, building orientation and roof overhangs) should be designed to minimize heating and cooling costs and provide more comfortable indoor spaces. ▪ Courtyards, particularly south facing, may be used to create outdoor spaces with a favorable microclimate for year-round activities.
Window Locations	▪ Windows on the east, west, and south shall use landscaping and window treatment (i.e., shades and blinds) to reduce solar glare and heat gain. ▪ Whenever feasible, locate the largest windows on the north side of building and use overhangs to minimize heat gain on south elevations. Windows on the west side of a building are discouraged.
Elements to Shade Wall Surface	▪ Protected courtyards, porches, arcades, trellises, loggias, pergolas, verandas, overhangs or trees are encouraged to shade exterior wall surfaces and windows from direct sun exposure and provide relief from the sun in outdoor recreation areas.
PARKING STRUCTURES	
Design	▪ All sides of a parking structure visible from the street or common area shall be faced with a building material similar to or the same as the adjoining building.
Location	▪ Parking structures shall be placed toward the rear of properties, away from street frontage and shall meet building setback requirements.
Screening Methods	▪ Parking structures shall be screened by one or a combination of the following: dense planting, sunken parking structure design, with dense slope planting, berms, and planting in front of structure.
OTHER CONSIDERATIONS	
Building Types	▪ Construction trailers permitted only as interim facilities during construction phase of project.
Signage	Signage shall be in conformance with the County of San Diego Zoning Ordinance.



PLANTING LEGEND

NOTE: ALL STREET & PARKWAY TREES TO BE 24" BOXES. ALL SLOPE TREES TO BE 5 GAL.

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	DESCRIPTION / SIZE
		TREES:		
14		CERATONIA SILIQUA	CAROB	LARGE BROAD-HEADED (25' O.C.) 5 GAL. ON SLOPES/ 24" BOX IN PARKING 25' SPREAD / EVERGREEN
14		LIQUIDAMBAR STRYRACIFLUA	SWEET GUM	LARGE DECIDUOUS 5 GAL. (30' O.C.)
		STREET TREES:		
51		PODOCARPUS GRACILIOR	FERN PINE	LARGE CANOPY (25' O.C.) 24" B CONTAINER/ EVERGREEN
19		PINUS CANARIENSIS	CANARY ISLAND PINE	LARGE BROAD-HEADED (30' O.C.) 5 GAL. ON SLOPES/ 24" BOX ON STREET AND IN PARKING 25' SPREAD / EVERGREEN
		MEDIAN TREES:		
32		GEIJERA PARVIFOLIA	AUSTRALIAN WILLOW	MEDIUM GREEN, DROOPING LEAVES/ 24" BOX - 25' ON CENTER/ EVERGREEN
		MAJOR INTERSECTION TREES:		
11		ALBIZIA JULIBRISSIN	SILK TREE	FLOWERING ORNAMENTAL 24" BOX- GROUPS OF 3, SUMMER PINK FLUFFY FLOWERS / EVERGREEN
		SDG&E APPROVED TREES (ALTA ROAD):		
22		PITTOSPORUM PHILLYRAEOIDES	WILLOW PITTOSPORUM	SLOW GROWING, DROUGHT TOLERANT (30' O.C.) 5 GAL. ON SLOPES/ 24" BOX ON STREET AND IN PARKING 25' SPREAD / EVERGREEN
18		ARBUTUS UNEDO	STRAWBERRY TREE	
63		RAPHIOLEPIS	MAJESTIC BEAUTY	MODERATE GROWTH TO 15'. DARK GREEN, LARGE LEAVES, DROUGHT TOLERANT (25' O.C.) 24" BOX / EVERGREEN
		SHRUBS:		
298	3	ALYOGYNE HUEGELII	BLUE HIBISCUS	SCREEN SHRUBS (4'-6' HT.) (5' O.C.) 1 GAL
368	3	COMAROSTOAPHYLIS - DIVERSIFOLIA	SUMMER HOLLY	
432	4	RAPHIOLEPHIS INDICA 'PINK CLOUD'	INDIA HAWTHORN	MEDIUM SHRUB (2'-3' HT.) (3' O.C.) 5 GAL. IN PARKWAY & SETBACKS - (1) EVERY 100 S.F., 1 GAL. AT SLOPES
416	4	CAESALPINIA GILLIESII	BIRD OF PARADISE	
527	5	LANTANA SPP.	LANTANA	SMALL FLOWERING SHRUB (1'-2' HT.) (3' O.C.) 1 GAL - (1) EVERY 100 S.F. AT SLOPES
269	5	RAPHIOLEPSIS	PINK CLOUD	MEDIUM SHRUB (2'-3' HT.) (3' O.C.) 5 GAL. IN PARKWAY & SETBACKS - (1) EVERY 100 S.F., 1 GAL. AT SLOPES
		ANNUALS:		
10 FLATS		ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	FROM FLATS
		GROUND COVER:		
		MYOPORUM PARVIFOLIUM	PROSTRATE MYOPORUM	FLATS - 12" O.C.
		HYDROSEED MIX		SEE NOTE #6

– PRELIMINARY –
NOT FOR CONSTRUCTION

CONFIDENTIAL

REV	DESIGN BY	DRAWN BY	CHECKED BY	DATE
B	PRELIMINARY			
	1st Int.Last Name	S. HANNI	C. KEBODEAUX	07-13-11
A	PRELIMINARY			
	1st Int.Last Name	S. HANNI	C. KEBODEAUX	07-12-11

PIO PICO ENERGY CENTER
SAN DIEGO COUNTY, CA

3xLMS100

Kiewit

Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

Figure 5.13-18

SCALE IN FEET
30 0 30 60
SCALE: 1" = 30'-0"

N

CONCEPTUAL LANDSCAPING PLAN

ENGINEER/DESIGN ORIGINATOR
LEAD ENG
ENG MGR
PROJ MGR

DRAWING NUMBER
P009-041-PP-006

T/Ladd/PioPicoEnergyCenter/611-258

KOP 4B: Existing motorists' view for northbound travelers on Alta Road (commuters to Richard J. Donovan Correction Facility and East Mesa Detention Center), approaching the intersection of Alta Road and Paseo de la Fuente, looking northeast toward project site.

EXISTING VIEW OF PROJECT FROM KOP #4B
PIO PICO ENERGY CENTER

URS	NO SCALE	CREATED BY: BL	DATE: JULY 2011	FIG. NO: 5.13-19
		PM: MF		

T/Ladd/PioPicoEnergyCenter/611-259

KOP 4B: Simulated motorists' view for northbound travelers on Alta Road (commuters to Richard J. Donovan Correction Facility and East Mesa Detention Center), approaching the intersection of Alta Road and Paseo de la Fuente, looking northeast toward project site. This photo is meant to represent the "worst-case" traveler/commuter view from Alta Road.

SIMULATED VIEW OF PROJECT FROM KOP #4B
PIO PICO ENERGY CENTER

URS	NO SCALE	CREATED BY: BL	DATE: JULY 2011	FIG. NO: 5.13-20
		PM: MF		

BACKGROUND:

The Pio Pico Energy Center (PPEC) project proposes to meet all of its process water needs with recycled water, approximately 380 acre feet per year. Currently, recycled water is not available at the proposed PPEC project site, but Otay Water District (OWD) expects to expand its recycled water system to this area by June 2013. Construction of the PPEC is anticipated to begin in February 2013 and the estimated commercial online date is May 2014. Until recycled water can be delivered to the PPEC site, OWD has agreed to meet PPEC's near-term process water demands using potable water. In light of the State's and the Energy Commission's water policy, staff is concerned that any potential delays in the availability of recycled water would prolong the PPEC's dependence on potable water.

Technical Area: Soil & Water Resources

Data Request SW-56: Please provide a copy of any signed agreement between OWD and the project applicant for the delivery of at least 380 acre-feet per year of recycled water.

Response: PPEC provided a will-serve letter dated January 20, 2011, from OWD to PPEC. Please see the February, 2011 AFC, Appendix 1 – Water Resources. Based on recent discussions between Applicant and OWD, OWD has reaffirmed that it does not enter into agreements to provide water to specific customers.

Technical Area: Soil & Water Resources

Data Request SW-57: Please provide an economic feasibility analysis that examines PPEC paying the upfront cost of installing the recycled water pipeline as planned by OWD, in the event that OWD is unable to fund the installation by the expected commissioning of the PPEC start of operations date. If the analysis meets the requirements for obtaining confidential designation, the applicant is welcome to submit this Data Response together with an application for confidentiality.

Response: To provide reclaimed water to PPEC and the east Otay Mesa area, OWD will need to complete approximately 13,400 feet of pipeline along Wueste Road as shown on the attached drawing, Figure 5.5-3, OWD Wueste Road Pipeline Expansion. The additional pipeline is part of OWD's expansion plans to serve the Otay Mesa area with reclaim water. OWD has completed the EIR for this phase of expansion and expects to have final permits in hand by the end of July 2011. OWD has provided Applicant with a cost estimate of $4.5 million for construction of this phase. In current ongoing discussions with OWD, OWD has indicated that if PPEC is willing to fund the development costs up front, OWD will reimburse PPEC for approximately 75 percent of the total costs as construction milestones are achieved. This would result in a total cost to PPEC of approximately $1.125 million. In terms of the overall PPEC project cost or the annual amortized cost of approximately $132,000 per year, this amount does not have a significant detrimental effect. Actual construction is expected to take place during the construction of PPEC.

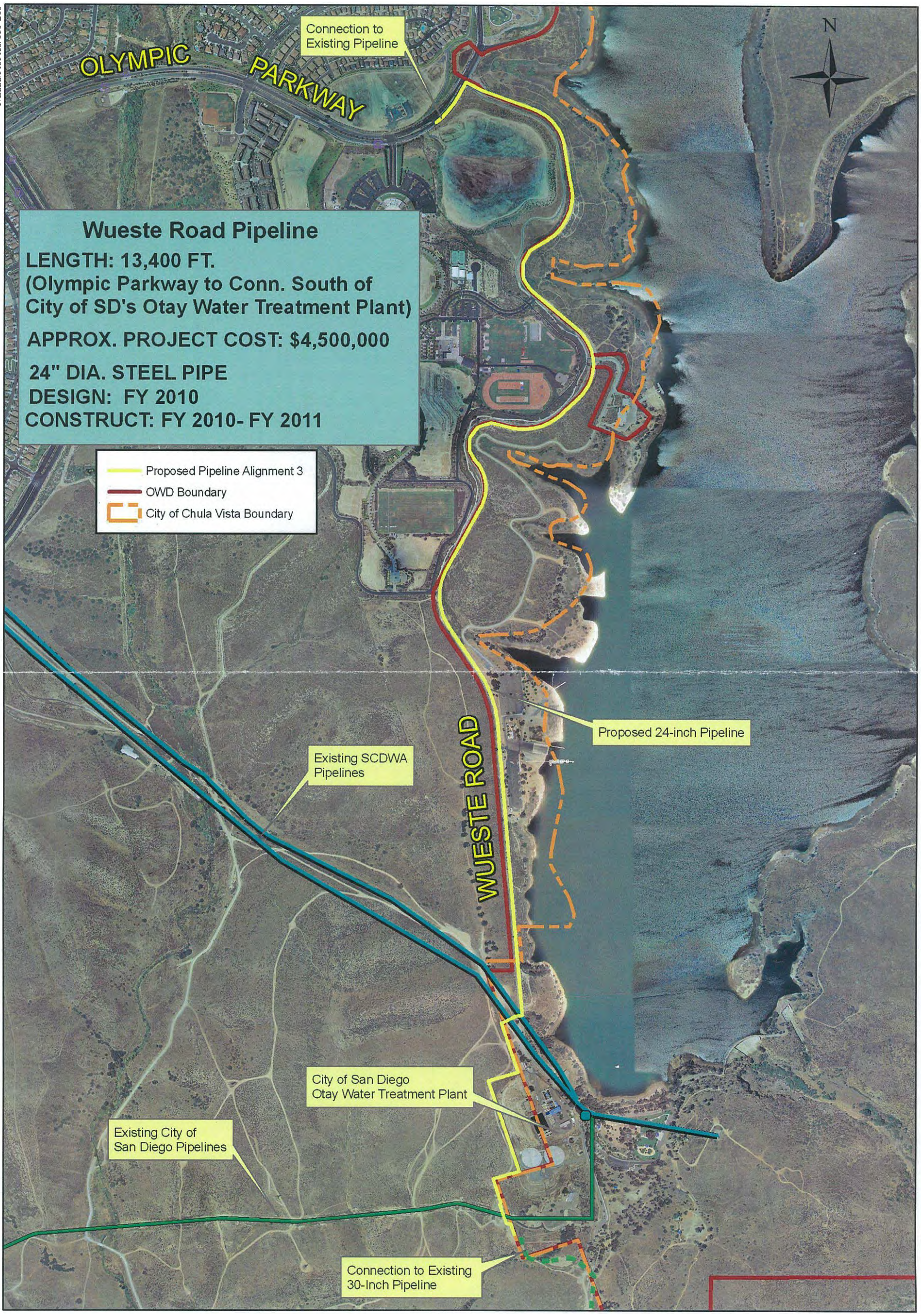
At times that reclaimed water is not available due to, among other reasons, construction of the reclaimed water line infrastructure described above, the Applicant proposes to use potable water as the source of water for dust control, equipment washing, soil compaction, and other short-term uses during construction. The Applicant therefore proposes a Condition of Certification SOIL&WATER-4, to control and

limit the use of potable water for any construction activity that is suitable for non-potable water use.

SOIL&WATER-4: Potable water shall not be used for any construction activity that is suitable for non-potable water use if a non-potable water source is available at the project site. Prior to site mobilization, the project owner shall submit to the CPM a Non-Potable Construction Water Use Plan (plan) for the supply and use of non-potable water in construction activities. The plan shall specify those construction activities that would use non-potable water and those construction activities that would use potable water.

Verification: Prior to site mobilization, the project owner shall submit to the CPM for review and approval the Non-Potable Construction Water Use Plan. Within the Monthly Compliance Report, the project owner shall report the volume of potable and non-potable water used and the construction activities for which each was used.

T/Ladd/PioPico/610-260



800 400 0 800 900

SCALE: 1″ = 800′

SOURCE: Otay Water District, 2011

FIGURE 5.5-3
OWD WUESTE ROAD PIPELINE EXPANSION

PIO PICO ENERGY CENTER

PROJECT NO.: 29874838
DATE: JULY 2011

URS

BACKGROUND:

Fire protection services will be required for the project and will be provided by the San Diego Rural Fire Protection District (SDRFPD). As the construction of the project will increase the assets that the fire district must protect, Energy Commission staff requires assurance that SDRFPD's increased responsibility will not adversely affect, to any significant degree, its ability to continue to provide coverage to the public in its jurisdiction. Generally, development fees and taxes to be provided by the project to local government are sufficient to enable the local fire district to continue to maintain adequate emergency response readiness to serve both the project and the fire district's existing jurisdiction. Although rare, in some recent siting cases, project specific issues have occurred which required additional mitigation of unique impacts to the local fire district.

Technical Area: Worker Safety and Fire Protection

Data Request WSFP-58: Please provide a letter or email from (or record of conversation with) SDRFPD that confirms the absence of any expected significant impacts on the local fire district from construction and operation of the proposed project, and states that SDRFPD will remain adequately equipped, staffed, and prepared to provide fire protection to both the project and the public if that is the case.

Response: On June 21, 2011, Applicant met with SDRFPD Chief, David Nissen, at his office in Jamul. The primary purpose of that meeting was to solicit his and the SDRFPD's views and input on the Pio Pico Energy Center design, landscape plan, ingress and egress, fire loop, setbacks and other salient features that relate to fire protection. Applicant also explicitly sought Chief Nissan's response to Data Request 58; that is, confirmation of the absence of any expected significant impacts on the local fire district from construction and operation of the proposed project, and that SDRFPD will remain adequately equipped, staffed, and prepared to provide fire protection to both the project and the public if that is the case. Chief Nissen affirmed that the Pio Pico Energy Center would not present any significant impacts on the SDRFPD during construction and operation, and that the Department would actually gain from the project in terms of equipment, staffing and overall fire

protection preparedness. In addition, on July 12, 2011, Chief Nissen provided Applicant with the attached Emergency Medical Response Needs Assessment Form (Exhibit 7).

Technical Area: Worker Safety and Fire Protection

Data Request WSFP-59: In the absence of such letter or communication, please provide a fire protection needs assessment and a fire risk assessment pursuant to NFPA 1710 guidelines that provides an objective estimate of both equipment and staffing shortfalls (if any) and the associated recommended mitigation (if any) that would be required to maintain sufficiency of SDRFPD's readiness to respond.

Response: Refer to Response to Data Request WSFP-58 above.

Exhibit 7

Emergency Medical Response Needs Assessment Form	
Project Characteristics, as Proposed by the Project Applicant	
Type, Location, Size, and Site Access:	Power generating facility proposed on 9.9 acres in the southeast corner of the Alta Road and Calzada de la Fuente intersection in the Otay Mesa Business Park in unincorporated San Diego County. Primary site access is from Calzada de la Fuente on the north side of the site.
Estimated Schedule:	Construction of the power generating facility, from site preparation and grading to commercial operation, would take approximately 16 months. If approved, construction would begin February 2013, commissioning and initial startup would begin March 2014, and commercial operation would begin May 2014.
Construction (Traffic and Work Force):	Construction would generally occur between 7 a.m. and 5:30 p.m., M-F. During the three month peak construction period, approximately 658 daily trips would occur. Of these daily trips, truck traffic accounts for 48 trips, where 1 truck is equivalent to three passenger cars, and 42 trips are attributed to equipment delivery. The number of workers per day range from 50 to 284, with the highest numbers predicted during construction months six through ten.
Operation (Staff and Traffic):	The project would employ approximately 12 full-time workers resulting in approximately 24 daily trips. Occasional visitor trips, maintenance visits, and as-needed equipment deliveries are anticipated to likely occur outside of the morning and evening peak traffic hours.
Project Medical Emergency Response Features:	The project would be constructed and operated in accordance with all applicable safety standards required by the California Occupational Safety and Health Administration (Cal-OSHA) and San Diego County. During project construction, the general contractor would retain a safety manager, who would prepare and implement a site-specific safety plan. The plan would include contact information for a local urgent care facility for non-emergency physician referrals, first aid training requirements for all foremen and supervisors and ate least one person per construction crew. First aid kits would be available.
Existing Emergency Medical Response Resources and Services in the Project Area (attach additional paper if more room is needed to answer questions)	
Names and addresses of the facilities (e.g., fire stations, AMR dispatch facility) serving the project area, and distance of closest dispatch facility to the project site:	Fire station and ambulance located at same address 446 alta road approx 2.5 miles from proposed site
Adopted or desired emergency medical response service standard (e.g., 5 minute minimum emergency response time, 1 emergency response unit per 1,000 employees):	Response service criteria is 5-. fire district generates 82 calls per 1000 population
Existing staffing levels able to respond to emergency medical incidents for facilities serving the project area (including permanent and volunteer staff , totals and per shift):	Existing staffing levels are sufficient for development for at least the next year. Additional staffing will be required as development continues, and will be funded through existing means (CFD)
Estimated emergency medical response times to the project site:	5-
Current projected needs (e.g., facilities and staff) to maintain or meet existing emergency medical response service levels:	Existing staffing levels are sufficient for development for at least the next year. Additional staffing will be required as development continues, and will be funded through existing means (CFD)
Exchange of general emergency medical response responsibilities (e.g., formal and/or informal agreements with local municipalities or private companies for provision of services) in the project area:	East Otay Mesa is an EOA contracted to AMR with dedicated unit (exclusive Operating Area)

Exhibit 7

Emergency Medical Response Needs Assessment Form	
Current inventory of specialized equipment or services (e.g., life flight services):	Mercy Air, Sheriff's rescue copter, SDFD copter
Estimated Need for Emergency Medical Response Services, Equipment, and Facilities (attach additional paper if more room is needed to answer questions)	
Is there a process or formula used by your department to determine the need for additional medical response services to serve a new large-scale power plant? Please explain.	The Fire District conducts an internal view annually to determine areas that are in need of higher levels or additional levels of service
Could the project trigger a need for additional emergency medical response services? Please explain. During project construction: During project operation:	No additional needs forcasted at this time
Could increased project-related traffic affect circulation and access on roads near the project site to the extent that an impact to emergency response times might occur? Please explain. During project construction: During project operation:	There is potential for this to occur however it is believed to be a transient situation and not a continuing issue
Do emergency medical response personnel review development site plans for projects to assess potential medical emergency issues (e.g., safety plans, emergency response plans)? Please explain.	Fire District does, and inservice training with ambulance provider is arranged to pass on target information/concerns.
Please explain any other emergency medical response concerns that have not been addressed by this needs assessment form.	None at this time
Person Completing This Needs Assessment Form	
Name: Title/Position: Telephone No: E-mail Address:	David Nissen/ Division Chief 619-669-1188 Dave.nissen@fire.ca.gov

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 *PIO PICO ENERGY CENTER, LLC*

Docket No. 11-AFC-1
PROOF OF SERVICE
(Revised 5/12/11)

Pio Pico Energy Center, LLC
Letter to Eric Solorio, California Energy Commission, dated July 15, 2011 re Applicant's Responses to Staff's Data Requests, Set 1 (#1-59)

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DECLARATION OF SERVICE

I, Judith M. Warmuth, declare that on July 15, 2011, I deposited copies of the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

AND/OR

Transmission via electronic mail and/or personal delivery were consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Judith M. Warmuth