

VOLUME III



FINAL
ENVIRONMENTAL
IMPACT REPORT

PASADENA WATER & POWER GLENARM REPOWERING PROJECT

CITY OF PASADENA, CALIFORNIA

SCH No. 2011091056

CONDITIONAL USE PERMIT No. 5804

MARCH 2013



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MARCH 2013

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1.0 INTRODUCTION AND EXECUTIVE SUMMARY

This chapter of the Final Environmental Impact Report is prepared pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15123. It includes: an overview of the purpose and focus of the EIR being prepared for the proposed Glenarm Power Plant Repowering Project (proposed project); a description of the EIR process being conducted; a description of the contents and organization of the Draft EIR and Final EIR; summary descriptions of existing conditions, the proposed project, and the project alternatives; a discussion of the areas of controversy and issues to be resolved associated with the proposed project; and an updated summary of the potential environmental impacts of the proposed project.

A. INTRODUCTION

This Final EIR comprises the second and final part of the Environmental Impact Report (EIR) for the Glenarm Power Plant Repowering Project (proposed project). The Final EIR, together with the Draft EIR published in November 2012, addresses the potential environmental impacts of the proposed project pursuant to the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq, and the CEQA Guidelines, Title 14 of the Code of California Regulation (CCR), Section 15000 et seq. According to the CEQA Guidelines, Section 15132, the Final EIR shall consist of the following items: (a) the Draft EIR or a revision of the Draft, (b) comments and recommendations received on the Draft EIR, (c) a list of persons, organizations and public agencies commenting on the Draft EIR, (d) the responses of the Lead Agency to significant environmental points raised in the review and consultation process, and (e) any other information added by the Lead Agency.

The purpose of the EIR is to inform decision-makers and the general public of the potential environmental impacts resulting from the proposed project. The EIR is a Project EIR as defined by Sections 15161 and 15362 of the State CEQA Guidelines. The City of Pasadena (the City) has the principal responsibility for approving the proposed project and, as the Lead Agency, is responsible for the preparation and distribution of this Draft EIR pursuant to CEQA Statute Section 21067. The EIR will be used in connection with all other permits and all other approvals necessary for the construction and operation of the proposed project. The EIR will be used by the City of Pasadena and other responsible public agencies that must approve activities undertaken with respect to the project.

B. ENVIRONMENTAL REVIEW PROCESS

An Initial Study was prepared for the proposed project and, a Notice of Preparation (NOP) was distributed for public comment to the State Clearinghouse, Office of Planning and Research, responsible agencies, and other interested parties, on September 19, 2011, for a 30-day review period ending on October 18, 2011. In addition, a public scoping meeting was held on October 6, 2011. The NOP, Initial Study, and public comments on the NOP are included in Appendix I of the Draft EIR. The Draft EIR was published on November 5, 2012, and was circulated for a 46-day public comment period, in addition to a 41-day extension of the public comment period, for a total of 87 days. The public comment period for the Draft EIR ultimately ended on January 31, 2013. A list of those providing public comment on the Draft EIR, along with a breakdown of individual comments and responses to those comments by the City, is provided in Section 3.0, Comments and Responses on the Draft EIR, in this Final EIR.

C. CONTENTS OF THE FINAL EIR/EIR ORGANIZATION

1. Final EIR

This Final EIR is organized into the following chapters:

- 1.0 Introduction and Executive Summary.** This chapter of the Final EIR provides overview information regarding the purpose and structure of the Draft EIR and Final EIR (collectively, the EIR), as well as a summary of the project characteristics, its impacts and mitigation measures.
- 2.0 Comments and Responses on the Draft EIR.** This chapter includes a list of those providing comments on the Draft EIR that was circulated to the public; a matrix that indicates the environmental issues that were addressed in each of the comment letters and all written comments on the Draft EIR that were presented to the City during the 87-day circulation period; a topical response that describes a new alternative developed by the City, in part, in response to public comments received on the Draft EIR; copies of all comment letters received by the City; and City responses to each of the public comments, including those presented orally during the December 12, 2012 Planning Commission Public Meeting.
- 3.0 Corrections and Additions to the Draft EIR.** This chapter presents a list of revisions that have made to the Draft EIR, based on comments received from the public and agencies, and other items requiring updating and/or corrections.
- 4.0 Mitigation Monitoring and Reporting Program (MMRP).** This chapter provides the project's MMRP, which is the document used by the enforcement and monitoring agencies responsible for the implementation of the proposed project's mitigation measures. Mitigation measures are listed by environmental topic, and for each mitigation measure, the following is defined: phase of implementation, frequency and/or duration of required monitoring, and the enforcement/reporting agency.

In addition, the Final EIR incorporates the Draft EIR and associated appendices by reference.

2. Draft EIR

The Draft EIR is comprised of the following chapters and appendices:

- 1.0 Summary.** This chapter describes the purpose and focus of the Draft EIR, Draft EIR organization, background information regarding the project site, a summary of the project, areas of controversy/issues to be resolved, a description of the public review process, a summary of alternatives evaluated, and a summary of environmental impacts and mitigation measures.
- 2.0 Project Description.** This chapter describes the project location, existing conditions, project objectives, characteristics of the proposed project, and a description of the intended use of the Draft EIR.
- 3.0 General Description of Environmental Setting.** This chapter contains a description of the existing natural and built environments, as well as background information used to evaluate

cumulative impacts, including a list of past, present, and reasonably anticipated future projects to be built in the project vicinity.

4.0 Environmental Impact Analysis. This chapter contains the environmental setting, project and cumulative impact analyses, mitigation measures, and conclusions regarding the level of significance after mitigation for each of the following environmental issues: (1) aesthetics/visual resources; (2) air quality; (3) cultural resources (historic); (4) greenhouse gas emissions; (5) hazards and hazardous materials; (6) land use and planning; (7) noise; and (8) water supply.

5.0 Project Alternatives. This chapter provides analysis of each of the alternatives to the proposed project, which include the following three alternatives: No Project/No Action, Reduced Operations, and Project Site Reconfiguration.

6.0 Other Environmental Considerations. This chapter of the Draft EIR addresses the additional topics required by the State CEQA regulations. First, it provides a discussion of significant unavoidable impacts that would result from the proposed project; the reasons why the project is being proposed notwithstanding the significant unavoidable impacts; and the project's significant irreversible changes in the environment. This section also analyzes growth-inducing impacts of the project to determine whether the project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Potential secondary effects caused by the implementation of the mitigation measures for the proposed project are also discussed. Finally, this section discusses the effects that were determined within the Initial Study not to be significant.

7.0 Report Preparers. This chapter lists the persons, public agencies, and organizations that were consulted or contributed to the preparation of this Draft EIR.

8.0 References. This chapter lists the documents, websites, and other technical resources consulted in the course of Draft EIR preparation.

Appendix A: NOP/IS; Scoping Meeting Presentation; NOP Comments and Scoping Meeting Sign-In Sheet

Appendix B: Air Quality Assessment Worksheets

Appendix C: Greenhouse Gas Impact Assessment Worksheets

Appendix D: Phase II Investigation and Hazardous Materials Survey Reports

Appendix E: Noise Assessment Worksheets and Technical Report

Appendix F: Water Supply Documentation

2.0 COMMENTS AND RESPONSES ON THE DRAFT EIR

CEQA Guidelines Section 15088(a) states that “The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The lead agency shall respond to comments that were received during the noticed comment period and any extensions . . .” In accordance with these requirements, this section of this Final EIR provides responses to each of the written comments received during the public comment period. **Table 2-1, Summary of Comments on the Draft EIR**, which starts on page 2-2, provides a list of the comment letters received and an indication of the issues raised in response to the Draft EIR.

Section 2.0 first provides Topical Response No. 1: Revised Project Site Reconfiguration (Alternative 3A), a new alternative that modifies Alternative 3, Project Site Configuration, which was evaluated in the Draft EIR.

Section 2.0 also provides public comment letters on the Draft EIR that were submitted during the public comment period, including oral comments received during the December 12, 2012 Planning Commission Public Meeting and written comments received from State, County, and City agencies and from organizations and individuals, as listed on Table 2-1. Each letter was assigned a number, based on the affiliation, if any, of the commenter, and arranged alphabetically, as indicated in Table 2-1. Each comment that requires a response within the letters is also assigned a number. For example, the first State agency to provide comments was the California State Clearinghouse, and this is therefore Letter Number 2. The first (and only) comment in that letter is labeled Comment 2-1. For subsequent letters that provided multiple comments, responses to each comment are similarly numbered (i.e., Response 4-1, 4-2, etc.).

A copy of each comment letter is followed by the corresponding responses. The sole exception is Letter 1, the December 12, 2012 Planning Commission Public Meeting Comments, which integrates comments and responses into a single document.

As required by the *CEQA Guidelines*, Section 15088 (c), the focus of the responses to comments is on “the disposition of significant environmental issues raised.” Therefore, comments that are considered introductory or that provide background information about the commenter are not bracketed since no response is necessary.

Table 2-1
Comments on the Draft EIR

		EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER	
	SUMMARY OF WRITTEN COMMENTS																			
01	December 12, 2012 Planning Commission Public Meeting Comments		X		X	X	X	X	X		X									X
02	State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit 1400 Tenth Street P.O. Box 3044 Sacramento, California 115812-3044 Scott Morgan, Director																			X
03	State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit 1400 Tenth Street P.O. Box 3044 Sacramento, California 115812-3044 Scott Morgan, Director																			X
04	Native American Heritage Commission 915 Capital Mall, Room 364 Sacramento, CA 95814 Dave Singleton, Program Analyst																			X

Table 2-1 (Continued)

Comments on the Draft EIR

	SUMMARY OF WRITTEN COMMENTS	EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER
05	South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4182 Susan Nakamura, Planning and Rules Manager Planning, Rule Development & Area Resources					X	X												
06	County Sanitation Districts of Los Angeles County P.O. Box 4998 Whittier, CA 90607-4998 Adriana Raza, Customer Service Specialist																		X
07	Los Angeles County Metropolitan Transportation Authority One Gateway Plaza Los Angeles, CA 90012-2952 Shahzad Amiri Deputy Executive Officer San Gabriel Valley Area Team																		X

Table 2-1 (Continued)

Comments on the Draft EIR

		EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER
SUMMARY OF WRITTEN COMMENTS																			
08	Los Angeles County Metropolitan Transportation Authority One Gateway Plaza Los Angeles, CA 90012-2952 Shahzad Amiri Deputy Executive Officer San Gabriel Valley Area Team (Duplicate of Letter No. 7)																		X
09	City of San Marino 2200 Huntington Drive San Marino, CA 91108-2639 Aldo Cervantes, Senior Planner																		X
10	Southern California Edison Company Real Properties Department 2131 Walnut Grove Avenue G.O. 3-Second Floor Rosemead, CA 91770 Marissa Castro-Salvati, Local Public Affairs Region Manager																		X

Table 2-1 (Continued)

Comments on the Draft EIR

		EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER
	SUMMARY OF WRITTEN COMMENTS																		
11	California Clean Energy Committee 3502 Tanager Avenue Davis, CA 95616-7531 Eugene S. Wilson					X	X												
12	Pasadena Heritage 651 South Saint John Avenue Pasadena. California 91105 2913 Jenna Kachour, Preservation Director							X											
13	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Janet Laurain, Environmental Paralegal (11/16/2012)																		X

Table 2-1 (Continued)

Comments on the Draft EIR

		EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER
	SUMMARY OF WRITTEN COMMENTS																		
14	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Rachel E. Koss (11/28/2012)									X									
15	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Rachael E. Koss (12/14/2012)																		X
16	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Rachael E. Koss (12/14/2012)																		X

Table 2-1 (Continued)

Comments on the Draft EIR

	SUMMARY OF WRITTEN COMMENTS	EXECUTIVE SUMMARY	2.0 PROJECT DESCRIPTION	3.0 ENVIRONMENTAL SETTING	4.A. AESTHETICS/VISUAL RESOURCES	4.B. AIR QUALITY	4.B-2. GLOBAL CLIMATE CHANGE	4.C. CULTURAL RESOURCES	4.D. GREENHOUSE GAS EMISSION	4.E. HAZARDS AND HAZARDOUS MATERIALS	4.F. LAND USE AND PLANNING	4.G. NOISE	4.H. WATER SUPPLY	5.0 ALTERNATIVES	6.0 OTHER ENVIRONMENTAL CONSIDERATIONS	REQUEST TO EXTEND COMMENT PERIOD	GENERAL SUPPORT FOR PROJECT	GENERAL OPPOSITION TO PROJECT	OTHER
17	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Rachael E. Koss (12/20/2012)															X			
18	California Unions for Reliable Energy (CURE) Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080-7037 Rachael E. Koss (1/31/13)								X										X
19	Linda R. Ward 204 Cedar Crest Ave., #3 South Pasadena, CA 91030				X														

TOPICAL RESPONSE: REVISED PROJECT SITE RECONFIGURATION (ALTERNATIVE 3A)

As described in **Section 2.0, Project Description**, of the Draft EIR, the proposed project would rehabilitate and reuse the currently vacant Glenarm Building to house consolidated control room facilities in support of the proposed new power generation Unit GT-5 as well as existing units GT-1, GT-2, GT-3 and GT-4. **Section 5.0** of the Draft EIR evaluates three alternatives to the proposed project, including a No Project/No Action Alternative (Alternative 1), which assumes existing Unit B-3 remains in use and no operational changes or physical improvements are made to the power plant; a Reduced Operations Alternative (Alternative 2), which assumes the proposed power generating Unit GT-5 would operate for fewer hours annually than under the proposed project; and a Project Site Reconfiguration Alternative (Alternative 3), which assumes existing administrative facilities and the Unit B-3 control room on the Broadway Plant site would support proposed Unit GT-5, and no reuse of the Glenarm Building for this purpose or any other would occur.

The ballooning cost of hazardous materials [specifically asbestos-containing materials (ACMs)] abatement and structural work within the Glenarm Building has prompted the Pasadena Department of Water & Power to more closely consider the consolidation of control room support elsewhere on the plant site. This Topical Response therefore presents a variation on Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR, which proposes a temporary modular building to house new consolidated control room facilities, in the event that reuse of the Glenarm Building ultimately proves economically infeasible. This variation on Alternative 3 (“Alternative 3A”) also proposes landscape enhancements and minor changes in the location of future parking, in response to public and Planning Commission comments received on the Draft EIR.

Alternative 3A – Project Description

Under Alternative 3A, a modular building housing a control room supporting the new Unit GT-5 and existing gas turbine power generation units would be installed near the western perimeter of the Glenarm Plant, north of the Pacific Electric Railway Company (PERC) substation building and fronting on Fair Oaks Avenue. The building would be up to 50 feet width and 77 feet in length, or approximately 3,850 square feet, and up to 15 feet in height, and would occupy a portion of the area proposed for employee parking under the original project. The modular building would be set back from Fair Oaks behind an approximately five- to eight-foot-wide setback and separated from the PERC building on the south by a 21-foot buffer area. The building would be clad with metal siding to enhance its appearance, although the final building design and materials have not yet been determined. One handicap-accessible parking space and one loading space would be provided immediately east of the building and would be accessed from a driveway off the State Street cul-de-sac. Siting of the modular building may require removal of two existing red flowering gum trees (*Corymbia ficifolia*). A new wall would be constructed along the Fair Oaks property line to screen the industrial appearance of the project site; the wall would be up to 12 feet in height, although the precise design and materials have not yet been finalized. **Figure 2-1, Alternative 3A Site Plan**, is a site plan and depicts existing buildings and equipment as well as the modular building and other built features proposed under Alternative 3A.

The site of proposed Unit GT-5 would remain unchanged compared to the project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR, and two equipment manufacturer configurations, GE and Rolls

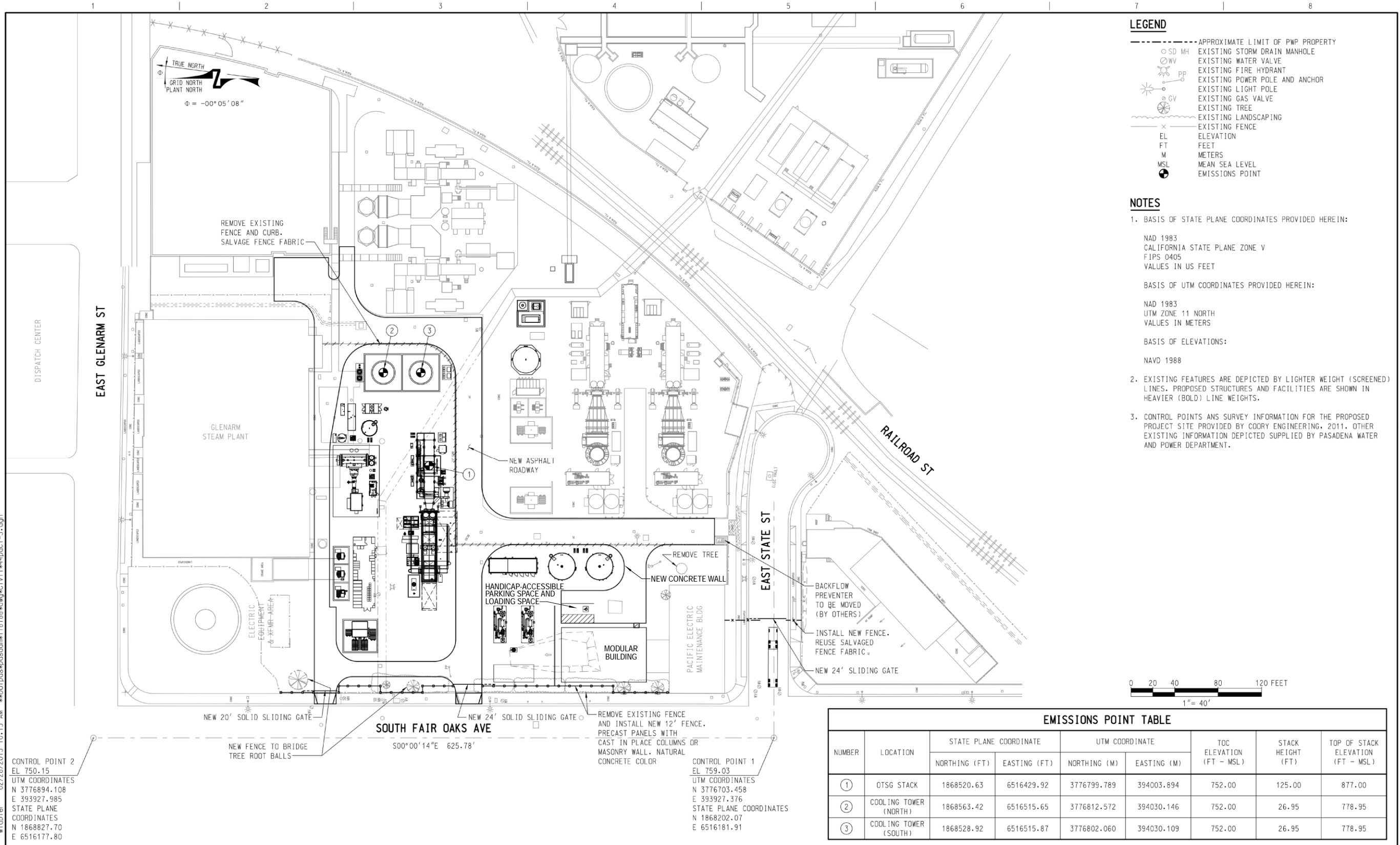
Royce, are still under consideration. Also as proposed under Alternative 3, the Glenarm Building would not undergo seismic rehabilitation for designation as an essential facility, nor would it be rehabilitated or reused by the Department of Water & Power at this time. The existing Glenarm Building stack and duct work, and two small non-historically significant additions (housing restrooms and compressor) affixed to the south façade of the Glenarm Building would be demolished as under Alternative 3 to accommodate installation of proposed Unit GT-5, but no other interior or exterior modifications would take place. Instead, a mothballing program to preserve the character-defining features of the Glenarm Building from further deterioration would be implemented in accordance with the National Park Technical Preservation Services publication *Brief 31 Mothballing Historic Buildings*.

The proposed modular building location was selected for visual and physical proximity to new and existing power generation units on the Glenarm Plant, while maintaining the required buffer distance from proposed Unit GT-5 structural components to be installed to the north. A new concrete wall would be erected around equipment to the north and east of the modular building. Power plant administration facilities, the Engineering Unit, and existing mechanical equipment would remain on the Broadway Plant as proposed under the Alternative 3. The State Street cul-de-sac would be closed and the existing 4,000-square-foot Pump Building on the parcel south of State Street would be remodeled and expanded to 6,000 square feet to house mechanical and maintenance shops, as proposed under Alternative 3.

The parking lot containing 45 employee and visitor parking spaces that was proposed under the original project would no longer be located along the Glenarm Plant's Fair Oaks frontage, but those spaces would instead be provided in the existing lot in the northwest corner of the Broadway Plant that is currently shared with Jacobs Engineering. Jacobs Engineering will be relocating to South Lake Avenue before project construction is complete, which will allow all parking except a limited number of handicap-accessible spaces to be moved away from Fair Oaks Avenue.

Landscape enhancements are proposed along the eastern edge of the Broadway Plant. Trees will be planted along the Arroyo Seco Parkway (SR 110) inside City property, to screen motorists' views of the existing cooling towers and other equipment. Several specimen trees would be removed from the Glenarm Plant area south of the Glenarm Building and adjacent to Fair Oaks Avenue to accommodate the modular building, handicap-accessible parking and access, including the previously mentioned *Eucalyptus*, a pepper tree (*Schinus molle*) growing up against the PERC building, and a palm tree (*Syagrus romanzoffiana*) on the State Street cul-de-sac that interferes with the driveway turning radius. Along the Arroyo Parkway frontage of the Broadway Plant between the southern property line and the northern façade of the Unit B-1 and B-2 cooling towers, existing trees, primarily *Eucalyptus* spp., would be enhanced with new landscaping of trees. In all locations, new trees to be planted would be selected for consistency with landscape palette requirements contained in the City's Zoning Code.

All other project components, including soil remediation, utility relocation and/or installation, and incorporation into the Glenarm Plant of the one-acre parcel south of the State Street cul-de-sac, would be implemented as proposed under Alternative 3. Units B1, B2, and B3 would remain in place and no demolition is proposed at this time, as under Alternative 3. The duration of construction would be similar to that proposed for the original project, since the modular building would be constructed simultaneously with installation of proposed Unit GT-5 and other site improvements, as was planned for Glenarm Building demolition and construction activities under the project, but the intensity of construction would be reduced, since no seismic strengthening, abatement or other rehabilitation of the Glenarm Building is proposed.



- LEGEND**
- APPROXIMATE LIMIT OF PWP PROPERTY
 - SD MH EXISTING STORM DRAIN MANHOLE
 - ⊙ WV EXISTING WATER VALVE
 - ⊙ FH EXISTING FIRE HYDRANT
 - ⊙ PP EXISTING POWER POLE AND ANCHOR
 - ⊙ LV EXISTING LIGHT POLE
 - ⊙ GV EXISTING GAS VALVE
 - ⊙ EX EXISTING TREE
 - EXISTING LANDSCAPING
 - EXISTING FENCE
 - EL ELEVATION
 - FT FEET
 - M METERS
 - MSL MEAN SEA LEVEL
 - ⊙ EMISSIONS POINT

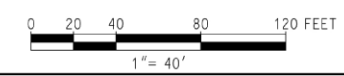
- NOTES**
- BASIS OF STATE PLANE COORDINATES PROVIDED HEREIN:
 NAD 1983
 CALIFORNIA STATE PLANE ZONE V
 FIPS 0405
 VALUES IN US FEET

 BASIS OF UTM COORDINATES PROVIDED HEREIN:

 NAD 1983
 UTM ZONE 11 NORTH
 VALUES IN METERS

 BASIS OF ELEVATIONS:

 NAVD 1988
 - EXISTING FEATURES ARE DEPICTED BY LIGHTER WEIGHT (SCREENED) LINES. PROPOSED STRUCTURES AND FACILITIES ARE SHOWN IN HEAVIER (BOLD) LINE WEIGHTS.
 - CONTROL POINTS AND SURVEY INFORMATION FOR THE PROPOSED PROJECT SITE PROVIDED BY COORY ENGINEERING, 2011. OTHER EXISTING INFORMATION DEPICTED SUPPLIED BY PASADENA WATER AND POWER DEPARTMENT.



NUMBER	LOCATION	STATE PLANE COORDINATE		UTM COORDINATE		TOC ELEVATION (FT - MSL)	STACK HEIGHT (FT)	TOP OF STACK ELEVATION (FT - MSL)
		NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)			
①	DTSG STACK	1868520.63	6516429.92	3776799.789	394003.894	752.00	125.00	877.00
②	COOLING TOWER (NORTH)	1868563.42	6516515.65	3776812.572	394030.146	752.00	26.95	778.95
③	COOLING TOWER (SOUTH)	1868528.92	6516515.87	3776802.060	394030.109	752.00	26.95	778.95

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 CONTROL POINT 2
 EL 750.15
 UTM COORDINATES
 N 3776894.108
 E 393927.985
 STATE PLANE COORDINATES
 N 1868827.70
 E 6516177.80

CONTROL POINT 1
 EL 759.03
 UTM COORDINATES
 N 3776703.458
 E 393927.376
 STATE PLANE COORDINATES
 N 1868202.07
 E 6516181.91

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DISC	INTER-DISCIPLINE REVIEW						
	ARCH	CIVIL	ELECT	HVAC	I&C	MECH	STRUCT
DATE							
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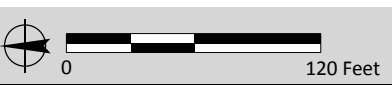
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
E	RE-ISSUED FOR PERMIT	12/04/12	WMT	WKW	WKW	GTH
D	RE-ISSUED FOR PERMIT	08/18/11	WMT	WKW	WKW	GTH
H	RE-ISSUED FOR PERMIT	02/28/13	WMT	WKW	WKW	GTH
G	RE-ISSUED FOR PERMIT	02/25/13	WMT	WKW	WKW	GTH
A	RE-ISSUED FOR PERMIT	01/31/13	WMT	WKW	WKW	GTH

DSGN WKW 05/27/11
 DRN WMT 05/27/11
 CKD WKW 06/03/11
 SCALE: 1" = 40'
 FOR 22x34 DWG ONLY



PASADENA WATER & POWER
 GLENARM REPOWERING PROJECT
 (GT-5 COMBINED CYCLE INSTALLATION)
 PRELIMINARY SITE PLAN
 LM6000 CONFIGURATION

JOB NUMBER	REV
123374	△
DRAWING NUMBER	
C1-3	



Alternative 3A Site Plan

Glenarm Power Plant Repowering Project
 Source: Power Engineers, Inc., February 2013.



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Alternative 3A – Environmental Impact Analysis

a. Aesthetics

As discussed in **Section 4.A, Aesthetics**, of the Draft EIR, it was determined that construction-related aesthetic impacts would be intermittently visible from off-site locations, especially elevated vantage points to the south, but impacts were determined to be less than significant because of the short-term duration of construction. The magnitude of construction under Alternative 3A would be reduced compared to that of the proposed project; while new walls would be constructed and a new modular building installed on the Glenarm Plant's Fair Oaks frontage, the elimination of seismic upgrading of the Glenarm Building and interior renovations and new construction would considerably reduce the amount and duration of demolition and new construction required. Construction impacts on aesthetics would therefore be reduced compared to the project.

With respect to impacts on views from off-site vantage points, Alternative 3A would not alter the exterior south- or east-facing facades of the Glenarm Building, and would only construct two new parking spaces on the Glenarm Plant, whereas the project proposes to construct new surface parking for 45 vehicles. A new modular building would be installed on the Glenarm Plant fronting on Fair Oaks Avenue, but a wall would be constructed along the plant's Fair Oaks Avenue frontage north of State Street, and would largely screen views of the building and of the new Unit GT-5 from Fair Oaks Avenue vantages. **Figure 2-2, Visual Simulations Looking Northeast from Fair Oaks Avenue**, shows a view of existing conditions and simulations of the two proposed equipment configurations, new modular building, and new wall on the plant site from Fair Oaks Avenue, and **Figure 2-3, Visual Simulations Looking East from Across Fair Oaks Avenue**, shows views of the same scenarios from across Fair Oaks Avenue. **Figure 2-4, Visual Simulations Looking West from the Broadway Plant**, shows views from the east, on the Broadway Plant. As shown in these figures, views of the project site would not be substantially different from those under the project, except that the wall along the Glenarm Plant's Fair Oaks Avenue frontage would screen views of the industrial plant interior from Fair Oaks Avenue. Moreover, planned new landscape enhancements along the Glenarm Plant's Fair Oaks Avenue frontage and along the Broadway Plant's Arroyo Parkway frontage would further screen views of plant operations from off-site, and would remove existing dead or weedy vegetation. Finally, all new employee and visitor parking (with the exception of a single handicap-accessible parking space east of the modular building) would largely be accommodated in the lot currently shared with Jacobs Engineering, farther from residential uses south of the plant site. Overall, Alternative 3A impacts on views would be less than significant, and would therefore be comparable to those of the project.

With respect to impacts on visual character, Alternative 3A would still introduce the new unit GT-5 and associated infrastructure as under the project, but would also introduce the new modular building, walls along Fair Oaks Avenue and around equipment within the plant interior, and new perimeter landscaping along Fair Oaks Avenue and Arroyo Parkway. In contrast to the project, no new parking would be constructed on the project site, with the exception of a single handicap-accessible site, and the majority of plant employee and visitor parking would be accommodated in the lot currently shared with Jacobs Engineering, on the northeast corner of the Broadway Plant. Alternative 3A would also remove the existing ductwork, stack, and two non-historic additions from the south façade of the Glenarm Building, as under the project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR. While the interior renovations, exterior modifications, and seismic retrofitting of the Glenarm Building would not occur as proposed under the project, mothballing of character-defining features within the building would be implemented to reduce future deterioration of the building.

With respect to light and glare, Alternative 3A would result in a reduced level of nighttime lighting on the Glenarm Plant, since, in contrast to the project and Alternative 3, no new employee and visitor surface parking would be constructed, apart from the single handicap-accessible space. Lighting of the modular building would not substantially increase nighttime light levels on the plant and impacts would be reduced compared to those of the project or Alternative 3.

Finally, with respect to shade and shadow, the new Unit GT-5 would be constructed as under the proposed project and the modular building and wall along Fair Oaks Avenue would not shade off-site sensitive land uses. Shade and shadow impacts would be less than significant and comparable to those of the proposed project and Alternative 3A in **Section 5.0, Alternatives**, of the Draft EIR.

b. Air Quality

As discussed in **Section 4.B, Air Quality**, in the Draft EIR, the proposed project was determined to result in less than significant construction, commissioning, and operational air quality impacts. Under the Revised Project Site Reconfiguration Alternative, construction-related air quality impacts would be less than the proposed project since the amount of construction activity would be slightly reduced. Alternative 3A would require similar levels of site preparation activities, including soil removal, and similar intensity of trucks bringing materials to the site. However, because abatement and structural work associated with the Glenarm Building would not occur, Alternative 3A would result in fewer truck trips hauling demolition debris than the proposed project. In addition, on-site construction activity would be less than the proposed project because many of the modular building components would be prefabricated and delivered to the site in a “ready-to-assemble” state. This Final EIR acknowledges that this alternative would result in a slight improvement in the air quality in comparison to construction of the proposed project under Impacts AQ-1 through AQ-4 and the cumulative analysis.

Commissioning impacts would be comparable to those of the project since Unit GT-5 would require a commissioning stage for the testing and certification of the combined-cycle power generation unit. The duration and level of activity of the commissioning stage under this alternative would be comparable to the project; therefore, commissioning emissions would be comparable to those of the project.

Alternative 3A assumes installation of the same power generation equipment (i.e., Unit GT-5) as the proposed project, and it would operate for the same number of permitted operating hours (8,760). During operations, Unit GT-5 would operate as under the proposed project, and operational air quality impacts would therefore be comparable to those of the project and Alternative 3A in **Section 5.0, Alternatives**, of the Draft EIR.

c. Cultural Resources

Archaeological, Native American, and Paleontological Resources

As discussed in **Section 4.C, Cultural Resources**, in the Draft EIR, the City’s General Plan EIR stated that infill development in previously developed areas of the City is not generally expected encounter previously unknown resources. Because of this determination, together with the long history of disturbance and development on the project site, the potential to encounter archaeological or paleontological resources on the project site is considered remote. Nonetheless, mitigation measures were identified in the project Initial



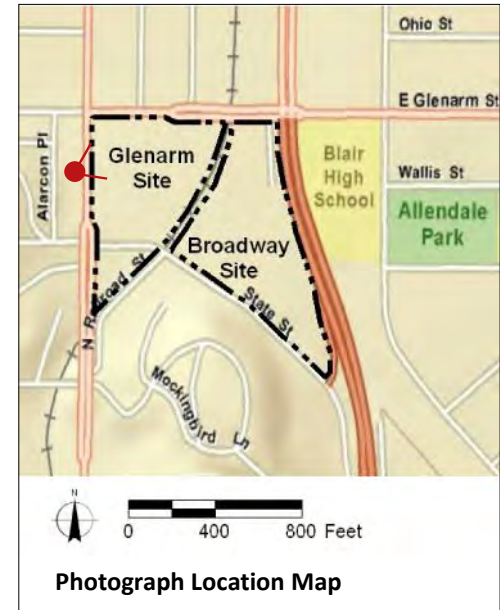
Existing



GE LM6000 Option



Rolls Royce Trent Option



Photograph Location Map



Visual Simulations Looking Northeast from Fair Oaks Avenue

Glenarm Power Plant Repowering Project
 Source: Power Engineers, Inc., February 2013.



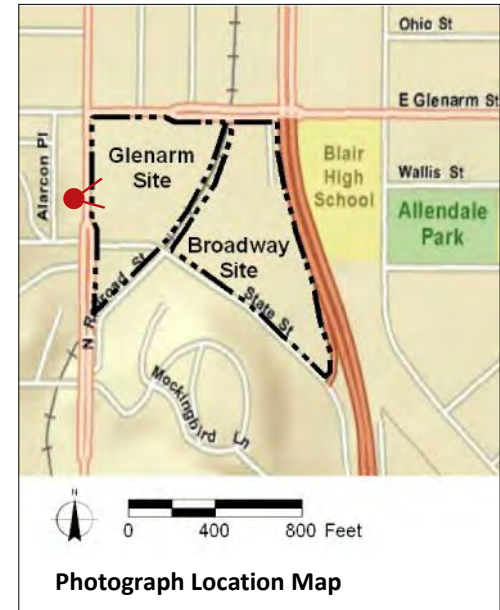
Existing



GE LM6000 Option



Rolls Royce Trent Option



Visual Simulations Looking East from Across Fair Oaks Avenue

Glenarm Power Plant Repowering Project
 Source: Power Engineers, Inc., February 2013.



Existing



GE LM6000 Option



Rolls Royce Trent Option



Photograph Location Map



Visual Simulations Looking West from the Broadway Plant

Glenarm Power Plant Repowering Project
 Source: Power Engineers, Inc., February 2013.

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Study to reduce impacts to a less than significant level in the unlikely event resources are encountered during project construction. Likewise, as discussed in the Initial Study (provided in **Appendix A** of the Draft EIR), the potential to encounter Native American human remains beneath the project site during construction was determined to be low, but mitigation was included in the Initial Study to reduce impacts to a less than significant level in the event that resources are encountered.

Alternative 3A would require a comparable amount of grading and excavation to the project, since Unit GT-5 and associated utility improvements would still be installed on the Glenarm Plant site. Other new built features under this alternative, including installation of the modular building and construction of walls, would not substantially increase the amount of grading or excavation, or increase the potential for encountering archaeological, Native American, or paleontological resources, compared to the project. The elimination of the proposed seismic upgrade of the Glenarm Building and construction of the new control room/administrative offices within the building would slightly decrease the need for excavation compared to the project. Impacts on these resources would therefore be slightly reduced compared to those of the project, and comparable to those of Alternative 3A in **Section 5.0, Alternatives**, of the Draft EIR.

Historical Resources

Under Alternative 3A, no interior rehabilitation of the Glenarm Building for use by City employees, or seismic upgrades necessary for essential facility designation, would be undertaken. Alternative 3A would not construct the consolidated administrative facilities, control stations, maintenance facilities, and shared and public spaces within the Glenarm Building that are proposed under the project. Since the consolidated administrative/control facilities would not be constructed in the Glenarm Building, the building would not merit designation as an essential facility or undergo related seismic upgrades required for an Occupancy Category IV building, as is proposed under the project. Consequently, this alternative would entirely avoid the project's significant, but mitigable, impacts on historical resources resulting from the proposed removal of boilers that support the character-defining floor-to-ceiling hallway and floating master gauge, and any other impacts to historical resources resulting from seismic upgrades. As part of Alternative 3A, a mothballing plan for the Glenarm Building would be created to preserve the existing character-defining features in place while the Glenarm Building remained unoccupied. The mothballing plan would be based on the National Park Technical Preservation Services publication *Brief 31 Mothballing Historic Buildings*.

Alternative 3A includes the construction of a one-story modular building housing a control room just north of the Pacific Electric Railway Company (PERC) Substation No. (circa 1893), which is a City of Pasadena historic landmark. Furthermore, Alternative 3A includes the construction of a perimeter security-wall along Fair Oaks Avenue to shield the power plant from the street. Since the 1960s the PERC building has been used as a storage space, and currently is used for items that do not require staff to access daily. The existing PERC building, which according to Sanborn Maps was originally larger, is rectangular in plan and constructed with unreinforced brick masonry. Constructed to serve as a substation for the Red Line, the PERC building is utilitarian in design and like other improvements on the site, its architecture was dictated by its use. Under Alternative 3A, the PERC building will be just outside the construction zone. The proposed adjacent modular building will be utilitarian in design with a metal exterior surface, and the new 12-foot perimeter security-wall along Fair Oaks Avenue wall will be stucco covered panels between concrete piers. The PERC building will not be physically impacted by the implementation of Alternative 3A, nor will it be indirectly impacted by the construction of the proposed adjacent modular building and security-wall. After the railway closed in the 1950s the PERC building was part of the PWP plant. Throughout its history on the PWP site, the PERC Building was adjacent to the power generating machinery and infrastructure. The proposed modular

building and security-wall are utilitarian and industrial in design and will create no new or different architectural idiom on the site. The one-story height of the proposed modular building is similar to the existing PERC building and will not visually impair the scale of the PERC building's setting from the public view on Fair Oaks Avenue. The surrounding architectural context for the PERC building, along with the site's use, will remain largely the same, and therefore, Alternative 3A has less than significant impacts to the PERC building and impacts are therefore comparable to those of the project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR.

d. Greenhouse Gas Emissions

Under Alternative 3A, construction-related greenhouse gas (GHG) impacts would be less than the proposed project since the amount of construction activity would be slightly reduced. Alternative 3A would require similar levels of site preparation activities to Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR, including soil removal, and similar intensity of trucks bringing materials to the site. However, because abatement and structural work associated with the Glenarm Building would not occur, Alternative 3A would result in fewer truck trips hauling demolition debris than the project. In addition, on-site construction activity would be less than the project because many of the modular building components would be prefabricated and delivered to the site in a "ready-to-assemble" state. This alternative would slightly reduce GHG emissions in comparison to construction of the project under Impact GHG-1.

Commissioning impacts would be comparable to those of the project since Unit GT-5 would require a commissioning stage for the testing and certification of the combined-cycle power generation unit. The duration and level of activity of the commissioning stage under this alternative would be comparable to the project; therefore, commissioning GHG emissions would be comparable to the project.

The Revised Project Site Reconfiguration Alternative assumes installation of the same power generation equipment (i.e., Unit GT-5) as the proposed project, and it would operate for the same number of permitted operating hours (8,760). Unit GT-5 (GE LM 6000 or Rolls Royce Trent 60) would, as under the proposed project, replace existing Unit B-3 with a cleaner and more reliable and efficient natural gas-fueled combined-cycle generating unit equipped with state-of-the-art air pollution control system. Nonetheless, assuming an increase in operating hours over those of existing Unit B-3 up to its permitted limit of 8,760 hours per year, GHG emissions from operation of Unit GT-5 would be significant and unavoidable at the project and cumulative levels, and the associated impacts would therefore be comparable to those of the project.

e. Hazards and Hazardous Materials

Under the Project Site Reconfiguration Alternative, Unit GT-5 would still be constructed in the same location as under the proposed project, and therefore remediation of contaminated soils determined to be present on at this location in the Phase II investigation performed for the project would still be necessary. However, since no new employee parking lot would be constructed south of Unit GT-5, the volume of contaminated soils to be remediated would be potentially reduced compared to the project. Alternative 3A would require similar levels of site preparation activities; however because abatement and structural work would not occur, would be slightly more reduced under Alternative 3A.

Under Alternative 3A, no new facilities would be constructed in the Glenarm Building, and the building would therefore not merit designation as an essential facility/Occupancy Category IV building. Consequently, no seismic upgrades would be undertaken for compliance with current State Building Code, as is proposed

under the project. No abatement of ACMs or LBP within the Glenarm Building would be required, although ACMS and LBP exist elsewhere on the Plant site and would still require abatement under this alternative. Impacts with respect to hazardous materials, including contaminated soils, ACMs, and LBP, would therefore be significant but mitigable under both the proposed project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR, but would be incrementally reduced under this alternative because of the reduced scope of construction-related remediation and abatement.

f. Land Use and Planning

Under the Project Site Reconfiguration Alternative, proposed Unit GT-5 would be constructed in the same location as under the proposed project, south of the Glenarm Building on the Glenarm Plant. Consequently, this alternative and Alternative 3A would still introduce a 125-foot OTSG stack to the project site, which would exceed the height limitation under existing zoning, comparable to the proposed project. Under Alternative 3A, a variance from the height restriction specified in the Zoning Code would be required, as is the case for the proposed project and Alternative 3A in **Section 5.0, Alternatives**, of the Draft EIR. Alternative 3A land use impacts with respect to exceedance of the height limitation would therefore be comparable to those of the project and Alternative 3A.

Under Alternative 3A, the 45-space employee parking lot proposed south of Unit GT-5 and fronting on Fair Oaks Avenue would not be constructed, and PWP employees would instead continue to share the City parking lot leased to Jacob's Engineering at the corner of Glenarm Street and the Arroyo Seco Parkway. With elimination of this project component, Alternative 3A would fully comply with the South Fair Oaks Specific Plan Development Standard 3.3.3-B.4, Parking and Loading, which requires new parking facilities to be located between an on-site building and the rear property line. No variance from the Specific Plan development standard for parking would be required under Alternative 3A. However, a Minor Conditional Use permit would be required because parking would be located on a separate parcel (on the Broadway Plant) from the Glenarm Building (on the Glenarm Plant). Nonetheless, Alternative 3A would entirely avoid the significant and unavoidable land use impacts that would result from noncompliance of the project and Alternative 3A in **Section 5.0, Alternatives**, of the Draft EIR with Specific Plan regulations prohibiting parking that fronts on Fair Oaks Avenue.

g. Noise

Under Alternative 3A, no interior rehabilitation of the Glenarm Building for use by City employees or seismic upgrades necessary for essential facility designation would be undertaken. Alternative 3A would have similar or slightly reduced levels of site preparation activities, including grading, excavation, and soil removal, and a slightly reduced number of trucks bringing materials to the site. However, because abatement and structural work associated with the Glenarm Building would not occur, Alternative 3A would result in considerably fewer truck trips hauling demolition debris than the proposed project. On-site construction activity would be less than the proposed project since many of the modular building components would be prefabricated and delivered to the site in a "ready-to-assemble" state. This Final EIR acknowledges that this alternative would slightly reduce noise in comparison to construction of the proposed project under Impacts NOISE-1, NOISE-3, and NOISE-4 and the cumulative analysis. During project operation, Unit GT-5 would operate as proposed under the project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR, and operational noise impacts would therefore be comparable to those of the project and Alternative 3.

h. Water Supply

Under Alternative 3A, the Project Site Reconfiguration Alternative, no interior rehabilitation of the Glenarm Building to house City employees and the current offices and control rooms would remain in operation. The Pump Building would still be expanded and improved to house maintenance facilities. Unit GT-5 would still be installed and operated the same number of hours as under the proposed project. Alternative 3A would have the same type of water supply impacts. Although water supply impacts under the proposed project were determined to be less than significant, impacts under this alternative would still be slightly reduced compared to the proposed project and to the Project Site Reconfiguration Alternative, since the Glenarm Building improvements would not be implemented. However, the vast majority of water consumption associated with the proposed project is related to the operation of Unit GT-5, and water consumption by Unit GT-5 under the Alternative 3A would be comparable to those of the project and Alternative 3 in **Section 5.0, Alternatives**, of the Draft EIR.

Conclusion and Relationship to Project Objectives

Since Alternative 3A would still construct and operate Unit GT-5, similar to the proposed project, it would fully achieve the five project objectives pertaining to improved local generation reliability; increased City ability to generate power locally and reduced reliance on coal power; support and implementation of the IRP; and the City's ability to provide for mandated capacity (i.e., guarantee of availability) to generate power when required by the CAISO.

Alternative 3A would still renovate the Pump Building to serve as a mechanical shop, but it would not consolidate new administrative offices, public and shared space, and maintenance facilities within the Glenarm Building, and instead would locate the control room only within the modular building. Power plant administration facilities, the Engineering Unit, and existing mechanical equipment would remain on the Broadway Plant. As a result, Alternative 3A would not meet the project objective of rehabilitating the Glenarm Building and repurposing it into viable work space for City employees, or the objective of enabling designation of the Glenarm Building as an essential facility, and would only partially achieve the objective of maximizing the use and efficiency of the facility.

Alternative 3A, therefore, would fully achieve five project objectives, partially achieve one project objective, and would not achieve two project objectives defined in **Section 2.0, Project Description**, of the Draft EIR.

LETTER NO. 1

Planning Commission Public Meeting
December 12, 2012

Note: Public and Planning Commissioner comments and requests for additional information, provided below, are summarized based on the official audio-video recording of the December 12, 2012 public meeting. Where responses were provided during the hearing by Planning Division staff, Water and Power Department staff, or members of the environmental consulting team that assisted the City with preparation of the Draft EIR, those are summarized herein. In other instances, responses were prepared following subsequent research.

COMMISSIONER NORTON**COMMENT 1-1**

How many units will be in operation following project implementation?

RESPONSE 1-1

At the public meeting, Dan Angeles, P.E., Principal Engineer with the Pasadena Water & Power Department, responded that five units will be operational upon project implementation (Units GT-1 through GT-5).

COMMENT 1-2

Why doesn't Pasadena Water & Power remove Units B1 and B2, since they are hardly used, and continue to operate Unit B3?

RESPONSE 1-2

At the public meeting, Mr. Angeles responded that Units B1 and B2 are not currently in use (both were decommissioned in 2003) and their removal is possible. Unit B-3 continues in use up to approximately 2,000 hours per year (out of a possible annual maximum of 8,760 hours).

COMMENT 1-3

Why is additional parking required?

RESPONSE 1-3

At the public meeting, Mr. Angeles responded that the Zoning Code requires three parking spaces per 1,000 square feet of new development, and with the proposed new control room/administrative facility in the Glenarm Building proposed to be approximately 18,000 square feet, 54 new spaces would be required as part of the proposed project. In addition, there are 14 spaces currently available near the Pump Building on the one-acre parcel south of State Street. Accordingly, there would be a total of 68 spaces on the Glenarm Plant and one-acre parcel following project buildout.

COMMENT 1-4

Is the parking code requirement discussed in the EIR?

RESPONSE 1-4

No detailed evaluation of project parking demand or the parking code requirement is contained in the Draft EIR, since parking was dismissed in the Initial Study as a less than significant impact. Nonetheless, as discussed in **Response 1-3**, the parking requirement for the project has been calculated to be 54 spaces, based on the square footage of proposed new development within the Glenarm Building.

COMMENT 1-5

Why doesn't Pasadena Water & Power use the parking lot on the Broadway Plant that is currently leased to Jacobs Engineering, instead of putting parking [*on the Glenarm Plant*] fronting on Fair Oaks Avenue?

RESPONSE 1-5

At the public meeting, Mr. Angeles responded that use of the Jacobs Engineering parking lot, at the corner of Glenarm Street and the Arroyo Seco Parkway on the Broadway Plant, could be evaluated.

It should be noted that, at the time the Draft EIR was prepared, the parking lot currently leased by Jacobs Engineering for use by its employees was considered to be unavailable for use by Pasadena Water & Power, other than for sharing as space permitted, because of the terms of the lease. The project therefore sought to consolidate employee and visitor parking on the Glenarm Plant as close as possible to the planned new control room/administrative/public facilities within the Glenarm Building, and to reduce the need for employees and visitors to cross the Gold Line train tracks. The proposed location of new parking on the Glenarm Plant, fronting on Fair Oaks Avenue, was in response to constraints imposed by existing power generation equipment and the planned location of new Unit GT-5, and the required safety buffer zones surrounding such equipment.

However, following the December Planning Commission public meeting for the project, Pasadena Water & Power learned that Jacobs Engineering will relocate its offices elsewhere in Pasadena and terminate its lease of the parking lot on the Broadway Plant in July. A revised project alternative has been included in the Final EIR that, among other things, proposes to consolidate the majority of future parking for Pasadena Water & Power employees and visitors in the parking lot currently shared with Jacobs Engineering. See **Topical Response No. 1, Revised Project Site Reconfiguration (Alternative 3A)**, in this Final EIR.

COMMENT 1-6

Is use of the parking lot leased to Jacobs Engineering evaluated in the EIR?

RESPONSE 1-6

At the public meeting, Mr. Angeles responded that use of the Jacobs Engineering parking lot was not evaluated in the Draft EIR; it was not originally envisioned as a part of the proposed project since the lot is leased to Jacobs Engineering. See **Response 1-5** for further discussion of this topic.

COMMENT 1-7

Has Pasadena Water & Power compared the cost of operating new Unit GT-5 to buying imported power? If more cost-efficient, why not use the new Unit GT-5 for the full permitted 7,600 [*sic*] hours? Would Unit GT-5 be used for the same amount of time as Unit B-3?

RESPONSE 1-7

At the public meeting, Gurchuran Bawa, Assistant Plant Manager with the Pasadena Water & Power Department, responded that operation of Unit B-3 is not cost-effective in comparison to the use of imported power, but Pasadena Water & Power is required to maintain the capacity to generate a certain amount of power for transmission to the State power grid if called upon by the California Independent Systems Operators (CAISO). Furthermore, Pasadena Water & Power has a peak load of slightly more than 300 MW but is only capable of importing up to 215 MW through its interconnection with Southern California Edison. Thus, service reliability depends on local power generation units that must be used when customer demand exceeds 215 MW and when required by CAISO.

As an assurance against unanticipated shortfalls in supply, the operating permit sought for the proposed Unit GT-5 would allow for operation up to a maximum of 8,760 hours per year, as is also the case with Unit B-3. The ability to operate continuously throughout the year provides Pasadena Water & Power with operational flexibility and system reliability.

Although Unit GT-5 is expected to be operated for the same number of hours as Unit B-3, it is more cost-efficient than Unit B-3 and, depending on the price of imported power, has the potential to be used for more hours annually. In addition, Unit B-3 has a long start-up time of 24 hours whereas Unit GT-5 would have a relatively short start-up time of 2 hours or less. The relatively shorter start-up time of Unit GT-5 would allow it to be used to a greater extent than Unit B-3 to meet City and/or CAISO obligations.

COMMENT 1-8

When does Pasadena Water & Power currently use Units GT-1, GT-2, GT-3, and GT-4?

RESPONSE 1-8

At the public meeting, Mr. Bawa responded that in recent years Units GT-1 and GT-2 have each been used less than 200 hours per year, and are considered to be for standby emergency purposes. In contrast, newer Units GT-3 and GT-4 are relatively "quick-start" units for use when there are constraints to importing power (whether a transmission constraint outside the City or a system constraint inside the City) and to meet days of high electrical demand, typically during the summer months, when the overall City's demand is higher than Pasadena Water & Power's import capability.

It should be noted that Unit GT-1 is currently under repair following a fire in May 2010 and Unit GT-2 is currently out of commission following a fire in October 2012.

COMMENT 1-9

When Pasadena Water & Power installs unit GT-5, what will happen to Units GT-1, GT-2, GT-3, and GT-4?

RESPONSE 1-9

Mr. Bawa responded that Units GT-1, GT-2, GT-3, and GT-4 would continue to operate after Pasadena Water & Power installs Unit GT-5.

It should be noted that Unit GT-1 is currently under repair following a fire in May 2010 and Unit GT-2 is currently out of commission following a fire in October 2012.

COMMENT 1-10

Are there any [*currently*] operational facilities within the Glenarm building?

RESPONSE 1-10

At the public meeting, Mr. Bawa responded that there are currently no operational facilities in the building, but the project proposes to construct a control room and administrative offices in the building.

As stated in **Section 2.0, Project Description**, of the Draft EIR, the Glenarm Building is currently vacant. A lease was signed with Art Center College of Design for reuse of a portion of the building for classrooms, but those plans were not realized and the lease was automatically terminated. The agreement between the Art Center and the City was approved in 2008 and stipulated that the Art Center was to submit a development plan for the reuse of the Glenarm building within two years. The Art Center did not submit a development plan within the two year time frame; hence, the lease was automatically terminated. The Glenarm Power Plant Repowering Project proposes to reuse the southwest corner of the building to house control rooms for Unit GT-5 and all other operational power generation units on the Power Plant property, as well to consolidate Pasadena Water & Power's administrative offices for its Energy Unit; these are currently housed on the Broadway Plant in temporary buildings.

COMMENT 1-11

What is the Pump Building used for?

RESPONSE 1-11

At the public meeting, Mr. Bawa responded that at one time the Pump Building was a machine shop and was later used for repairing water pumps. The machinery inside the unit is approximately 40-50 years old. The Pump Building and surrounding one-acre parcel are not currently part of the Glenarm Plant site, but would be incorporated into the site and updated to house the entire plant maintenance team, providing space for general maintenance, offices, machine work, storage, welding, and equipment, as part of the project.

COMMENT 1-12

What would be the use of the renovated Pump Building?

RESPONSE 1-12

See **Response 1-11**.

COMMISSIONER FARHAT**COMMENT 1-13**

With respect to permitted versus actual use, does Pasadena Water & Power intend to run the plant intermittently at 2,000 hours or closer to its permitted number of hours?

RESPONSE 1-13

At the public meeting, Mr. Bawa responded that the actual use of Unit GT-5 will be based on market conditions, but it is expected to be more than the historical use of Unit B-3.

Unit GT-5 is not designed as a base load unit and will only operate to generate electricity to meet customer demand, when called upon by the CAISO, and when electrical system reliability is needed. It is not expected that Unit GT-5 would operate all the time and thus not close to its maximum permitted limit of 8,760 hours per year. However, it is more cost-efficient than Unit B-3 and would, depending on the price of imported power, have the potential to be used for more hours annually. In addition, Unit B-3 has a long start-up time of 24 hours whereas Unit GT-5 would have a relatively short start-up time of 2 hours or less. The relatively shorter start-up time of Unit GT-5 would allow it to be used to a greater extent than Unit B-3 to meet City and/or CAISO obligations.

COMMENT 1-14

[With respect to cultural resources mitigation], would asbestos be removed from equipment inside the Glenarm Building, and if so, will there be photographing of affected historic building features, and archiving of those photographs?

RESPONSE 1-14

As discussed in **Section 2.0, Project Description**, of the Draft EIR, in the southwestern portion of the Glenarm Building interior, the proposed project would remove asbestos-coated boilers and remove and/or encapsulate lead paint on existing equipment and infrastructure. In the northern portion of the interior of the building (i.e., the turbine hall) asbestos would be removed and lead paint encapsulated, but no machinery or other character-defining features would be removed. As stated in **Section 4.C, Cultural Resources**, in the Draft EIR, mitigation measure CULT-1 requires Historic American Buildings Survey (HABS) level III recordation to be prepared prior to boiler removal, and requires original archival prints to be submitted to the Library of Congress, the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library. Copies of the photographs are to be incorporated in the interpretive exhibit displaying the layout of the boiler room required by mitigation measure CULT-2.

COMMENT 1-15

The City Council recognized the flexibility *[for adaptive reuse of the Glenarm Building, at the time the City Monument designation was adopted]*. How did the EIR address that?

RESPONSE 1-15

On page 4.C-9 of **Section 4.C, Cultural Resources**, of the Draft EIR, the City Council's February 2008 adoption of the resolution approving the declaration of Historic Monument designation for the Glenarm Building is acknowledged, and the Draft EIR notes that, "[A]s part of the designation, the City Council recognized the need for flexibility in regulating changes to the interior spaces to accommodate future uses of the building." Section 17.62.040 of the City's Municipal Code, Criteria for Designation of Historic Resources, states that a Historic Monument designation may include significant public or semi-public interior spaces.

The December 17, 2007 City Manager's Agenda Report prepared for the City Council concerning the proposed Historic Monument designation of the Glenarm Building, which was reviewed in the course of Draft EIR preparation, noted this fact and stated that, "As plans for use of this building are explored, it will be necessary to remain flexible in the application of the Secretary of the Interior's Standards to allow for future use of the building." Attachment B of the Agenda Report, Architectural Description, Photographs & Documentation, lists the character-defining features of the Glenarm Building. With respect to the building's interior, it defines primary character-defining features, including monumental spatial relationships and visible equipment within the turbine hall and boiler room, and secondary character-defining features, including the boilers and associated pipes in the boiler room and other equipment and spaces. This distinction appears to have been carefully made in the Historic Monument designation so that impacts of adaptive reuse could be accurately determined, in anticipation of future City or third-party proposals for the Glenarm Building such as Art Center College of Design.

The determination of project impacts contained in **Section 4.C** of the Draft EIR was made in light of the City's designation of the Glenarm Building as a Historic Monument, and the associated definition of character-defining features. As stated in **Section 4.C**, project-related seismic upgrades of the building required for essential facility designation and modifications to the building's exterior required for construction of the control room/administrative facility were determined to be in compliance with the applicable Secretary of the Interior's Standards. With respect to planned modifications to the building's interior, removal of the boilers from the boiler room in the southwest portion of the building was determined to be a less than significant impact, since the boilers were defined as features of secondary importance in the Historic Monument designation. The removal of the associated floor-to-ceiling hallway and free-floating master gauge were determined to be significant impacts, since those features are defined as character-defining features in the Historic Monument designation. With implementation of the required mitigation measures CULT-1, CULT-2, and CULT-3, these impacts would be reduced to less than significant levels.

As stated in **Section 4.C** of the Draft EIR, the project would neither result in significant and unavoidable impacts on historic resources, nor would it preclude future adaptive reuse of other portions of the building by the City or a third party.

COMMISSIONER NELSON

COMMENT 1-16

What is the difference between street closure and vacation?

RESPONSE 1-16

At the public meeting, David Reyes, Principal Planner/Zoning Administrator with the Planning Department, stated that vacation changes the underlying ownership of a street, whereas closure leaves street ownership unchanged and merely prevents (public) access to the street.

COMMISSIONER HANSEN

COMMENT 1-17

What would prevent the retrieval [*and use*] of the parking spaces leased to Jacobs Engineering by the City?

RESPONSE 1-17

See **Response 1-5**.

COMMENT 1-18

What is the likelihood of running Unit GT-5 nonstop?

RESPONSE 1-18

At the public meeting, Mr. Bawa responded that it is not likely that Unit GT-5 would be run nonstop, unless the [*transmission*] system [*for imported power*] goes down. Unit GT-5 would be run to meet customer demand and when required by CAISO. Mr. Reyes also responded that the Draft EIR evaluated Unit GT-5 assuming 8,760 operational hours per year, which likely results in an overstatement of the impacts. See **Response 1-7**, which discusses the likely operational parameters of Unit GT-5.

COMMENT 1-19

What will happen to the units that are not operational? Will they be junked or displayed somewhere?

RESPONSE 1-19

At the public meeting, Mr. Bawa responded with a characterization of power generation Units B-1 and B-2 on the Broadway Plant, and explained that these units, although decommissioned, will remain in place.

No demolition of these units is proposed at this time, and their removal was not proposed or evaluated as part of the project in the Draft EIR. Demolition of the units could potentially require asbestos and lead abatement and soil remediation, considerably increasing project costs and prolonging the duration of construction, which would in turn delaying implementation of Unit G-5.

The comment may have been in reference to the proposed removal of the boilers from the southwestern corner of the Glenarm Building (the boiler room). As discussed in **Response 1-14**, the project proposes removal of those boilers because they are coated in asbestos. The asbestos represents a health hazard if the boilers remain in place, even with encapsulation, since the potential would remain for contamination of the remainder of the building through the heating and cooling air ducts to be installed as part of rehabilitation and construction of the proposed control unit/administrative facility within the building. In addition, removal of boilers would eliminate an unsafe environment for administrative personnel due to the potential for falling objects since most of the equipment and components of the boilers, as well as the associated structures, are in a state of disrepair. Thus, boilers in the Glenarm Building would be removed and clean steel components (asbestos and lead free) would be sent to a recycling facility. As stated in **Response 1-14**, HABS photography, archiving of the photographs, and incorporation of photographs into an interpretive exhibit within the Glenarm Building are required by mitigation measures CULT-1 and CULT-2 in **Section 4.C, Cultural Resources**, of the Draft EIR.

COMMENT 1-20

Has Pasadena Water & Power considered removing those units, or is it too costly?

RESPONSE 1-20

At the public meeting, again with respect to power generation Units B-2 and B-3 on the Broadway Plant, Mr. Bawa responded that cost is one reason their demolition and removal was not included as part of the project. He further noted that the equipment functions as a noise buffer along the eastern edge of the Broadway Plant (thereby reducing noise impacts on Blair High School east of the Arroyo Seco Parkway).

COMMISSIONER PERSICO**COMMENT 1-21**

How were the project alternatives selected?

RESPONSE 1-21

At the public meeting, Project Manager Anne Doehne, representing PCR Services Corporation, the environmental consultant assisting the City with preparation of the EIR, explained that the alternatives were selected based on their ability to avoid or reduce significant impacts associated with the proposed project. **Section 5.0, Alternatives**, of the Draft EIR first includes a discussion of alternatives that were considered and rejected, including different forms of energy production. The section then evaluates three alternatives in detail, including No Project; Reduced Operations, which was selected to reduce greenhouse gas emissions and air quality impacts; and Project Site Reconfiguration, which avoided impacts on historic resources and reduced land use impacts associated with parking.

COMMENT 1-22

How feasible is the Reduced Project Alternative [*evaluated in the Draft EIR*], considering the City's obligation to provide power to CAL-ISO on demand?

RESPONSE 1-22

At the public meeting, Mr. Bawa explained that the City is contractually obligated by its agreement with the CAISO to [*maintain the ability to*] provide electricity [*generated at the Power Plant*]. Any limitations on the operating hours of new Unit GT-5 would reduce the City's ability to provide the mandated capacity (i.e., guarantee of availability) when required by CAISO [*which would lead to fines*]. This obligation would make the Reduced Operations Alternative infeasible, since this alternative would not meet the project objectives of providing for mandated capacity (i.e., guarantee of availability) to generate power when required by the California Independent System Operator (CAISO), and maintaining the City's ability to generate power locally, as and when needed, to make up for any shortfall due to import or distribution system constraints.

COMMISSIONER FARHAT**COMMENT 1-23**

What is the existing vacant parcel south of the Glenarm Plant used for? Does the City or Pasadena Water & Power have access to or use that parcel right now?

RESPONSE 1-23

The comment actually refers to the undeveloped parcel on the Glenarm Plant site east of the Glenarm Building, fronting on Glenarm Street. Art Center holds an active lease from the City for this parcel and could submit a proposal for its redevelopment at any time during that lease term. At the public meeting, Mr. Bawa confirmed that Pasadena Water & Power therefore does not have the use of this parcel other than, potentially, for the short-term staging of project construction equipment and materials.

COMMISSIONER HANSEN**COMMENT 1-24**

To what extent does Pasadena Water & Power see changes to the Glenarm building, either inside, outside, or both?

RESPONSE 1-24

At the public hearing, Jon Wilson, Architectural Historian with PCR, responded that there would be changes within the boiler rooms, where the boilers would be removed, and changes to the building's exterior, specifically the south and east-facing elevations. Anne Doehne of PCR further noted that those elevations face the interior of the Plant site.

See **Response 1-15** for further discussion of the planned changes to the interior and exterior of the Glenarm Building. See also section 2.c.1, Project Features, on pages 4.C-14 and 4.C-15 of **Section 4.C, Cultural Resources**, of the Draft EIR, which summarizes project-related activities that would affect portions of the interior and Glenarm of the Glenarm Building.

COMMISSIONER NORTON**COMMENT 1-25**

With respect to the rectangular parcel east of the Glenarm Building that the City has leased to Art Center, has Art Center abandoned its plans to develop it, and what use is planned for the site?

RESPONSE 1-25

At the public hearing, Mr. Bawa responded that that parcel used to be the site of above-ground tanks that were removed a number of years ago, and that there was at one time a proposal by Art Center College of Design to build an above-ground parking structure on the parcel. Mr. Angeles noted for the record that there is no current active application from Art Center College of Design for building on this parcel.

However, Art Center holds an active lease from the City for this parcel and could submit a proposal for its redevelopment at any time during the lease term, and therefore the property is not currently available for use by Pasadena Water & Power.

JENNA KACHOUR, PRESERVATION ARCHITECT, PASADENA HERITAGE**COMMENT 1-26**

Ms. Kachour noted that she will be reviewing the Cultural Resources section of the EIR and will submit a comment letter.

RESPONSE 1-26

Pasadena Heritage subsequently submitted a comment letter on the Draft EIR. That letter (Letter No. 8) and the associated responses to comments raised in the letter are contained in **Section 2.0, *Comments and Responses on the Draft EIR***, in the Final EIR.

COMMENT 1-27

If the floor area is not needed [*within the Boiler Room in the southwestern corner of the Glenarm Building*], and the boilers are identified as items of secondary importance, is there a way to take care of the asbestos problem in place and leave the boilers intact?

RESPONSE 1-27

While the floor area of the boiler room in the southwest portion of the Glenarm Building is not needed for construction of proposed facilities as part of the project, the project proposes removal of the boilers because they are coated in asbestos. The asbestos represents a health hazard if the boilers remain in place, even with encapsulation, since the potential would remain for contamination of the remainder of the building through the heating and cooling air ducts to be installed as part of rehabilitation and construction of the proposed control unit/administrative facility within the building. In addition, removal of boilers would eliminate an unsafe environment for administrative personnel due to the potential for falling objects since most of the equipment and components of the boilers, as well as the associated structures, are in a state of disrepair. Thus, boilers in the Glenarm Building would be removed and clean steel components (asbestos- and lead-free) would be sent to a recycling facility.

COMMISSIONER FARHAT**COMMENT 1-28**

Commissioner Farhat commented: I served on the late, great utility advisory commission for the site, so it's near and dear to my heart. I like that there are fewer cultural resource impacts to the Glenarm Building that would occur than if the original [*Art Center adaptive reuse*] proposal went through. But with respect to historic conservation, I would ask, picking up on what Jenna [*Kachour, of Pasadena Heritage*], for a discussion in the Final EIR of the items of secondary importance, if they were not discussed in the Draft EIR.

RESPONSE 1-28

Features of secondary importance within the Glenarm Building were defined, and project impacts on those features discussed, in **Section 4.C., Cultural Resources**, of the Draft EIR. See **Response 1-15** for further discussion of project impacts on those features. See also Response 1-27 for discussion of why features of secondary importance, specifically the boilers in the boiler room, are planned for removal as part of the project.

COMMENT 1-29

[Regarding greenhouse gas emissions], the impacts appear to be overstated in the Draft EIR. These should be more precise, based on actual use. This would affect the magnitude of the Statement of Overriding Considerations.

RESPONSE 1-29

In response to this comment, Commissioner Norton noted to Commissioner Farhat during the hearing that the City cannot predict how many hours the power plant will actually be needed, since that varies based on whether there will be other power sources available, and that the City likewise cannot predict when it will have excess electricity.

Construction and operation of the proposed Unit GT-5 requires a Permit to Construction/Permit to Operate (PTC/PTO) from the South Coast Air Quality Management District (SCAQMD). The permit for Unit GT-5, which would be a new, efficient, and state-of-the-art turbine with advanced air pollution controls, seeks to allow Pasadena Water & Power the flexibility to operate it for a maximum number of hours. Therefore, for permitting purposes, emissions are calculated based on a so-called potential-to-emit (PTE) basis assuming 8,760 hours per year of operation even though it is likely that the proposed Unit GT-5 may not actually operate for that length of time in any given year. Nonetheless, since the permit seeks to allow operation for 8,760 hours per year, the emissions are calculated to match the requested permitted limit.

COMMENT 1-30

Commissioner Farhat commented: On the issue of parking, I just think the point has been raised, a legitimate point: it sounds like we've looked at alternative parking but it hasn't been explained, I think we should at least analyze, and document and analyze, and if we want to continue to recommend parking on Fair Oaks have an explanation as to why we've made that decision.

RESPONSE 1-30

As discussed in **Response 1-5**, partly in response to Planning Commission and other public comments on the Draft EIR, a revised project alternative was included in the Final EIR that, among other things, proposes to consolidate the majority of future parking for Pasadena Water & Power employees and visitors in the parking lot currently shared with Jacobs Engineering. Under Alternative 3A, the 45-space employee parking lot proposed south of Unit GT-5 and fronting on Fair Oaks Avenue would not be constructed, and Pasadena Water & Power employees and visitors would instead use the parking lot at the corner of Glenarm Street and the Arroyo Seco Parkway on the Broadway Plant. With elimination of this project component, Alternative 3A would fully comply with the South Fair Oaks Specific Plan Development Standard 3.3.3-B.4, Parking and Loading, which requires new parking facilities to be located between an on-site building and the rear property line, and not front directly onto Fair Oaks Avenue.

COMMISSIONER NORTON**COMMENT 1-31**

Regarding the selection of alternatives in the EIR, land use impacts could be mitigated by using existing parking [*on the Broadway Plant, in the lot leased to Jacobs Engineering*] and locating new parking away from Fair Oaks, so as not to violate the Fair Oaks Specific Plan.

RESPONSE 1-31

See **Responses 17-5** and **17-30**, which discuss the potential for future use of the parking lot currently leased to Jacobs Engineering.

COMMENT 1-32

Regarding parking, consider using the existing parking lot leased to Jacobs Engineering. If pedestrian safety is a concern [*for employees crossing the Metro Gold Line tracks between the Glenarm and Broadway Plants*], put up walkways over the tracks.

RESPONSE 1-32

See **Responses 17-5** and **17-30**, which discuss the potential for future use of the lot currently leased to Jacobs Engineering. Although this is now proposed as part of a new alternative contained in the Final EIR, the construction of a pedestrian bridge to allow access between the Glenarm and Broadway Plants is not contemplated as part of the new alternative. Handicap-accessible parking would be provided on the Glenarm Plant site behind the modular building proposed under the new alternative, and other employees and visitors would continue to cross the tracks via the at-grade crossing, as needed, to move between the Glenarm and Broadway plant sites. A pedestrian bridge is not warranted at this time given the limited number of pedestrian crossings needed at this time, and such a proposal would require additional impact analysis and consultation with Metro.

COMMENT 1-33

[*Regarding aesthetic impacts and the planned installation of a new 125-foot stack as part of Unit GT-5*], why not take out [*the two 125-foot*] stacks not being used (Units B-1 and B-2)?

RESPONSE 1-33

As discussed in **Responses 17-19** and **17-20**, cost is the primary reason demolition and removal of the stacks was not proposed as part of the project.

COMMENT 1-34

Can the City cancel the lease with Art Center for the rectangular parcel west of the Glenarm Building and use that for surface parking? This wouldn't have the aesthetic impacts that exist along Fair Oaks and would probably reduce, if not eliminate, the significant adverse land use impacts.

RESPONSE 1-34

See **Response 1-23** regarding the Art Center's lease of that parcel. Also, as discussed in **Response 1-5**, a revised project alternative was included in the Final EIR that proposes to consolidate the majority of future parking for Pasadena Water & Power employees and visitors in the parking lot currently shared with Jacobs Engineering. Alternative 3A would fully comply with the South Fair Oaks Specific Plan Development Standard 3.3.3-B.4, Parking and Loading, eliminating the project's significant and unavoidable land use impact.

COMMENT 1-35

Will boilers be removed or kept in place?

RESPONSE 1-35

The boilers within the boiler room in the southwest portion of Glenarm Building would be removed as part of the project. See Response 1-19 for discussion of the reasons for their removal.

COMMENT 1-36

Pasadena Water & Power should investigate invalidating the City's lease with Art Center for the parcel west of the Glenarm Building parcel and using that parcel for parking.

RESPONSE 1-36

See **Response 1-23**, which discusses the constraint to use of that parcel by Pasadena Water & Power.

COMMISSIONER QUIRK**COMMENT 1-37**

Quantify greenhouse gas emissions.

RESPONSE 1-37

Project greenhouse gas emissions are discussed in **Section 4.D** of the Draft EIR. As noted in **Response 1-29**, the permit for Unit GT-5, which would be a new, efficient, and state-of-the-art turbine with advanced air pollution controls, seeks to allow Pasadena Water & Power the flexibility to operate it for a maximum number of hours. Therefore, for permitting purposes, emissions are calculated based on a so-called potential-to-emit (PTE) basis assuming 8,760 hours per year of operation even though it is likely that the proposed Unit GT-5 may not actually operate for that length of time in any given year. Nonetheless, since the permit seeks to allow operation for 8,760 hours per year, the emissions are calculated to match the requested permitted limit.

COMMENT 1-38

The other thing I agree with you about is where we should be siting parking and the lease for the Jacobs lot.

RESPONSE 1-38

See **Response 1-5**, which discusses the potential for future use of the lot currently leased to Jacobs Engineering.

COMMENT 1-39

Can asbestos be encapsulated?

RESPONSE 1-39

See **Response 1-19**, which discussion why boiler removal is proposed as part of the project.

COMMISSIONER HANSEN**COMMENT 1-40**

How do prevailing winds disperse emissions from the stacks [*in the context of impacts on nearby schools to the west*]?

RESPONSE 1-40

PCR's Director of Air Quality, Climate, and Acoustics Services Division, Heidi Rous, responded that dispersion of emissions from the stack due to prevailing winds has been included in the technical air quality studies prepared for the Draft EIR and that the location of the power plant is safe for the school. The stack associated with the proposed Unit GT-5 would disperse the emissions away from the school.

As discussed in **Section 4.B, Air Quality**, of the Draft EIR, dispersion modeling was performed using the AMS/EPA Regulatory Model (AERMOD) with meteorological data obtained from the SCAQMD that is representative of the project site. The meteorological data indicates winds are primarily from the west-southwest and occasionally from the north-northeast. The proposed Unit GT-5 would have an approximately 125 foot stack, which would aid in dispersion of the pollutants before reaching ground-level or breathing-level heights near the surface. Dispersal of pollutants reduces the actual exposure concentrations and thus reduces the potential for health impacts. The stack height also reduces pollutant exposures to nearby receptors as they would be carried further downwind before reaching ground-level or breathing-level heights. The emissions, stack height, meteorological data, and geographical locations of sensitive receptors relative to the project site have been included in the technical studies for the Draft EIR. The results of the modeling demonstrate that the proposed project would not exceed the thresholds of significance at sensitive receptors and would result in a less than significant impact. The location of the power plant is generally safe for the school.

COMMENT 1-41

The Commissioner expressed concern about the impacts of project emissions on nearby Huntington Hospital and associated medical facilities.

RESPONSE 1-41

At the public meeting, Heidi Rous of PCR responded that sensitive receptors have all been identified in the technical air quality studies prepared for the Draft EIR.

As discussed in **Response 1-40**, the emissions, stack height, meteorological data, and geographical locations of sensitive receptors relative to the project site have been included in the technical studies for the Draft EIR. All necessary sensitive receptors have all been identified and included in the modeling analyses. The results of the modeling demonstrate that the proposed project would not exceed the thresholds of significance at sensitive receptors and would result in a less than significant impact.

COMMISSIONER NELSON

COMMENT 1-42

The Commissioner expressed a preference for hard copy of the Draft EIR to review in the future, instead of a compact disc.

RESPONSE 1-42

The Planning Department submitted a hard copy of the Draft EIR to Commissioner Nelson in response to this comment.



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Ken Alex
Director

December 19, 2012

Dan Angeles
City of Pasadena
85 E. State Street
Pasadena, CA 91105

Subject: Glenarm Power Plant Repowering Project
SCH#: 2011091056

Dear Dan Angeles:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on December 17, 2012, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures

cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report
State Clearinghouse Data Base**

SCH# 2011091056
Project Title Glenarm Power Plant Repowering Project
Lead Agency Pasadena, City of

Type EIR Draft EIR
Description The City of Pasadena, Water & Power Dept., proposes a combined-cycle power generating unit with a gross capacity of 71 MW (Unit GT-5) on its Glenarm Power Plan site, replacing steam generating Unit B-3 on the adjacent Broadway site. Unit GT-5 will include a new gas turbine, steam turbine, once-through steam generator, wet-type cooling tower, water storage tanks, electric powered fuel gas compressors, electric air compressor, and a 125-foot stack. Other improvements include reconfiguration of an existing aqueous ammonia storage tank, associated piping, and other equipment on the Broadway site; an 18,000 sf foot administrative/control room in the on-site Glenarm Building; vacation of a portion of adjacent State Street; and incorporation of an adjacent 1-acre parcel to the south and conversion of a 4,000 sf building on that parcel to house maintenance shops.

Lead Agency Contact

Name Dan Angeles
Agency City of Pasadena
Phone (626) 744-6240 **Fax**
email
Address 85 E. State Street
City Pasadena **State** CA **Zip** 91105

Project Location

County Los Angeles
City Pasadena
Region
Lat / Long
Cross Streets Glenarm Street and State Street
Parcel No. 5317-030-901, -902; 5317-029-900
Township **Range** **Section** **Base**

Proximity to:

Highways SR 110
Airports
Railways Metro Gold Line
Waterways Arroyo Seco
Schools Blair HS, Allendale ES
Land Use Municipal Power Plant/IG SP-2, HL "56" /SP-2 Overlay District

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Noise; Toxic/Hazardous; Water Supply; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 7; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Board, Region 4; Department of Toxic Substances Control; California Energy Commission; Native American Heritage Commission; Public Utilities Commission

Date Received 11/02/2012 **Start of Review** 11/02/2012 **End of Review** 12/17/2012

LETTER NO. 2

State of California
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit
1400 Tenth Street P.O. Box 3044
Sacramento, California 115812-3044
Scott Morgan, Director
December 19, 2012

RESPONSE 2-1

The comment is noted. No further response is required because the letter acknowledges compliance with State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, and does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.



STATE OF CALIFORNIA
 Governor's Office of Planning and Research
 State Clearinghouse and Planning Unit



Edmund G. Brown Jr.
 Governor

Ken Alex
 Director

February 1, 2013

Dan Angeles
 City of Pasadena
 85 E. State Street
 Pasadena, CA 91105

Subject: Glenarm Power Plant Repowering Project
 SCH#: 2011091056

Dear Dan Angeles:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on January 31, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
 Director, State Clearinghouse

Enclosures

cc: Resources Agency

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**Document Details Report
State Clearinghouse Data Base**

SCH# 2011091056
Project Title Glenarm Power Plant Repowering Project
Lead Agency Pasadena, City of

Type EIR Draft EIR
Description Note: Extended Review Per Lead

The City of Pasadena, Water & Power Dept., proposes a combined-cycle power generating unit with a gross capacity of 71 MW (Unit GT-5) on its Glenarm Power Plan site, replacing steam generating Unit B-3 on the adjacent Broadway site. Unit GT-5 will include a new gas turbine, steam turbine, once-through steam generator, wet-type cooling tower, water storage tanks, electric powered fuel gas compressors, electric air compressor, and a 125-foot stack. Other improvements include reconfiguration of an existing aqueous ammonia storage tank, associated piping, and other equipment on the Broadway site; an 18,000 sf foot administrative/control room in the on-site Glenarm Building; vacation of a portion of adjacent State Street; and incorporation of an adjacent 1-acre parcel to the south and conversion of a 4,000 sf building on that parcel to house maintenance shops.

Lead Agency Contact

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Land Use Municipal Power Plant/IG SP-2, HL "56" /SP-2 Overlay District

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Noise; Toxic/Hazardous; Water Supply; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 7; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Board, Region 4; Department of Toxic Substances Control; California Energy Commission; Native American Heritage Commission; Public Utilities Commission

Date Received 11/02/2012 **Start of Review** 11/02/2012 **End of Review** 01/31/2013

LETTER NO. 3

State of California
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit
1400 Tenth Street P.O. Box 3044
Sacramento, California 115812-3044
Scott Morgan, Director
February 1, 2013

RESPONSE 3-1

The comment is noted. No further response is required because the letter acknowledges extension of the public comment period for the Draft EIR and compliance with State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, and does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
 SACRAMENTO, CA 95814
 (916) 653-6251
 Fax (916) 657-5390
 Web Site www.nahc.ca.gov
 ds_nahc@pacbell.net



CLEAR
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November 7, 2012

RECEIVED

NOV 20 2012

STATE CLEARING HOUSE

Mr. Dan Angeles, Planner
City of Pasadena
 85 East State Street
 Pasadena, CA 91105

Re: SCH#2011091056 CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the "Glenarm Power Plant Repowering Project;" located in the City of Pasadena; Los Angeles County, California

Dear Mr. Angeles:

The NAHC is the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties or resources of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9. This project is also subject to California Government Code Section 65352.3.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC advises the Lead Agency to request a Sacred Lands File search of the NAHC if one has not been done for the 'area of potential effect' or APE previously.

The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway.

Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties, including archaeological studies. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and California Public Resources Code Section 21083.2 (Archaeological Resources) that requires documentation, data recovery of cultural resources, construction to avoid sites and the possible use of covenant easements to protect sites.

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of the NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

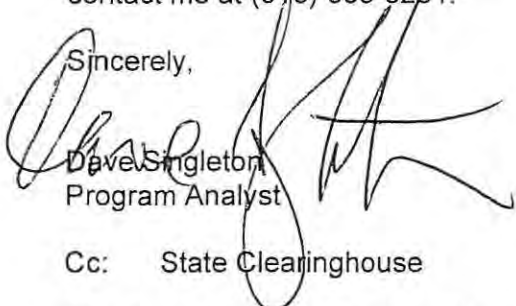
To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

Cont'd

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

LETTER NO. 4

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814
Dave Singleton, Program Analyst
November 7, 2012

RESPONSE 4-1

The comment is noted and is hereby part of the Final EIR, and will be used by decision-makers for their consideration prior to taking any action on the proposed project. Potential impacts to archaeological and paleontological resources were addressed in the Initial Study for the Glenarm Repowering Project, which is included as **Appendix A** of the Draft EIR. As discussed therein, the project site has been in continuous use as a Power Plant for over a century and has been periodically subject to construction-related disturbance. The City's General Plan EIR determined that infill development in already developed areas of the City is generally not anticipated to result in the uncovering of additional resources. However, although the potential to encounter archaeological or Native American resources is considered remote, Mitigation Measure 7.a was included in the Initial Study and in the Mitigation Monitoring and Reporting Plan (MMRP) of this Final EIR. This mitigation requires a qualified archaeologist be notified immediately if archeological resources are encountered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter. If warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the project applicant, and the City. The monitoring program also requires the preparation of a treatment plan for any additional resources encountered and a final report on findings.

With respect to the potential for the proposed project to encounter human remains, a records search was conducted through the California Historical Resources Information-System South Central Coastal Information Center (CHRIS-SCCIC) did not indicate any known human burials on the project site or within a one-half-mile radius. The project site has been in continuous use as a Power Plant for more than a century and is heavily disturbed, and it is considered unlikely that project implementation would impact previously unknown human burials. Nonetheless, mitigation measure 7.c was included in the Initial Study and in the Mitigation Monitoring and Reporting Program, provided in **Section 4.0** of this Final EIR. This mitigation states that, if human remains are encountered unexpectedly during construction excavations and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then identify the person(s) thought to be the Most Likely Descendent of the deceased Native American, who would then help determine what course of action should be taken in dealing with the remains.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

E-Mailed: December 21, 2012
ravila@cityofpasadena.net

December 21, 2012

Mr. Robert Avila
85 East State Street
Pasadena, CA 91105-3418

Review of the Draft Environmental Impact Report (Draft EIR) for the Glenarm Power Plant Repowering Project

The South Coast Air Quality Management District (AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are intended to provide guidance to the lead agency and should be incorporated into the Final Environmental Impact Report (Final EIR) as appropriate.

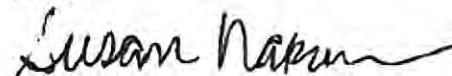
Based on a review of the Draft Environmental Impact Report (Draft EIR) the project exceeds the AQMD's CEQA regional construction emissions threshold for VOC, NOX, CO and PM2.5 as a result of commissioning. Further, the Draft EIR demonstrates significant greenhouse gas (GHG) emissions during operation of the proposed project. However, the lead agency has provided limited construction and operational mitigation measures to reduce the significant air quality and GHG impacts demonstrated by the Draft EIR. Therefore, the AQMD staff recommends that the lead agency provide additional mitigation in Final EIR pursuant to CEQA Guidelines Section 15126.4 to address these concerns. Details regarding these comments are attached to this letter.

Pursuant to Public Resources Code Section 21092.5, please provide the SCAQMD with written responses to all comments contained herein prior to the adoption of the Final EIR.

Further, staff is available to work with the lead agency to address these issues and any other questions that may arise. Please contact Dan Garcia, Air Quality Specialist CEQA Section, at (909) 396-3304, if you have any questions regarding the enclosed comments.

Cont'd

Sincerely,



Susan Nakamura
Planning and Rules Manager
Planning, Rule Development & Area Sources

Attachment

SN:CM:DG

LAC121113-03
Control Number

Peak Daily Regional Construction Emissions

1. Based on the project's peak daily construction emissions values presented in Table 4.B-4 of the Draft EIR the project exceeds the AQMD's CEQA regional construction emissions threshold for VOC, NOX, CO and PM2.5 are significant. For example, the project's peak daily NOX emissions during construction (specifically commissioning) exceed the AQMD's CEQA regional construction NOX emissions threshold by 2,274 lbs/day (i.e., over 20 times higher than the regional NOX threshold). Despite Table 4.B-4, the lead agency determined that the project's air quality impacts during construction will be less than significant. The Draft EIR discussed the conclusion for regional and localized construction impacts together. Specifically, on page 4.B-37 of the Draft EIR the lead agency states, "air dispersion modeling of NO2, CO, SOX and PM2.5 emissions confirm that emissions ...would not result in a significant impact to regional or localized air quality." However, air dispersion modeling for construction emissions is strictly used to determine localized air quality impacts and should not be used to determine regional construction air quality impacts. Therefore, AQMD staff recommends that the lead agency clarify its regional air quality significance determination for construction of the proposed project.

Construction Mitigation Measures

2. The AQMD staff recognizes that the project's significant construction emissions are a direct result of commissioning for the proposed project. However, given the elevated level of emissions during this phase of construction the AQMD staff recommends that the lead agency minimize regional air quality impacts by ensuring that any simultaneous emissions activity during commissioning is minimized. Therefore, AQMD staff recommends that the lead agency provide the following additional mitigation pursuant to CEQA Guidelines Section 15126.4.
 - a) Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow,
 - b) Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site,
 - c) Reroute construction trucks away from congested streets or sensitive receptor areas,
 - d) Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation,
 - e) Improve traffic flow by signal synchronization, and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications,
 - f) Use coatings and solvents with a VOC content lower than that required under AQMD Rule 1113,
 - g) Construct or build with materials that do not require painting,
 - h) Require the use of pre-painted construction materials,
 - i) Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export). If the lead agency determines that 2010 model

year or newer diesel trucks cannot be obtained the lead agency shall use trucks that meet EPA 2007 model year NOx and PM emissions requirements,

- j) Consistent with measures that other lead agencies in the region (including Port of Los Angeles, Port of Long Beach, Metro and City of Los Angeles)¹ have enacted, require all on-site construction equipment to meet EPA Tier 3 or higher emissions standards according to the following:
- ✓ Project start, to December 31, 2014: All offroad diesel-powered construction equipment greater than 50 hp shall meet Tier 3 offroad emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
 - ✓ Post-January 1, 2015: All offroad diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
 - ✓ A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.
 - ✓ Encourage construction contractors to apply for AQMD "SOON" funds. Incentives could be provided for those construction contractors who apply for AQMD "SOON" funds. The "SOON" program provides funds to accelerate clean up of off-road diesel vehicles, such as heavy duty construction equipment. More information on this program can be found at the following website: <http://www.aqmd.gov/tao/Implementation/SOONProgram.htm>

For additional measures to reduce off-road construction equipment, refer to the mitigation measure tables located at the following website:
www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html.

Greenhouse Gas Emissions

3. Given that the lead agency determined that the proposed project will exceed the GHG emissions thresholds the AQMD staff recommends that the lead agency provide the following additional mitigation measures pursuant to CEQA Guidelines Section 15126.4.

¹ For example see the Metro Green Construction Policy at:
http://www.metro.net/projects_studies/sustainability/images/Green_Construction_Policy.pdf

Cont'd

Energy and Other

- a) Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or on the project site to generate solar energy for the facility.
- b) Require all lighting fixtures, including signage, to be state-of-the art and energy efficient, and require that new traffic signals have light-emitting diode (LED) bulbs and require that light fixtures be energy efficient compact fluorescent and/or LED light bulbs. Where feasible use solar powered lighting.
- c) Maximizing the planting of trees in landscaping and parking lots.
- d) Use light colored paving and roofing materials.
- e) Use passive heating, natural cooling, solar hot water systems, and reduced pavement.
- f) Install light colored "cool" roofs and cool pavements.
- g) Limit the hours of operation of outdoor lighting.
- h) Install energy efficient heating and cooling systems, appliances and equipment, and control systems.
- i) Require use of water-based or low VOC cleaning products at the project site.

Applicable Permitting Requirements and Emissions Calculations

4. Based on a review of Chapter 4 (B) of the Draft EIR the AQMD staff recommends that the lead agency revise and/or clarify the following text to accurately summarize the regulatory requirements applicable to the proposed project.
 - a) On page 4.B-2: The applicable New Source Performance Standards (NSPS) is Subpart KKKK.
 - b) On page 4.B-9: Regulation IX should reference Subpart KKKK instead of Subpart GG.
 - c) On page 4.B-10: Not exempt from Rule 1303 - BACT; but they are exempted from modeling and offsets per Rule 1304(a)(2).
 - d) On page 4.B-32: NOx CEMS per Rule 2012 and CO CEMS per Rule 218.
 - e) Also, in Table 4.B-14 of the Draft EIR the annual operational emissions don't appear to include start-up and shutdown emissions in the totals, therefore, the NOx, CO, and VOC emissions may be underrepresented.

LETTER NO. 5

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Susan Nakamura
December 21, 2012

RESPONSE 5-1

This comment provides a general introduction to the comments raised in this letter. Responses to the comments contained in this letter are provided below in **Responses 5-3** through **5-9**.

RESPONSE 5-2

This comment requests that the Lead Agency provide the South Coast Air Quality Management District (SCAQMD) with written responses to all comments contained in this letter prior to adoption of the Final EIR, pursuant to Public Resources Code Section 21092.5. This comment also indicates that SCAQMD staff is available to work with the lead agency to address the issues raised in this comment letter and any other questions that may arise. This comment is noted and the SCAQMD will be provided with written responses to all comments contained in this letter prior to adoption of the Final EIR in accordance with Public Resources Code Section 21092.5.

RESPONSE 5-3

As discussed on page 4.B-34 of **Section 4.B, Air Quality**, of the Draft EIR, the proposed project would result in one-time and temporary commissioning emissions that would occur for up to 12 days, up to a total of 204 hours. Commissioning is required for testing and certification of the combined-cycle power generation unit. Commissioning emissions would be exhausted through an approximately 125-foot tall exhaust stack, which is similar to other existing stacks on the site.

The Lead Agency used Appendix G of the State *CEQA Guidelines* to determine if the project would have a significant impact, as discussed on pages 4.B-21 and 4.B-22. Criteria AQ-2 states that the project would have a significant impact if it would “[v]iolate any air quality standard or contribute substantially to an existing or projected air quality violation.” The California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS) are provided in **Table 4.B-1** of the Draft EIR. The determination of whether the project would violate or contribute substantially to an existing or project air quality violation was based on a two-tiered approach. The first tier utilizes the SCAQMD daily mass threshold. If emissions exceed the SCAQMD daily mass threshold, a second tier analysis was performed using the allowable increase in pollutant concentrations based on the CAAQS and NAAQS or the allowable increase from applicable SCAQMD rules. The second tier utilized dispersion modeling using the U.S. Environmental Protection Agency (USEPA) and SCAQMD-approved AERMOD model with meteorological data from the SCAQMD. As described on page 4.B-29, the AERMOD model calculates pollutant concentrations from the project’s commissioning emissions, which are then used to compare to the CAAQS and NAAQS shown in **Table 4.B-1**. For pollutants that already exceed the CAAQS/NAAQS, such as particulate matter (PM10 and PM2.5), the threshold is based on the limits in Table 2-A of Rule 1303. The Rule 1303 limit establishes that a “significant change in air quality concentration” for particulate matter less than 10 microns is 2.5 micrograms per cubic meter

($\mu\text{g}/\text{m}^3$) for a 24-hour averaging period and $1 \mu\text{g}/\text{m}^3$ for an annual averaging period. This threshold applies to the incremental contribution from a source and does not include background or ambient concentrations.

The use of dispersion modeling to determine the potential for significant air quality impacts has previously been used by similar utility projects in the region. Examples include the following projects in the South Coast Air Basin where the California Energy Commission (CEC) is the lead agency: the Watson Cogeneration Steam and Electric Reliability Project¹ (pre-construction stage); and the CPV Sentinel Energy Project² (under construction). The air quality analyses for these projects rely on dispersion modeling to determine if the project could create a new ambient air quality standard (AAQS) exceedance (emission concentrations above the standard), or substantially contributes to an existing AAQS exceedance. The air quality analysis prepared for the proposed project utilized this same approach. A summary of the CEC's methodology to assess the potential for air quality impacts is provided below. The relevant pages from the above-referenced CEC documents are provided in Appendix A of the Final EIR.:

CEC staff evaluates potential impacts per Appendix G of the CEQA Guidelines (CCR 2006) as appropriate for the project. A CEQA significant adverse impact is determined if potentially significant CEQA impacts cannot be mitigated appropriately through the adoption of Conditions of Certification. Specifically, Energy Commission staff uses health-based ambient air quality standards (AAQS) established by the ARB and the U.S. EPA as a basis for determining whether a project's emissions would cause a significant adverse impact under CEQA. The standards are set at levels that include a margin of safety and are designed to adequately protect the health of all members of the public, including those most sensitive to adverse air quality impacts such as the aged, people with existing illnesses, children, and infants. Staff evaluates the potential for significant adverse air quality impacts by assessing whether the project's emissions of criteria pollutants and their precursors (NO_x , VOC, PM_{10} and SO_2) could create a new AAQS exceedance (emission concentrations above the standard), or substantially contributes to an existing AAQS exceedance.³

Unlike other phases of construction, the only emissions occurring during commissioning would be from the point source stack located on the proposed project site. This is in contrast to other construction activities, such as grading, when emissions from on-road trucks and vehicles occur. Thus, because commissioning emissions would originate entirely within the project site, the location of the stack can be estimated with a reasonable level of accuracy from project site plans, and because no other off-site sources of emissions would occur, it is reasonable and appropriate to conduct dispersion modeling during commissioning to determine whether commissioning emissions would violate or contribute substantially to an existing or projected air quality violation.

The dispersion modeling analysis is described on pages 4.B-36 and 4.B-37 of **Section 4.B, Air Quality**, of the Draft EIR, which states that dispersion modeling was conducted to determine the impact of the commissioning emissions exhausted through the stack on ground-based receptors. The receptors were placed in a grid that extends 13 kilometers (8.1 miles) north of the project site to account for the increase in elevation in that direction and 5 kilometers (3.1 miles) in all other directions. The design of the receptor grid

¹ CEC, Watson Cogeneration Steam and Electric Reliability Project, Final Staff Assessment, CEC 700-2011-002-FSA, August 2011.

² CEC, CPV Sentinel Energy Project, Final Staff Assessment, Air Quality Addendum, CEC 700-2008-005-FSA-AD, April 2010.

³ *Ibid.*, p. 2.1-24.

allowed the dispersion model to fully evaluate the project's maximum potential impacts from commissioning emissions in the project area while also considering local topography. The modeling results indicated that commissioning emissions of nitrogen oxides (NO_x), which is a regulated pollutant and a precursor to ozone, carbon monoxide (CO), and fine particulate matter (PM_{2.5}) from the 125-foot tall stack would not result in violations of the most stringent air quality standards (CAAQS or NAAQS) at the point of maximum impact, within the modeling domain. For PM_{2.5}, the dispersion modeling determined that commissioning would not result in concentrations at receptors in excess of the allowable increase of 2.5 µg/m³ for a 24-hour averaging period. Commissioning would also not exceed the allowable increase of 1 µg/m³ for an annual averaging period given the short duration of commissioning. As a result, the project would not violate or contribute substantially to an existing or project air quality violation. Therefore, commissioning would result in less than significant impacts.

In order to clarify impacts associated with the separate activities of construction and commissioning, formatting changes have been made to **Table 4.B-4** of the Draft EIR. **Table 4.B-4** has been replaced with **Table 4.B-4A**, which provides estimated emissions for construction activity, and **Table 4.B-4B**, which provides estimated emissions for commissioning activities. References to **Table 4.B-4** have also been formatted to refer to **Table 4.B-4A** for construction emissions and **Table 4.B-4B** for commissioning emissions. In addition, a new subheading, **(2) Commissioning**, has been added to page 4.B-34 of the Draft EIR to separate the portion of the text that assesses the emissions associated with commissioning activities. Subsequent subheadings have been renumbered as appropriate. These changes are incorporated into the Final EIR in **Section 3.0, Corrections and Additions to the Draft EIR**.

RESPONSE 5-4

With respect to regional impacts, the dispersion modeling analysis, as described in **Response 5-3**, determined that the peak concentrations of the modeled pollutants occurred well within the modeling domain defined by the receptor grid (i.e., 13 kilometers to the north and 5 kilometers in all other directions). Since commissioning emissions would originate entirely within the project site, the maximum impacts would generally occur in the local area. As discussed previously, no other off-site sources of emissions would occur during the required commissioning phase. Pollutant concentrations at receptors beyond the modeling domain from the short-term and temporary commissioning emissions would be less than the concentrations reported in the Draft EIR due to dispersion effects. As a result, regional pollutant concentrations due to the project's temporary commissioning emissions would be less than the maximum localized impacts. As discussed in **Response 5-3**, dispersion modeling results indicated that commissioning emissions of NO_x, CO, and PM_{2.5} from the 125-foot tall stack would not result in violations of the most stringent air quality standards (CAAQS or NAAQS) at the point of maximum impact, within the modeling domain. For PM_{2.5}, the dispersion modeling determined that commissioning would not result in concentrations at receptors in excess of the allowable increase of 2.5 µg/m³ for a 24-hour averaging period. Commissioning would also not exceed the allowable increase of 1 µg/m³ for an annual averaging period given the short duration of commissioning. Therefore, the project would result in less than significant regional impacts. It should be noted that ozone modeling must be performed on an air basin-wide level and it is not feasible to perform ozone modeling on a project-level basis.

RESPONSE 5-5

This comment provides a list of suggested mitigation measures to reduce emissions from traditional construction activities. However, as discussed on page 4.B-34 of **Section 4.B, Air Quality**, of the Draft EIR, the

proposed project would not result in construction emissions from traditional activities that exceed the mass-based emission thresholds. As discussed in that section, commissioning emissions that would occur for up to 12 days, up to a total of 204 hours and exhausted through an approximately 125-foot tall exhaust stack, would emit short-term pollutants in excess of the SCAQMD's construction mass daily thresholds; however, the commissioning emissions would not violate or contribute substantially to an existing or project air quality violation and would not result in a significant impact per criteria AQ-2 of the Appendix G of the State *CEQA Guidelines*. The commissioning emissions would only occur after construction of the proposed project has been completed and are not expected to occur simultaneously with any other construction phase. The mitigation measures suggested in this comment are designed to affect emissions from traditional construction activities, such as grading, and as such, would not reduce emissions associated with commissioning. No feasible mitigation measures are available to reduce emissions from the required commissioning phase.

With respect to emissions from traditional construction activities, such as grading, the proposed project would not exceed the SCAQMD daily mass emission thresholds. Therefore, construction emissions from traditional activities would not violate or contribute substantially to an existing or project air quality violation without the need to demonstrate so using dispersion modeling. As the impacts were determined to be less than significant based on the daily mass emission thresholds for traditional construction activities, CEQA does not require that the proposed project implement mitigation measures to further reduce a less than significant impact from one activity to compensate for any impact (less than significant or significant) from a distinctly separate activity. Nonetheless, the City will voluntarily implement feasible recommended pollution reduction strategies for this project, as outlined below:

- a. Provide a temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.

The Pasadena Water & Power Department and its contractors, via the City of Pasadena Public Works Department, shall implement this measure and require that a contractor-prepared "Construction Staging and Traffic Management Plan(s)" provide this measure.

- b. Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site.

The Pasadena Water & Power Department and its contractors, in consultation with the City of Pasadena Department of Transportation, shall implement this measure. An on-site dedicated turn lane shall be identified in a contractor-prepared "Construction Staging and Traffic Management Plan(s)." When turning off-site, trucks will be required to utilize the on-site dedicated turn lane described in the plan(s).

- c. Reroute construction trucks away from congested streets or sensitive receptors areas.

This measure is ambiguous in its suggested method of implementation and intended effect. Construction haul trucks may not deviate from truck routes governed by the Pasadena Public Works Department. Truck routes are in place specifically to manage the impact of truck traffic on sensitive receptors, smaller streets and traffic in general. Accordingly, utilizing designated truck routes would serve the purpose apparently intended by this suggested measure. Furthermore, Pasadena Mobility Element Policy 3.1 states that the City shall make the most efficient use of major corridors and discourage auto and truck traffic from using local streets to bypass congested intersections, and thus

precludes the need for deviation from designated truck routes. Therefore, this measure is rejected as written, but will be met as apparently intended.

- d. Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation.

The Pasadena Water & Power Department and its contractors shall implement this measure and require that contractors designate a construction relations officer.

- e. Improve traffic flow by signal synchronization, and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications.

Signal synchronization measures have already been implemented by the Pasadena Department of Transportation. The project Applicant shall require that contractors utilize equipment that shall be properly tuned and maintained according to manufacturers' specifications.

- f. Use coatings and solvents with a VOC content lower than required under AQMD Rule 1113.

The Pasadena Water & Power Department and its contractors shall use coating and solvents with a VOC content that meets or exceeds the requirements of Rule 1113, depending on product application and availability.

- g. Construction or build with materials that do not require painting.

the Pasadena Water & Power Department and its contractors shall use construction materials that do not require painting to the extent economically feasible and that meet the project's structural, acoustical, aesthetic, or other needs.

- h. Require the use of pre-painted construction materials.

The Pasadena Water & Power Department and its contractors shall use pre-painted construction materials for major equipment. Materials that require field coating are exempt from this measure.

- i. Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export). If the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the lead agency shall use trucks that meet EPA 2007 model year NO_x and PM emission requirements.

The use of 2010 and newer diesel haul trucks may not be feasible. Review of the EMFAC 2011 fleet data for T7 (heavy duty diesel) single construction trucks shows that only approximately 10 percent of the construction trucks in the Los Angeles region meet EPA 2010 or better emission standards. With a low availability of 2010 or newer haul trucks, it is not feasible to meet the performance standard. However, since the project would occur after January 1, 2014, the Pasadena Water & Power Department and its contractors shall require the use of 2007 and newer diesel haul trucks pursuant to California Code of Regulations, Title 13, §2025.

- j. Consistent with measures that other lead agencies in the region (including Port of Los Angeles, Port of Long Beach, Metro and City of Los Angeles) have enacted, require all on-site construction equipment meet EPA Tier 3 or higher emissions standards according to the following:

- Project start to December 31, 2014: All offroad diesel-powered construction equipment greater than 50 hp shall meet Tier 3 offroad emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- Post-January 1, 2015: All offroad diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.
- Encourage construction contractors to apply for AQMD "SOON" funds. Incentives could be provided for those construction contractors who apply for AQMD "SOON" funds. The "SOON" program provides funds to accelerate clean up of off-road diesel vehicles, such as heavy duty construction equipment. More information on this program can be found at the following website: <http://www.aqmd.gov/tao/Implementation/SOONProgram.htm>.

The recommended mitigation measure requiring all construction equipment to meet Tier 3 or 4 emissions standards may not be feasible due to the current availability of such equipment. Review of the latest CARB Diesel Off-Road Online Reporting System (DOORS) data shows that heavy duty off-road construction equipment meeting Tier 3 or 4 emission standards account for only seven percent of the statewide fleet. With a low availability of Tier 3 or 4 emissions compliant construction equipment, it is not feasible to require all construction equipment to meet these requirements. However, the Pasadena Water & Power Department and its contractors shall require at least 50 percent of construction equipment greater than 250 hp, which are on-site for 6 or more consecutive work days, shall meet Tier 3 emissions standards and be outfitted with BACT devices (e.g., Level 3 diesel emissions control devices) certified by CARB. The Pasadena Water & Power Department and its contractors shall also require that a copy of each unit's certified tier specification and BACT documentation shall be available for inspection during construction. The project Applicant shall also encourage construction contractors to apply for AQMD "SOON" funds.

Based on the above discussion, the proposed project shall voluntarily include the following mitigation measures to reduce criteria air pollutant emissions from project construction, even though they are not required.

- AQ-1** The Pasadena Water & Power Department and its contractors, via the City of Pasadena Public Works Department, shall require the implementation of a "Construction Staging and Traffic Management Plan" that provides for a temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.

- AQ-2** The Pasadena Water & Power Department and its contractors, in consultation with the City of Pasadena Department of Transportation, shall require the implementation of a “Construction Staging and Traffic Management Plan” that identifies an on-site dedicated turn lane for the movement of construction trucks and equipment. When turning off-site, trucks will be required to utilize the on-site dedicated turn lane described in the plan.
- AQ-3** The Pasadena Water & Power Department and its contractors shall require the implementation of a “Construction Staging and Traffic Management Plan” that provides for a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation.
- AQ-4** The Pasadena Water & Power Department and its contractors shall require that all vehicles and equipment are properly tuned and maintained according to manufacturers’ specifications.
- AQ-5** The Pasadena Water & Power Department and its contractors shall require the use of coatings and solvents with a VOC content that exceeds the requirements of Rule 1113 if available. All coatings and solvents shall at a minimum meet the requirements of Rule 1113 unless exempted.
- AQ-6** The Pasadena Water & Power Department and its contractors shall use construction materials that do not require painting to the extent economically feasible and that meet the project’s structural, acoustical, aesthetic, or other needs.
- AQ-7** The Pasadena Water & Power Department and its contractors shall use pre-painted construction materials for major equipment. Materials that require field coating are exempt from this measure.
- AQ-8** The Pasadena Water & Power Department and its contractors shall require contractors to use model year 2007 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) pursuant to California Code of Regulations, Title 13, §2025.
- AQ-9** The Pasadena Water & Power Department and its contractors shall require the use of internal combustion engines/construction equipment that operate on the project site to meet the following:
- At least 50 percent of construction equipment greater than 250 hp, which are on-site for 6 or more consecutive work days, shall meet Tier 3 emissions standards and be outfitted with BACT devices (e.g., Level 3 diesel emissions control devices) certified by CARB.
 - A copy of each unit’s certified tier specification and BACT documentation shall be available for inspection during construction. The contractor(s) shall monitor and record compliance for each project construction phase and document efforts undertaken to increase the use of compliant off-road vehicles, such as but not limited to bid solicitation documents, fleet registration of successful vendor(s), etc.
 - Construction contractors supplying heavy duty diesel equipment, greater than 50 hp, will be encouraged to apply for AQMD SOON funds. Information including the AQMD website will be provided to each contractor which uses heavy duty diesel for on-site construction activities.

RESPONSE 5-6

This comment provides an introduction to suggested greenhouse gas (GHG) mitigation measures. Responses to the suggested GHG mitigation measures contained in this letter are provided in **Response 5-7**.

RESPONSE 5-7

As shown in **Table 4.D-3 in Section 4.D, Greenhouse Gas Emissions**, of the Draft EIR, the proposed project would result in greenhouse gas (GHG) emissions that would be considered significant. The primary source of the GHG emissions would result from power generation, which would represent approximately 99.9 percent of the project's total GHG emissions. The GHG mitigation measures suggested in this comment are designed to affect emissions from building energy, water, and fugitive sources. The suggested mitigation measures would not reduce emissions from power generation; instead, the measures focus on GHG emissions from the other sources that constitute approximately 0.1 percent of the project's total GHG emissions. The proposed project would incorporate project design features, such as compliance with the Tier 2 requirements of the City of Pasadena Green Building Standards. Under the City's Green Building Standards, the renovation of the Glenarm Building to accommodate the control room as proposed under the project would be required to achieve the equivalent of a "Silver" rating from the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED)® green building program. The achievement of an equivalent USGBC LEED "Silver" rating may incorporate some or all of the suggested mitigation measures and would likely achieve similar GHG emission reductions from sources other than power generation. However, unlike the suggested mitigation measures, the implementation of the project design features would provide flexibility to the project proponent to achieve the GHG reductions in the most cost-effective and efficient means possible. Therefore, because the suggested measures would not avoid or substantially lessen the project's significant GHG impact, and because the measures would not allow flexibility in reducing GHG emission from sources other than power generation in the most cost-effective and efficient manner possible, the measures are considered infeasible. However, the comment will be included as part of the record and made available to the decision-makers prior to a final decision on the proposed project.

While the proposed project would result in GHG emissions that would be considered significant, the proposed project would reduce its actual GHG emissions in full compliance with the Global Warming Solutions Act of 2006 [Assembly Bill (AB) 32]. AB 32 requires the State to reduce its GHG emissions to 1990 levels by 2020. As discussed on page 4.D-5 of the Draft EIR, under AB 32:

"approximately 85 percent of the State's GHG emissions are subject to the cap-and-trade program where covered sectors are placed under a declining emissions cap. The emissions cap incorporates a margin of safety whereby the 2020 emissions limit will still be achieved even in the event that uncapped sectors do not fully meet their anticipated emission reductions."

the Pasadena Water & Power Department is an entity covered by the cap-and-trade program and is thus subject to compliance obligations. As such, the Pasadena Water & Power Department would reduce its GHG emissions, including GHG emissions from the proposed project (if approved and operational) in accordance with its declining emissions allocations pursuant to AB 32.

As discussed on page 3-1 in **Section 3.0**, *General Description of the Environmental Setting*, of the Draft EIR, the proposed project is consistent with the City of Pasadena Integrated Resource Plan (IRP), which serves as a blueprint for the Pasadena Department of Water and Power (the Pasadena Water & Power Department) to deliver reliable, environmentally responsible electricity service. The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include:

- Reducing the import of power generated from high GHG-emitting resources (e.g., reducing coal power purchases by at least 35 MW by 2016);
- Replacing old technology at the local plant on Glenarm Street with a more efficient and reliable natural gas combined cycle plant;
- Implementing aggressive energy efficiency and load reduction programs;
- Increasing the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020;
- Achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024;
- Purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations); and
- Cutting carbon dioxide emissions by 40 percent by 2020.

While the proposed project is not responsible for implementing all of the objectives of the IRP, the proposed project is consistent with the key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant. The proposed project would be a combined-cycle natural gas fueled power generation unit, which is the best technology available for natural gas fueled power generating equipment. The project would comply with Emissions Performance Standards (EPS) requirements established by Senate Bill (SB) 1368. Thus proposed project would support the IRP and implementation of its goals of increasing energy efficiency, reducing load, increasing renewable power generation and purchases, and reducing GHG emissions.

RESPONSE 5-8

The following revisions have been made in **Section 4.B**, *Air Quality*, of the Draft EIR based on comments provided by the SCAQMD. These changes have been incorporated into **Section 3.0, Corrections and Additions to the Draft EIR**, of this Final EIR.

On page 4.B-2, under subsection **(b) New Source Performance Standards (NSPS)**, the paragraph is edited as follows:

The proposed project will be subject to Federal New Source Performance Standards (NSPS) Subpart ~~Db~~ KKKK (Standards of Performance for Stationary Combustion Turbines) ~~(Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)~~ which establishes standards for PM SO_x and NO_x emissions.

On page 4.B-9, under the subheading **Regulation IX – Standards of Performance for New Stationary Sources**, the second sentence of the paragraph is edited as follows:

Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary gas turbines (Subpart ~~KKKK~~ GG).

On page 4.B-10, under the subheading **Regulation XIII – New Source Review**, the first bullet list item, **Rule 1303 – Requirements**, is edited as follows:

This rule specifies the application of BACT, modeling, offsetting and offset ratios to permitted sources within the SCAQMD. The proposed project is not exempt from BACT but is exempt from modeling and offsets from Rule 1303 due to Rule ~~rule~~-1304(a)(2), below.

On page 4.B-32, under the subheading **(4) Continuous Emissions Monitoring System**, the following sentence is added to the end of the paragraph:

The CEMS shall be designed to monitor NO_x per the requirements of SCAQMD Rule 2012 and to monitor CO per the requirements of Rule 218.

RESPONSE 5-9

Table 4.B-14 of the Draft EIR has been revised to include the annual startup and shutdown emissions in the total emissions. On page 4.B-45, **Table 4.B-14, Annual Operational Emissions for Unit GT-5 (tons/yr)**, is edited as follows:

Table 4.B-14

**Annual Operations Emissions for Unit GT-5
(tons/yr)**

GE LM 6000 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	6	17	10	3	18	18
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>15</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>5</u>
Total GE LM 6000	<u>9 6</u>	<u>32 17</u>	<u>23 10</u>	<u>4 3</u>	<u>23 18</u>	<u>23 18</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>8 5</u>	<u>27 12</u>	<u>3 -10</u>	<u>4 3</u>	<u>21 16</u>	<u>21 16</u>
Rolls-Royce Trent 60 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	7	19	11	4	22	22
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>16</u>	<u>16</u>	<u>1</u>	<u>6</u>	<u>6</u>
Total Rolls-Royce Trent 60	<u>10 7</u>	<u>35 19</u>	<u>27 11</u>	<u>5 4</u>	<u>28 22</u>	<u>28 22</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>9 6</u>	<u>30 14</u>	<u>7 -9</u>	<u>5 4</u>	<u>26 20</u>	<u>26 20</u>

Source: PCR Services Corporation, 2012.

Similar revisions to **Appendix B** of the Draft EIR have been revised to include the annual startup and shutdown emissions in the total emissions. In **Appendix B** on page 58, **Table 14, Annual Operational Emissions for Unit GT-5 (tons/yr)**, is edited as follows:

Table 14

**Annual Operations Emissions for Unit GT-5
(tons/yr)**

GE LM 6000 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	6	17	10	3	18	18
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>15</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>5</u>
Total GE LM 6000	<u>9 6</u>	<u>32 17</u>	<u>23 10</u>	<u>4 3</u>	<u>23 18</u>	<u>23 18</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>8 5</u>	<u>27 12</u>	<u>3 -10</u>	<u>4 3</u>	<u>21 16</u>	<u>21 16</u>

Rolls-Royce Trent 60 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	7	19	11	4	22	22
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>16</u>	<u>16</u>	<u>1</u>	<u>6</u>	<u>6</u>
Total Rolls-Royce Trent 60	<u>10 7</u>	<u>35 19</u>	<u>27 11</u>	<u>5 4</u>	<u>28 22</u>	<u>28 22</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>9 6</u>	<u>30 14</u>	<u>7 -9</u>	<u>5 4</u>	<u>26 20</u>	<u>26 20</u>

Source: PCR Services Corporation, 2012.

The proposed project would result in up to 750 startups and 750 shutdowns annually; therefore, emissions in tons per year corresponding to 750 startups and 750 shutdowns have been added to **Table 4.B-14** (and Table 14 in **Appendix B**), which is included in the Final EIR. It should be noted that this information does not alter the dispersion modeling results for the NO_x and PM10 annual emissions presented in Table 4.B-15 of the Draft EIR (Table 15 in **Appendix B**). A review of the application for Permit to Construct/Permit to Operate (PTC/PTO) shows that the modeling results in **Table 4.B-15** are based on the annual emissions of NO_x and PM10 inclusive of the emissions from 750 annual startups and 750 annual shutdowns. Therefore, this revision does not alter the findings and conclusions presented in the Draft EIR and the **Appendix B** technical report.



COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON CHAN
Chief Engineer and General Manager

December 18, 2012

Ref. File No: 2410623

Mr. Robert Avila, Management Analyst IV
Water & Power Department
City of Pasadena
85 East State Street
Pasadena, CA 91105-3418

Dear Mr. Avila:

Conditional Use Permit No. 5804

The County Sanitation Districts of Los Angeles County (Districts) received a Draft Environmental Impact Report for the subject project on November 13, 2012. The proposed development is located within the jurisdictional boundaries of District No. 16. We offer the following comments:

1. Previous comments submitted by the Districts in correspondence dated October 18, 2011 (copy enclosed), to Mr. Dan Angeles of your agency, still apply to the subject project with the following updated information.
2. The Whittier Narrows Water Reclamation Plant (WRP) currently processes an average flow of 8.3 million gallons per day (mgd). The Los Coyotes WRP currently processes an average flow of 22.8 mgd.
3. The expected average wastewater flow from the project site is 3,600 gallons per day. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.
4. All other information concerning Districts' facilities and sewerage service contained in the document is current.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Grace Robinson Chan

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR: ar

Enclosure

c: S. Wienke



COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
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GRACE ROBINSON CHAN
Chief Engineer and General Manager

October 18, 2011

File No: 16-00.04-00

Mr. Dan Angeles, Principal Engineer
Water and Power Department
City of Pasadena
85 E. State Street
Pasadena, CA 91105

Dear Mr. Angeles:

Glenarm Power Plant Repowering Project

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report for the subject project on September 19, 2011. The proposed development is located within the jurisdictional boundaries of District No. 16. We offer the following comments regarding sewerage service:

1. The proposed project may require an amendment to a Districts' permit for Industrial Wastewater Discharge. Project developers should contact the Districts' Industrial Waste Section at extension 2900, in order to reach a determination on this matter. If this update is necessary, project developers will be required to forward copies of final plans and supporting information for the proposed project to the Districts for review and approval before beginning project construction.
2. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Arroyo Seco Trunk Sewer, located in Garfield Avenue at the Pasadena Freeway. This 16-inch diameter trunk sewer has a design capacity of 8.2 million gallons per day (mgd) and conveyed a peak flow of 0.7 mgd when last measured in 2010.
3. The wastewater generated by the proposed project will be treated at the Whittier Narrows Water Reclamation Plant (WRP) located near the City of South El Monte, or the Los Coyotes WRP located in the City of Cerritos. The Whittier Narrows WRP has a design capacity of 15 mgd and currently processes an average flow of 7.9 mgd. The Los Coyotes WRP has a design capacity of 37.5 mgd and currently processes an average flow of 21.0 mgd.
4. In order to estimate the volume of wastewater the project will generate, go to www.lacsd.org, Information Center, Will Serve Program/Buildover Procedures, Obtain Will Serve Letter, and click on the appropriate link on page 2 for a copy of the Districts' average wastewater generation factors.

- 5. The Districts are authorized by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System or increasing the strength or quantity of wastewater attributable to a particular parcel or operation already connected. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Information Center, Will Serve Program/Buildover Procedures, Obtain Will Serve Letter, and click on the appropriate link on page 2. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at extension 2727.

- 6. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CAA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the Districts intend to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of the Districts' facilities.

Cont'd

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Stephen R. Maguin

SIGNED ORIGINAL

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

c: S. Wienke

LETTER NO. 6

County Sanitation Districts of Los Angeles County
P.O. Box 4998
Whittier, CA 90607-4998
Adriana Raza, Customer Service Specialist
December 18, 2012

RESPONSE 6-1

Based on wastewater generation factors provided by the County Sanitation Districts of Los Angeles County (the "District"), project implementation is anticipated to generate approximately 3,600 gallons of wastewater per day. Wastewater generated by project implementation would be treated at the Whittier Narrows Water Reclamation Plant (WRP) or the Los Coyotes WRP. With respect to treatment capacity, the District indicates that the Whittier Narrows Water Reclamation Plan (WRP) has a design capacity of 15 million gallons per day (mgd) and currently processes an average flow of 8.3 million gallons per day (mgd). The Los Coyotes WRP has a design capacity of 37.5 mgd and currently processes currently processes an average flow of 22.8 mgd. Based on current flow rates, the two WRPs have an excess treatment capacity of 21.4 mgd. As a result, the 3,600 gallons per day that would be generated by the project constitutes only 0.02 percent of the remaining wastewater treatment capacity at these facilities and a less than significant impact would result. As also indicated in the County of Los Angeles Sanitation Districts' letter, the District's 16-inch Arroyo Seco Trunk Sewer would have adequate capacity to serve the project.

In addition, as discussed in the Initial Study for the project (included as **Appendix A** of the Draft EIR), the project would continue to operate under the existing Wastewater Discharge Permit (WDR), which includes BMPs to self-limit peak flows, recordation of wastewater pH, pre-processing through oil/water separators, and periodically emptying cooling towers. The WDR may require minor modifications, as appropriate, as well as the payment of all applicable sewer connection fees to ensure adequate capacity continues to be available to serve the project. Therefore, the Draft EIR concluded that existing wastewater facilities are available to serve the project, and no new wastewater treatment facilities or expansion of existing facilities are expected to be required for project implementation.

RESPONSE 6-2

Comment 4-2 is a copy of the October 18, 2011 comment letter previously submitted to the City of Pasadena in response to the Notice of Preparation for the Glenarm Power Plant Repowering Project. Comment 4-1 states that the October 2011 letter is submitted to the City as an attachment to the Draft EIR comment letter, since the comments contained in the previous still apply, with the updated information provided in Comment 4-1.

Page 1-4 in **Section 1.0, Introduction**, of the Draft EIR cites the Los Angeles County Sanitation District as a responsible agency. As listed on page 2-13 in **Section 2.0, Project Description**, of the Draft EIR, an Industrial Wastewater Discharge Permit from the County Sanitation District would be required for the development of the project. The conditions and payment of fees described in the comment would be enforced under the permit. In addition, as discussed on page 4.B-33 in **Section 4.B, Air Quality**, of the Draft EIR, the project would not result in new employment and, therefore, would not conflict with the Southern California Association of Government (SCAG) regional growth forecast for Los Angeles County and the respective Air Quality Management Plan (AQMP).



Metro

January 31, 2013

Mr. Robert Avila
Management Analyst IV
Pasadena Water and Power
85 East State Street
Pasadena, CA 91105-3418

RE: Glenarm Power Plant Repowering Project Draft EIR

Dear Mr. Avila:

The Los Angeles County Metropolitan Transportation Authority (Metro) appreciates the opportunity to review and comment on the Pasadena Water and Power Glenarm Power Plant Repowering Project Draft Environmental Impact Report (DEIR).

The proposed project is located in the City of Pasadena and is bounded to the north by Glenarm Street, to the south by the State Street cul-de-sac that terminates at the Gold Line, to the east by State Route 110, to the west by Fair Oaks Avenue, and bisected by the Metro Gold Line tracks.

As currently envisioned, construction of the project and associated work will occur no closer than 150 ft. from the western fence line of Metro right-of-way (ROW), with a small portion occurring 25 feet from the western fence line, and no construction on Metro ROW. Under this configuration, no Metro approvals would be needed. However, should plans for the proposed project change and construction activities occur on or adjacent to Metro ROW, the appropriate permits and approvals from Metro would be required. To account for this possibility, Metro requests to be added to the list of approvals required for development of the project as listed in Section 2 pages 2-12 and 2-13 and on page 4.F-9.

Metro also appreciates the opportunity to work with Pasadena Water and Power to review project plans and drawings as well as monitor construction activity. To this end, Michael Harris-Gifford will be Metro's point of contact for this project. His contact information is:

Michael Harris-Gifford
Executive Officer, Wayside Systems
Metro
284 S. Santa Fe Avenue
Mail Stop 61-1-1
Los Angeles, CA 90013
213-922-3250
harrisgiffordm@metro.net

Again, thank you for the opportunity to review and comment on this DEIR and we look forward to working with you as the project moves forward.

Sincerely,



Shahrzad Amiri
Deputy Executive Officer
San Gabriel Valley Area Team

cc: Michael Harris-Gifford

LETTER NO. 7

Los Angeles County
Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012-2952
Shahrzad Amiri, Deputy Executive Officer
San Gabriel Valley Area Team
January 31, 2013

RESPONSE 7-1

The comment is noted. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

RESPONSE 7-2

In response to this comment, the Los Angeles County Metropolitan Transportation Authority (Metro) will be added as one of the listed agencies to review project plans, including construction plans. Although Metro acknowledges that no approvals would be needed under the current configuration, the review of project construction plans would allow Metro to confirm that no construction activities would occur on or adjacent to the Metro right of way. See also **Chapter 3.0, *Corrections and Additions to the Draft EIR***, in this Final EIR for the text amending the Draft EIR Project Description to incorporate this requirement.

RESPONSE 7-3

In response to this comment, the Los Angeles County Metropolitan Transportation Authority (Metro) will be added as one of the listed agencies to review project plans and drawings and monitor construction activity. See **Chapter 3.0, *Corrections and Additions to the Draft EIR***, in this Final EIR for the text amending the Draft EIR Project Description to incorporate this requirement.

The Pasadena Water & Power Department will coordinate review of project plans and drawings and monitoring of construction activity with the Metro point of contact indicated by the commenter.



Metro

January 28, 2013

Ms. Christine Abraham
Principal Planner
PCR Services Corporation
201 Santa Monica Blvd, Suite 500
Santa Monica, CA 90401

RE: Glenarm Power Plant Repowering Project Draft EIR

Dear Ms. Abraham:

The Los Angeles County Metropolitan Transportation Authority (Metro) appreciates the opportunity to review and comment on the Pasadena Water and Power Glenarm Power Plant Repowering Project Draft Environmental Impact Report (DEIR).

The proposed project is located in the City of Pasadena and is bounded to the north by Glenarm Street, to the south by the State Street cul-de-sac that terminates at the Gold Line, to the east by State Route 110, to the west by Fair Oaks Avenue, and bisected by the Metro Gold Line tracks.

As currently envisioned, construction of the project and associated work will occur no closer than 150 ft. from the western fence line of Metro right-of-way (ROW), with a small portion occurring 25 feet from the western fence line, and no construction on Metro ROW. Under this configuration, no Metro approvals would be needed. However, should plans for the proposed project change and construction activities occur on or adjacent to Metro ROW, the appropriate permits and approvals from Metro would be required. To account for this possibility, Metro requests to be added to the list of approvals required for development of the project as listed in Section 2 pages 2-12 and 2-13 and on page 4.F-9.

cc

Metro also appreciates the opportunity to work with Pasadena Water and Power to review project plans and drawings as well as monitor construction activity. To this end, Michael Harris-Gifford will be Metro's point of contact for this project. His contact information is:

Michael Harris-Gifford
Executive Officer, Wayside Systems
Metro
284 S. Santa Fe Avenue
Mail Stop 61-1-1
Los Angeles, CA 90013
213-922-3250
harrisgiffordm@metro.net

Again, thank you for the opportunity to review and comment on this DEIR and we look forward to working with you as the project moves forward.

Sincerely,



Shahrzad Amiri
Deputy Executive Officer
San Gabriel Valley Area Team

cc: Michael Harris-Gifford

LETTER NO. 8-DUPLICATE

Los Angeles County
Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012-2952
Shahrzad Amiri, Deputy Executive Officer
San Gabriel Valley Area Team
January 28, 2013

This letter is a duplicate of Letter No. 7 from the Metropolitan Transportation Authority, differing only in the date and addressee. Please see **Responses 7-1** through **7-3**.

City of San Marino

Planning & Building Department



December 4, 2012

Robert Avila
Management Analyst IV
85 E. State St.
Pasadena, CA 91105

**SUBJECT: RESPONSE TO NOTICE OF AVAILABILITY OF A DRAFT
ENVIRONMENTAL IMPACT REPORT FOR THE GLENARM POWER PLANT
REPOWERING PROJECT**

Dear Mr. Avila:

Thank you for the opportunity to review and comment on the Glenarm Power Plant Repowering Project. The City of San Marino has no comments regarding the project at this time.

Should you need any additional information, please feel free to contact me by phone at 626-300-0713 or by email at acervantes@cityofsanmarino.org.

Sincerely,

A handwritten signature in black ink, appearing to read 'Aldo Cervantes', is written over a horizontal line.

ALDO CERVANTES
Senior Planner

LETTER NO. 9

City of San Marino
Planning and Building Department
2200 Huntington Drive
San Marino, CA 91108-2639
Aldo Cervantes, Senior Planner
December 4, 2012

RESPONSE 9-1

This comment indicates that the City of San Marino Planning and Building Department has no comments regarding the project at this time. Since the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR, no further response is required.



August 31, 2012

Mr. Robert Avila
Management Analyst IV
Pasadena Water & Power
85 E. State Street
Pasadena, CA 91105-3418

Re: Glenarm Power Plant Repowering Project

Dear Mr. Avila:

Southern California Edison (SCE) appreciates the opportunity to provide comment on the above referenced project.

Southern California Edison Company's rights-of-ways and fee-owned properties are purchased for the exclusive use of SCE to operate and maintain its present and future facilities. Any proposed use will be reviewed on a case-by-case basis by SCE's Operating Department. Approvals or denials will be in writing based upon review of the maps provided by the developer and compatibility with SCE right-of-way constraints and rights. In the event the project proposes to impact SCE facilities or its land related rights, please forward five (5) sets of project plans, and a PDF copy of the same, depicting SCE's facilities and its associated land rights to the following location for review as noted above:

Real Properties Department
Southern California Edison Company
2131 Walnut Grove Avenue
G.O.3 – Second Floor
Rosemead, CA 91770

Please be advised if development plans result in the need to build new or relocate existing SCE electrical facilities that operate at or above 50 kV, the SCE construction may have environmental consequences subject to CEQA review as required by the California Public Utilities Commission (CPUC). If those environmental consequences are identified and addressed by the local agency in the CEQA process for the larger project, SCE may not be required to pursue a later, separate, mandatory CEQA review through the CPUC's General Order 131-D (GO 131-D) process. If the SCE facilities are not adequately addressed in the CEQA review for the larger project, and the new facilities could result in significant environmental impacts, the required additional CEQA review at the CPUC could delay approval of the SCE power line portion of the project for two years or longer.

Once again, we appreciate the opportunity to comment on the project. If you have any questions regarding this letter, do not hesitate to contact me at (323) 720-5213.

Sincerely,

A handwritten signature in cursive script that reads "Marissa Castro-Salvati".

Marissa Castro-Salvati
Local Public Affairs Region Manager
Southern California Edison Company

LETTER NO. 10

Southern California Edison Company
Real Properties Department
2131 Walnut Grove Avenue
G.O.3-Second Floor
Rosemead, CA 91770
Marissa Castro-Salvati, Local Public Affairs Region Manager
August 31, 2012

RESPONSE 10-1

This comment is noted and is incorporated into this Final EIR for consideration by the decision makers prior to any action on the proposed project. The comment identifies nearby Southern California Edison (SCE) right-of-way constraints and rights, and requests design plans should SCE facilities or its land rights be affected. The comment also indicates that any new or relocated existing SCE electrical facilities may have environmental consequences and be subject to CEQA review as required by the California Public Utilities Commission (CPUC). The project would not affect any SCE facilities, including those directly south of the Glenarm Plant. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

California Clean Energy Committee

*"We're all working together
to do a better job for the country."*

December 14, 2012

Mr. Robert Avila, Management Analyst IV
Pasadena Water & Power
85 East State Street
Pasadena, California 91105-3418

Re: Glenarm Power Plant Repowering Project
Draft Environmental Impact Report
SCH # 2011-091 056

Dear Mr. Avila:

This letter will constitute comments by the California Clean Energy Committee on the Glenarm Power Plant Repowering Project Draft Environmental Impact Report (EIR).

The California Clean Energy Committee is a California non-profit corporation headquartered in Davis, California, which promotes energy conservation, greenhouse gas reduction, and the development of clean-energy resources throughout California. It actively supports the application of the California Environmental Quality Act (CEQA) to energy conservation and related project impacts.

Over 20 individuals in the Pasadena area have joined the California Clean Energy Committee's request that Pasadena Water & Power be required to incorporate robust energy conservation, water conservation, and environmental stewardship into the Glenarm Repowering project. A copy of our petition is enclosed.

The Committee does not support the project as designed and is requesting that the project be modified either to incorporate district heating and cooling or to rely on renewable resources and energy efficiency.

All notices regarding this project should be sent to 3502 Tanager Avenue, Davis, California 95616-7531. Please feel free to contact the undersigned for additional information.

California Clean Energy Committee | 3502 Tanager Avenue, Davis, CA 95616-7531

Voice: 530-756-6141 | Facsimile: 530-756-5930

Accompanying this letter there is a DVD containing electronic copies of all documents listed in the appendix to this letter in pdf format. Please contact us if you have any difficulty displaying the documents.

Based on a review of the proposed project, the draft EIR, and related information, there are a number of areas where the environmental impacts should be more carefully evaluated and where feasible mitigation measures should be adopted. The EIR should be revised and recirculated.

Cont'd

1. Water Impacts

PWP's current water sources are groundwater, surface supplies, and imported water purchases from MWD. The existing groundwater, surface supplies and imported water purchases produce 38,460 acre-feet per year (afy). By 2035, these supplies are expected to decline to 32,253 afy. (UWMP at 4-28.)

Forty percent of the city's water supply currently comes is from local groundwater in the Raymond Basin. Due to falling groundwater levels, the city expects a 20% reduction in groundwater pumping by 2014. (WIRP at ES-1.)

Complicating matters, the city expects that between the present time and year 2035, the population of city will increase by approximately 24,000 people. (UWMP at 2-4.) Projected future water demand in year 2035, without future active conservation, is expected to be 43,300 afy. (UWMP at 3-3.) This results in a shortage of water supplies in year 2035 of 11,047 afy.

PROJECTED YEAR 2035 WATER SHORTAGE	
Projected 2035 Demand	43,300
Projected 2035 Supplies	32,253
Project Year 2035 Water Shortage	11,047

Current water supplies are not sufficient to serve the projected population and the re-powering project. New water supply facilities are required.

In order to meet the needs of an expanding population with a dwindling water supply, the city is planning to implement several programs including a recycled water program, the Devil's Gate surface diversion project, and a groundwater storage program using MWD replenishment water. (UWMP at 4-3.)

The city is planning to divert approximately 1,750 afy of water from Devil's Gate Reservoir using a new 30-inch pipeline that will convey the water to the Eaton Canyon Reservoir for release into spreading basins. (UWMP at 4-10.) The city is planning to construct a new pipeline as well as three new injection/extraction wells at a cost of \$36.1 million to import and store MWD replenishment water when available. This is expected to yield an average of 6,500 afy.

PWP is further planning the construction of a recycled water distribution system to provide tertiary treated water, presumably Title 22 water, for landscape and irrigation demands if it can determine that sufficient demand for recycled water exists. The estimated cost of the project would be \$17 - \$68 million. (UWMP at 4-21 - 25.) These projects will require considerable electrical energy for pumping and will have potentially significant energy and water impacts.

The proposed project, which would use up to 95,000,000 gallons per year for cooling, makes a cumulatively considerable contribution to the projected water shortage and the need for the construction of new water facilities. The EIR should analyze the impact on water demand and the impact of requiring new water facilities.

The EIR states that Unit GT-5 would be required to use recycled water "when the infrastructure is in place." (DEIR at 4.H-23.) This does not constitute a sufficient analysis of the potential to use recycled water or a sufficient commitment to it. The delivering of recycled water to Unit GT-5 is uncertain because there is no existing infrastructure for the delivery of recycled water to the site and because PWP is not certain whether the demand for recycled water is sufficient to finance the installation of the infrastructure.

In considering the use of recycled water for GT-5 cooling, PWP must determine what the quality of the recycled water from the proposed source is and whether it is compatible with the manufacturer's requirements for cooling water. Once-through steam generators (OTSG) typically cannot tolerate any solids in their feed water, and low pH can lead to rapid acidic corrosion and may cause hydrogen damage in carbon steel. Heat recovery steam generators (HSRG) in combined cycle systems have experienced unexpectedly high failure rates that can be associated with feed water chemistry.

Running the project on recycled water may require additional water treatment facilities depending on the water chemistry involved. If so, PWP should discuss what facilities would be required and evaluate the feasibility of such facilities and consider whether any additional synergies may exist between the recycled water and the repowering project. In view of those conclusions, PWP should discuss its commitment to using recycled water.

Cont'd

The project will use a wet-type cooling tower. (EIR 4.H-22.) The EIR does not disclose that wet type cooling towers rely on evaporative cooling and release large quantities of water into the atmosphere.

As a result of the project's reliance on evaporative cooling, it will release approximately 95,000,000 gallons of water into the atmosphere for cooling purposes. No evaluation has been made of whether there are ways to reduce the impacts of the project on the water supply. The EIR fails to consider that system design elements that reduce the quantity of waste heat generated by the project provide a commensurate reduction in the amount of cooling water required. The EIR fails to evaluate mitigation measures and alternatives that would increase the project's thermal efficiency and consequently reduce water consumption by reducing the amount of waste heat sent to the cooling tower.

The project's unnecessary and wasteful use of water is a significant cumulative impact to energy and GHG emissions. The EIR must be revised and recirculated to consider methods of reducing evaporative cooling and water use by the project by diverting waste heat to useful purposes.

2. District Heating and Cooling

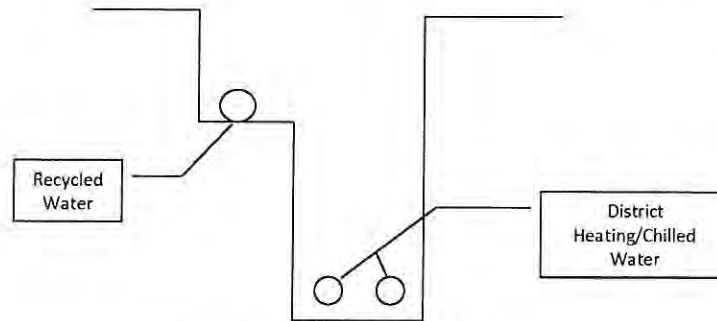
Project impacts could be mitigated by using hot water from GT-5 to heat buildings on the project site and by converting the hot water to chilled water using an absorption chiller and using the chilled water to air condition buildings on site including the Glenarm Building, the Pacific Electric Building, and the proposed Maintenance Shop.

Additionally, the hot water or chilled water could be sold to customers in the vicinity of the power plant for heating and cooling purposes. There are numerous potential customers. Blair High School, which is less than a 1000 feet from the project, could potentially use hot water or chilled water. Huntington Hospital is about 2000 feet from the project site and would be a potentially large user of hot or chilled water.

The Central District and numerous city buildings are within less than two miles from the project site. Pasadena City College is three miles from the project. Heating and cooling water could be routed through areas targeted for redevelopment along the way or through the Lake Street corridor. New projects under design could choose to incorporate a district heating or chilled water service provided by PWP, allowing PWP to make economic use of energy that would otherwise be wasted.

The city is working on a project to install a recycled water distribution system that would involve running piping to the Unit GT-5 site. (DEIR at 4.H-23.) The city should consider the potential for installing district heating pipes concurrently with recycled water piping.

Considerable savings could be achieved using a combined-trench design that would extend district heating or chilled water at a dramatically lower capital cost.



Combined Trench for Recycled Water
and District Heating/Chilled Water

The existing recycled water plan would lay a 10 inch recycled water main to the Glenarm Power Plant. District heating/chilled water could be installed at the same time running north from the power plant to California and then east and west on California in a joint trench providing service to a large number of nearby public and private users.

The city is currently undertaking a revision of its general plan Land Use Element and its Mobility Element. The potential of district heating should be considered in determining new economic development opportunities. A number of mixed-use transit villages are being considered near the Gold Line. The Gold Line bisects the power plant. The city is considering re-focusing South Fair Oaks as an employment center with workforce, student, and senior housing opportunities. The Glenarm Power Plant is on South Fair Oaks and could serve those projects with district heating and cooling.

District Energy St. Paul, in St. Paul, Minnesota, currently heats more than 185 buildings and 300 single-family homes (31.8 million square feet) and cools 100 buildings (18.8 million square feet) in downtown Saint Paul and adjacent areas. Its cooling system includes two chilled water storage tanks that hold more than 6.5 million gallons of water chilled at night, during off-peak electrical hours, for consumer use during the day. Customers enjoy stable rates, very-high reliability, and energy efficient heating and cooling service.

Buildings connected to district energy systems have lower capital costs for their energy equipment because they don't need conventional boilers and chillers. They save valuable upfront dollars they can invest elsewhere. Many companies are interested in cost-effective ways to reduce their climate impacts. District heating or chilled water provide a way for them to use recycled heat energy thus meeting climate goals while also achieving

Cont'd

lower costs. Plus, district heating/chilled water saves building space that can be used for other more valuable purposes. Affordable stable energy rates are a draw to businesses. Using waste heat involves no fuel costs and produces competitive prices.

Cont'd

3. Economic Feasibility

It will cost PWP up to \$14.7 million over the next thirty years for cooling water to dissipate valuable thermal energy generated by GT-5.

TOTAL COST OF COOLING WATER USED TO DESTROY WASTE HEAT ENERGY				
	Gallons Used ¹	HCF Used ²	Rate/HCF ³	Water Cost
Block 4 Winter Per Year	95,000,000	126,997	\$3.86	\$490,206.60
Project Lifetime				30
Cooling Water Cost				\$14,706,197.97

The EIR fails to discuss information concerning the cooling water cost savings of diverting thermal energy from the cooling towers.

The EIR should discuss the revenues that the PWP would realize from the use or sale of chilled water or hot water. The EIR should discuss the amount of waste heat exhausted by the project via the cooling tower, the efficiency of the project, or the amount of energy that the project would consume.

Based on the data available, the potential value to PWP of the energy savings over a project lifetime of 30 years is as much as \$558,000,000.

¹ Draft EIR at 4-13.

² Conversion factor 0.133680556 cubic feet per gallon.

³ Pasadena Water & Power, Water Service Rates at ww2.cityofpasadena.net/waterandpower/YourWater/WaterRates/default.asp

SAVINGS ACHIEVED BY RECOVERY 50% OF WASTED HEAT ENERGY	
Assume 50% of Waste Energy Recovered (MW) ⁴	31
Annual Operating Hours per EIR ⁵	8,760
Annual Energy Saved in MWH	271,560
Levelized-Cost of Producing Energy (MWH)	\$69
Annual Avoided Cost of Energy Recovered	\$18,629,016
Project Lifetime in Years	30
Value of Energy Recovery Over Project Life	\$558,870,480

Actual savings would depend on the total hours of operation.

Additional costs to PWP include the loss of savings that would be achieved by reducing the cap and trade allowances that PWP would be required to purchase or by enabling it to sell allowances. Air Resources Board Chairman Mary D. Nichols has recently affirmed ARB's intention to reward combined heat and power facilities under the cap and trade program.⁶

Increasing plant efficiency from roughly 60% to 85% by diverting thermal energy to useful purposes would avoid the use of other energy resources and would consequently reduce overall GHG emissions.

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The value of the allowances lost to PWP can be estimated at \$21,000,000 over a conservative 30-year project lifetime based data for the Rolls-Royce Trent 60 gas turbine generator.⁷

⁴ Assume proposed 71 MW combined-cycle gas turbine will operate at 50% overall efficiency. Therefore, 71 MW of electrical energy is generated and an equivalent amount of energy is discharged largely in the form of waste heat. Recovering half of that wasted heat energy, i.e., overall plant efficiency increased to 75%, would result in the equivalent of 31 MW of additional energy production.

⁵ Draft EIR at 4.H-24.

⁶ Nichols, M., Letter to Honorable Nathan Fletcher, http://www.arb.ca.gov/cc/capandtrade/assemblyman_fletcher_response.pdf (Aug. 2012).

⁷ Draft EIR at 4.D-21.

SAVINGS ACHIEVED BY AVOIDING THE PURCHASE OF CO2 ALLOWANCES	
CO2 Produced Annually by GT-5 ⁸	282,601
25% of CO2 Produced Annually ⁹	70,650
Minimum Cost of 1 Ton CO2 Offset Credit ¹⁰	\$10
Value of Avoided Offset Purchases Annually	\$706,503
Lifetime of Project ¹¹	30
Value of Avoided Offset Purchases Over Project Lifetime	\$21,195,075

Cont'd

The city could achieve further savings over time by sizing the system to capture and distributing waste heat from the other gas turbine generators on the Glenarm site and distributing that along with heat from GT-5 via a district heating/chilled water system. Providing additional capacity would greatly reduce per unit costs.

4. Climate Mitigation

Developing a long-term plan for district heating and cooling using waste heat from the Glenarm Plant and the Broadway Plant would constitute feasible mitigation for the climate impacts of the project. Combined heat and power is a proven technology that can dramatically increase the energy efficiency of the electric power sector through the simultaneous production of electricity and thermal energy from a single source. Increasing the overall energy efficiency of the project would reduce fossil fuel consumption and mitigate climate impacts.

Climate impacts could be reduced by PWP adopting a robust feed-in-tariff. Feed-in-tariffs have proven effective in accelerating the development of renewable energy production by providing grid access, long-term contracts, and guaranteed purchase prices based on the cost of generation thus insuring producers a reasonable rate of return on an efficiently-operated clean energy project. PWP services around 57,000 customers which makes it exempt from a mandatory feed-in-tariff under SB 32, which applies to utilities with 75,000 or more customers. (Pub. Utilities Code § 399.32(e).) Since PWP is not legally required to establish a feed-in-tariff, a voluntarily feed-in-tariff established by PWP would constitute feasible mitigation for climate impacts.

⁸ Draft EIR at 4.D-21.

⁹ Represents projected increase in thermal efficiency from 60% to 85%.

¹⁰ Represents minimum price allowable under Cap and Trade regulations.

¹¹ Conservative estimate of project lifetime.

PWP operates at green pricing program under the name PWP Green Power Program. PWP could reduce GHG emissions by using the revenues derived from that program for local clean energy projects, rather than using them on unbundled renewable energy credits that do not produce additional renewable energy.

Greenhouse gas emissions could be mitigated by a program to facilitate grid interconnection by energy producers within the city's service territory. SCE provides an interconnection map. Data about the city's utility grid is not public making the cost of interconnection higher for renewable energy developers.

PWP could mitigate GHG emissions by implementing a solar garden program modeled on the San Diego Gas & Electric Share-the-Sun program. Share-the-Sun allows qualified solar developers to build local solar projects feeding into the local grid under long-term power purchase agreements. The developer markets the solar energy, and the utility bills subscribing customers.

Greenhouse gas emissions could be mitigated by adopting a refrigerator recycling program. Austin Energy, a municipal electric utility, provides customers with a \$50 rebate if they turn in a 14-to-27 cubic foot refrigerator in working condition. Austin Energy provides an on-line application for the program, and it picks up eligible refrigerators and disposes of them in an environmentally-sound way.

A centralized chilled water system using absorption chillers would reduce greenhouse gas emissions by reducing atmospheric leaks of greenhouse gases such as chlorofluorocarbons (CFC) and hydrofluorocarbons (HFC) used in refrigeration systems that are a potent greenhouse gases. According the Air Resources Board, these high global warming potential (GWP) gases pose a unique challenge because a few pounds of high GWP materials can have global warming effect equivalent to several tons of carbon dioxide. A centralized chilled system water operating an absorption chiller typically uses ammonia or water as a process fluid and reduces the use high-GWP gases by replacing compressor-driven air conditioning units with heat exchangers running on chilled water.

Solar water heating systems convert sunlight into thermal energy to heat water for use in homes and businesses. Solar water heating systems can offset up to 80 percent of the energy used to heat water in a single or multifamily home. The city can mitigate climate impacts by requiring new developments to install solar water heating.

The city can mitigate the climate impacts of the repowering project by implementing building energy standards that are more stringent than statewide standards under Title 24, Part 6. Many cities have adopted local standards that reach beyond the minimum requirements of Title 24.

PWP could mitigate climate impacts by deploying additional alternate fueling system infrastructure including electric vehicle charging stations or hydrogen fueling facilities. The city should look at the number of charging stations installed and determine where additional chargers would best be sited, how they should be priced, and set a deadline to have a full infrastructure in place. Greater adoption of EVs depends on drivers being more confident they will have charging stations when needed.

5. Project Energy Efficiency

Energy conversion efficiency is the ratio between the energy input of the system and the energy output, measured in BTUs. A combined cycle gas turbine, i.e., a gas turbine plus a steam turbine, achieves up to 60% energy conversion efficiency. 40% or more of the energy input in the form of natural gas is lost in the conversion of natural gas to electrical energy. A district heating/chilled water system can increase system efficiency to 85%.

Absorption chillers can use waste heat to refrigerate water and store it during the night in large tanks. This constitutes an effective way to store electrical energy and to increase energy efficiency by converting thermal energy into chilled water during off-peak evening hours. Chilled water can be sold to businesses for air conditioning use thus retiring the capital costs of the system. Chilled water is more valuable to local businesses than simply the energy savings that come from avoiding the cost of electric power to run air conditioners. Chilled water also significantly reduces the amount of equipment that businesses must buy and maintain for air conditioning purposes.

A chilled water program would be consistent with the PWP Energy Efficiency Partnering (EEP) program for non-residential customers. The EEP program, which was temporarily suspended in December, 2011, offered rebates for a range of different energy-saving projects including chilled water conversion projects. Alternatively, a hot-water system could potentially power remote absorption chiller units used for air conditioning.

A chilled water program would have the important benefit for PWP of reducing peak loads which occur when air conditioning loads rise on summer afternoons. To the extent that local businesses were using chilled water derived from waste heat, they would not require electrical energy for air conditioning during peak loads. Waste heat can be distributed concurrently with generation or stored using a chilled water system.

This would be an important contribution to PWP's goal of increasing local resources and reducing reliance on imported electric power, which would primarily be required during peak demand periods when local resources cannot meet demand. Further, the cost of peak power is considerably higher so the value of reducing peak period demand is considerably more than would occur at off-peak times.

Chilled water can be produced using waste heat and low-cost off-peak power during the night and stored in a chilled water thermal energy storage system such as the one used by U.C. Merced. The chilled water can then be used for cooling during peak energy demand periods when prices are highest. Chilled water is pumped through an air handler which cools the air. PWP residential peak use rate is almost twice its off-peak rate in summer. PWP has offered experimental time-of-use rates to customers with electric vehicles, which provides up to an 8.5 cent lower per kWh rate.

Cont'd

The EIR should evaluate whether the project constitutes an inefficient or unnecessary use of energy and discuss the energy efficiency of the project and the extent to which it will increase or decrease reliance on fossil fuels. The energy requirements of the project during the construction and operation phases should be identified. Energy conservation equipment and design features should be specified. The energy supplies that would serve the project should be identified.

6. Heat Island Effect

Temperatures in urban areas are typically higher than in surrounding rural areas due, among other things, to the waste heat that is put into the environment by the burning of fossil fuels.

The proposed project includes a 125 foot cooling tower which will release waste heat from the project adding to the urban heat island effect. On hot summer afternoons when the power plant is running at capacity to support air conditioning in the city, on the order of 50 percent of the heat energy produced by the burning of natural gas is being exhausted further heating the local environment. As the local environment heats up, more energy is required for air conditioning.

Many buildings in Pasadena that are taller than the cooling tower including the Parsons Corporate Headquarters at 200 feet, the AT&T Building at 197 feet, and the Concord Pasadena at 193 feet. The EIR should evaluate the urban heat island impacts of the project.

7. Alternatives Analysis

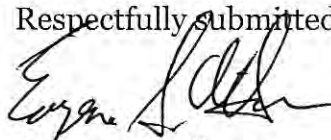
The extent to which additional electricity could be produced by renewable energy systems has not been considered in the EIR. There is no discussion of whether there are renewable energy resources in the area that can be utilized in a cost-effective manner to service part or all of the demand to be served by the project. The most likely would be solar, but there might also be biomass resources and CHP resources. The city is collecting yard waste separately but does not have a food scrap program for commercial restaurants or

Mr. Robert Avila, Management Analyst IV
December 15, 2012
Page 12

for homes, which could be utilized to produce energy through anaerobic digestion while furthering the city's zero waste goal.

Cont'd

Respectfully submitted,



Eugene S. Wilson

Enclosures

APPENDICES

- Appendix 1 Marin Energy Authority, Feed-In Tariff for Distributed Renewable Generation (FIT) (Nov. 2012).
- Appendix 2 SMUD, Feed-In Tarrif Procedures.
- Appendix 3 City of Palo Alto, Palo Alto CLEAN (Feed In Tarrif) (Dec. 2012).
- Appendix 4 Wikipedia, Feed-in-Tariff (Nov. 2012).
- Appendix 5 Pasadena Water and Power, The History of PWP (Dec. 2012).
- Appendix 6 Statewide Energy Efficiency Collaborative, City Planners' Energy Action Resource Guide (November, 2011).
- Appendix 7 California Energy Commission, Local Ordinances Exceeding the 2008 Building Energy Efficiency Standards (Dec. 2012).
- Appendix 8 City of Malibu, Local Energy Efficiency Standards Ordinance (April, 2011).
- Appendix 9 City of Pasadena, PWP Green Power Program (Nov. 2012).
- Appendix 10 California Public Utilities Commission, Renewable Energy Certificates and the California Renewables Portfolio Standard Program (Apr. 2006).
- Appendix 11 National Renewable Energy Laboratory, Status and Trends in U.S. Compliance and Voluntary Renewable Energy Certificate Markets (2010 Data) (Oct. 2011).
- Appendix 12 Austin Energy, Green Choice Program Details.
- Appendix 13 Austin Energy, Refrigerator Recycling.
- Appendix 14 San Diego Gas & Electric, Prepared Direct Testimony of Dawn Osborne on Behalf of San Diego Gas & Electric Company (Jan., 2012).
- Appendix 15 Farrell, J., Finding the More Cost-Effective Solar Policy (Oct. 2011).

- Appendix 16 Burbank Water & Power, Electric Vehicles (Dec. 2012).
- Appendix 17 ABM, EV Infrastructure 101: An Early Market Guide for Facility Managers (Dec. 2012).
- Appendix 18 ABM, City Installs Electric Vehicle Charging Stations Downtown (Dec. 2012).
- Appendix 19 ABM, The Linc Group Installs First Electric Vehicle Charging Stations for Laguna Beach Climate Protection Initiative (Dec. 2012).
- Appendix 20 ChargePoint, Create and EV-Friendly Community (Dec. 2012).
- Appendix 21 California Energy Commission, Sacramento Area Prepares for Electric Vehicles with Energy Commission Grant (Feb. 2012).
- Appendix 22 California Energy Commission, Energy Commission Grant Prepares LA Region for Electric Vehicles (April, 2012).
- Appendix 23 Brown, Edmund G., Executive Order 3-23-2012.
- Appendix 24 Wikipedia, General Electric LM6000.
- Appendix 25 Wikipedia, Thermal Efficiency.
- Appendix 26 Wikipedia, Energy Conversion Efficiency.
- Appendix 27 Rolls-Royce, Trent 60 (Nov. 2012).
- Appendix 28 Wikipedia, Heat Recovery Steam Generator (Nov. 2012).
- Appendix 29 Wikipedia, Combined Cycle (Nov. 2012).
- Appendix 30 UC Merced, Thermal Storage.
- Appendix 31 City of Pasadena, Electric Rate Information.
- Appendix 32 UC Merced, Not to Fast, Not too Slow: A Sustainable University Campus Community Sets an Achievable Trajectory Toward Zero Net Energy (August 2010).
- Appendix 33 Wikipedia, Thermal Energy Storage (Nov. 2012).
- Appendix 34 Brown, J., Clean Energy Jobs Plan.

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We, the undersigned, support the effort of the California Clean Energy Committee that the City of Pasadena require robust energy conservation, water conservation, and environmental stewardship in the Glenarm Power Plant Project:

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Petition for Energy Efficient Design Glenarm Power Plant Draft EIR

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Petition for Energy Efficient Design Glenarm Power Plant Draft EIR

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Petition for Energy Efficient Design Glenarm Power Plant Draft EIR

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We, the undersigned, support the effort of the California Clean Energy Committee that the City of Pasadena require robust energy conservation, water conservation, and environmental stewardship in the Glenarm Power Plant Project:

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LETTER NO. 11

California Clean Energy Committee
3502 Tanager Avenue
Davis, CA 95616
Eugene S. Wilson
December 14, 2012

RESPONSE 11-1

This comment provides a general introduction and summary of the California Clean Energy Committee and the comments raised in this letter. The comment states that more than 20 individuals in the City of Pasadena area have joined the California Clean Energy Committee's request that the Pasadena Water & Power Department be required to incorporate robust energy conservation, water conservation, and environmental stewardship into the Glenarm Repowering Project. The comment recommends that the project be modified either to incorporate district heating and cooling or to rely on renewable resources and energy efficiency. The comment also notes that a DVD was included containing electronic copies of all documents listed in the appendix to this comment letter. The commenter believes that there are a number of areas where the environmental impacts should be more carefully evaluated and where feasible mitigation measures should be adopted and the EIR revised and recirculated.

The comments provided in this letter, including the appendix attachments, will be incorporated into the Final EIR and will be made available to the decision makers. As discussed in the more detailed responses below, the project supports the City's efforts for robust energy conservation, water conservation, environmental stewardship, and use of renewable resources. The project incorporates energy efficiency in accordance with the State of California's goal to reduce greenhouse gas emissions. The project incorporates required and feasible mitigation measures. Accordingly, revision and recirculation are not required. Specific responses to the comments contained in this letter are provided below in **Responses 11-2** through **11-26**.

RESPONSE 11-2

This comment does not directly address the project or contents of the Draft EIR and instead constitutes a commentary on future water supply management and planning by Pasadena Water & Power, including provisions for alternative water sources outlined in their *2010 Urban Water Management Plan*. This commentary is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest that Pasadena Water & Power's future water supply planning may have potentially significant electrical energy and water supply impacts. While it is acknowledged that there is a potential for the future planned water supply projects to have a significant impact on electrical energy and water supplies, it would be merely speculative to predict such impacts now in this Draft EIR. Separate environmental review for the respective projects will be made by the City at the appropriate time in the future.

As stated in Response to Comment No. 7-3 below, the Draft EIR's analysis of water supply availability for the proposed project takes into account future water supply forecasts prepared by Pasadena Water and Power in their *2010 Urban Water Management Plan*, as well as their *Water Integrated Resources Plan*, adopted in

2011. These plans indicate that there will be sufficient water supplies available to meet the needs of the project, as well as those of related projects which may be built in the future and the needs of the residents and businesses in the City.

RESPONSE 11-3

As stated on page 4.H-24 in **Section 4.H, Water Supply**, of the Draft EIR, Unit GT-5 would use up to approximately 95 million gallons [293 acre-feet per year (afy)] of water annually. This calculation is based on a continuous annual operating schedule of 8,760 hours per year. As noted on page 2-6 in **Section 2.0, Project Description**, of the Draft EIR, "Unit GT-5 is likely to be used considerably less than 8,760 hours per year, as is the case with Unit B-3." As a result, the quantification of water use is considered conservative (i.e., likely to overstate actual water use).

Nonetheless, based on the conservative assumption, this would represent an increase over existing Unit B-3 of about 54 million gallons (167 afy) of water, as stated on page 4.H-24 of the Draft EIR. Unit GT-5 would use water more efficiently compared to existing Unit B-3. Unit GT-5 would use approximately 10,892 gallons per operational hour, whereas Unit B-3 uses approximately 20,459 gallons per operational hour. Thus, Unit GT-5 would reduce water use on a per-operational-hour basis by 53 percent. Accordingly for the same number of operating hours, Unit GT-5 would use less than half of the water currently used by existing Unit B-3 since the Unit GT-5 steam turbine capacity is five times smaller than the Unit B-3 steam turbine. As a result, the project would increase the Pasadena Water & Power Department's efficiency with respect to water demand.

Based on the conservatively estimated increase in water demand for Unit GT-5 that assumes continuous operation for 8,760 hours per year, project demand would fall within the Pasadena Water & Power Department's available and projected water supplies. As discuss on page 4.H-25 of the Draft EIR, the project would constitute approximately 5.1 percent of the City's total increase in water demand through 2035 and approximately 0.39 percent of the City's projected water demand for 2035. As such, the project's water demand would be less than significant on a project and cumulative basis.

RESPONSE 11-4

The project does not include the construction of infrastructure for recycled water because there is no current recycled water infrastructure anywhere within the City, and the phase of construction of the City's potential future recycled water project that may eventually serve the site is not proposed for construction in the reasonably foreseeable future. The project by itself does not have sufficient demand to feasibly finance the construction of the necessary infrastructure. As stated on page 4.H-23 in **Section 4.H, Water Supply**, of the Draft EIR, the Unit GT-5 would be required to use recycled water when the infrastructure is in place. In addition, as stated on page 4.H-25, the Pasadena Water & Power Department would be responsible for providing the necessary water infrastructure on the project site, as well as any extensions to connect the project site to existing water lines in the area. The recycled water connection would be located near the existing water meter serving the project if feasible, assuming that the meter is along or near the property line, adjacent to a major vehicle thoroughway or public right-of-way. However since the recycled water plans are not final the connection location would need to be determined at a later time. This is a sufficient commitment from the Pasadena Water & Power Department to utilize recycled water when the off-site infrastructure, which is not a part of the project, is in place. The analysis of the potential for water supply

impacts does not rely on the use of recycled water. As discussed in **Response 11-3**, impacts were determined to be less than significant. Thus, no further response is required.

RESPONSE 11-5

The analysis of the potential for water supply impacts does not rely on the use of recycled water. As discussed in **Response 11-3**, impacts were determined to be less than significant. However, if recycled water is used, the Pasadena Water & Power Department would install additional filters to treat the recycled water before sending it to the plant's existing water conditioning/demin system. The water will be conditioned to meet the once-through steam generator (OTSG) water chemistry regardless of the raw water source. Since the project is not proposed to use recycled water now, but will in the future only if recycled water and related infrastructure are brought to the plant, any analysis of the impacts on the project from the use of recycled water in the future would be part of a separate CEQA analysis, either in the recycled water project EIR, or in the environmental document drafted at the time that the power plant is proposed to switch to recycled water. There is no current recycled water infrastructure anywhere within the City, and the phase of construction of the City's potential future recycled water project that may eventually serve the site is not proposed for construction in the reasonably foreseeable future.

RESPONSE 11-6

The additional infrastructure required by using recycled water can vary based on the quality of the water being supplied from the waste water plant, and how much this quality varies throughout the day compared to potable water. Generally, recycled water would require monitoring for iron, ammonia and other possible constituents. Monitoring would require an inline monitoring and chemical dosing system. Prefiltration ahead of the demineralized water system would likely be an inline filter at a minimum, with the potential to have granular activated carbon (GAC) filters, alum injection, ultrasonic filtration or other filtration. Even with the prefiltration for the demin system, there could be accelerated degradation of the demineralization system equipment.

The plant has a space provision to add a water tank to store recycled water when city recycle water system is better defined, completed, and ready for use. The plant will install a water treatment system to condition the recycled water to meet the originally designed water supply analysis for the cooling tower and will be equipped with low clogging fill should Title 22 water become available. Cycles of concentration may be lower in the cooling tower, meaning more blow down to drain to remove suspended solids, if Title 22 water is used. Pre-filtration will likely be required, and additional chemical injection may be required to treat suspended particles.

As discussed in **Response 11-4** and **Response 11-5**, Pasadena Water & Power has sufficiently committed to using recycled water when the infrastructure is in place.

RESPONSE 11-7

The Draft EIR indicates that the cooling tower would result in evaporation of water into the atmosphere. As stated on page 4.D-17 in **Section 4.D, Greenhouse Gas Emissions**, of the Draft EIR, "[a]lthough the water used in the cooling towers is recycled, a small percentage of the water evaporates or is otherwise lost during the

process.” As discussed on page 4.H-23 in **Section 4.H, Water Supply**, of the Draft EIR, the “cooling tower will include drift eliminators to reduce the drift to less than 0.0005 percent of the inlet water flow. The drift eliminators capture water droplets prior to release into the atmosphere and return them to the cooling tower basin, reducing the losses in the cooling tower. In addition, for the GL LM6000 gas turbine option, an inlet air chiller will be included that will cause condensate to form on the inlet air coils of the chiller and be collected for reuse. As stated on page 4.H-23, “[t]he condensate will be directed for the cooling tower for use as make-up water, thereby reducing the amount of potable water required for make-up.” This design will partially compensate for the amount of water lost to the atmosphere during operation.

RESPONSE 11-8

The wet type cooling tower would be design to achieve 0.0005 percent drift loss which is the best available technology at the present. As stated on page 4.D-17 in **Section 4.D, Greenhouse Gas Emissions**, of the Draft EIR, “[a]lthough the water used in the cooling towers is recycled, a small percentage of the water evaporates or is otherwise lost during the process.” As discussed on page 4.H-23 in **Section 4.H, Water Supply**, of the Draft EIR, the “cooling tower will include drift eliminators to reduce the drift to less than 0.0005 percent of the inlet water flow. The drift eliminators capture water droplets prior to release into the atmosphere and return them to the cooling tower basin, reducing the losses in the cooling tower. In addition, for the GL LM6000 gas turbine option, an inlet air chiller will be included that will cause condensate to form on the inlet air coils of the chiller and be collected for reuse. As stated on page 4.H-23, “[t]he condensate will be directed for the cooling tower for use as make-up water, thereby reducing the amount of potable water required for make-up.” This design would limit the amount of water lost to the atmosphere during operation. These project features would reduce the potential for impacts of the project on water supply and would reduce cooling tower-related water vapor releases to the atmosphere. Impacts on water supply would thus be less than significant, as concluded in **Section 4.H** of the Draft EIR. Mitigation measures to reduce waste heat generated by the project and to increase thermal efficiency, in an effort to reduce water consumption, are not required.

RESPONSE 11-9

Greenhouse gas (GHG) emissions regulated by the State and Federal government are not a product of evaporative cooling. Furthermore, while water vapor is a greenhouse gas, information from the U.S. Geological Survey’s (USGS) “The Water Cycle: Evaporation”¹ states that natural processes, such as evaporation from oceans and rivers and transpiration from plants, contribute about 90 percent and 10 percent of the water vapor in our atmosphere, respectively. According to information from the U.S. Energy Information Administration’s (USEIA) “What are greenhouse gases and how do they affect the climate?”² water vapor produced directly by human activity contributes very little to the amount of water vapor in the atmosphere (less than 1 percent). As a result, the project itself would have no impact on the global climate with respect to water vapor emissions or water vapor concentrations in the atmosphere.

¹ USGS, “The Water Cycle: Evaporation,” <http://ga.water.usgs.gov/edu/watercycleevaporation.html>. Accessed February 2013.

² USEIA, “What are greenhouse gases and how do they affect the climate?” <http://www.eia.gov/tools/faqs/faq.cfm?id=81&t=11>. Accessed February 2013.

Unit GT-5 would use water more efficiently compared to existing Unit B-3. Unit GT-5 would use approximately 10,892 gallons per operational hour whereas Unit B-3 uses approximately 20,459 gallons per operational hour. Thus Unit GT-5 would reduce water use on a per operational hour basis by 53 percent. For the same number of operating hours, Unit GT-5 would use less than half of the water currently used by existing Unit B-3. As a result, the project would increase the Pasadena Water & Power Department's energy efficiency with respect to water conveyance and would reduce GHG emissions from water conveyance on a per-operational-hour basis.

RESPONSE 11-10

The commenter is including within the comment projects that are not proposed by the City, or is including within its comments to this EIR comments on other projects proposed to be undertaken by the City in the future, but not at this time. The suggestions do not amount to mitigation measures for the project, as they do not reduce impacts but instead would significantly increase impacts, and would have potentially significant effects of their own. Suggestions for future projects will be forwarded to the Pasadena Water & Power Department and the City Council, but cannot be analyzed in this EIR. It is not feasible for the project to install district heating and cooling for the following reasons:

- Unit GT-5 is not designed as a base load unit and will only operate to generate electricity when called upon by the California Independent System Operator (CAISO) and when electrical system reliability is needed. While the Draft EIR analyzed impacts for continuous operation (8,760 hours per year), this was done to satisfy the air quality permitting needs. The permit for Unit GT-5, which would be a new, efficient, and state-of-the-art turbine with advanced air pollution controls, seeks to allow the Pasadena Water & Power Department the flexibility to operate it for a maximum number of hours. Therefore, for permitting purposes, impacts are assessed based on a so-called potential-to-emit (PTE) basis assuming 8,760 hours per year of operation even though it is likely that Unit GT-5 may not actually operate for that length of time in any given year. The City notes, as explained in the Draft EIR on page 4.B-29, that Unit B-3, which Unit GT-5 will replace, is permitted to operate 8,760 hours and has historically operated for only 2,000 hours (approximately) per year. District heating and cooling requires a base load plant that operates all the time to meet the heating and cooling needs of customers on a 24 hours per day, seven days per week. These needs will not be met when Unit GT-5 is offline and not needed by CAISO.
- During the winter months, Pasadena's power plants are not typically running because the City's electrical load is low. District heating would force Pasadena to run units at a loss and would generate air pollutant emissions when it is not necessary. In the event that Unit GT-5 runs to support the district heating and cooling needs only, the Unit may violate the air permit when it operates at low loads and the efficiency would be penalize because the heat rate is very high at low loads. This may also result in a violation of the GHG requirements pursuant to Senate Bill (SB) 1368, which requires compliance with 1,100 pounds of carbon dioxide (CO₂) per megawatt-hour (MWh) (the lower the MW generation the higher the GHG emission rate).
- District heating and cooling would require redundancy to ensure that the customer needs are met all the time. The Pasadena Water & Power Department would install only one (1 x 1) combined cycle plant, which means one gas turbine and one steam generator. For district heating and cooling, the steam generator would supply the heat for heating and cooling use. If the steam generator is

unavailable due to major overhaul, maintenance, or experienced serious operational failures, there is no other plant (steam generator) to supply the needs of the customers. Conversion of existing Units GT-3 and GT-4 or Units GT-1 and GT-2 to combined cycle plants is not feasible because of space constraints. As a remedy, customers would have to maintain their own electrical heating and cooling as backup, which will force customers to maintain two systems.

- District heating and cooling requires additional equipment (chiller, pumps, and huge water tanks for storing chilled water at night). This additional equipment will not fit in the limited footprint of the project site.
- Trench arrangement would require additional piping for hot water return and chilled water return.
- District heating and cooling requires confirmation of heating and cooling loads as well as load characteristics (daily, monthly, yearly, seasonal) for customers. To meet this variability, the unit would need to be designed with duct burners. From an air quality permitting standpoint, this would increase the capacity of the unit and result in an increase in emissions (although it may be offset by an unknown quantity of water heaters that will not be used by customers – the City of Pasadena would not be able to quantify this value). As a result, the South Coast Air Quality Management District (SCAQMD) would require Pasadena to buy emission reduction credits (ERC) to offset these emissions. Presently, respirable particulate matter (PM10) offsets are very expensive if they become available.
- District heating and cooling would substantially increase plant operations and maintenance personnel to maintain the plant's additional equipment and piping and mechanical systems of customers. This may have significant impact on traffic and emissions.

Based on these reasons, it is not feasible for the project to install district heating and cooling.

RESPONSE 11-11

The economic feasibility calculations provided in the comment are flawed based on a number of reasons as discussed below:

- The table for the total cost of cooling water is based on 8,760 hours and at maximum load. As discussed in **Response 11-9**, the actual operating hours of the unit will likely be less than 8,760 hours and the unit will not be operating at maximum load all the time because it will operate on CAISO demand and reliability. While the Draft EIR analyzed impacts for continuous operation (8,760 hours per year), this was done to satisfy the air quality permitting needs. The permit for Unit GT-5, which would be a new, efficient, and state-of-the-art turbine with advanced air pollution controls, seeks to allow the Pasadena Water & Power Department the flexibility to operate it for a maximum number of hours. Therefore, for permitting purposes, impacts are assessed based on a so-called PTE basis assuming 8,760 hours per year of operation even though it is likely that Unit GT-5 may not actually operate for that length of time in any given year.
- Unit GT-5 does not include diversion of energy from cooling towers. In order to accomplish this, Unit GT-5 would be required to be designed with regenerative feedwater heaters. These are additional equipment which will not fit in the project footprint and is not needed for the designed operating purpose of the plant.

- The assumption of recovering half of the wasted energy in the combined cycle that results in the equivalent of 31 MW of energy production is not feasible. In addition, the efficiency improvement from 50 percent to 75 percent by recovering waste heat energy is not practical. In a combined cycle, such as Unit GT-5, the fuel heat input is the total energy introduced into the cycle that is partly converted to work and a portion is lost to the atmosphere. A part of this total energy is converted to electricity in the simple cycle (gas turbine) and the rest is used as heat input into the bottom cycle. The major part of heat input into the bottom cycle is utilized to generate steam in the OTSG and delivered to the steam turbine which is directly coupled to the electric generator to produce electricity. The remainder of the heat input into the bottom cycle is lost through the OTSG stack which cannot be recovered. In the steam turbine, the portion of the heat that is not converted to electricity is discharged to and lost in the condenser. Only a portion of heat loss through the condenser can be recovered by means of steam extraction system to support district heating and cooling. The savings should be calculated by the amount of fuel saved in recovering this waste heat energy. Hence, the fuel savings must not be correlated as a heat source for the extra MW output of the whole cycle. The actual savings will depend on cogeneration plant design and consumer demand.
- With regard to avoiding the purchase of CO₂ allowances, the savings must be calculated based on the CO₂ emissions of the fuel saved by recovering waste heat in the cycle by means of steam extraction system.

Based on these reasons, economic feasibility calculations provided in the comment are flawed and no revision to the Draft EIR is required.

RESPONSE 11-12

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance district heating and cooling, which is outside the scope of the Draft EIR. The suggestions do not constitute mitigation measures for the project, as they do not reduce impacts but instead would significantly increase impacts, and would have potentially significant effects of their own. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. As discussed in **Response 11-10**, district heating and cooling is not feasible and is beyond the scope of the project. As discussed on page 3-1 in **Section 3.0, General Description of the Environmental Setting**, of the Draft EIR, the project is consistent with the City of Pasadena Integrated Resource Plan (IRP), which serves as a blueprint for the Pasadena Water & Power Department to deliver reliable, environmentally responsible electricity service. The IRP recommends a reconfiguration of the Pasadena Water & Power Department's existing energy portfolio in order to significantly reduce GHG emissions by transitioning over the next two decades to a diverse and reliable mix of renewable energy resources and replacing existing Unit B-3 with a new natural-gas fueled electricity generating unit of approximately equivalent size. Replacement of existing Unit B-3 with a more efficient unit, such as Unit GT-5, would balance the City's increasing use of renewable energy resources, such as wind and solar, which are less predictable, while maintaining the stability and reliability of the electrical system.

The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include:³

- Reducing the import of power generated from high GHG-emitting resources (e.g., reducing coal power purchases by at least 35 MW by 2016);
- Replacing old technology at the local plant on Glenarm Street with a more efficient and reliable natural gas combined cycle plant;
- Implementing aggressive energy efficiency and load reduction programs;
- Increasing the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020;
- Achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024;
- Purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations); and
- Cutting carbon dioxide emissions by 40 percent by 2020.

While the project is not responsible for implementing all of the objectives of the IRP, the project is consistent with the key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant that complies with all applicable BACT requirements. As shown in the second to the last bulleted item, the IRP includes provisions for "feed-in" sources. Since the project supports the objectives of the IRP, mitigation is not required since "feed-in" sources are already included in the IRP.

RESPONSE 11-13

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance adoption of a feed-in-tariff program, which is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The project supports the City's efforts to utilize renewable sources in a cost-effective manner. As discussed on page 3-1 in **Section 3.0, *General Description of the Environmental Setting***, of the Draft EIR, the project is consistent with the City of Pasadena IRP, which serves as a blueprint for the Pasadena Water & Power Department to deliver reliable, environmentally responsible electricity service. The IRP recommends a reconfiguration of the Pasadena Water & Power Department's existing energy portfolio in order to significantly reduce GHG emissions by transitioning over the next two decades to a diverse and reliable mix of renewable energy resources and replacing existing Unit B-3 with a new natural-gas fueled electricity generating unit of approximately equivalent size. Replacement of existing Unit B-3 with a more efficient unit, such as Unit GT-

³ City of Pasadena, "Integrated Resource Plan," <http://ww2.cityofpasadena.net/waterandpower/IRP/default.asp>. Accessed February 2013.

5, would balance the City's increasing use of renewable energy resources, such as wind and solar, which are less predictable, while maintaining the stability and reliability of the electrical system.

The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include:⁴

- Reducing the import of power generated from high GHG-emitting resources (e.g., reducing coal power purchases by at least 35 MW by 2016);
- Replacing old technology at the local plant on Glenarm Street with a more efficient and reliable natural gas combined cycle plant;
- Implementing aggressive energy efficiency and load reduction programs;
- Increasing the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020;
- Achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024;
- Purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations); and
- Cutting carbon dioxide emissions by 40 percent by 2020.

While the project is not responsible for implementing all of the objectives of the IRP, the project is consistent with the key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant that complies with all applicable BACT requirements. As shown in the second to the last bulleted item, the IRP includes provisions for "feed-in" sources. The City is evaluating feed-in-tariff rates and terms as part of an on-going electric cost of service study. More information may be found at online at [http://www.thePasadenaWater & Power Departmentweb.com/IRP](http://www.thePasadenaWater&PowerDepartmentweb.com/IRP). Since the project supports the objectives of the IRP, mitigation is not required since "feed-in" sources are already included in the IRP.

RESPONSE 11-14

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance the Green Power Program, which is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. As discussed in **Response 11-13**, the project supports the City's efforts to utilize renewable sources in a cost-effective manner. As discussed on page 3-1 in **Section 3.0, General Description of the Environmental Setting**, of the Draft EIR, the project is consistent with the City of Pasadena IRP, which serves as a blueprint for the Pasadena Water & Power Department to deliver reliable, environmentally responsible electricity service. The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include objectives to: implement

⁴ City of Pasadena, "Integrated Resource Plan," <http://ww2.cityofpasadena.net/waterandpower/IRP/default.asp>. Accessed February 2013.

aggressive energy efficiency and load reduction programs; increase the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020; achieve 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024; and purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations). While the project is not responsible for implementing all of the objectives of the IRP, the project is consistent with and supportive of the key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and providing for local clean energy programs.

Revenues from the Pasadena Water & Power Department's Green Power Program are used to procure both short- and long-term contracts for renewable energy, and fund procurement of "net surplus energy" from local customer-owned solar projects. The Pasadena Water & Power Department offers the most generous net surplus compensation of any regional utilities. These revenues were instrumental in making the 564 kilowatt (kW) Windsor Reservoir Solar project financially feasible. The Windsor Reservoir Solar project is Pasadena's largest city-owned solar photovoltaic project to date and was officially connected to the municipal electric grid on May 31, 2011.

The California Energy Commission (CEC) has stated that natural gas-fired power plants cannot simply be replaced with renewable energy resources without endangering the reliability of the electric system:

*The Energy Commission's 'Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California' found that as California's integrated electricity system evolves to meet GHG emissions reduction targets, the operational characteristics associated with increasing renewable generation will increase the need for flexible generation to maintain grid reliability. The report asserts that natural gas-fired power plants are generally well-suited for this role and that **California cannot simply replace all natural gas fired power plants with renewable energy without endangering the safety and reliability of the electric system.**⁵ [emphasis added]*

Thus, while Unit GT-5 itself uses natural gas, it allows for the City to aggressively pursue renewable energy without endangering the safety and reliability of the electric system.

RESPONSE 11-15

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance adoption of a program to facilitate grid interconnection, which is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The City already has a program to facilitate grid interconnection by energy producers. Any customer interested in interconnecting with the Pasadena Water & Power Department's grid may obtain the necessary information by following our Regulation 23 (Distributed Generation Facilities Interconnection Requirements), which is available online at [http://www.the Pasadena Water & Power Departmentweb.com/SelfGeneration](http://www.thePasadenaWater.com/SelfGeneration).

⁵ CEC, 2009 Integrated Energy Policy Report, CEC-100-2009-003-CMF, December 5, 2007.

RESPONSE 11-16

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance adoption of a solar garden program, which is outside the scope of the Draft EIR. The suggestions do not amount to mitigation measures for the project, as they do not reduce impacts but instead would significantly increase impacts, and would have potentially significant effects of their own. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The Pasadena Water & Power Department has determined that offering a solar share program would not be financial feasible. However, the Pasadena Water & Power Department offers direct access to its retail customers, who are free to contract with any renewable resource provider they choose.

Nonetheless, the project supports the City's efforts to utilize renewable sources in a cost-effective manner. As discussed on page 3-1 in **Section 3.0, *General Description of the Environmental Setting***, of the Draft EIR, the project is consistent with the City of Pasadena IRP, which serves as a blueprint for the Pasadena Water & Power Department to deliver reliable, environmentally responsible electricity service. The IRP recommends a reconfiguration of the Pasadena Water & Power Department's existing energy portfolio in order to significantly reduce GHG emissions by transitioning over the next two decades to a diverse and reliable mix of renewable energy resources and replacing existing Unit B-3 with a new natural-gas fueled electricity generating unit of approximately equivalent size. Replacement of existing Unit B-3 with a more efficient unit, such as Unit GT-5, would balance the City's increasing use of renewable energy resources, such as wind and solar, which are less predictable, while maintaining the stability and reliability of the electrical system.

The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include implementing aggressive energy efficiency and load reduction programs; increasing the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020; achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024; purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations); and cutting carbon dioxide emissions by 40 percent by 2020.

While the project is not responsible for implementing all of the objectives of the IRP, the project is consistent with the IRP's key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant that complies with all applicable BACT requirements. As indicated above, the IRP includes provisions for "feed-in" sources. Since the project supports the objectives of the IRP and feed-in" sources are already included in the IRP, no mitigation is required.

RESPONSE 11-17

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance adoption of a refrigerator recycling program, which is outside the scope of the Draft EIR. The suggestions do not amount to mitigation measures for the project, as they do not reduce project-related impacts. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The Pasadena Water & Power Department already offers many energy efficiency programs to its

customers, including refrigerator recycling incentives for all residential customers and free refrigerator replacement and recycling for its income-qualified customers. More information is available online at [http://www.thePasadenaWater & Power Departmentweb.com/SaveMoney](http://www.thePasadenaWater&PowerDepartmentweb.com/SaveMoney).

RESPONSE 11-18

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance construction and operation of a centralized chilled water system, which is outside the scope of the Draft EIR. The suggestions do not amount to mitigation measures for the project, as they do not reduce impacts but instead would significantly increase impacts, and would have potentially significant effects of their own. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. With respect to the chilled water system suggested in the comment, such a system is not feasible due to space constraint. The system would require installation of large storage tanks that would not fit on the existing project footprint. In addition, as explained in **Response 11-10** a centralized system is infeasible because Unit GT-5 is not designed to provide base load power, and will be operated intermittently at the direction of CAISO. Thus a centralized chilled water system could not completely replace refrigeration units and the high GWP-materials they use.

RESPONSE 11-19

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance requiring new developments to install solar water heating systems, which is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The Pasadena Water & Power Department cannot mitigate the potential climate impacts (greenhouse gas emissions) arising from the project by requiring new off-site developments to install solar water heating because such a measure is beyond the scope and control of the project. However, as discussed in **Response 11-14**, the project supports the City's efforts to aggressively pursue local renewable energy without endangering the safety and reliability of the electric system. In addition, Pasadena residents qualify for solar water heating incentives through the Southern California Gas Company. More information is available online at <http://www.socalgas.com/for-your-home/rebates/solar-water-heating/index.shtml>.

RESPONSE 11-20

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance implementing building energy standards that are more stringent than the statewide standards under Title 24, Part 6. This is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The City has adopted local ordinances that go beyond the minimum requirements of Title 24 building standards. As discussed on page 4.D-7 in **Section 4.D, Greenhouse Gas Emissions**, in the Draft EIR, the City of Pasadena incorporated the California Green Building (CALGreen) Standards Code, with amendments, in Chapter 14.04.500 et seq. of its Municipal Code. The City's ordinance requires applicable projects to comply with specified provisions to reduce energy consumption, such as the use of low-slope cool roofs and exceeding regulatory requirements for energy

efficiency targets. The ordinance also supports use of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED®) Green Building Rating System as a standard by which a project may be measured as a green building. The ordinance allows applicable projects the flexibility to comply with voluntary measures to achieve a certain number of LEED-equivalent points. According to the amended CALGreen Standards Code, projects that are required to comply with Tier 1 standards include municipal buildings with 5,000 square feet or more of new construction. while Tier 2 standards apply to new municipal buildings or municipal renovations of 15,000 square feet or more. The proposed administrative/control room would be approximately 18,000 square feet; therefore, it would be required to comply with Tier 2 standards. According to the CALGreen standards, nonresidential buildings should achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards. The Tier 2 standards encourage, but do not require, nonresidential buildings to achieve a 30 percent reduction. Section 14.04.578 requires that Tier 2 projects achieve the equivalent of 50 LEED points through compliance with required and voluntary measures.

The project would incorporate project design features, such as compliance with the Tier 2 requirements of the City of Pasadena Green Building Standards. Under the City's Green Building Standards, renovation of the Glenarm Building to accommodate the control room as proposed under the project would be required to achieve the equivalent of a "Silver" rating from LEED® program, which would exceed the requirements of Title 24. Because this already defined as a project design feature, it is not required as a mitigation measure.

RESPONSE 11-21

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance construction and operation of alternative fueling system infrastructure, which is outside the scope of the Draft EIR. The suggestions do not amount to mitigation measures for the project, as they do not reduce impacts, and would have potentially significant effects of their own. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of encouraging clean energy and reducing GHG emissions. The Pasadena Water & Power Department supports electric vehicles by providing funding for the City's electric vehicle (EV) fleet and local charging infrastructure. More information is available online at <http://ww2.cityofpasadena.net/waterandpower/EV/default.asp>. In addition, the Pasadena Water & Power Department offers experimental time of use rates for EV owners, so they can save money by charging and using household energy off peak.

RESPONSE 11-22

This comment does not directly address the project or contents of the Draft EIR and instead constitutes commentary on City policy, in this instance Pasadena Water & Power's Energy Efficiency Partnering Program and the proposed development of a district chilled/heated water system, which is outside the scope of the Draft EIR. Nevertheless, it is understood that the comment is intended to suggest a course of action for the City to pursue for the purposes of improving energy efficiency and reducing GHG emissions.

As discussed in **Response 11-3**, Unit GT-5 would use water more efficiently compared to existing Unit B-3. Unit GT-5 would use approximately 10,892 gallons per operational hour, whereas Unit B-3 uses approximately 20,459 gallons per operational hour. Thus, Unit GT-5 would reduce water use on a per-

operational-hour basis by more than 53 percent. For the same number of operating hours, Unit GT-5 would use less than half of the water currently used by existing Unit B-3. As a result, the project would increase the Pasadena Water & Power Department's energy efficiency with respect to water conveyance.

The project would also provide reliable electricity in an efficient manner. The project would comply with and perform better than Emissions Performance Standards (EPS) requirements established by Senate SB 1368. As described on page 4.D-21 in **Section 4.D, Greenhouse Gas Emissions**, in the Draft EIR, SB 1368 establishes an emissions performance standard (EPS) of 1,100 pounds of CO₂ per MWh. As shown in **Table 4.D-4** in the Draft EIR, the project would be better than the EPS of 1,100 pounds of CO₂ per MWh under both configuration options (GE LM 6000 and Rolls Royce Trent 60). The City notes that the existing Unit B-3 emits GHGs at a rate of approximately 1,400 lb CO₂/MWh, and Unit GT-5 would represent an approximately 20 percent improvement in GHG emissions for the same power produced. Thus, Unit GT-5 would provide efficient and environmentally responsible electricity service.

With respect to the chilled water system recommended in the comment, such a system is not feasible due to space constraints. The system would require the installation of large water storage tanks and other infrastructure that would not fit on the existing Power Plant site, and would also require the installation of considerable off-site infrastructure as well as new equipment at the site of users. Because GT-5 will not be used for base load power production, but be used intermittently based on immediate needs as determined by CAISO and dispatchable within hours, it cannot be relied upon to run every night during the lengthy cooling season in Pasadena to produce chilled water for the next day's chilling needs.

RESPONSE 11-23

The project would require the installation of a 125-foot exhaust stack for the combustion of air pollutants, not a 125-foot cooling tower as stated in the comment.

As described in **Section 2.0, Project Description**, of the Draft EIR, the Glenarm Plant site is currently developed with the Glenarm Building, Pacific Electric Railway Substation No. 2, four natural gas turbine generators, and paved areas. The Broadway site is also similarly developed with a number of buildings and structures, three steam-generating units, and paved areas. Refer to Figure 2-2 in the Draft EIR for an aerial view of the project site. The project would not substantially increase the amount of developed, paved, or otherwise impervious surface area on the Glenarm Plant site and therefore would not incrementally contribute to the urban heat island effect because of surface area heating.

Similar to the existing Unit B-3, the proposed Unit GT-5 would operate to generate electricity to meet customer demand, when called upon by the California Independent Systems Operators (CAISO), and when electrical system reliability is needed. The Pasadena Water & Power Department has programs in place to reduce its potential contribution to the urban heat island effect, including any potential contribution from the proposed project and associated air conditioning use. The City recognizes that urban forests diminish the urban heat island effect and improves overall air quality. The City's Conservation and Open Space Element of the General Plan has goals and objectives to increase the tree canopy of the City by 5 percent by 2020, and to increase the number of trees in the City in order to decrease the urban heat island effect and improve overall air quality. Consistent with the City's goals and objectives, the Pasadena Water & Power

Department has a “Cool Trees Program,” by which means the City intends to achieve its goal of increasing the tree canopy of the City by 5 percent by 2020. To ameliorate the urban heat island effect and the running of air conditioning units on hot days, the Pasadena Water & Power Department “Cool Trees Program” offers rebates up to \$50 as an incentive for residents to plant shade trees around their houses. More information is available online at <http://ww2.cityofpasadena.net/waterandpower/cooltrees/default.asp>. Therefore, the project and implementation of the existing the Pasadena Water & Power Department programs would not result in a substantial change in the urban heat island effect relative to waste heat and air conditioning use.

As stated on page 4.B-33 in **Section 4.B, Air Quality**, of the Draft EIR, the project would reduce lighting demand by at least 20 percent from existing conditions and would utilize energy-efficient and Energy Star eligible heating, ventilation, and air conditioning (HVAC) equipment and appliances. These project design features would reduce the project’s potential to incrementally contribute to the urban heat island effect relative to area lighting and appliances.

Based on these reasons, the project would not contribute substantially to any existing heat island impacts, and therefore this impact was determined to be less than significant.

RESPONSE 11-24

Alternatives to the project that were considered but rejected are described in **Section 5.0, Alternatives**, in the Draft EIR. In subsection C.2 of that chapter (*Alternatives Considered but Rejected*), a number of alternative sources of energy, including but not limited to, solar, wind, geothermal, hydroelectric, and landfill gas, are discussed and were determined to be infeasible or to not meet the majority of project objectives, based on reliability, availability, and other considerations. The Pasadena Water & Power Department performed an exhaustive analysis of alternative conservation scenarios and supply portfolios to cost-effectively meet reliability and environmental objectives. As a result, the Pasadena Water & Power Department has adopted a Renewable Portfolio Standard targeting 40 percent by 2020, which is 7 percent higher than the state’s statutory goal of 33 percent by 2020. Of this renewable supply, 19 MW is to be derived from local solar, with an additional 10 MW of local distributed renewables to be derived from a forthcoming feed-in-tariff program.

With respect to a solar power alternative, as discussed in **Section 5.0** in the Draft EIR, the CEC has identified areas within the State with high potential for viable solar, wind, and geothermal energy production. Although Los Angeles as a County has a relatively high photovoltaic potential of 3,912,346 MWh/day, inland counties such as Inyo (10,047,177 MWh/day), Riverside (7,811,694 MWh/day), and San Bernardino (25,338,276 MWh/day) are more suitable for large-scale solar power generation. In addition, most of the high potential areas of greater than 6 kWh/sqm/day in Los Angeles County are concentrated in the northeastern corner of the County around Lancaster, approximately 40 miles away from Pasadena.

The 2009 IRP Report considered a high solar portfolio option; however, the option was eliminated from consideration based on the cost and risks in excess of established plan metrics. While the high solar option would achieve substantial GHG emission reductions, it could also increase the Pasadena Water & Power Department’s exposure to reliability and commodity market risks because of their intermittent and unpredictable delivery patterns. As such, the high solar option would not provide for mandated capacity

(i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale solar energy generation to supply the majority of Pasadena's energy demands is not feasible. Nonetheless, the IRP proposes increased production of local solar energy by the following timeline: 3 MW by 2010, 10 MW by 2015, 15 MW by 2020, and 19 MW by 2024.

Landfill gas is limited by general resource availability in the area. The 2009 IRP Report considered a high landfill gas portfolio option; however, the option was eliminated from consideration due to the uncertainty associated with their general availability and with regard to transmission to the Pasadena Water & Power Department. As such, landfill gas would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale landfill gas energy generation to supply the majority of Pasadena's energy demands is not feasible. Refer to **Section 5.0** in the Draft EIR for a detailed discussion of the alternatives considered.

The project supports the City's efforts to utilize renewable sources in a cost-effective manner. As discussed on page 3-1 in **Section 3.0, General Description of the Environmental Setting**, of the Draft EIR, the project is consistent with the IRP, which serves as a blueprint for the Pasadena Water & Power Department to deliver reliable, environmentally responsible electricity service. The IRP recommends a reconfiguration of the Pasadena Water & Power Department's existing energy portfolio in order to significantly reduce GHG emissions by transitioning over the next two decades to a diverse and reliable mix of renewable energy resources and replacing existing Unit B-3 with a new natural-gas fueled electricity generating unit of approximately equivalent size. Replacement of existing Unit B-3 with a more efficient unit, such as Unit GT-5, would balance the City's increasing use of renewable energy resources, such as wind and solar, which are less predictable, while maintaining the stability and reliability of the electrical system. The CEC has stated that natural gas-fired power plants cannot simply be replaced with renewable energy resources without endangering the reliability of the electric system:

*The Energy Commission's 'Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California' found that as California's integrated electricity system evolves to meet GHG emissions reduction targets, the operational characteristics associated with increasing renewable generation will increase the need for flexible generation to maintain grid reliability. The report asserts that natural gas-fired power plants are generally well-suited for this role and that **California cannot simply replace all natural gas fired power plants with renewable energy without endangering the safety and reliability of the electric system.**⁶ [emphasis added]*

While the project is consistent with the IRP, it would result in greenhouse gas (GHG) emissions that would be considered significant, as shown in **Table 4.D-3 in Section 4.D, Greenhouse Gas Emissions**, of the Draft EIR. The primary source of the GHG emissions would result from power generation from Unit GT-5, which would represent approximately 99.9 percent of the project's total estimated GHG emissions. The GHG emissions shown in Table 4.D-3 represent potential maximum annual GHG emissions under a worst-case operational schedule of 750 shutdowns, 750 startups, and 8,760 continuous hours of operation per year. While the maximum annual increase in emissions are considered potentially significant, the project would result in

⁶ CEC, 2009 Integrated Energy Policy Report, CEC-100-2009-003-CMF, December 5, 2007.

GHG emissions which are lower per kilowatt hour than the existing inefficient unit and in full compliance with the Global Warming Solutions Act of 2006 [Assembly Bill (AB) 32]. AB 32 requires the State to reduce its GHG emissions to 1990 levels by 2020. As discussed on page 4.D-5 of the Draft EIR, under AB 32:

[A]pproximately 85 percent of the State's GHG emissions are subject to the cap-and-trade program where covered sectors are placed under a declining emissions cap. The emissions cap incorporates a margin of safety whereby the 2020 emissions limit will still be achieved even in the event that uncapped sectors do not fully meet their anticipated emission reductions.

The Pasadena Water & Power Department is an entity covered by the cap-and-trade program and is thus subject to compliance obligations. As such, the Pasadena Water & Power Department would reduce its GHG emissions, including GHG emissions from the project (if approved and operational) in accordance with its declining emissions allocations pursuant to AB 32.

The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include:⁷

- Reducing the import of power generated from high GHG-emitting resources (e.g., reducing coal power purchases by at least 35 MW by 2016);
- Replacing old technology at the local plant on Glenarm Street with a more efficient and reliable natural gas combined cycle plant;
- Implementing aggressive energy efficiency and load reduction programs;
- Increasing the proportion of green power in the Pasadena Water & Power Department's mix to 40 percent by 2020;
- Achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024;
- Purchasing 10 MW of renewable power from "feed-in" sources within Pasadena (e.g., private solar installations); and
- Cutting carbon dioxide emissions by 40 percent by 2020.

While the project is not responsible for implementing all of the objectives of the IRP, it is consistent with the key goals of reducing the Pasadena Water & Power Department's reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant that complies with all applicable BACT requirements. The project would be a combined-cycle natural gas fueled power generation unit, which is the best technology available for natural gas fueled power generating equipment. The project would comply with and perform better than Emissions Performance Standards (EPS) requirements established by Senate Bill (SB) 1368. Thus, the project would support the IRP and implementation of its goals of increasing energy efficiency, reducing load, increasing renewable power

⁷ City of Pasadena, "Integrated Resource Plan," <http://ww2.cityofpasadena.net/waterandpower/IRP/default.asp>. Accessed February 2013.

generation and purchases, and reducing GHG emissions without sacrificing the safety and reliability of the electric system.

In addition, the project would incorporate project design features that would reduce GHG emissions from other sources. The project would comply with the Tier 2 requirements of the City of Pasadena Green Building Standards. Under the City's Green Building Standards, the renovation of the Glenarm Building to accommodate the control room as proposed under the project would be required to achieve the equivalent of a "Silver" rating from the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED)® green building program. Implementation of the project design features would provide flexibility to the project to achieve GHG reductions in the most cost-effective and efficient means possible.

RESPONSE 11-25

Comment 7-25 is an attachment to the comment letter provided by the California Clean Energy Committee, and contains a list of the 87 appendices provided on the compact disc that accompanied the comment letter. The incorporation of reference documents as appendices to the comment letter is noted. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

RESPONSE 11-26

Comment 7-26 is an attachment to the comment letter provided by the California Clean Energy Committee, and contains a petition entitled *Petition for Energy Efficient Design Glenarm Power Plant Draft EIR* containing 25 signatures is noted. In the petition, the signatories agree to support the effort of the California Clear Energy Committee for robust conservation efforts at the Pasadena Water & Power Department. The incorporation of the petition into the comment letter is noted. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

December 21, 2012

Robert Avila, Management Analyst IV
Pasadena Water & Power
85 East State Street
Pasadena, CA 91105-3418

RE: Glenarm Power Plant Repowering Project DEIR Comments



Dear Mr. Avila,

Pasadena Heritage continues to monitor the proposed Glenarm Power Plant Repowering Project for potential adverse impacts on historic resources. As you might recall, our organization attended the Scoping Meeting for this project on October 6, 2011, and provided comments during that initial public hearing. These comments included: 1.) the EIR should include renderings and/or descriptions for the proposed interior work, including a discussion of historic features that might be removed or altered, and the impact to the building's integrity; 2.) the EIR should include renderings and/or elevations for the proposed new east and south openings, and a discussion of the impact to the building's integrity; 3.) it should be determined if the smoke stack proposed to be demolished is from building's period of significance, if so, consider decommissioning, rather than demolishing.

In addition, we attended a site visit with representatives from Pasadena Water & Power and the EIR consultant team on November 28, 2011, and provided additional comments in writing following that meeting. These comments included: 1.) the EIR should disclose if the proposed demolition of character-defining features would result in a loss of integrity to the extent that the Pasadena Monument designation of the Glenarm Power Plant could be threatened; 2.) the EIR should include a project alternative that does not involve the removal of character-defining features, so that the two options and their associated impacts can be compared.

After reviewing the DEIR (dated November 2012), we would like to provide additional comments in response to the content of the DEIR document, specifically the Cultural Resources chapter (Section 4.C) and the associated Mitigation Measures:

With regard to the boilers located in the southwestern portion of the building, we would like to clarify that although the statement that they are not character-defining features is technically correct (Page 4.C-16), the City Council's Pasadena Monument designation of February 4, 2008, acknowledged the boilers were "features of secondary importance." So while the intent may not have been to protect the boilers to the same degree as those features specifically identified as "character-defining," there was a degree of importance ascribed to the boilers.

The project features description indicates that an approximately 18,000 square-foot administrative/control room facility would be added "entirely within the southeastern portion" of the building's interior (Page 4.C-15). Since the floor area currently occupied by the boilers in

the southwestern portion of the building is not needed to accommodate the administrative use, it is unclear why the boilers are being proposed for demolition. This is concerning, not only because of the secondary importance of the boilers themselves, but also because their removal will result in the loss of the “floor-to-ceiling hallway” between the boilers with its associated control panels, burner fronts, and “floating master gauge,” which are character-defining features. **In order to avoid this impact to cultural resources, we suggest that the boilers not be demolished, and that any asbestos and/or lead conditions associated with boilers be treated in a manner that allows the boilers to remain in place.**

Cont'd

In the event the project scope cannot be altered to avoid this impact, we suggest the following improvements to strengthen Mitigation Measures CULT-1, CULT-2, and CULT-3, which are intended to reduce the impact to less than significant:

The implementation of Mitigation Measure CULT-1: Recordation and Photography can be improved by linking the requirement for HABS Level III documentation to a condition of approval. This can be accomplished by requiring that **the HABS report shall be completed prior to the issuance demolition and construction permits** for the project, rather than simply “prior to the removal and before the commencement of construction activities.”

The implementation of Mitigation Measure CULT-2: Interpretive Architectural Exhibit can be improved by linking the requirement for construction of an interpretive exhibit in the location of the existing character-defining hallway to a condition of approval. This can be accomplished by requiring that **the display shall be installed prior to the issuance of a certificate of occupancy** for the building. In addition, as the local historic preservation organization that submitted the nomination for Pasadena Monument designation of the Glenarm Plant, **Pasadena Heritage requests that MM CULT-2 include a requirement that our organization be consulted during the planning phase of the interpretive exhibit and afforded the opportunity to provide input regarding its design and installation.**

MM CULT-2 also indicates that if features of the hallway are destroyed during demolition of the boilers, new in-kind replacements shall be constructed. Preservation of the original historic fabric, rather than construction of replacements, is preferred. Mitigation Measure CULT-3: Demolition Monitoring can be strengthened to help avoid damage to historic fabric and character-defining features. MM CULT-3 should specify that:

- **A “qualified historic architect” shall prepare and review the demolition plan and monitor the demolition and construction, rather than a “qualified preservation consultant.”**
- **The demolition plan shall include a protection plan that details procedures, materials, and sequence of operations necessary to protect existing materials from damage.**
- **Protection shall be provided to existing historic materials wherever encountered adjacent to proposed demolition or construction work to prevent damage to or marring of materials, surfaces, and finishes. Such protection shall be of sufficient size**

and thickness to withstand impact from falling debris; rolling objects such as equipment, machinery and handcarts; movement of materials and debris; and residue from flame cuttings such as sparks.

- **The demolition plan shall be completed prior to the issuance of demolition and construction permits for the project.**
- **Demolition and construction monitoring by a historic architect shall occur on a weekly basis and the historic architect shall prepare and submit reports with photographs of the work at 50% and 100% completion.**

Cont'd

The description of project features indicates the seismic and other improvements necessary to designate the building as an essential facility would be “conducted according to the guidelines set forth in the Secretary of the Interior’s Standards” (Page 4.C-15). To ensure this is accomplished, a mitigation measure should be added that states **the project team shall include an engineer with historic preservation expertise and a qualified historic architect and that the proposed rehabilitation of the building shall comply with the Secretary of the Interior’s Standards for Rehabilitation.** Also, to prevent the loss of historic fabric and character-defining features without any real plan for a replacement use, we suggest a mitigation measure be added that states **a demolition permit for the boilers and adjacent hallway shall not be issued until there is an approved plan for the use of the space they currently occupy.**

Thank you for the opportunity to provide these comments in response to the Draft EIR. We look forward to reviewing and commenting on the Final EIR when it becomes available.

Sincerely,



Jenna Kachour
Preservation Director

LETTER NO. 12

Pasadena Heritage
651 South Saint John Avenue
Pasadena, California 91105-2913
Jenna Kachour, Preservation Director
December 21, 2012

RESPONSE 12-1

Section 4.C, *Cultural Resources*, of the Draft EIR provides descriptions of the proposed interior work within the Glenarm Building, including a discussion of existing character-defining features listed during the City Historic Monument designation process, and a comprehensive discussion of which features will be removed or altered by the proposed project. **Section 2.0, *Project Description***, of the Draft EIR includes conceptual renderings of the new proposed window openings on the south and east elevations of the Glenarm Building. Based on historic photos, the existing stack on the southwest corner of the Glenarm Building was constructed after the building's period of significance.

RESPONSE 12-2

As part of the designation of the Glenarm Building as a City of Pasadena Historic Monument, the existing boilers in the southwest portion of the building were deemed to be features of secondary significance. Features of secondary significance are acknowledged to add to the significance of a historic property. However, removal of such features does not detract from the overall significance of a historic property.

RESPONSE 12-3

The boilers were identified as features of secondary significance in the Planning Department staff report recommending the Glenarm Building for designation as a City of Pasadena Historic Monument. While the southwestern portion of the Glenarm Building is not needed for the proposed project (i.e., to house the proposed control room or administrative offices), there is a risk of the asbestos that is present in that part of the building entering the proposed new control room/administrative offices in the building through the air distribution system. Asbestos can sometimes be encapsulated in place; however, given the size and age of the boilers and associated structural supports, and their structural instability, the risk remains for asbestos to contaminate other areas of the building through the through the heating, ventilation, and air conditioning system. The Pasadena Water and Power Department has determined that asbestos removal, rather than encapsulation, is the safest option for the project. As stated in mitigation measure CULT-2, the character-defining features of the floor-to-ceiling hall, including the boiler fronts, control panels, burner fronts, and floating master gauge, would be retained and incorporated into an interpretive architectural exhibit describing the past operations of the Glenarm Power Plant.

RESPONSE 12-4

This comment requests that the original mitigation measure CULT-1 as set forth in the Draft EIR, which requires HABS Level III documentation of the Glenarm Building prior to the removal of interior equipment and commencement of construction activities, be amended to condition City issuance of demolition and

building permits for the Glenarm Building on receipt of the completed HABS documentation required by this measure. This requested amendment has been incorporated into the original mitigation measure CULT-1. Please see the amended text of this measure in **Section 3.0, Corrections and Additions to the Draft EIR**, in this Final EIR. The amended mitigation measure has also been incorporated into **Section 4.0, Mitigation Monitoring and Reporting Program**, of this Final EIR.

RESPONSE 12-5

This comment requests that mitigation measure CULT-2 be amended to condition City issuance of the Glenarm Building certificate of occupancy on the completed installation of the interpretive architectural exhibit required by this measure. The commenter further requests that Pasadena Heritage be consulted during the planning phase for the interpretive architectural exhibit and given the opportunity to provide input.

This comment also recommends specific amendments to mitigation measures CULT-2 and CULT-3, as set forth in the Draft EIR, to better protect existing character-defining features within the Glenarm Building during demolition and reduce the potential need to reconstruct such features in the event they are destroyed. The recommendations include retention of a qualified historic architect, rather than a preservation consultant, to prepare and review demolition plans for affected features of the Glenarm Building and to conduct monitoring; specific protection plan practices to be incorporated into the demolition plan; a requirement for completion of the demolition plans prior to City issuance of demolition and building permits; and a requirement for weekly submittal of construction monitoring reports to the City by a historic architect, as well as submittal of reports, with photographs, at 50 percent and 100 percent demolition completion milestones.

These requested amendments have been incorporated into the original mitigation measure CULT-3, which addresses demolition within the Glenarm Building. Please see the amended text of this measure in **Section 3.0, Corrections and Additions to the Draft EIR**, in this Final EIR. The amended mitigation measure has also been incorporated into **Section 4.0, Mitigation Monitoring and Reporting Program**, of this Final EIR.

RESPONSE 12-6

As stated on page 4.C-13 of **Section 4.C, Cultural Resources**, of the Draft EIR, the seismic retrofitting of the Glenarm Building would be conducted in compliance with the guidelines set forth in the Secretary of Interior's Standards for Rehabilitation ("Standards"), and potential impacts on character-defining features of the building were determined to be less than significant, with no mitigation required. This comment requests that the project team include a Historic Engineer and Historic Architect to ensure compliance with the Standards. The original mitigation measure CULT-3 as set forth in the Draft EIR, which requires construction monitoring throughout the duration of demolition and construction within the Glenarm Building, has been amended to incorporate this request. Please see the amended text of this measure in **Section 3.0, Corrections and Additions to the Draft EIR**, of this Final EIR. The amended mitigation measure has also been incorporated into **Section 4.0, Mitigation Monitoring and Reporting Program**, of this Final EIR.

RESPONSE 12-7

Mitigation measure CULT-3 in **Section 4.C, *Cultural Resources***, of the Draft EIR, ensures that demolition within the Glenarm Building, including demolition and removal of the boilers within the Boiler Room, would be conducted in accordance with a demolition plan to be approved in advance by the City of Pasadena Design and Historic Preservation Section. Furthermore, as discussed in **Response 12-5**, the original mitigation measure CULT-3, as set forth in the Draft EIR, has been amended in this Final EIR to incorporate recommendations from Pasadena Heritage to better protect existing character-defining features within the Glenarm Building during demolition, and to condition issuance of demolition and building permits for the Glenarm Building on City receipt and approval of the demolition plan.

It is infeasible to delay demolition and removal of the boilers until there is an approved plan for the space they currently occupy, because the Pasadena Water and Power Department has determined that the boilers are 1) structurally unstable (together with their structural supports) and represent a hazard to construction and City employees working in the building due to the potential for collapse and falling debris, and 2) coated in asbestos that cannot safely and completely be removed with the boilers in place, which could contaminate other parts of the building (see also **Response 12-3** for discussion of this issue). While the commenter is correct that there is no current plan for the space the boilers currently occupy, since proposed new construction in the Glenarm Building would take place in the southeast portion of the building and would not directly result in boiler removal, the continued presence of the boilers in the building represents an unacceptable health hazard during project construction and operation.

ADAMS BROADWELL JOSEPH & CARDOZO

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JAMIE L. MAULDIN
ROBYN C. PURCHIA
ELLEN L. TRESKOTT

OF COUNSEL
THOMAS R. ADAMS
ANN BROADWELL

November 16, 2012

Via U.S. Mail and Email

Vincent P. Bertoni, AICP
Director, Planning & Community Development Administration
City of Pasadena Environmental Administrator
Planning and Development
175 N. Garfield Ave.
Pasadena, CA 91101-7125
Email: vbertoni@cityofpasadena.net

Via U.S. Mail and Fax

Mark Jomsky
City Clerk
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91109
Fax: (626) 744-4190

Public Records Coordinator
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91109
Fax: (626) 744-4190

Re: **CEQA and Public Records Act Request – Glenarm Repowering Project**

Dear Public Records Coordinator, Mr. Bertoni and Mr. Jomsky:

2657-011ev

We are writing on behalf of the California Unions for Reliable Energy (“CURE”) to request immediate access to any and all public documents in the City of Pasadena’s (“City”) possession or control regarding the Glenarm Power Plant Repowering Project (“Project”) at 43 East State Street/72 East Glenarm Street, since the date of our last request on November 29, 2011. Our request includes, but is not limited to:

Cont’d

1. Any and all materials referenced or relied upon in the Draft Environmental Impact Report (“DEIR”) prepared for the Project; and
2. Any and all correspondence, resolutions, memos, notes, analysis, electronic mail messages, files, maps, charts, and/or any other documents by, to, or from the City Staff and/or the Applicant, any other landowners/applicants and/or any other party or agency referring to or relating to the Project.

This request *excludes* the DEIR and any documents already made available online. If any of the requested items are available on the Internet, we request that the City direct us to the appropriate links for accessing the documents.

Our request for all materials referenced or relied upon in the DEIR is made pursuant to the California Environmental Quality Act, which requires that all documents referenced in an environmental review document be made available to the public for the entire comment period.¹

This request is also made pursuant to the California Public Records Act.² We request the above documents pursuant to section 6253(a) of the Public Records Act. This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of the government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

¹ See Pub. Resources Code, § 21092, subd. (b)(1); 14 Cal. Code Reg. § 15087, subd. (c)(5).

² Gov. Code, §§ 6250, et seq.

2657-011ev

November 16, 2012

Page 3

We will pay for any direct costs of duplication associated with copying public records responsive to this request up to \$200. However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Cont'd

Pursuant to Government Code Section 6253.9, if the requested documents are in electronic format and are 10 MB or less (or can be easily broken into sections of 10 MB or less), please email them to me as attachments.

My contact information is:

U.S. Mail

Janet Laurain
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

jlaurain@adamsbroadwell.com

Please call me if you have any questions. Thank you for your assistance with this matter.

Sincerely,


Janet Laurain
Environmental Paralegal

JML:clv

cc: Dan Angeles, *via email*, dangeles@cityofpasadena.net

2657-011cv

2-143

LETTER NO. 13

California Unions for Reliable Energy (CURE)
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037
Rachael E. Koss
November 16, 2012

RESPONSE 13-1

All documents used in the preparation of the Draft EIR are referenced in that document. All reference documents cited in the document are either included as appendices, available on-line, or available as hard copies for viewing at the City of Pasadena Permit Center, 175 North Garfield Avenue, Pasadena. As with documents and correspondence cited in the Draft EIR, all other documents, including e-mail correspondence between the City and the EIR preparer and contracts between the parties are public record and are available for viewing at 175 North Garfield.

The California Public Records Act requires the provision of any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics. Although the Public Records Act requires the agency to assist the public in identifying related information and to provide a physical location in which the records exist, it is not the duty of the agency to deliver copies to the requester. The City submitted to CURE the requested public documents in the City's possession and control regarding the Glenarm Repowering project on December 6, 2012. The submission included documents dating from November 29, 2011 to November 16, 2012.

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

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ELLEN L. TRESPOTT

OF COUNSEL
THOMAS R. ADAMS
ANN BROADWELL

November 28, 2012

Via U.S. Mail and Email

Vincent P. Bertoni, AICP
Director, Planning & Community Development Administration
City of Pasadena Environmental Administrator
Planning and Development
175 N. Garfield Ave.
Pasadena, CA 91101-7125
Email: vbertoni@cityofpasadena.net

Via U.S. Mail and Fax

Mark Jomsky
City Clerk
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

Public Records Coordinator
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

Re: Public Records Act Request – Glenarm Repowering Project –
Phase I Environmental Site Assessment

Dear Public Records Coordinator, Mr. Bertoni and Mr. Jomsky:

We are writing on behalf of the California Unions for Reliable Energy (“CURE”) to request immediate access to any Phase I Environmental Site

2657-014ev

November 28, 2012
Page 2

Assessment prepared for the Glenarm Power Plant Repowering Project located at 43 East State Street/72 East Glenarm Street.

Cont'd

This request is made pursuant to the California Public Records Act.¹ We request the above document pursuant to section 6253(a) of the Public Records Act. This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of the government.

We will pay for any direct costs of duplication associated with copying the requested document up to \$200. However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the document.

Pursuant to Government Code Section 6253.9, if the requested document is in electronic format and is 10 MB or less (or can be easily broken into sections of 10 MB or less), please email it to me as an attachment(s).

My contact information is:

U.S. Mail

Rachael Koss
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

rkoss@adamsbroadwell.com


¹ Gov. Code, §§ 6250, et seq.
2657-014cv

November 28, 2012
Page 3

Please call me if you have any questions. Thank you for your assistance with this matter.

Cont'd

Sincerely,



Rachael E. Koss

REK:clv

LETTER NO. 14

California Unions for Reliable Energy (CURE)
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037
Rachael E. Koss
November 28, 2012

RESPONSE 14-1

All documents used in the preparation of the Draft EIR are referenced in that document. All reference documents cited in the document are either included as appendices (as is the case for the Limited Phase II Environmental Assessment report prepared for the project site, which is specifically cited in the comment), available on-line, or available as hard copies for viewing at the City of Pasadena Permit Center, 175 North Garfield Avenue, Pasadena. As with documents and correspondence cited in the Draft EIR, all other documents, including e-mail correspondence between the City and the EIR preparer and contracts between the parties are public record and are available for viewing at 175 North Garfield Avenue.

The California Public Records Act requires the provision of any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics. Although the Public Records Act requires the agency to assist the public in identifying related information and to provide a physical location in which the records exist, it is not the duty of the agency to deliver copies to the requester. The City submitted to CURE the requested public documents in the City's possession and control regarding the Glenarm Repowering project on December 6, 2012. The submission included documents dating from November 29, 2011 to November 16, 2012.

ADAMS BROADWELL JOSEPH & CARDOZO

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ROBYN C. PURCHIA
ELLEN I. TRESMOTT

OF COUNSEL
THOMAS R. ADAMS
ANN BROADWELL

December 14, 2012

Via U.S. Mail and Email

PWP
• Vincent P. Bertoni, AICP
Director, Planning & Community Development Administration
City of Pasadena Environmental Administrator
Planning and Development
175 N. Garfield Ave.
Pasadena, CA 91101-7125
Email: vbertoni@cityofpasadena.net

Via U.S. Mail and Fax

Mark Jomsky
City Clerk
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

Public Records Coordinator
City of Pasadena
Office of the City Attorney/Prosecutor
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

Re: Public Records Act Request – Glenarm Repowering Project –
Former Municipal Incinerator

Dear Public Records Coordinator, Mr. Bertoni and Mr. Jomsky:

We are writing on behalf of the California Unions for Reliable Energy (“CURE”) to request immediate access to any and all public documents in the City

2657-016cv

of Pasadena's possession or control regarding a former municipal incinerator located on the Glenarm Power Plant Repowering Project site. The attached 1961 Certified Sanborn Map (Attachment 1) shows the exact location of the former incinerator (shown in the circle adjacent to the Broadway Steam Plant).

Cont'd

This request is made pursuant to the California Public Records Act.¹ We request the above documents pursuant to section 6253(a) of the Public Records Act. This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of the government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

We will pay for any direct costs of duplication associated with copying public records responsive to this request up to \$200. However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Pursuant to Government Code Section 6253.9, if the requested documents are in electronic format and are 10 MB or less (or can be easily broken into sections of 10 MB or less), please email them to me as attachments.

My contact information is:

U.S. Mail

Rachael Koss
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Email

rkoss@adamsbroadwell.com

¹ Gov. Code, §§ 6250, et seq.
2657-016cv

December 14, 2012
Page 3

Please call me if you have any questions. Thank you for your assistance with this matter.

15-1
Cont'd

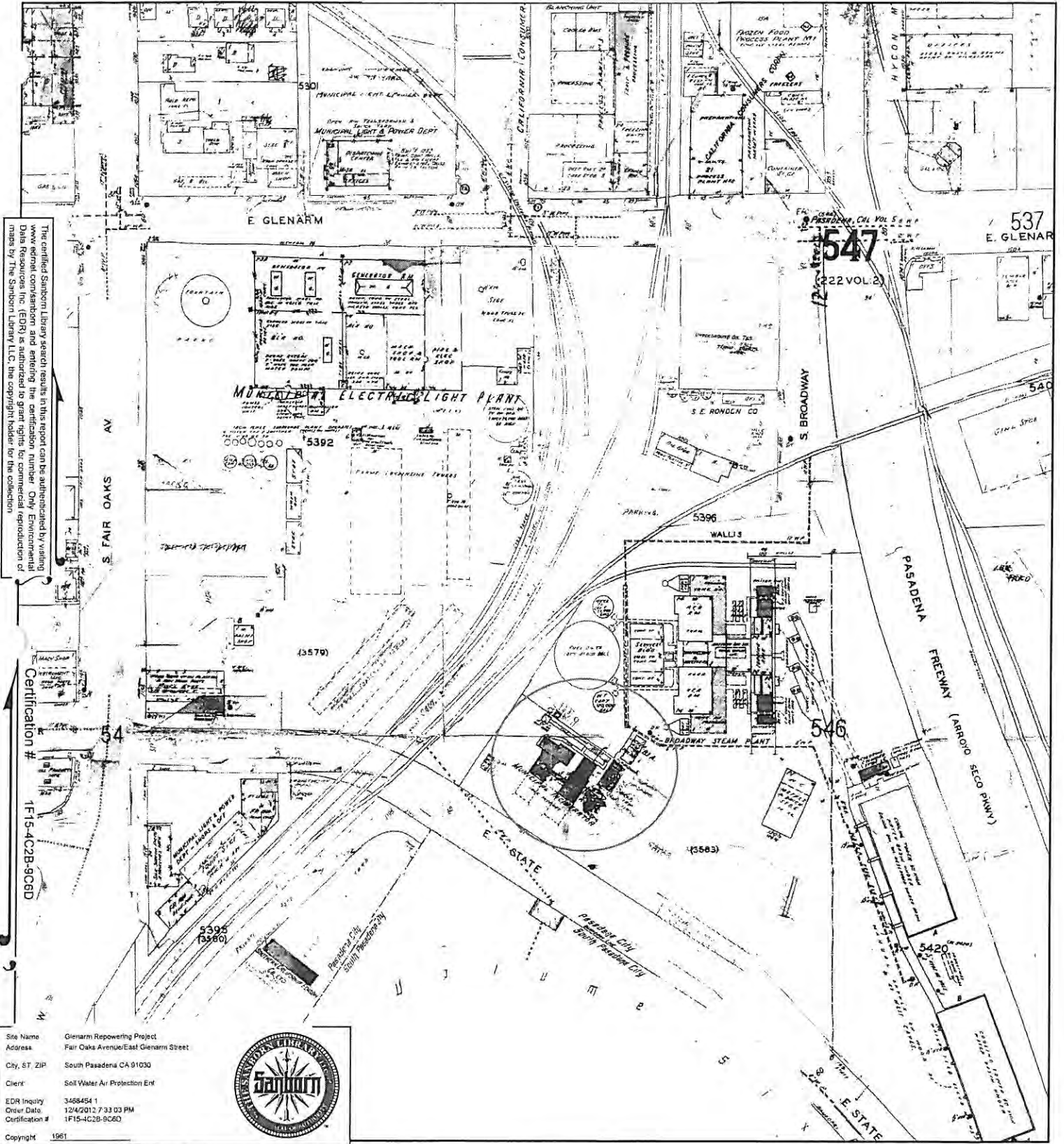
Sincerely,



Rachael E. Koss

REK:clv

1961 Certified Sanborn Map



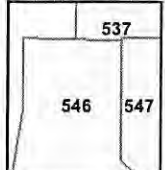
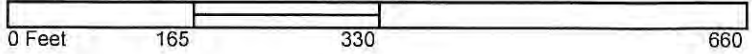
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Certification # 1F15-4C2B-9C6D

Site Name: Glenarm Repowering Project
 Address: Fair Oaks Avenue/East Glenarm Street
 City, ST, ZIP: South Pasadena CA 91030
 Client: Soil Water Air Protection Ent
 EDR Inquiry: 3468454 1
 Order Date: 12/4/2012 7:33 03 PM
 Certification #: 1F15-4C2B-9C6D
 Copyright: 1961



This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.



Volume 5, Sheet 537
 Volume 5, Sheet 546
 Volume 5, Sheet 547



LETTER NO. 15

California Unions for Reliable Energy (CURE)
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037
Rachael E. Koss
December 14, 2012

RESPONSE 15-1

All documents used in the preparation of the Draft EIR are referenced in that document. All reference documents cited in the document are either included as appendices, available on-line, or available as hard copies for viewing at the City of Pasadena Permit Center, 175 North Garfield Avenue, Pasadena. As with documents and correspondence cited in the Draft EIR, all other documents, including e-mail correspondence between the City and the EIR preparer and contracts between the parties are public record and are available for viewing at 175 North Garfield. The City has no extant records of the existence of a municipal incinerator on the Power Plant property, and cannot provide any further information.

RESPONSE 15-2

Comment 15-2 is a photocopy of the 1961 certified Sanborn Map for the Power Plant site, showing the location on the current Broadway Plant site, just north of State Street and west of the Gold Line train tracks, of a facility or equipment labeled as a municipal incinerator.

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

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OF COUNSEL
THOMAS R. ADAMS
ANN BROADWELL

December 14, 2012

Via U.S. Mail and Email

Vincent P. Bertoni, AICP
Director, Planning & Community Development Administration
City of Pasadena Environmental Administrator
Planning and Development
175 N. Garfield Ave.
Pasadena, CA 91101-7125
Email: vbertoni@cityofpasadena.net

Via U.S. Mail and Fax

Mark Jomsky
City Clerk
City of Pasadena
Office of the City Attorney/Prosecutor
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Public Records Coordinator
City of Pasadena
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100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

Re: Public Records Act Request – Glenarm Repowering Project –
Phase II Environmental Site Assessment Figures

Dear Public Records Coordinator, Mr. Bertoni and Mr. Jomsky:

We are writing on behalf of the California Unions for Reliable Energy (“CURE”) to request **immediate access** to Figures 1 through 13 referenced in the Phase II Environmental Site Assessment (“ESA”) prepared for the Glenarm Power

2657-015cv

December 14, 2012

Page 2

Plant Repowering Project located at 43 East State Street/72 East Glenarm Street ("Project"). The Phase II ESA is included in Appendix D to the City of Pasadena's Draft Environmental Impact Report prepared for the Project, but Appendix D does not include Figures 1 through 13.

Cont'd

Our request is made pursuant to the California Environmental Quality Act, which requires that all documents referenced in an environmental review document be made available to the public for the entire comment period.¹

This request is also made pursuant to the California Public Records Act.² We request the above documents pursuant to section 6253(a) of the Public Records Act. This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of the government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

We will pay for any direct costs of duplication associated with copying public records responsive to this request up to \$200. However, please contact me at (650) 589-1660 with a cost estimate before copying/scanning the materials.

Pursuant to Government Code Section 6253.9, if the requested documents are in electronic format and are 10 MB or less (or can be easily broken into sections of 10 MB or less), please email them to me as attachments.

My contact information is:

U.S. Mail

Rachael Koss
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

¹ See Pub. Resources Code, § 21092, subd. (b)(1); 14 Cal. Code Reg. § 15087, subd. (c)(5).

² Gov. Code, §§ 6250, et seq.

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December 14, 2012
Page 3

Email

rkoss@adamsbroadwell.com

Please call me if you have any questions. Thank you for your assistance with this matter.

Sincerely,



Rachael E. Koss

REK:clv

Cont'd

LETTER NO. 16

California Unions for Reliable Energy (CURE)
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037
Rachael E. Koss
December 14, 2012

RESPONSE 16-1

This comment is a request for access to Figures 1 through 13 in the *Limited Phase II Environmental Investigation* (July 29, 2011), provided in **Appendix D, Hazardous Materials**, to the Draft EIR. The figures were inadvertently omitted from this report at the time of circulation of the Draft EIR. The missing figures were transmitted to the commenter on December 18, 2012 in response to this request and were made available for public review on the same day at the City of Pasadena, Pasadena Permit Center, 175 North Garfield Avenue. Moreover, the Draft EIR review period was extended for an additional 45 days after December 18, 2012 and ended on January 31, 2013.

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

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OF COUNSEL
THOMAS R. ADAMS
ANN BROADWELL

December 20, 2012

Via Email and U.S. Mail

Vincent P. Bertoni, AICP
Director, Planning & Community Development Administration
City of Pasadena Environmental Administrator
Planning and Development
175 N. Garfield Ave.
Pasadena, CA 91101
vbertoni@cityofpasadena.net

Via Facsimile and U.S. Mail

Mark Jomsky
City Clerk
City of Pasadena
Office of the City Attorney/
100 N. Garfield Ave., Suite N-210
Pasadena, CA 91101
Fax: (626) 744-4190

**Re: Request for Extension of Comment Deadline for the Draft EIR
for the Glenarm Power Plant Repowering Project**

Dear Mr. Bertoni and Mr. Jomsky:

We are writing on behalf of California Unions for Reliable Energy to request an extension of the December 21, 2012 comment deadline for the Glenarm Power Plant Repowering Project draft environmental impact report ("DEIR"). The California Environmental Quality Act ("CEQA") requires the City to make available for public review the full DEIR and all documents referenced in the DEIR for the entire public comment period.¹ Once materials are properly made available, CEQA requires a minimum of forty-five days for public review and comment.

¹ Pub. Resources Code §§ 21092(b)(1), 21168.6.5(g)(2).
2657-017cv

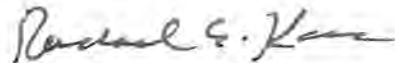
December 20, 2012

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The City released the DEIR on November 5, 2012 but failed to make available for public review Figures 1 through 13 of Appendix D to the DEIR. The figures were not made available until December 18, 2012, just three days before the end of the public comment period for the DEIR. Because the comment deadline is rapidly approaching, and because we just received all of the necessary documents to fully evaluate the project, it will be very difficult to meet the December 21, 2012 deadline. We therefore respectfully request an extension of the comment deadline to January 31, 2013, 45 days from the date the entire DEIR was made available for public review.

Thank you for your attention to this request. Please feel free to contact me at (650) 589-1660 to discuss further.

Sincerely,



Rachael E. Koss

REK:clv

Via Email

cc: Robert Avila, Management Analyst IV, ravila@cityofpasadena.net

LETTER NO. 17

California Unions for Reliable Energy (CURE)
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037
Rachael E. Koss
December 20, 2012

RESPONSE 17-1

This comment is a request for an extension of the December 21, 2012 comment deadline for the Draft EIR, and cites the missing figures from the *Limited Phase II Environmental Investigation* (July 29, 2011), provided in **Appendix D, Hazardous Materials**, to the Draft EIR. As stated in **Response 16-1**, the figures were inadvertently omitted from the report and were transmitted to the commenter and made publicly available on December 18, 2012. In response to this comment, the public review period for the Draft EIR was extended another 45 days after December 18, 2012 and ended on January 31, 2013.

ADAMS BROADWELL JOSEPH & CARDOZO

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JAMIE L. MAULDIN
ROBYN C. PURCHIA
ELLEN L. TRESCOTT

January 31, 2013

Via Email and Overnight Mail

Robert Avila, Management Analyst IV
Pasadena Water & Power
85 East State Street
Pasadena, CA 91105-3418
ravila@cityofpasadena.net

Re: Comments on Draft Environmental Impact Report for the Glenarm Power Plant Repowering Project

Dear Mr. Avila:

We write on behalf of California Unions for Reliable Energy ("CURE") to comment on the City of Pasadena's Draft Environmental Impact Report ("DEIR") for the Glenarm Power Plant Repowering Project ("Project"). The Project includes: (1) replacement of steam generating unit B-3 on the Broadway Plant with a new combined-cycle 71 megawatt power generating unit, Unit GT-5, on the Glenarm Plant, south of the Glenarm Building (GT-5 includes a new gas turbine, steam turbine, once-through steam generator, wet-type cooling tower, water storage tanks, electric-powered fuel gas compressors, an electric-powered air compressor and a 125-foot tall stack); (2) construction of a 18,000 square-foot administrative/control room facility in the southeastern portion of the existing Glenarm Building; (3) demolition of the Glenarm Building stack, air compressor facility, and restroom located along the south elevation of the building; (4) seismic retrofit work on the Glenarm Building; (5) reconfiguration of two existing aboveground aqueous ammonia tanks on the Broadway Plant; (6) closure of the State Street cul-de-sac; (7) incorporation of a one-acre parcel south of State Street into the Glenarm Plant; (8) expansion and modification of the 4,000 square-foot Pump Building to a 6,000 square-foot building to house maintenance shops, machine work and welding; (9) rerouting or relocating storm drains, underground water lines, electrical lines and other utilities; (10) removal of existing mechanical equipment; and (11) abatement of asbestos-containing materials and lead-based paint and remediation of contaminated soil.

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January 31, 2013

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The Project presents significant, unmitigated and unanalyzed environmental impacts that must be addressed prior to Project approval. Based on our review of the DEIR and its supporting documents, we have concluded that the DEIR does not comply with the basic requirements of the California Environmental Quality Act ("CEQA").¹ The DEIR fails to meet the informational and public participation requirements of CEQA because it does not adequately describe the Project, the existing environmental setting, or the evidence to support the City's environmental conclusions. In many places, the DEIR contains conclusory statements without any analysis whatsoever, depriving City decision makers and the public of information that is necessary for an informed assessment of Project impacts and proposed mitigation measures. The DEIR also fails to include adequate mitigation measures for the Project's potentially significant impacts. The City may not approve the Project until the DEIR is revised and recirculated for public review and comment.

These comments were prepared with the assistance of technical experts Matt Hagemann, P.G. and Valorie Thompson, Ph.D. Their comments and curriculum vitae are attached hereto as Exhibits 1 and 2. Please note that these experts' comments are comments on the DEIR and *must be responded to separately*.

I. INTRODUCTION

A. Interest of Commenters

CURE is a coalition of labor unions whose members help solve the State's energy problems by building, maintaining and operating conventional and renewable energy power plants. Since its founding in 1997, CURE has been committed to building a strong economy and a healthier environment. CURE has helped cut smog-forming pollutants in half, reduced toxic emissions, increased the use of recycled water for cooling systems and pushed for groundbreaking pollution control equipment as the standard for all new power plants, all while ensuring new power plants are built with highly trained, professional workers who live and raise families in nearby communities.

Individual members of the CURE unions live, work, recreate, and raise their families in the City of Pasadena and Los Angeles County. Accordingly, they would be directly affected by the Project's environmental and health and safety impacts.

¹ Pub. Resources Code § 21000 et seq.
2657-020cv

Individual members of the CURE unions may also work on the Project itself. They will, therefore, be first in line to be exposed to soil contamination, air contaminants, or other health and safety hazards that exist onsite.

Cont'd

In addition, CURE has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for its members. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live there. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduce future employment opportunities.

II. THE DEIR FAILS TO ADEQUATELY DESCRIBE THE PROJECT

The DEIR does not meet CEQA's requirements because it fails to include an accurate and complete Project description, rendering the entire analysis inadequate. CEQA places the burden of environmental investigation on the government rather than the public. Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate Project description.² An accurate and complete project description is necessary to perform an adequate evaluation of the potential environmental effects of a proposed project. In contrast, an inaccurate or incomplete project description renders the analysis of environmental impacts inherently unreliable. Without a complete project description, the environmental analysis under CEQA will be impermissibly narrow, thus minimizing the project's impacts and undercutting public review.³

California courts have also repeatedly held that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document]."⁴ CEQA requires that a project be described with enough particularity that its impacts can be assessed.⁵ It is impossible for the public to make informed comments on a project of unknown or ever-changing description. "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental

² *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311.

³ See, e.g., *Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376.

⁴ *County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal.App.3d 185, 193.

⁵ *Id.* at 192.

costs....”⁶ As articulated by the court in *County of Inyo v. City of Los Angeles*, “a curtailed, enigmatic or unstable project description draws a red herring across the path of public input.”⁷ Without a complete project description, the environmental analysis under CEQA is impermissibly limited, thus minimizing the project’s impacts and undermining meaningful public review.⁸

Cont’d

CEQA broadly defines a “project” as “the whole of an action” with the potential to result in a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.⁹ A lead agency must therefore review a project’s impacts as a whole, including all phases of the project.¹⁰

A. The Description of Basic Project Components is Incomplete

The DEIR fails to identify all of the Project’s components and describe their locations and design. Without an adequate description of the Project’s components, decision makers and the public cannot assess the Project’s impacts. Because the DEIR fails to describe key Project details, it lacks foundation for its conclusions regarding the Project’s environmental impacts. Moreover, it renders public comment and review meaningless since the public is not provided the basic information about the Project necessary to assess potential impacts. This has the very real consequence of defeating the public’s efforts to understand and assess the Project’s impacts. The City must prepare a revised DEIR that includes a complete description of Project components.

1. The City Must Provide a Detailed Description of the Proposed Rerouting or Relocation of Utilities

The DEIR states that the Project would include “rerouting or relocation of storm drains, underground water lines, electrical lines, and other utilities.”¹¹ However, the DEIR provides no details about rerouting or relocating these utilities. The DEIR fails to provide both the existing and planned locations of the utilities, and does not analyze the construction-related or operational impacts of relocating

⁶ *Id.* at 192-193.

⁷ *Id.* at 197-198.

⁸ See, e.g., *Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376.

⁹ CEQA Guidelines § 15378(a).

¹⁰ *Burbank-Glendale-Pasadena Airport Auth. v. Hensler* (1991) 233 Cal.App.3d 577, 592; *Laurel Heights Improvement Assn. v. Regents of the Univ. of Calif.* (1988) 47 Cal.3d 376, 396-397.

¹¹ DEIR, p. 2-11.

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the utilities. Without this information, it is impossible for decision makers and the public to assess the Project's environmental impacts.

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2. *The City Must Include Demolition of Unit B-3 in the Project Description*

The Project includes decommissioning Unit B-3.¹² According to the DEIR, Unit B-3 will not be demolished "at this time"¹³ and, therefore, provides no description (or analysis) of demolition of Unit B-3. However, at some point, as a result of decommissioning, Unit B-3 will be demolished. In the alternative, Unit B-3 will sit idle and deteriorate. Either way, potentially significant impacts will result – Unit B-3 will remain and become an eyesore or demolition will cause potentially significant impacts associated with air quality, noise, and hazardous materials, among other impacts. A revised DEIR must describe the plan for Unit B and analyze and mitigate any associated significant impacts.

3. *The DEIR's Description of the Project's Water Demand is Inadequate*

The DEIR fails to adequately describe how much water the Project will use for construction. The City must provide this information so that the Project's potentially significant impacts can be evaluated and mitigated.

The DEIR completely fails to disclose the amount of water required for Project construction. Without this information, there is no support for the City's conclusion that "[c]onstruction-related water usage is not expected to have an adverse impact on available water supplies or the existing water distribution system, and impacts would be less than significant."¹⁴ Further, the decision makers and the public cannot discern the Project's impacts on water supplies.

¹² *Id.*, p. 2-7, Figure 2-3.

¹³ *Id.*, p. 2-11.

¹⁴ *Id.*, p. 4.H-24.

III. THE DEIR FAILS TO ADEQUATELY ESTABLISH THE EXISTING ENVIRONMENTAL SETTING AGAINST WHICH THE DEIR IS REQUIRED TO ANALYZE THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS

The DEIR describes the existing environmental setting inaccurately and incompletely, thereby skewing the impact analysis. Yet, the existing environmental setting is the starting point from which the lead agency must measure whether a proposed Project may cause a significant environmental impact.¹⁵ CEQA defines the environmental setting as the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and regional perspective.¹⁶

Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the project is critical to an accurate, meaningful evaluation of environmental impacts. The importance of having a stable, finite, fixed environmental setting for purposes of an environmental analysis was recognized decades ago.¹⁷ Today, the courts are clear that, “[b]efore the impacts of a Project can be assessed and mitigation measures considered, an [environmental review document] must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined.”¹⁸ In fact, it is:

a central concept of CEQA, widely accepted by the courts, that the significance of a Project’s impacts cannot be measured unless the DEIR first establishes the actual physical conditions on the property. In other words, baseline determination is the first rather than the last step in the environmental review process.¹⁹

¹⁵ See, e.g., *Communities for a Better Env’t v. S. Coast Air Quality Mgmt. Dist.* (March 15, 2010) 48 Cal.4th 310, 316; *Fat v. County of Sacramento* (2002) 97 Cal.App.4th 1270, 1278 (“*Fat*”), citing Remy, et al., Guide to the Calif. Environmental Quality Act (1999) p. 165.

¹⁶ CEQA Guidelines §15125(a) (emphasis added); *Riverwatch v. County of San Diego* (1999) 76 Cal.App.4th 1428, 1453 (“*Riverwatch*”).

¹⁷ *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185.

¹⁸ *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952.

¹⁹ *Save our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 125. 2657-020cv

The DEIR must also describe the existing environmental setting in sufficient detail to enable a proper analysis of Project impacts.²⁰ Section 15125 of the CEQA Guidelines provides that “[k]nowledge of the regional setting is critical to the assessment of environmental impacts.”²¹ This level of detail is necessary to “permit the significant effects of the Project to be considered in the full environmental context.”²²

The description of the environmental setting in the DEIR is inadequate because it omits highly relevant information regarding soil contamination at the Project site. The City must gather the relevant data, and provide an adequate description of the existing environmental setting in a revised DEIR.

A. The DEIR Fails to Adequately Establish the Existing Setting for Analyzing Potentially Significant Impacts Associated with Soil Contamination on the Project Site

The failure of the DEIR to disclose the historic and ongoing contamination problems at the Project site cannot be overstated. The DEIR’s avoidance of the true state of affairs at the Project site results in a failure to “permit the significant effects of the Project to be considered in the full environmental context.”²³ Matt Hagemann, a technical expert on hazardous materials, explains that the DEIR fails to describe the existing setting for purposes of conducting an analysis of the Project’s potential impacts to workers and nearby residents and schoolchildren from soil contamination.²⁴

First, the City failed to conduct a Phase I Environmental Site Assessment (“ESA”) for the Project site. Phase I ESAs “identify conditions on site that are indicative of a past release of a hazardous substance or sources of contamination that may pose risks to construction workers or off-site receptors.”²⁵ According to Hagemann, Phase I ESAs are “routinely completed as part of the CEQA process to determine the presence of recognized environmental conditions...and sources of contamination on and surrounding the project site.” Because the City failed to conduct a Phase I ESA, the City was unable to fully identify and disclose

²⁰ *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1121-22.

²¹ CEQA Guidelines § 15125(d).

²² *Id.*

²³ *Id.*

²⁴ Exhibit 1, Hagemann comments on DEIR (December 18, 2012), p. 1.

²⁵ *Id.*, pp. 1-2.

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contamination on the Project site. As a result, it is impossible for decision makers and the public to evaluate the Project's significant impacts associated with the presence of hazardous materials.

Cont'd

Second, perhaps as a result of the City's failure to conduct a Phase I ESA, the DEIR completely fails to disclose the presence of a former municipal incinerator on the Project site. Mr. Hagemann located historical maps which show that from 1933 to 1966, a municipal incinerator stood where the GT-3 and GT-4 gas compressor is currently located.²⁶ According to Hagemann, the incinerator is "a major source of contamination," and "aerial deposition of materials from the incinerator may have impacted soils that would pose a risk to construction workers."²⁷ Specifically, "incomplete or poor combustion of garbage in municipal incinerators produce dioxins," which "are highly toxic."²⁸ Although soil testing was conducted on the Project site, testing was not performed for dioxins. Thus, the City failed to disclose the potential presence of highly toxic dioxins on the Project site.

Without information regarding the location and concentration of dioxins and other hazardous materials on the Project site, it is impossible for the decision makers and public to assess the Project's impacts to worker safety, human health and the environment.

B. The DEIR's Description of the Project's Water Supply is Inadequate

The DEIR fails to adequately describe how much water is available for the Project. The City must provide this information so that the Project's potentially significant impacts can be evaluated and mitigated.

The DEIR provides confusing and incomplete information regarding the available water supply. The DEIR states that the City would supply Project water.²⁹ According to the DEIR, the City gets its water from three sources – local groundwater, surface water diversions, and purchases of imported water. The DEIR spends the next eleven pages describing the reliability (or lack of reliability) of each of these sources. The DEIR also describes the City's estimated water

²⁶ *Id.*, p. 2 and Attachment A.

²⁷ *Id.*, p. 2.

²⁸ *Id.*, p. 3.

²⁹ *Id.*, p. 4.H-10.

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demand through 2035.³⁰ Yet, the DEIR never discloses the City's current or future total water supply amount. Thus, the decision makers and the public cannot discern the Project's impacts on water supplies and the DEIR's conclusion that the City will have a sufficient supply of water for the Project is unsupported.

IV. THE CITY LACKS SUBSTANTIAL EVIDENCE TO SUPPORT ITS CONCLUSIONS IN THE DEIR REGARDING POTENTIALLY SIGNIFICANT PROJECT IMPACTS; THE DEIR FAILS TO INCORPORATE ALL FEASIBLE MITIGATION MEASURES NECESSARY TO REDUCE SUCH IMPACTS TO A LEVEL OF INSIGNIFICANCE

CEQA has two basic purposes, neither of which the DEIR satisfies. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental impacts of a Project before harm is done to the environment.³¹ The DEIR is the "heart" of this requirement.³² The DEIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."³³

To fulfill this function, the discussion of impacts in a DEIR must be detailed, complete, and "reflect a good faith effort at full disclosure."³⁴ An adequate DEIR must contain facts and analysis, not just an agency's conclusions.³⁵ CEQA requires a DEIR to disclose all potential direct and indirect, significant environmental impacts of a Project.³⁶

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring imposition of mitigation measures and by requiring the consideration of environmentally superior alternatives.³⁷ If a DEIR

³⁰ *Id.*, p, 4.H-25.

³¹ CEQA Guidelines § 15002(a)(1); *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal.App.4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

³² *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84.

³³ *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

³⁴ CEQA Guidelines § 15151; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 721-722.

³⁵ See *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 568.

³⁶ Pub. Resources Code § 21100(b)(1); CEQA Guidelines § 15126.2(a).

³⁷ CEQA Guidelines § 15002(a)(2) and (3); *Berkeley Jets*, 91 Cal.App.4th at 1354; *Laurel Heights Improvement Ass'n v. Regents of the University of Cal.* (1998) 47 Cal.3d 376, 400.

identifies potentially significant impacts, it must then propose and evaluate mitigation measures to minimize these impacts.³⁸ CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible Project alternatives or mitigation measures.³⁹ Without an adequate analysis and description of feasible mitigation measures, it would be impossible for agencies relying upon the DEIR to meet this obligation.

In this case, the DEIR fails to satisfy the basic purposes of CEQA. The DEIR's conclusions regarding impacts to air quality, greenhouse gas emissions, and hazardous materials are not supported by substantial evidence. In preparing the DEIR, the City has: (1) failed to provide sufficient information to inform the public and decision-makers about potential environmental impacts; (2) failed to accurately identify and adequately analyze all potentially significant environmental impacts; and (3) failed to incorporate adequate measures to mitigate environmental impacts to a less than significant level. The City must correct these shortcomings and recirculate a revised DEIR for public review and comment.

A. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Potentially Significant Air Quality Impacts

1. *The DEIR Fails to Identify and Disclose the Correct New Source Performance Standards Applicable to the Project*

The DEIR fails to identify and disclose the correct U.S. EPA New Source Performance Standards ("NSPS") for PM and NO_x emissions and, therefore, fails to adequately analyze the Project's air quality impacts. The DEIR states that NSPS Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) applies to the Project.⁴⁰ 40 CFR Part 60, Subpart Db states,

[i]f the affected facility (*i.e.* heat recovery steam generator) is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.).⁴¹

³⁸ Pub. Resources Code §§ 21002.1(a), 21100(b)(3).

³⁹ *Id.*, §§ 21002-21002.1.

⁴⁰ DEIR, p. 4.B-2.

⁴¹ Exhibit 2, Comments of Valorie Thompson (December 18, 2012), p. 2.

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As air quality expert Valorie Thompson explains, the DEIR should have identified the more stringent Subpart KKKK (Standards of Performance for Stationary Combustion Turbines).⁴² Subpart KKKK applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBTU) per hour, based on the higher heating value of the fuel, which are constructed, modified, or reconstructed after February 18, 2005. The Project includes the construction of a new natural gas-fired combustion turbine (Unit GT-5) with a heat input at peak load of at least 90 MMBTU per hour (and likely much greater).⁴³ Thus, Subpart KKKK is applicable to the Project. The DEIR fails to identify the correct NSPS for the Project and, therefore, fails to disclose the applicable standard for the Project's NO_x and PM emissions to the public. In other words, the DEIR does not provide sufficient information to inform the public and decision-makers about potential environmental impacts, as required by CEQA.⁴⁴ The DEIR is deficient as a public disclosure document and must be revised and recirculated for public review.

2. *The DEIR Fails to Disclose that the Project is Subject to the Federal Prevention of Significant Deterioration Regulations*

The Federal Prevention of Significant Deterioration ("PSD") regulations provide preconstruction requirements for stationary sources to ensure that air quality does not significantly deteriorate from criteria pollutant emissions. Without any evidence, the DEIR states that the Project is exempt from PSD requirements because "[c]riteria pollutant emissions resulting from the project are less than the PSD increment."⁴⁵ The DEIR contains no further analysis of the applicability of the PSD regulations to the Project.

Ms. Thompson reviewed the DEIR's emission calculations for Unit GT-5's annual operational emission increases.⁴⁶ The calculations reveal that the GE

⁴² *Id.*

⁴³ DEIR, Appendix B, Table A.4-3 shows the commissioning emissions and indicates that the turbine operates with a heat input of at least 90 MMBTU per hour. Documents filed with the California Energy Commission for other projects (such as Sacramento Cogeneration Authority's LM6000 Fleet Upgrade Project) indicate that the heat input is 400 to 450 MMBTU per hour.

⁴⁴ CEQA Guidelines § 15002(a)(1); *Berkeley Jets*, 91 Cal.App.4th at 1354; *County of Inyo v. Yorty*, 32 Cal.App.3d at 810.

⁴⁵ DEIR, p. 4.B-10.

⁴⁶ Exhibit 2, p. 2.

LM6000 turbine would result in a net emission increase of 16 tons/year of both PM₁₀ and PM_{2.5}, and the Rolls Royce Trent 60 turbine would result in a net emission increase of 20 tons/year of both PM₁₀ and PM_{2.5}.⁴⁷ According to the PSD regulations, as adopted in SCAQMD Regulation XVII, a significant increase in air contaminant emissions is defined as 15 tons/year for PM₁₀.⁴⁸ Thus, criteria pollutant emissions from the Project are greater than the PSD increment, not less, and the PSD requirements apply to the Project.

PSD regulations mandate that: (1) the Project meets the requirements for Best Available Control Technology for PM₁₀; (2) the City conduct an Air Quality Impact Analysis to demonstrate that the Project would not result in an exceedance of the ambient air quality standard for PM₁₀; (3) the City conduct a PSD increment analysis; and (4) the City conduct additional impact analyses to assess the impacts of air, ground and water pollution on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant from the source or modification under review, and from associated growth (associated growth is industrial, commercial, and residential growth that will occur in the area due to the source).⁴⁹ The DEIR completely fails to describe how the Project will meet these requirements.

The DEIR provides no justification for its assertion that the Project is exempt from PSD regulations. On the contrary, substantial evidence shows that the Project is subject to PSD regulations. The DEIR does not provide sufficient information to inform the public and decision-makers about potential environmental impacts from the Project's PM₁₀ and PM_{2.5} emissions, as required by CEQA.⁵⁰ Thus, the DEIR fails as a public disclosure document. The City must prepare a revised DEIR that discloses the applicability of PSD regulations to the Project and provides a description of how the Project will meet the requirements of PSD regulations.

⁴⁷ *Id.* (According to the DEIR, the City has not decided which turbine model it will use for the Project and, therefore, the DEIR includes emissions calculations for both turbine models.)

⁴⁸ Exhibit 2, pp. 2-3.

⁴⁹ *Id.*, p. 3.

⁵⁰ CEQA Guidelines § 15002(a)(1); *Berkeley Jets*, 91 Cal.App.4th at 1354; *County of Inyo v. Yorty*, 32 Cal.App.3d at 810.

3. *The DEIR's Analysis of Potentially Significant Impacts from PM₁₀ and PM_{2.5} Construction Emissions is Flawed*

The DEIR concludes that the Project's PM₁₀ and PM_{2.5} construction emissions would not cause significant impacts from an increase of criteria pollutants for which the Project is in nonattainment.⁵¹ Ms. Thompson reviewed the DEIR's analysis and found that the conclusion is wrong.⁵²

The DEIR's analysis fails to account for background concentrations of PM₁₀ and PM_{2.5}, including emissions from the four turbines that exist on the Project site, GT-1 through GT-4.⁵³ Ms. Thompson notes that had the City properly considered background concentrations of PM₁₀ and PM_{2.5}, the DEIR's conclusion would be different – the Project would contribute to existing violations of the California Ambient Air Quality Standard (“CAAQS”) for PM₁₀ and existing violations of both CAAQS and National Ambient Air Quality Standard (“NAAQS”) for PM_{2.5}.⁵⁴

According to the DEIR, the maximum background concentrations of PM₁₀ in the Project area were 109 µg/m³ on a 24-hour basis and 40 µg/m³ on an annual basis.⁵⁵ The CAAQS for PM₁₀ is 50 µg/m³ (24-hour) and 20 µg/m³ (annual), and the NAAQS is 150 µg/m³ (24-hour).⁵⁶ The Project area is already in nonattainment under the State and Federal standards. Thus, the Project's PM₁₀ emissions will result in a significant impact by causing an increase of criteria pollutants for which the Project is in nonattainment.

Likewise, the Project's PM_{2.5} emissions will result in a significant impact by causing an increase of criteria pollutants for which the Project is in nonattainment. The maximum background concentrations of PM_{2.5} in the Project area were 68.9 µg/m³ (24-hour) and 14.3 µg/m³ (annual).⁵⁷ The CAAQS for PM_{2.5} is 12 µg/m³ (annual) and the NAAQS is 35 µg/m³ (24-hour) and 15 µg/m³ (annual). The Project area is already in nonattainment under State and federal standards. Thus, the

⁵¹ DEIR, pp. 4.B-44 – 45.

⁵² Exhibit 2, p. 3.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ DEIR, p. 4.B-16, Table 4.B-3.

⁵⁶ *Id.*, Appendix B, p. 16, Table 1.

⁵⁷ *Id.*, p. 4.B-16, Table 4.B-3.

Project's PM_{2.5} emissions will result in a significant impact by causing an increase of criteria pollutants for which the Project is in nonattainment.

Cont'd

The DEIR's conclusion that the Project's PM₁₀ and PM_{2.5} construction emissions would not cause significant impacts from an increase of criteria pollutants for which the Project is in nonattainment, is not supported. On the contrary, substantial evidence shows that the Project would result in significant impacts from PM₁₀ and PM_{2.5} emissions which will cause an increase of criteria pollutants for which the Project is in nonattainment.

4. *The DEIR Fails to Adequately Analyze Potentially Significant Impacts to Sensitive Receptors*

The DEIR acknowledges that toxic air contaminants ("TAC") emissions would result from the combustion of natural gas in GT-5 and from the cooling tower.⁵⁸ The DEIR also provides that the nearest sensitive receptors to the Project are residences approximately 64 meters to the west and 130 meters to the south, and a school approximately 1,967 meters to the east.⁵⁹ The DEIR concludes that the Project's impacts to sensitive receptors from the Project's TAC emissions would be less than significant.⁶⁰ According to Ms. Thompson, the DEIR underestimates and fails to fully analyze potentially significant impacts to sensitive receptors from the Project's TAC emissions.⁶¹

First, the DEIR underestimates TAC emissions from commissioning and startup of GT-5. The DEIR states that emissions are lower during commissioning and startup than during maximum operations. However, Ms. Thompson notes that "stack parameters during commissioning and startup are different from maximum operations and therefore impacts could be higher, not lower."⁶² Further, "[c]hanges in stack parameters could result in greater impacts from downwash effects, which would affect receptors in the immediate vicinity of the project."⁶³ The City must prepare a revised DEIR that analyzes the Project's potentially significant impacts to

⁵⁸ *Id.*, p. 4.B-47.

⁵⁹ *Id.*, p. 4.B-45.

⁶⁰ *Id.*, p. 4.B-46.

⁶¹ Exhibit 2, p. 4.

⁶² *Id.*

⁶³ *Id.*

adjacent residences and schoolchildren during commissioning and startup that accounts for stack parameters specific to those operations.⁶⁴

Cont'd

Second, the DEIR fails to support its conclusion that Project impacts from diesel particulate emissions would be less than significant. According to the DEIR, “[t]he greatest potential for construction-related TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities.”⁶⁵ The DEIR fails to include diesel particulate emissions from on-road trucks that are required to export debris and import fill material which will travel close to sensitive receptors in the Project vicinity.

Further, the DEIR does not provide a quantitative analysis of these impacts as a contributor to overall lifetime excess cancer risk. Ms. Thompson states that “the lifetime risks would include the additive risks from exposure both to diesel particulate matter during construction and to emissions from operation of the on-site sources, including the turbine and cooling tower.”⁶⁶

The DEIR underestimates the Project’s potentially significant impacts on sensitive receptors from TAC emissions, because the DEIR does not fully address the contribution from construction emission sources. The City must prepare a revised DEIR that includes a complete analysis of the Project’s potentially significant impacts to sensitive receptors from TAC emissions.

5. *The DEIR Fails to Adequately Mitigate Significant Air Quality Impacts*

The DEIR acknowledges that emissions of PM_{2.5} are above the South Coast Air Quality Management District’s (“SCAQMD”) significance threshold.⁶⁷ Yet, the DEIR concludes that the Project’s impacts from PM_{2.5} emissions are less than significant and provides no mitigation to reduce impacts from PM_{2.5} emissions. In Ms. Thompson’s expert opinion, the Project would result in potentially significant impacts from PM_{2.5} emissions and the City should be required to mitigate these impacts.⁶⁸

⁶⁴ *Id.*

⁶⁵ DEIR, p. 4.B-46.

⁶⁶ Exhibit 2, p. 4.

⁶⁷ DEIR, p. 4.B-38.

⁶⁸ Exhibit 2, p. 5.

SCAQMD acknowledges that emissions of particulate matter can have regional effects.⁶⁹ SCAQMD's guidance document states,

[w]hen fugitive dust enters the atmosphere, the larger particles of dust typically fall quickly to the ground, but smaller particles less than 10 microns in diameter may remain suspended for longer periods, giving the particles time to travel across a regional area and affecting receptors at some distance from the original emissions source. Fine PM_{2.5} particles have even longer atmospheric residency times.⁷⁰

Accordingly, SCAQMD's mass emission rate threshold of 55 lbs/day for PM_{2.5} was designed to identify the potential for significant impacts on a regional basis. The Project's emissions exceed this significance threshold. The DEIR should be revised to acknowledge this significant impact. Further, a revised DEIR should require the City to fully mitigate the significant impact. Ms. Thompson recommends that mitigation measures include installation of particulate control devices that are designed to reduce directly emitted PM_{2.5} on the existing on-site combustion sources, reducing the temperature of the gas stream and increasing collection of condensable PM_{2.5} through use of a wet electrostatic precipitator or other control device; installation of diesel oxidation catalysts and/or filters on existing diesel-fired equipment on site; or development of off-site emission offsets through the installation of particulate emission reduction devices or implementation of off-site controls.⁷¹

B. The DEIR Fails to Adequately Mitigate Significant Impacts from Greenhouse Gas Emissions

The DEIR concludes that the Project would result in significant and unavoidable impacts from the Project's greenhouse gas emissions.⁷² The DEIR states that no feasible mitigation measures are available to reduce these impacts.⁷³ The DEIR's statement is unsupported. On the contrary, substantial evidence shows that there are a number of feasible measures available to mitigate the Project's significant impacts from greenhouse gas emissions. In her attached comments, Ms.

⁶⁹ SCAQMD. 2006. *Final – Methodology to Calculation Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, p. 7.

⁷⁰ *Id.*

⁷¹ Exhibit 2, p. 5.

⁷² DEIR, p. 4.D-21.

⁷³ *Id.*

2657-020cv

Thompson recommends feasible mitigation measures, including the pursuit of carbon sequestration strategies, installing solar roofs on existing buildings within the City, implementing a tree planting program, and development of a program to eliminate or replace high global warming potential substances, such as SF6 or CFCs.⁷⁴ The DEIR must be revised to include feasible measures to mitigate the Project's significant impacts from greenhouse gas emissions.

C. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Potentially Significant Impacts from Soil Contamination

As discussed in our above comments about the environmental setting, the DEIR severely understates the nature and extent of on-site contamination. The DEIR's description of on-site contamination is based on an inadequate Phase II ESA (and without any Phase I ESA). The DEIR fails to disclose, analyze and mitigate the Project's potentially significant impacts from soil contamination.

1. *The DEIR Fails to Disclose, Analyze, and Mitigate Potentially Significant Impacts from a Former Municipal Incinerator on the Project Site*

Perhaps the most troubling part of the hazards and hazardous materials section of the DEIR is a complete failure to disclose potential dioxin contamination from a municipal incinerator formerly located on the Project site that will be disturbed during Project construction.⁷⁵ Through his own research, Mr. Hagemann discovered that a municipal incinerator was located on the Project site where the GT-3 and GT-34 gas compressor currently sits.⁷⁶ The incinerator operated on the Project site for over 30 years, during which time dioxins likely formed from incomplete combustion and settled with ash and other particulate matter on soils which will be disturbed during Project construction.⁷⁷ The Project involves excavation of 13,000 cubic yards of soil that may contain dioxins.⁷⁸ Consequently, workers may be exposed to dioxins through skin contact and inhalation of dust.⁷⁹ Nearby residents and schoolchildren may also be exposed to dioxin-contaminated

⁷⁴ Exhibit 2, p. 6.

⁷⁵ *Id.*, p. 3.

⁷⁶ See Exhibit 1, Attachment A (Sanborn Map).

⁷⁷ Exhibit 1, pp. 2-3.

⁷⁸ *Id.* 1, p. 3.

⁷⁹ *Id.*

soil through inhalation of windblown dust.⁸⁰ The City has not conducted any soil testing for dioxins and no analysis of the potentially significant impacts associated with the former incinerator.⁸¹

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Mr. Hagemann explains that “[d]ioxins are highly toxic, persistent in the environment, and can bioaccumulate.”⁸² Further, “[d]ioxins strongly sorb to soil particles and sediment,” and once dioxins deposit in soil they “may persist at toxic concentrations for decades.”⁸³ Dioxins are a known human carcinogen.⁸⁴ According to Hagemann, exposure to toxins at very low concentrations can be toxic.⁸⁵ Short-term exposure to dioxins can cause altered liver function and skin lesions.⁸⁶ Long-term exposure can impair the nervous, endocrine and reproductive systems.⁸⁷

Mr. Hagemann recommends that the City conduct soil sampling for dioxins in the area where Project construction will occur. The results must be disclosed in a revised DEIR. If the results exceed construction worker and human health screening levels, the City must notify the appropriate regulatory agencies and must conduct site specific health risk evaluations.⁸⁸ The results of any health risk evaluations must also be included in a revised DEIR. Further, a revised DEIR must include mitigation measures to ensure that workers, nearby residents and schoolchildren will not be significantly impacted by the excavation of dioxin-contaminated soil.

As it stands, the DEIR’s measures to mitigate potentially significant impacts from contaminated soils are insufficient to address dioxin contamination. Mitigation measure HAZ-3 calls for removal of only lead-contaminated soil.⁸⁹ Mitigation measure HAZ-5 requires the City to develop a soils management plan prior to excavation and grading activities to ensure that contaminated soil is

⁸⁰ *Id.*, p. 4.

⁸¹ DEIR, p. 4.E-9 (soil samples were analyzed for semi-volatile organic compounds, volatile organic compounds, polychlorinated biphenyls, lead, hexavalent chromium, total petroleum hydrocarbons and total recoverable petroleum hydrocarbons).

⁸² Exhibit 1, p. 3.

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*, p. 4.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ DEIR, p. 4.E-26.

properly disposed of off-site.⁹⁰ However, without any knowledge of the exact location and extent of dioxin contamination (which is not apparent to the naked eye), it would be impossible to excavate and properly dispose of dioxin-contaminated soil. Soil sampling for dioxins must be conducted prior to Project approval. Further, a soils management plan that addresses dioxin contamination must be developed now and included in a revised DEIR that is circulated to the public.

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2. *The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Potentially Significant Impacts from Hexavalent Chromium*

Hexavalent chromium is a known human carcinogen. Exposure to hexavalent chromium can result in gastrointestinal and neurological effects and skin contact can cause burns.⁹¹ Mr. Hagemann discovered that condensing towers were located to the east and south of the proposed location of GT-5.⁹² The DEIR fails to disclose that fact. Condensing towers are known sources of hexavalent chromium.⁹³ The DEIR states that 40 soil samples were collected and tested for hexavalent chromium and concludes that none of the detected concentrations exceed health-based exposure levels.⁹⁴ Mr. Hagemann explains that the DEIR's analysis and conclusion are flawed.

The DEIR fails to compare testing results to exposure levels specifically created for construction workers.⁹⁵ Mr. Hagemann compared the detected concentrations of hexavalent chromium to the construction worker exposure screening levels and found that three samples exceed the screening levels for construction worker safety.⁹⁶ The DEIR must be revised to accurately disclose potentially significant impacts to construction workers from the presence of hexavalent chromium on the Project site.

In addition, as discussed in the previous section, mitigation measures HAZ-3 and HAZ-5 fail to adequately mitigate potentially significant impacts from the presence of hexavalent chromium. HAZ-3 calls for removal of only lead-

⁹⁰ *Id.*

⁹¹ Exhibit 1, p. 5.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ DEIR, Appendix D, Phase II ESA, p. iv.

⁹⁵ Exhibit 1, p. 4.

⁹⁶ *Id.*, pp. 4-5.

contaminated soil.⁹⁷ Mitigation measure HAZ-5 requires the City to develop a soils management plan prior to excavation and grading activities to ensure that contaminated soil is properly disposed of off-site.⁹⁸ A soils management plan that addresses hexavalent chromium contamination must be developed now and included in a revised DEIR that is circulated to the public.

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V. THE DEIR MUST BE REVISED AND RECIRCULATED FOR PUBLIC REVIEW AND COMMENT

CEQA requires recirculation of a DEIR for public review and comment when significant new information is added to the DEIR following public review, but before certification.⁹⁹ The CEQA Guidelines clarify that new information is significant if “the DEIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect.”¹⁰⁰

The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it.¹⁰¹ As discussed above: (1) not all Project components are disclosed and analyzed in the DEIR; (2) the Project will result in significant environmental impacts that are not analyzed in the DEIR; (3) further study for soil contamination is required in order to adequately identify the existing conditions on the ground and analyze and mitigate potentially significant impacts; and (4) mitigation measures must be added. These changes must be addressed in a revised DEIR that is circulated for public review and comment.

VI. CONCLUSION

The Project presents significant environmental issues that must be addressed prior to Project approval. The DEIR’s Project description is improperly truncated. The DEIR fails to adequately establish the existing setting upon which to measure impacts related to soil contamination and water supply. The DEIR also fails to include an adequate analysis of and mitigation measures for the Project’s

⁹⁷ DEIR, p. 4.E-26.

⁹⁸ *Id.*

⁹⁹ Pub. Resources Code § 21092.1.

¹⁰⁰ CEQA Guidelines § 15088.5.

¹⁰¹ *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (1981) 122 CalApp3d 813, 822. 2657-020cv

January 31, 2013
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as required by CEQA. The DEIR also fails to identify and disclose the applicable air quality standards and regulations. The DEIR must be revised and recirculated.

Cont'd

Sincerely,



Rachael E. Koss

REK:clv
Attachments

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The following information was obtained from the records of the Department of Health and Human Services, Office of Inspector General, Washington, D.C. The information was obtained from the records of the Department of Health and Human Services, Office of Inspector General, Washington, D.C.

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Richard H. Ross

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ATTACHMENT 1



Technical Consultation, Data Analysis and
Litigation Support for the Environment

2503 Eastbluff Dr., Suite 206
Newport Beach, California 92660

Matt Hagemann, P.G, Ch.G.
Tel: (949) 887-9013
Email: mhagemann@swape.com

December 18, 2012

Rachael Koss
Adams Broadwell Joseph & Cardozo
520 Capitol Mall, Suite 350
Sacramento, CA 95814

Subject: Comments on the Glenarm Repowering Project, Pasadena, California

Dear Ms. Koss:

We have reviewed the Draft Environmental Impact Report (DEIR) for the Glenarm Repowering Project (Project). The 14-acre Project site is divided into two portions, the Glenarm and Broadway site, and will have the following components:

- Replacement of a steam generating unit on the Broadway site with a combined-cycle 71 MW power unit on the Glenarm site to include a new gas turbine, steam turbine, once-through steam generator, wet-type cooling tower, water storage tanks, electric fuel gas compressors, an electric air compressor, a 125-foot-tall stack, administrative offices and a control station totaling 18,000 square feet;
- Reconfiguration or replacement of aboveground aqueous ammonia tanks and associated piping and other equipment on the Broadway site; and
- Incorporation of a one-acre parcel south of State Street into the Glenarm site.

We reviewed the DEIR for issues associated with hazards and hazardous materials. The DEIR fails to disclose baseline environmental conditions which may pose significant risks to workers and off-site receptors during construction. A revised DEIR should be prepared to disclose, evaluate and mitigate these impacts.

HAZARDS AND HAZARDOUS MATERIALS

Potentially significant sources of contamination have not been identified

A Phase I Environmental Site Assessment (ESA) has not been prepared for the site. Phase I ESAs are routinely completed as part of the CEQA process to determine the presence of recognized

environmental conditions (RECs)¹ and sources of contamination on and surrounding the Project site. Phase I ESAs identify conditions on site that are indicative of a past release of a hazardous substance or sources of contamination that may pose risks to construction workers or off-site receptors.

Our review of the Project site shows that historical sources of contamination, and, therefore, potential risks to construction workers and off-site receptors have not been identified. Research of historical Sanborn Fire Insurance maps showed that a city incinerator was located on part of the Project site. The incinerator began operations in 1933 and continued to operate until 1966 when it was demolished.² The incinerator was located where the current GT-3 and GT-4 gas compressor is located, in the southwestern portion of the Broadway site (Attachment A).

Sampling of the Project site was documented in a 2011 "Limited Phase II Environmental Investigation" (Appendix D); however, the Phase II sampling did not identify or target the incinerator, a major source of contamination. Although we recognize that the incinerator is not located in the area where soil disturbance is planned to occur at GT-5 construction site, aerial deposition of materials from the incinerator may have impacted soils that would pose a risk to construction workers.

We have obtained the following images from the City of Pasadena³ that show waste being loaded into the incinerator:



July 21, 1957

¹ A REC is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. See: <http://www.astm.org/Standards/E1527.htm>

² http://ww2.cityofpasadena.net/WATERANDPOWER/pdf/HISTORY_BROCHURE.pdf, p. 8; and http://pasadenapio.blogspot.com/2010/10/mystery-history-solved_28.html

³ E-mail correspondence with Dan McLaughlin, history librarian at the Pasadena Public Library, on December 17, 2012.



June 27, 1948

The caption for the image above states the conveyor is “filled with trash the burner hasn’t yet been able to handle – and there’s another whole field of it.”

Incomplete or poor combustion of garbage in municipal incinerators produces dioxins.⁴ Dioxins are highly toxic, persistent in the environment, and can bioaccumulate.⁵ Dioxins may have formed during incomplete combustion of the City incinerator and settled with ash and other particulate matter on soils that will be disturbed during Project construction. Dioxins strongly sorb to soil particles and sediment⁶ and, once deposited in adjacent areas, may persist at toxic concentrations for decades.

During earthwork at the Project site, which will involve excavation of 13,000 cubic yards of soil (DEIR, p. 2-12), workers may be exposed to dioxins through dermal contact and inhalation of dust. The California Regional Water Quality Control Board (CRWQCB) has established human health screening levels from exposure to contaminants, specifically for a construction worker scenario. The screening level for

⁴ <http://www.epa.gov/pbt/pubs/dioxins.htm>; and <http://www.epa.gov/ttn/atw/hlthef/dioxin.html>

⁵ <http://www.epa.gov/oar/oaqps/takingtoxics/p3.html>

⁶ <http://www.nrdc.org/breastmilk/chem9.asp>

dioxins for workers in direct contact with soil, as in the digging of a trench, is 0.00023 mg/kg, or 230 parts per trillion.⁷

Exposure to dioxins, even at very low concentrations such as parts per trillion levels, can be toxic.⁸ Short-term exposure to dioxins can lead to altered liver functions and skin lesions and long term exposure can impair the nervous system, endocrine, and reproductive functions. Dioxins are a known human carcinogen.⁹

Potential deposition of dioxins on the Project site from incinerator operations may impact the health of construction workers who may be exposed to contaminated soil via dermal contact and dust inhalation. Off-site receptors such as nearby residents and schoolchildren at the Blair High School, located approximately 800 feet away, may also be exposed during construction activities through inhalation of windblown dust.

Sampling, to test for dioxins in soil, should be conducted in areas where Project construction is scheduled to occur. Results should be compared to construction worker screening levels and human health screening levels and included in a revised DEIR. If results exceed screening levels, appropriate regulatory agencies should be notified and further site specific health risk evaluations should be conducted under their supervision. Mitigation measures, if necessary, should be incorporated into a revised DEIR to ensure that workers, nearby residents, and schoolchildren will not be significantly impacted.

Other soil contaminants at the Project site that may pose risks to construction workers were inadequately considered in the DEIR. The Phase II documents that forty soil samples were collected and tested for chromium VI, or hexavalent chromium. The Phase II states that none of the detected concentrations exceed health-based exposure levels (Phase II, p. iv). However, the Phase II fails to compare results to exposure levels specifically set for construction worker exposure.¹⁰ We have compared the detected concentrations of hexavalent chromium to the construction worker exposure screening levels and tabulated the results below:

Sample ID	Chromium VI ¹¹ (mg/kg)	Screening Level ¹² (mg/kg)
BH-1 @ 5-6.5'	0.51	0.53
BH-8@S	0.75	0.53
BH-9@4.5-6'	1.08	0.53
BH-10@S	2.22	0.53
BH-10@5-6.5'	0.52	0.53

⁷ http://www.swrcb.ca.gov/sanfranciscobay/water_issues/available_documents/ESL_May_2008.pdf, Table K-3

⁸ <http://www.epa.gov/pbt/pubs/dioxins.htm>

⁹ <http://www.who.int/mediacentre/factsheets/fs225/en/>

¹⁰ http://www.swrcb.ca.gov/sanfranciscobay/water_issues/available_documents/ESL_May_2008.pdf, Table K-3

¹¹ Appendix D: Phase II Investigation and Hazardous Materials Survey Reports

¹² http://www.swrcb.ca.gov/sanfranciscobay/water_issues/available_documents/ESL_May_2008.pdf, Table K-3

Hexavalent chromium concentrations in three samples exceed the screening level for construction worker safety. The other two samples, at 0.51 mg/kg and 0.52 mg/kg, are barely below the screening level of 0.53 mg/kg.

Review of the 1950 Sanborn Fire Insurance map shows that condensing towers were located to the east and south of the currently proposed location of GT-5 on the Glenarm site, a potential source not identified in the DEIR (Attachment B). Condensing towers are known sources of hexavalent chromium.¹³ Hexavalent chromium is a known human carcinogen, and exposure can result in gastrointestinal and neurological effects and dermal contact can cause skin burns.¹⁴

Project construction would result in excavation of 13,000 cubic yards of soil which would be temporarily stored on the property. Approximately 11,700 cubic yards of soil would be re-used on site and the remaining 1,300 cubic yards would be disposed off-site (DEIR, p. 2-12). Excavated soil may be contaminated with chromium VI and dioxins at levels that exceed screening levels for a construction worker exposure scenario. The DEIR only calls for mitigation that would involve limited removal of a small area of lead-contaminated soil (Mitigation Measure HAZ-3), and preparation of a plan that would provide measures to evaluate soils that “appear to have been affected by hydrocarbons or any other contaminant”(Mitigation Measure HAZ-5). Neither mitigation measure adequately addresses the potential risks we have identified: dioxin- and chromium VI-contaminated soils would not be apparent to the naked eye during excavation activities.

Soils, where Project construction will occur, should be tested for dioxins. Results should be compared to the values in Table K-3 in the CRWQCB guidance¹⁵ and included in a revised DEIR. A revised DEIR should be prepared to disclose all known information about the incinerator and contaminants that are likely to be associated with its operation, to include an evaluation of health risks from all potential scenarios for human exposure. Additional sampling for chromium VI should be conducted and targeted to the location of the former cooling towers.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Uma Bhandaram

¹³ <http://www.atsdr.cdc.gov/toxprofiles/tp7-c6.pdf>, p. 371

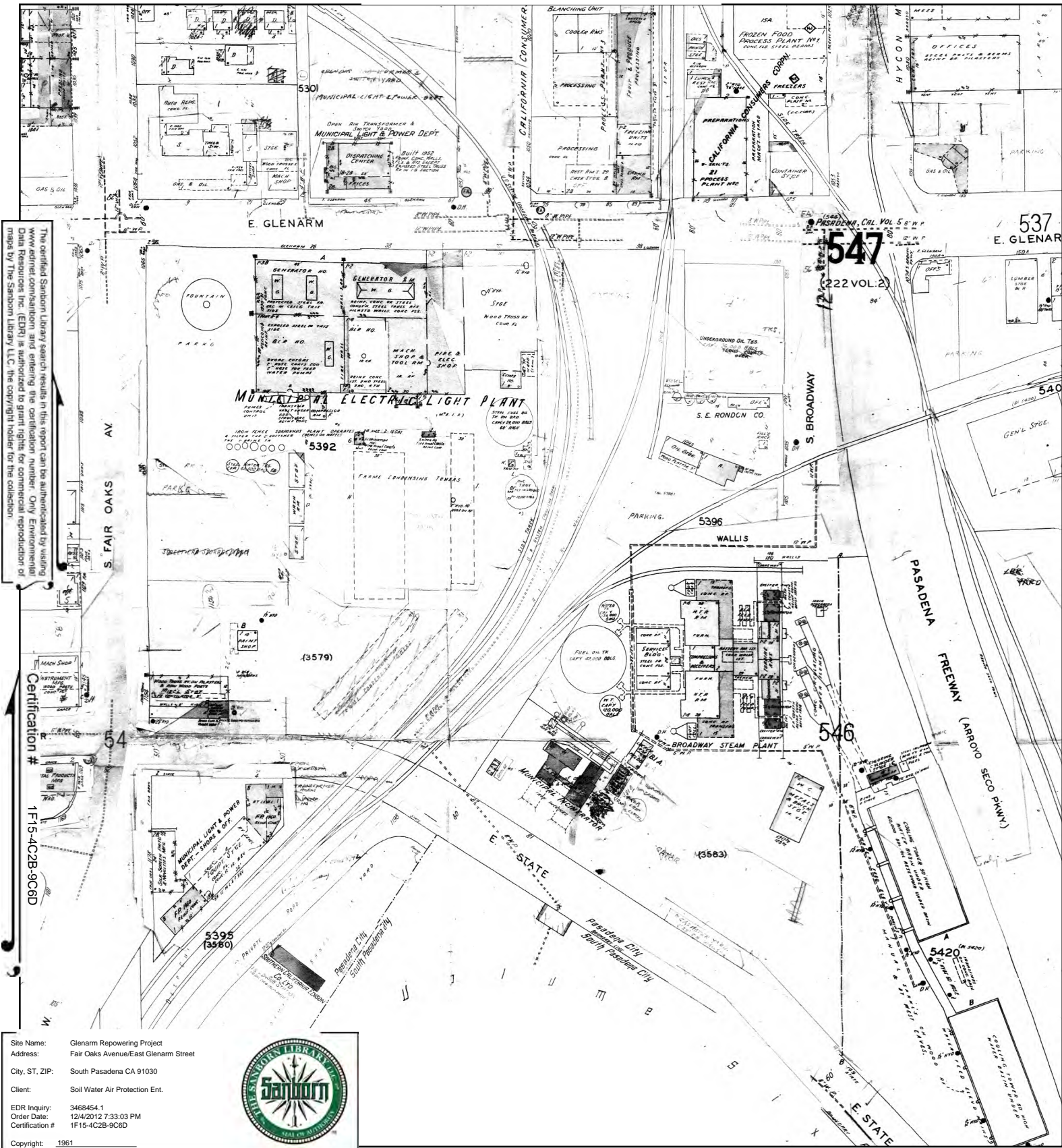
¹⁴ <http://www.epa.gov/ttnatw01/hlthef/chromium.html>

¹⁵ http://www.swrcb.ca.gov/sanfranciscobay/water_issues/available_documents/ESL_May_2008.pdf

ATTACHMENT A:

1961 Sanborn Fire Insurance Map

1961 Certified Sanborn Map



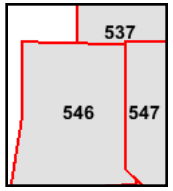
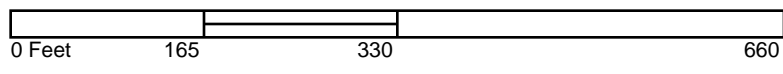
The certified Sanborn Map search results in this report can be authenticated by visiting www.edrnet.com and entering the certification number. Only Environmental Data Resources, Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 1F15-4C2B-9C8D

Site Name: Glenarm Repowering Project
 Address: Fair Oaks Avenue/East Glenarm Street
 City, ST, ZIP: South Pasadena CA 91030
 Client: Soil Water Air Protection Ent.
 EDR Inquiry: 3468454.1
 Order Date: 12/4/2012 7:33:03 PM
 Certification #: 1F15-4C2B-9C8D



This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.



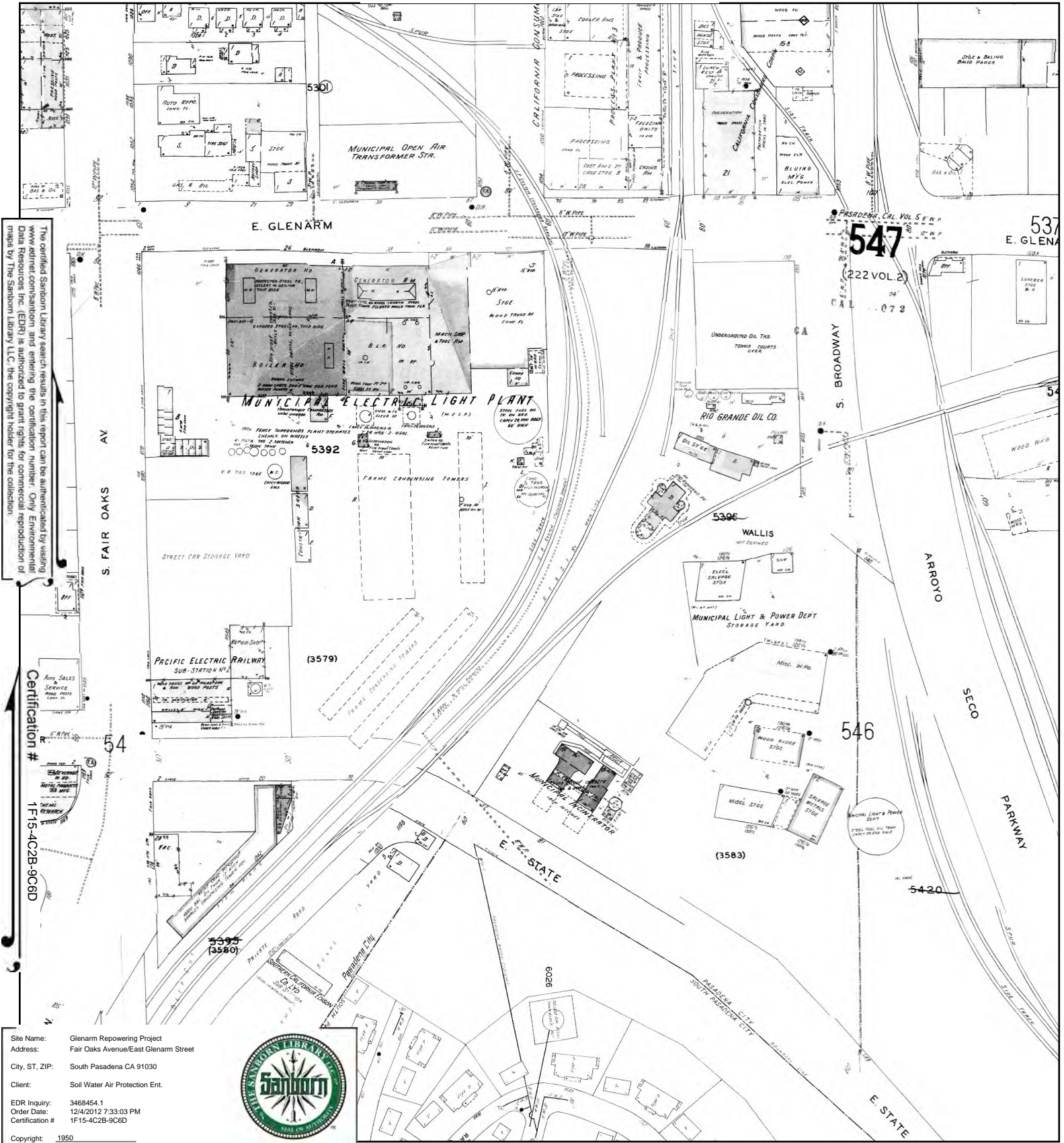
Volume 5, Sheet 537
 Volume 5, Sheet 546
 Volume 5, Sheet 547



ATTACHMENT B:

1950 Sanborn Fire Insurance Map

1950 Certified Sanborn Map



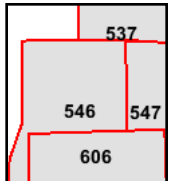
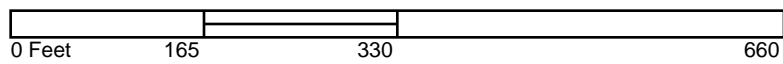
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Certification # 1F15-4C2B-9C8D

Site Name: Glenarm Repowering Project
 Address: Fair Oaks Avenue/East Glenarm Street
 City, ST, ZIP: South Pasadena CA 91030
 Client: Soil Water Air Protection Ent.
 EDR Inquiry: 3468454.1
 Order Date: 12/4/2012 7:33:03 PM
 Certification #: 1F15-4C2B-9C8D
 Copyright: 1950



This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



- Volume 5, Sheet 537
- Volume 5, Sheet 546
- Volume 5, Sheet 547
- Volume 6, Sheet 606





Technical Consultation, Data Analysis and
Litigation Support for the Environment

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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review**

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certification:

California Professional Geologist

California Certified Hydrogeologist

Qualified SSWPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – present;
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nationwide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt currently teaches Physical Geology (lecture and lab) to students at Golden West College in Huntington Beach, California.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

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Cont'd

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.



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Uma Bhandaram
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Uma N. Bhandaram

Education:

B.S. Degree, Environmental Science, University of California, Los Angeles (UCLA), 2011.

Professional Experience:

Uma has 1 ½ years of experience working in environmental policy. At SWAPE, Uma serves as an environmental scientist and provides technical consultation, data analysis, and litigation support for the environment. Uma works closely with legal counsel to analyze and prepare comments on environmental impacts from commercial and industrial development.

With SWAPE, Uma's duties have included:

- Analyzing numerous environmental impact reports;
- Preparing comments on environmental impact reports within the provisions of the California Environmental Quality Act with regard to hazards and hazardous materials and waste; hydrology, water quality, and water resources; air quality; and greenhouse gas emissions; and
- Performing stormwater analysis and best management practice evaluation at industrial and construction facilities.

Positions Uma has held include:

- Environmental scientist, SWAPE (September 2011 – Present);
- Intern, Haiti Timber Re-Introduction Project (March 2012 – May 2012);
- Intern, UCLA Facilities Management (June 2010 – July 2011);
- Communications Director, UCLA Institute of the Environment Action Research Teams (August 2010 – June 2011); and
- External Affairs Director, UCLA Student Government Sustainability Office (August 2010 – June 2011).

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Cont'd

ATTACHMENT 2



December 18, 2012

Ms. Rachael Koss
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Ste. 1000
South San Francisco, CA 94080

Dear Ms. Koss:

Per your request I have reviewed the Air Quality and Greenhouse Gas Analyses conducted for the proposed Glenarm Power Plant Repowering Project in the *Draft Environmental Impact Report* (Report) published by the City of Pasadena in November 2012. My review focused on the adequacy of the Report's Air Quality and Greenhouse Gas Analyses, including the applicability of mitigation measures. In my opinion, the analyses included in the Report do not fully address potentially significant impacts, and no mitigation measures are proposed to reduce impacts. I recommend that the City conduct a thorough evaluation of potentially significant impacts to air quality and global climate, and evaluate the need for mitigation measures to reduce these impacts.

My qualifications include a doctorate in Chemical Engineering from Purdue University and 23 years of environmental consulting experience in the preparation of CEQA and NEPA documents throughout the western United States. I have prepared and reviewed numerous project and plan documents for power generation projects, commercial projects, industrial projects, and infrastructure projects, and am very familiar with the state and local requirements for evaluating air quality and greenhouse gas impacts. In addition, I have assisted in the preparation of air permit applications for several power plant projects. I have also prepared numerous toxic air contaminant health risk assessments in accordance with California guidelines. My resume is attached to this letter.

My comments on the Air Quality and Greenhouse Gas Analyses are as follows:



I. The U.S. EPA's newly adopted New Source Performance Standards (NSPS) are applicable to the turbine.

The Air Quality Section of the Report states that “the proposed project will be subject to Federal New Source Performance Standards (NSPS) Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) which establishes standards for PM and NO_x emissions.”¹ On July 6, 2006, the U.S. EPA adopted 40 CFR Part 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines, which applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005. The City is proposing to construct a new natural gas-fired combustion turbine (Unit GT-5), which would be subject to the more stringent NSPS NO_x emission limits of Subpart KKKK, and would also be subject to the SO_x emission limits of Subpart KKKK. As stated in 40 CFR Part 60, Subpart Db, “If the affected facility (*i.e.* heat recovery steam generator) is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)” The Air Quality Section did not correctly identify the applicable NSPS.

II. The project is subject to the Federal Prevention of Significant Deterioration Regulations, but no analysis of compliance with the requirements of these regulations was provided in the Draft EIR.

The Air Quality Section of the Report states that “Criteria pollutant emissions resulting from the project are less than the PSD increment. Therefore, the project is exempt from XVII requirements with regard to criteria pollutants.”² There is no further analysis of the applicability of the Federal Prevention of Significant Deterioration (PSD) regulations.

Appendix B of the Draft EIR provides detailed emission calculations showing the annual operational emission increases attributable to the operation of Unit GT-5.³ According to the tables, the GE LM6000 turbine would result in a net emission increase of 16 tons/year of both PM₁₀ and PM_{2.5}, and the Rolls Royce Trent 60 turbine would result in a net emission increase of 20 tons/year of both PM₁₀ and PM_{2.5}. According to the PSD regulations, as adopted in SCAQMD Regulation XVII, a significant increase in air contaminant emissions is defined as 15 tons/year for PM₁₀.

¹ Draft EIR. Page 4.B-2.

² Draft EIR. Page 4.B-10.

³ Draft EIR. Appendix B – Air Quality Assessment Files, Page 58, Table 14.



On March 25, 2010, the California Air Resources Board (ARB) approved the PM₁₀ Redesignation Request, Maintenance Plan, and Transportation Conformity Budgets for the South Coast Air Basin. On April 28, 2010, the Redesignation Request was transmitted to the U.S. EPA. Redesignation of the South Coast Air Basin to an attainment area for PM₁₀ is pending, and will likely be approved. The project would therefore be subject to the requirements of the PSD Regulations/SCAQMD Regulation XVII. This in turn would require the project to demonstrate that it meets the requirements for Best Available Control Technology for PM₁₀; to conduct an Air Quality Impact Analysis to demonstrate that the project would not result in an exceedance of the ambient air quality standard for PM₁₀; to conduct a PSD increment analysis; and to conduct additional impact analyses to assess the impacts of air, ground and water pollution on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant from the source or modification under review, and from associated growth. Associated growth is industrial, commercial, and residential growth that will occur in the area due to the source. The Draft EIR does not provide this information, and simply states that the project will comply with Regulation XVII without providing any justification for this conclusion.⁴

III. Project emissions would contribute to existing violations of the PM₁₀ and PM_{2.5} standards.

The section provides an analysis of potential impacts from PM₁₀ emissions in Table 4.B-15. The impact analysis does not specifically address emissions of PM_{2.5}, but indicates in the table that it is assumed that PM_{2.5} emissions equal PM₁₀ emissions. The impact analysis did not add in background concentrations to the impact and presents only the impact from the new GT-5 turbine. This approach does not acknowledge the presence of four other turbines at the site that would contribute to PM₁₀ and PM_{2.5} concentrations, nor does it address background concentrations from other sources in the project area. According to Table 4.B-3, the maximum background concentrations of PM₁₀ measured in the project area were 109 µg/m³ on a 24-hour basis and 40.0 µg/m³ on an annual basis; the maximum background concentrations of PM_{2.5} measured in the project area were 68.9 µg/m³ on a 24-hour basis and 14.3 µg/m³ on an annual basis. The project would therefore contribute to existing violations of the CAAQS for PM₁₀ and existing violations of both the CAAQS and NAAQS for PM_{2.5}. Despite these background concentrations, the Air Quality Analysis concludes that the project's emission increases would not contribute to a violation of an air quality standard. This conclusion is not supported by the information presented in the analysis. In fact, Appendix B incorrectly states that 2.50 µg/m³ is the ambient air quality standard for PM₁₀⁵, and indicates that modeling was

⁴ Draft EIR. Appendix B – Air Quality Assessment Files, Page 24.

⁵ Draft EIR. Appendix B – Air Quality Assessment Files, Page 57, Table 13.



conducted for PM_{2.5}, but does not provide results of that modeling analysis. The Draft EIR has incorrectly concluded that impacts are less than significant.

IV. The Air Quality Analysis did not provide a complete evaluation of potential impacts to sensitive receptors.

The Draft EIR provided an evaluation of impacts to sensitive receptors from toxic air contaminant (TAC) emissions under Impact AQ-4. The analysis, however, does not fully address the potential for significant adverse impacts to sensitive receptors.

Despite the statement that emissions are lower during commissioning and startup, it should be noted that stack parameters during commissioning and startup are different from maximum operations and therefore impacts could be higher, not lower. No demonstration is made to verify the assertion that impacts are lower, however. Changes in stack parameters could result in greater impacts from downwash effects, which would affect receptors in the immediate vicinity of the project. As stated in the Draft EIR⁶, “the nearest sensitive receptors to the project site are: single family residences approximately 64 meters to the west across Fair Oaks Avenue; multi-family residential approximately 130 meters to the south of the project site; and Blair High School approximately 197 meters east.” Given the close proximity of these receptors to the site, an analysis of the potential impacts during commissioning and startup that takes into account the stack parameters specific to those operations should have been included in the analysis.

The Draft EIR states⁷ “The greatest potential for construction-related TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities.” The Draft EIR then concludes that these impacts would be less than significant, but does not provide an analysis that demonstrates this to be the case. Construction impacts must be evaluated quantitatively because they contribute to the overall lifetime excess cancer risk. Therefore, the lifetime risks would include the additive risks from exposure both to diesel particulate matter during construction and to emissions from the operation of the on-site sources including the turbine and cooling tower. Furthermore, no analysis of on-road trucks is provided despite the requirement to export debris and import fill material. On-road trucks are also a source of diesel particulate matter emissions, and these trucks would travel in close proximity to sensitive receptors in the project vicinity.

The Draft EIR therefore underestimates potential TAC impacts to sensitive receptors by not addressing the contribution from construction emission sources.

⁶ Draft EIR. Page 4.B-45.

⁷ Draft EIR. Page 4.B-46.



V. Mitigation measures were not proposed to address significant impacts.

The Draft EIR acknowledges that emissions of PM_{2.5} are above the SCAQMD's significance threshold⁸. The thresholds are used by the SCAQMD to determine whether a project's emissions would have a significant impact on air quality. Given that the emissions of PM_{2.5} are above the threshold, the Draft EIR cannot conclude that impacts are less than significant, and has not made a demonstration to this effect.

SCAQMD acknowledges that emissions of particulate matter can have regional effects.⁹ As stated in their guidance document, "When fugitive dust enters the atmosphere, the larger particles of dust typically fall quickly to the ground, but smaller particles less than 10 microns in diameter may remain suspended for longer periods, giving the particles time to travel across a regional area and affecting receptors at some distance from the original emissions source. Fine PM_{2.5} particles have even longer atmospheric residency times." Accordingly, the SCAQMD's mass emission rate threshold of 55 lbs/day for PM_{2.5} was designed to identify the potential for significant impacts on a regional basis. Despite the exceedance of the significance threshold, the Draft EIR concludes that no mitigation is necessary because "the proposed project would result in either no impact or less than significant impacts without mitigation measures that are not required by applicable rules and regulations."¹⁰ This statement is not supported by the information presented in the Draft EIR.

The project should be required to fully mitigate its significant PM_{2.5} impacts. Mitigation measures should include a requirement to offset the project's PM_{2.5} emissions through emission reduction measures that would provide an offsite reduction in emissions of PM_{2.5} that is commensurate with the project's impacts. These emission reduction measures could include installation of particulate control devices that are designed to reduce directly emitted PM_{2.5} on the existing on-site combustion sources, reducing the temperature of the gas stream and increasing collection of condensable PM_{2.5} through use of a wet electrostatic precipitator or other control device; installation of diesel oxidation catalysts and/or filters on existing diesel-fired equipment on site; or development of off-site emission offsets through the installation of particulate emission reduction devices or implementation of off-site controls.

⁸ Draft EIR. Page 4.B-38.

⁹ SCAQMD. 2006. *Final – Methodology to Calculation Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*. Page 7.

¹⁰ Draft EIR. Page 4.B-53.



VI. Greenhouse gas emissions result in a significant impact, and mitigation measures were not proposed to address this impact.

Despite the project's stated goal of meeting the energy IRP and strategies consistent with the ARB's Climate Change Scoping Plan, the project results in a substantial increase in GHG emissions.¹¹ The analysis concludes that impacts are significant and unavoidable and states that no feasible mitigation measures are available. The project should be required to fully mitigate this significant impact. Mitigation measures for significant GHG impacts could include measures to provide emission reductions on- or off-site that would fully offset the project's impact. Emission reduction strategies could include the pursuit of carbon sequestration strategies; funding of a program to provide solar roofs for existing buildings within the City; implementing a tree planting program; and development of a program to eliminate or replace high global warming potential substances such as SF6 or CFCs.

Conclusions

In conclusion, the Air Quality and Greenhouse Gas Analyses conducted for the proposed Glenarm Power Plant Repowering Project in the *Draft Environmental Impact Report* (Report) published by the City of Pasadena does not provide a complete analysis of potentially significant impacts associated with criteria pollutant emissions or TAC emissions. The Report does not acknowledge impacts that are above the significance thresholds as significant impacts, and does not provide mitigation measures to reduce these impacts to less than significant levels.

In my opinion the City should include a complete analysis of potential impacts to air quality and global climate, and should include the requirement for mitigation measures that will be implemented to reduce or avoid the Project's impacts.

Sincerely,

A handwritten signature in black ink that reads "Valorie L. Thompson". The signature is written in a cursive, flowing style.

Valorie L. Thompson, Ph.D.
Principal

¹¹ Draft EIR. Page 4.D-21.



VALORIE L. THOMPSON, PH.D.
PRINCIPAL

Dr. Thompson has over twenty-three years of experience in environmental planning, air quality studies, air toxics emission evaluations, health risk assessments, process safety management, hazard and operability studies, off-site consequence analysis, and atmospheric dispersion modeling and is the founder of Scientific Resources Associated. She has managed numerous environmental planning, air quality, and risk assessment projects, including preparation of the Application for Certification for a proposed new natural gas-fired power plant, evaluation of risks associated with hazardous waste sites, and assessment of air emissions and air toxics risks from manufacturing facilities, oil and gas processing facilities, chlorine repackaging facilities, incineration projects, and cogeneration facilities. Dr. Thompson has also assisted government clients in the development of air emission inventories and compliance strategies for large military bases. Additionally, she has conducted research in atmospheric dispersion and enhanced oil recovery.

EDUCATION

Ph.D., Chemical Engineering, Purdue University, 1986
M.S., Chemical Engineering, Purdue University, 1982
B.S., Chemistry, Eastern Michigan University, 1980

PROFESSIONAL REGISTRATIONS/AFFILIATIONS

Young Professional Award, Woodward-Clyde Consultants, 1991
Air and Waste Management Association
American Institute of Chemical Engineers
Small Woman-Owned Business Enterprise/Disadvantaged Business Enterprise
Certification: Caltrans CT-030697
California Department of General Services Small Business Certification: #0019779

PROFESSIONAL EXPERIENCE

CEQA/NEPA Air Quality Analyses

Air Quality Impact Analysis – Pier S Container Terminal. Dr. Thompson is responsible for the preparation of the air quality analysis, greenhouse gas analysis, and health risk assessment for the proposed Pier S Container Terminal at the Port of Long Beach. The analysis, which is in progress, includes evaluating emissions from ocean-going vessels, harbor craft, diesel truck traffic, and container terminal equipment. The

analysis also includes a health risk assessment to address potential impacts to residential areas and sensitive receptors in the communities surrounding the Port. The analysis also involves preparation of a greenhouse gas emission inventory and evaluation of mitigation measures.

Air Quality Impact Assessment – Barren Ridge Renewable Transmission Project, Los Angeles Department of Water and Power. Dr. Thompson prepared the Air Quality Impact Assessment and Global Climate Change Assessment for the proposed construction of a transmission line in Kern and Los Angeles Counties. The project included evaluating emissions associated with the construction of the transmission line and addressing the requirements under CEQA and NEPA for the portions of the project within the SCAQMD, the AVAQMD, and the KCAPCD. The project included coordination with SCAQMD, LADWP, U.S. Forest Service, and Bureau of Land Management staff, and included an evaluation of the project’s requirements under the General Conformity Rule.

Technical Review – Sunrise Powerlink Project. Dr. Thompson was part of a technical peer review team that was tasked with conducting a technical peer review of the air quality and greenhouse gas analyses that were conducted for the Sunrise Powerlink Project, a major transmission line proposed to transport electricity generated from renewable energy sources to San Diego Gas and Electric’s customer base in San Diego. The project included review of calculations and mitigation measures and refinement of emission calculations based on more appropriate and realistic constructions scenarios.

Air Quality and Global Climate Change Impact Assessment – La Goleta Storage Field Enhancement Project. Dr. Thompson prepared the Air Quality Impact Assessment, Global Climate Change Evaluation, and Application for Authority to Construct for the La Goleta Storage Field Enhancement Project proposed by SoCal Gas. The project included evaluating construction emissions associated with the drilling of four new development/exploratory wells designed to produce native gas. The analysis included evaluating emissions that would result from processing of the gas in existing facilities.

Air Quality and Greenhouse Gas Analysis – South Orange County Reliability Project. For the proposed upgrades to the South Orange County transmission system, Dr. Thompson conducted an Air Quality and Greenhouse Gas Analysis to address potential impacts associated with construction and operational activities for substation and transmission line upgrades. The project included evaluating emissions attributable to heavy construction equipment, worker trips, fugitive dust, and helicopters.

Air Quality Impact Analysis/Global Climate Change Analysis – Meridian Specific Plan Amendment. For a large industrial/commercial development in Riverside, Dr. Thompson prepared an air quality analysis, health risk assessment, and global climate change analysis to address potential impacts associated with construction and operation

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of the development. The project included warehousing and distribution centers, light industrial uses, commercial uses, a gas station, and restaurant/fast food operations. The air quality analysis addressed construction impacts associated with construction phases to identify a maximum construction scenario, and identified mitigation measures to be implemented to reduce impacts to the extent possible. The health risk analysis addressed diesel particulate emissions from truck traffic attributable to the project, as well as emissions from diesel generators and TRUs. The global climate change analysis took into account the project's design features that are designed to reduce greenhouse gas emissions as well as state and federal programs designed to reduce greenhouse gas emissions from vehicles.

Air Quality Impact Analysis – County of San Diego General Plan Update. Dr. Thompson prepared the Air Quality Impact Analysis for the County of San Diego's General Plan Update. The analysis took into account the proposed additional development in the County and consistency with local air quality attainment plans (RAQS and SIP). The analysis also identified potential land use and air quality issues with regard to future development and conflicts in land use.

Air Quality Impact Analysis – Marine Corps F-35B West Coast Basing Project. The F-35B project is designed to replace existing military aircraft at U.S. Marine Corps installations with the new F-35B aircraft. Dr. Thompson conducted the air quality analysis for the Proposed Action, which involved evaluating emissions associated with construction projects, aircraft, ground support equipment, vehicles, and maintenance activities. The analysis included an evaluation of existing conditions to establish a baseline, and also included evaluating emissions from the F-35B aircraft based on aircraft operational training profiles. In addition, Dr. Thompson prepared the greenhouse gas emissions analysis for the Proposed Action.

Air Quality Impact Analysis – Chula Vista Bayfront Master Plan. Dr. Thompson prepared the Air Quality Analysis for two specific projects, the Gaylord Resort and Conference Center and the Pacific Residential and Retail Development, proposed as part of the Chula Vista Bayfront Master Plan. The analyses included evaluations of potential impacts associated with construction, health risk assessments to address toxic air contaminants from mobile sources (heavy-duty truck traffic), and an evaluation of global climate change impacts from the projects. Dr. Thompson also prepared the global climate change evaluation for the project. The analysis involved coordination between individual applicants and the Port and Port counsel on addressing greenhouse gas emissions under CEQA, as well as development of a mitigation program designed to address consistency with the goals of AB 32. The document established measures to reduce greenhouse gas emissions for both the specific developments and for future projects at the Chula Vista Bayfront.

Port of Long Beach, Pier S Container Terminal. Evaluation of greenhouse gas emissions for the proposed Pier S Container Terminal at the Port of Long Beach. The

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analysis included quantification of greenhouse gas emissions for ocean-going vessels, harbor craft, terminal equipment, on-road vehicles, and rail. The analysis also included evaluating measures proposed in the Port's Climate Action Plan as they apply to Pier S activities, and identifying those measures that will be implemented for the project as mitigation for global climate change impacts.

Air Quality Analysis – National City Marine Terminal, Port of San Diego. Preparation of an air quality, air toxics, and greenhouse gas assessment for the proposed expansion of the National City Marine Terminal for the Port of San Diego. The Port is proposing to expand the wharf area to allow for additional marine vessel calls at the terminal. The analysis included estimating emissions of greenhouse gases from expanded Port operations, including emissions from ocean-going auto carriers and truck traffic.

Air Permit Application – Clearwater Port Project. As part of the CEQA/NEPA analysis for a proposed offshore LNG terminal, a greenhouse gas analysis was prepared to address emissions from ocean-going LNG carriers and terminal operations. The project included evaluating emissions from stationary source operations including vaporizing equipment and power generation equipment, as well as evaluating emissions from LNG carriers and support vessels during both construction and operation of the facility.

Air Quality Impact Assessment – La Mesa Mixed-Use Overlay Zone. For the redevelopment of the La Mesa Mixed-Use Overlay Zone, Dr. Thompson prepared the Air Quality Technical Report. The analysis included an evaluation of construction that would occur over the development of the project; operational impacts associated with traffic, area sources, and energy use; and an evaluation of potential global climate change impacts.

Air Quality Impact Analysis – University Towne Center. For the proposed redevelopment of the University Towne Center retail center, Dr. Thompson prepared the Air Quality Analysis. The analysis addressed potential impacts associated with construction and operation of the center, including impacts from heavy construction equipment and fugitive dust; operation of the transit center including bus traffic, and traffic and area sources generated by the development itself. The analysis also included an evaluation of greenhouse gas emissions and potential global climate change impacts.

Air Quality Impact Analysis – Quarry Falls. Dr. Thompson prepared the Air Quality Impact Analysis for the proposed mixed-use Quarry Falls development in Mission Valley. The analysis included an assessment of construction impacts, operational impacts, and potential impacts associated with the continued operation of asphalt/concrete production at the site that would continue until full development of the project. The analysis also included an assessment of global climate change and greenhouse gas emissions.

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Air Quality Impact Assessment – Merriam Mountains Mixed-Use Development. For a proposed mixed residential and commercial development in northern San Diego County, Dr. Thompson prepared the air quality impact analysis in accordance with County of San Diego requirements. The analysis evaluated potential impacts associated with project construction, project-related traffic, commercial uses, and potential health effects associated with emissions of diesel particulate matter.

Air Quality Impact Assessment – Harmony Grove. For a proposed residential development in northern San Diego County, Dr. Thompson prepared the air quality impact analysis in accordance with County of San Diego requirements. The analysis evaluated potential impacts associated with project construction, project-related traffic, recreational/equestrian uses, and potential health effects associated with emissions of diesel particulate matter.

Health Risk Assessment Protocol – Port of Long Beach. Dr. Thompson was responsible for preparing the Health Risk Assessment Protocol for all human health risk assessments conducted for projects proposed at the Port of Long Beach. The development of the Protocol included identifying source configurations, emissions estimation methodologies, modeling approaches, and report preparation for Port of Long Beach HRAs.

Hazards Impact Assessment – Irvine Ranch Water District. For the proposed expansion of the Michelson Reclaimed Water Plant, Dr. Thompson prepared the hazards assessment to evaluate the potential for impacts associated with handling of hazardous materials. The assessment focused on materials that would be affected by the expansion, including chlorine gas, methanol, and other chemicals.

Air Quality Analysis – Southern California Range Complex EIS. Dr. Thompson prepared the air quality analysis for the Southern California Range Complex EIS. The project involved the movement of military training operations from other locations to the Southern California Range Complex. Dr. Thompson was responsible for conducting air emission calculations for mobile sources, including aircraft and marine vessels, and for evaluating the project's requirements under NEPA and the General Conformity Rule.

Air Quality Analysis and Health Risk Assessment – Port of Long Beach. Dr. Thompson has been working with the Port of Long Beach in evaluating approaches to air quality and health risk assessments for future port projects. She has assisted in the evaluation of air impacts associated with a proposed redevelopment of Port facilities, and has conducted preliminary health risk assessment modeling and calculations for the redevelopment.

Air Quality Impact Assessment – Los Angeles Department of Water and Power. Dr. Thompson prepared the Air Quality Impact Assessment for the proposed repowering of the Haynes Generating Station in Long Beach, California. The project included

evaluating potential criteria pollutant and toxic air contaminant impacts associated with the installation of two new combustion turbines, and the net air quality benefit of decommissioning existing boilers. The project involved conducting analyses of various proposed design configurations and stack heights to determine potential worst case impacts for the Environmental Impact Report. The project also involved evaluating various operational scenarios, including startup/shutdown and diesel readiness testing. The analysis was prepared in accordance with South Coast Air Quality Management District guidelines.

Air Conformity Determination – 129th RQW Relocation. Dr. Thompson has been providing assistance to the Air National Guard in their evaluation of the potential impacts and preparation of the Conformity Determination for the proposed relocation of the 129th RQW from Moffett Field in the San Francisco Bay Area to Castle Airport in Merced County. The project has involved interfacing with the San Joaquin Valley Air Pollution Control District on emission calculations, planning documents, and offset requirements.

Review of Air Quality Analysis – John Wayne Airport Expansion EIR. Dr. Thompson conducted a review and analysis of the Air Quality Analysis prepared for the proposed expansion of John Wayne Airport in Orange County, California. The project involved conducting a technical review of air emission calculations and health risk calculations for the proposed project.

Air Quality Analysis – Chiquita Terminal Relocation, Port of Los Angeles. For the Port of Los Angeles, Dr. Thompson prepared a fast-track air quality analysis to address the emissions associated with construction and operation to relocate the Chiquita Terminal from the Port of Long Beach to the Port of Los Angeles. The construction impact analysis included evaluating construction equipment emissions, and emissions associated with construction worker commutes and truck deliveries. The operational analysis included evaluating emissions associated with truck traffic to and from the facility and emissions associated with operations, including the use of ethylene in ripening rooms at the Terminal.

Air Quality Analysis – Otay Water District Recycled Pipeline and Facilities. Dr. Thompson prepared the Air Quality Analysis for a proposed recycled pipeline construction project that included the pipeline construction, along with construction of a reservoir and pump station. The analysis included evaluating emissions from construction equipment as well as emissions associated with construction worker commutes and truck deliveries.

Air Quality Analysis – Robert B. Diemer Filtration Plant, Metropolitan Water District. Dr. Thompson conducted a detailed construction evaluation that involved several construction scenarios to assess the impact of compressing construction schedules for the proposed modifications to the Robert B. Diemer Filtration Plant located in the South Coast Air Basin. The evaluation involved identifying potential construction

scenarios for proposed construction phases and determining the cumulative emissions associated with simultaneous phases, and advising the MWD on mitigation measures to reduce impacts.

Air Quality Analysis and Conformity Evaluation – Coachella Canal. SRA conducted an air quality analysis for a revised alternative for the Coachella Canal Lining Project in Riverside and Imperial Counties. The project involved evaluating emissions associated with project construction, including heavy equipment emissions, emissions associated with trucks and construction worker commutes, and emissions of fugitive dust. The project also included developing a conformity applicability analysis which compared project-related emissions with the *de minimis* thresholds for the two jurisdictions in which the project would occur.

Air Quality Analysis – Sugarbush Residential Development. In support of the Negative Declaration, Dr. Thompson prepared the Air Quality Analysis for a proposed 60-residence development located in northern San Diego County, California. The project included an evaluation of construction emissions, including diesel particulate, and operational impacts associated with traffic accessing the development. The project also included conducting a risk screening analysis of the diesel emissions associated with both construction and operational traffic.

Air Quality Analysis – Crestlake Residential Development. Dr. Thompson prepared the Air Quality Analysis for a proposed residential development located in Alpine, California. The project included an evaluation of construction emissions, including diesel particulate, and operational impacts associated with traffic accessing the development. The project also included conducting a risk screening analysis of the diesel emissions associated with both construction and operational traffic to address potential risks to existing residences near the site. Dr. Thompson also assisted in the identification and assessment of feasible mitigation measures to mitigate potential impacts.

Air Quality Analysis – Camp Pendleton Tertiary Treatment Plant. Dr. Thompson prepared a fast-track update to the air quality analysis for the proposed construction and operation of the Camp Pendleton Tertiary Treatment Plant that is proposed for the treatment of wastewater generated at Camp Pendleton. The project included assessing construction emissions associated with the various phases of construction, and evaluating the conformity of the construction phase of the project with the San Diego State Implementation Plan. The assessment also included evaluating the potential for adverse impacts associated with odors generated from wastewater treatment processes.

Air Quality Analysis – Del Lago Bus Rapid Transit Center. Dr. Thompson prepared the Air Quality Analysis for a bus rapid transit center located in northern San Diego County, California. The project involved evaluating construction and impacts associated with bus and personal vehicle traffic accessing the center.

Air Quality Analysis – Mira Mesa Bus Rapid Transit Center. Dr. Thompson prepared the Air Quality Analysis for a bus rapid transit center located in the Mira Mesa area of San Diego, California. The project involved evaluating construction and impacts associated with bus and personal vehicle traffic accessing the center.

Air Quality Analysis – San Diego Technology Center. Dr. Thompson prepared the Air Quality Analysis for a proposed industrial/research and development project located in San Diego, California. The project included assessing emissions associated with traffic increases associated with the project. The analysis also address CO “hot spots” in the project vicinity associated with project-related traffic. Dr. Thompson also assisted in the identification and assessment of feasible mitigation measures to mitigate potential impacts.

Air Quality Analysis – Lincoln Avenue Road Widening Project. For the City of Corona, Dr. Thompson prepared the air quality analysis and CO “hot spots” evaluation for the proposed widening of Lincoln Avenue. The project included interface with Caltrans District 8 and preparation of the evaluation to address the potential for CO “hot spots” in the project vicinity.

Air Quality Analysis – East Sycamore Commercial Development. For the City of Vista, Dr. Thompson prepared the air quality analysis and CO “hot spots” evaluation for a proposed commercial development to be located in the City. The project involved CO “hot spots” modeling with the CALINE4 model to address the potential for CO “hot spots” to form due to increased traffic in the project vicinity.

Air Quality Analysis – Mitsubishi Cement Expansion, Port of Long Beach. In support of the Negative Declaration, Dr. Thompson prepared the air quality analysis for the proposed expansion of the Mitsubishi Cement facility located at the Port of Long Beach, California. The project involved estimating emissions from cement loading operations as well as truck traffic accessing the facility.

Air Quality Analysis – Rhodes Crossing Development. Dr. Thompson prepared the Air Quality Analysis for a proposed commercial and residential development located in San Diego, California. The project involved evaluating construction and operational impacts to the ambient air quality, as well as a screening CO “hot spots” evaluation for traffic.

Air Quality Analysis – UTC Expansion. Dr. Thompson is prepared the Air Quality Analysis for the proposed expansion of the University Towne Center commercial development in San Diego, California. The project involved evaluating air quality impacts associated with development alternatives, including traffic at congested intersections.

Air Quality Analysis – The Bridges at Rancho Santa Fe. Dr. Thompson prepared the Air Quality Analysis and Air Quality Technical Report for a residential development located in north San Diego County. The analysis included evaluating construction and operational impacts associated with the project.

Air Quality Evaluation – San Elijo Ridge Development. Dr. Thompson prepared the air quality evaluation for a proposed residential development in North San Diego County. The project involved estimating emissions from construction during four construction phases, and assisting the client in evaluating their options for phasing construction and use of heavy equipment to mitigate potential impacts.

Air Quality Analysis and Risk Evaluation – Science Research Park, UCSD. Dr. Thompson prepared the air quality analysis and risk evaluation for a proposed Science Research Park development at the University of California, San Diego. The project involved estimating amounts of air toxics that could be released on a routine basis from the facility due to normal operations of the facility. The project also involved estimating whether the chemical usage is acceptable from a health risk standpoint.

Air Quality Impact Analysis – La Jolla Commons. Dr. Thompson prepared the air quality evaluation of the proposed La Jolla Commons project in San Diego. The analysis involved estimating emissions associated with construction and operation of the project, and evaluating the project's compliance with air quality standards.

Conformity Applicability Analysis - NAS North Island. Dr. Thompson prepared the conformity applicability analysis and the Record of Non-Applicability for the proposed homeporting of a nuclear carrier at NAS North Island. The project involved evaluating emissions from the construction stage of the project as well as emissions from the carriers, emissions from support equipment, and emissions from traffic.

Emergency Water Storage Project - San Diego County Water Authority. Dr. Thompson prepared the Air Quality Impact Analysis and the Public Health and Safety Section for an EIR prepared for a project involving the construction of a new reservoir for emergency water storage in San Diego County. The Air Quality Impact Analysis involved evaluating the emissions associated with the construction and operational phases of the proposed project, including evaluating emissions from dam construction. Mitigation measures were proposed to reduce potential impacts on air quality. The Public Health and Safety Section included an evaluation of dam and component safety, water quality issues, and recreational safety issues associated with the reservoir. The dam safety analysis included an engineering analysis of the potential for dam breach or break and an evaluation of the downstream impacts of a catastrophic event.

Air Quality Impact Analysis - San Diego River Outfall. Dr. Thompson prepared the Air Quality Impact Analysis for a proposed project in San Diego to construct an offshore outfall for the San Diego River. The project involved evaluating the emissions associated

with construction and evaluating potential health risk and odor issues associated with the project.

San Francisco Airport Extension - Bay Area Rapid Transit District. Dr. Thompson provided technical oversight for preparation of the Air Quality Technical Report for the Environmental Impact Report required for the proposed Bay Area Rapid Transit San Francisco Airport Extension project. The project involved evaluating the potential for carbon monoxide hot spots to develop at intersections affected by the proposed project. Dr. Thompson was also responsible for evaluating the proposed project and its associated impacts for conformance with the State Implementation Plan for CO attainment and the 1990 Federal Clean Air Act Amendments.

Gregory Canyon Landfill - Waste Management, Inc. Dr. Thompson prepared the Air Quality Impact Analysis and Health Risk Assessment for a proposed new landfill in northern San Diego County. The evaluation involved identifying the maximum anticipated activity levels for the landfill and estimating air emissions from traffic, solid waste handling, and the landfill gas collection system. The health risk assessment evaluated the potential cancer risks associated with exposure to emissions from the landfill.

Air Quality Impact Analysis - SR78/Sycamore Avenue Interchange. Following Caltrans guidelines, Dr. Thompson prepared the Air Quality Impact Analysis for a proposed improvement project for the SR78/Sycamore Avenue Interchange in northern San Diego County. The project involved estimating traffic queuing patterns and calculating the potential air quality impacts associated with carbon monoxide emissions.

Encinitas Specific Plan Amendment - City of Encinitas, California. Dr. Thompson managed a project to evaluate air quality impacts associated with various development alternatives for roadways in the City of Encinitas, California. The project involved evaluating carbon monoxide emissions associated with seven alternative roadway developments and developing mitigation measures to reduce or eliminate impacts.

Chiquita Canyon Landfill - Laidlaw Waste Systems, Inc. Dr. Thompson prepared the Air Quality section of the Draft Environmental Impact Report for a proposed landfill expansion for Laidlaw Waste Systems, Inc. The project involved evaluating emissions from construction, operation, and mobile sources. The project also involved evaluating measures to control emissions and their effectiveness in order to reduce the impacts associated with the proposed project.

Air Quality Technical Report - CalMat Company. Dr. Thompson prepared the Air Quality Technical Report for a proposed sand and gravel mining operation in southern San Diego County. The project involved developing an emissions inventory for stationary and mobile sources associated with the project and evaluating the impacts of fugitive dust and combustion emissions on air quality. The project also involved

evaluating the effectiveness of control measures to control dust emissions from point sources, material excavation, and travel on paved and unpaved roads.

Air Quality Analysis - Robinson Mine, Ely, Nevada. Dr. Thompson evaluated the air quality impacts associated with reoperation of a major copper mining facility in Ely, Nevada. The project involved preparing an emissions inventory for the facility, evaluating ambient air quality measurements in the area and their representativeness to existing conditions and future operations, and assessing impacts associated with reoperation of the mine. Major impacts included PM-10 impacts and impacts associated with acid spray for leaching.

State Implementation Plan Evaluation - City of Yuma, Arizona. Dr. Thompson assisted the City of Yuma, Arizona in evaluating their State Implementation Plan for achieving attainment of the PM-10 standard. The project involved reviewing the proposed State Implementation Plan and the proposed control measures and evaluating their effectiveness and applicability to activities in the City of Yuma. The project also involved negotiations with the Arizona Department of Environmental Quality regarding the proposed measures and evaluating the locations of ambient air quality monitoring stations with regard to their representativeness in evaluating progress on achieving the Federal PM-10 standard.

Air Permitting/Air Quality Impact Assessments

Air Permit Application – Pinal Power. Dr. Thompson prepared the air permit application for a proposed biomass power project in Pinal County, Arizona. The project involves conducting an air quality impact analysis, Best Available Control Technology evaluation, and permit application processing.

Air Permit Application – Clearwater Port Project, Crystal Energy, LLC. Dr. Thompson prepared the Application for Authority to Construct for a proposed offshore liquefied natural gas terminal to be constructed on Platform Grace offshore of Ventura County, California. The project involved assessing the regulatory requirements that are applicable to the project New Source Review requirements, conducting an air quality impact assessment, visibility analysis, best available control technology evaluation, and offsets evaluation, and providing technical support to the project team with regard to project design and control issues.

Air Permit Application – Bradwood Landing, LLC. Dr. Thompson prepared the Air Permit Application submitted to the Oregon Department of Environmental Quality for a proposed LNG terminal located along the Columbia River at Bradwood Landing, Oregon. The project included conducting an Air Quality Impact Assessment in accordance with DEQ requirements, preparing a best available control technology

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evaluation, and providing technical support to the project team with regard to project design and control issues.

Air Permitting – California Co-Gen, LLC. For a proposed installation of two internal combustion engines in Fresno, California, Dr. Thompson prepared the Application for Authority to Construct. The application included assessing potential human health risks, identifying BACT, and preparing a top-down BACT evaluation to address the SJVAPCD’s achieved-in-practice versus technologically feasible BACT limits for internal combustion engines. Dr. Thompson also reviewed draft permit conditions and coordinated with agency permit engineers to expedite permit processing.

Air Permitting – Penn-Mar Ethanol, LLC. Dr. Thompson prepared the air permit application for a proposed ethanol plant in York County, Pennsylvania. The application was prepared in accordance with the requirements of the Pennsylvania Department of Environmental Protection, and included an assessment of Best Available Control Technologies, air emissions calculation procedures, and an evaluation of application federal and state regulations. The application is pending.

Air Permitting – S&S El Dorado Hills. Dr. Thompson assisted in the preparation of an air permit application for a reciprocating engine installation in El Dorado Hills, California. The El Dorado Air Quality Management District requested that a human health risk assessment screening evaluation be conducted to demonstrate that the project would not pose a significant health risk to surrounding land uses. Dr. Thompson prepared the evaluation based on ARB and CAPCOA guidelines and demonstrated that no significant impact would be anticipated from the project.

Air Permitting – Chino Hospital. Dr. Thompson prepared the permit application for the installation of a reciprocating engine at the Chino Hospital located in Chino, California. The permitting process included public notification due to the proximity of a school to the project site. Dr. Thompson assisted in the notification process and the permit to construct was granted.

Synthetic Minor Application – SouthWest Marine, Inc. Dr. Thompson prepared an update to the Synthetic Minor Application for SouthWest Marine, Inc.’s operations in San Diego, California. The application included an assessment of the facility’s emissions of criteria pollutants and HAPs, and an evaluation of the existing permitted sources and their potential to emit. The application also included an evaluation of recordkeeping and reporting requirements for demonstrating compliance with the permit limits.

Air Permitting – Western Co-Gen, LLC. Dr. Thompson prepared fast-track permit applications for two reciprocating engines to be located at the Wawona Frozen Foods facilities in Fresno and Clovis, California. The projects included permit application preparation, agency interface, and risk evaluations. The permits were obtained within three weeks of submittal to the San Joaquin Valley Air Pollution Control District. Dr.

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Thompson has also been providing assistance to Western Co-Gen, LLC in coordinating source testing for the engines.

Air Quality Impact Assessment – Anheuser-Busch, Inc. Dr. Thompson prepared the Air Quality Impact Assessment and Air Toxics Evaluation for a proposed 7.5 MW turbine installation at the Anheuser-Busch facility in Fairfield, California. The assessment was conducted in support of the Application for Authority to Construct with the Bay Area Air Quality Management District.

Air Permitting – Herndon Energy Center, Calpine Corporation. Dr. Thompson prepared the air permit application for a proposed 49.5-MW power generation facility to be located in Fresno, California. The project included conducting an air quality impact assessment and toxics evaluation to demonstrate that the project would not have an adverse impact on the ambient air quality. The project also involved negotiations with the San Joaquin Valley Air Pollution Control District on BACT requirements and permit conditions. The project obtained an air permit on an expedited schedule.

Air Permitting – California Casualty Management Co. Dr. Thompson prepared the air permit application and air toxics evaluation for a proposed emergency diesel generator to be located at a facility in San Mateo, California. The project was permitted on an expedited schedule.

Air Permit Modification – Creed, Lambie, and Goose Haven Energy Centers, Calpine Corporation. Dr. Thompson assisted Calpine Corporation in the modification of three Authority to Construct permits granted to three projects located in Solano County, California. The project configurations and operational parameters were modified to meet the client’s needs, and the Authority to Construct permits were revised as well. The project included negotiations with the Bay Area Air Quality Management District to draft permit conditions that were acceptable to both the agency and the project proponent.

Applications for Authority to Construct - ICI Paints North America. Dr. Thompson has been assisting ICI Paints’ Commerce, California facility in obtaining Authority to Construct permits for new equipment to accommodate a proposed facility expansion. The project has included negotiations with the South Coast Air Quality Management District on applicable permit conditions, as well as development of a user-friendly calculation methodology to track emissions to demonstrate that the facility will be a non-major source. The project has also included banking of Emission Reduction Credits in association with cessation of solvent-based paint production. The permits have been issued and expansion is under construction.

Air Quality Impact Assessment – Johns Manville, Inc. Dr. Thompson assisted in the preparation of the PSD Air Quality Impact Assessment for the Johns Manville manufacturing facility located in northwestern Ohio. The project involved evaluating over 100 sources and determining appropriate source groupings for the purpose of air

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dispersion modeling. The project also included assisting in developing assumptions regarding stack parameters and downwash calculations.

Title V Permitting Assistance – PG&E Dispersed Generating. Dr. Thompson provided technical support and assistance in developing the Application for Title V Operating Permit for the PG&E Dispersed Generating facility in Chula Vista, California. The project involved regulatory review and evaluation of Multiple Applicable Requirements Streamlining for the facility.

CEC Application for Certification - Three Mountain Power, LLC. Dr. Thompson managed a multidisciplinary project to prepare the Application for Certification for a proposed 500 MW natural gas fired combined cycle plant in Burney, California. The project involved conducting a review of potential environmental concerns, including preparation of a PSD permit application, health risk assessment, biological and cultural resources surveys, traffic studies, socioeconomic evaluation, waste management evaluation, water resources studies, and soils/geological investigations. The Application for Certification was prepared pursuant to the California Energy Commission's Siting Regulations. The project also involved attendance and presentations at public meetings and CEC workshops and hearings. The project was certified in May, 2001. In addition, Dr. Thompson assisted in the preparation of legal briefs and technical documents to support the BACT finding that SCR, and not SCONox, is BACT for the Project. The BACT finding was upheld by the EPA's Environmental Appeals Board.

CEC Application for Certification – CalPeak Power. Dr. Thompson conducted the Air Quality Impact Assessments and developed Risk Management Plans for two 50-MW peaking power generation facilities to be located in San Diego County, California. The projects qualified for expedited permitting under the California Governor's 21-Day Emergency Siting Regulations as administered by the California Energy Commission. The project involved interface with the San Diego Air Pollution Control District in expediting permit processing, appearance at hearings and public workshops in support of the projects, and assisting CalPeak in preparation of application documents.

CEC Application for Certification – Evergreen Energy Facility. Dr. Thompson prepared the Application for Certification under the Governor's 21-day Emergency Siting Procedures for a proposed 50-MW power generation facility to be located in Contra Costa County, California. The project involved conducting a review of potential environmental concerns, including identification of potential fatal flaws for the site, coordination of subcontractors for conducting biological, cultural resources, and paleontological surveys, and development of the AFC. Dr. Thompson prepared an evaluation of land use, air quality, public health, hazardous materials handling, waste management, and socioeconomics. The AFC included information provided by various subcontractors for biological and cultural resources, traffic studies, water resources studies, and soils/geological investigations. Dr. Thompson also prepared an Application for Authority to Construct that was submitted to and accepted by the Bay Area Air

Quality Management District. The AFC was withdrawn pending Department of Water Resources contracting requirements.

Air Permit Applications – CalPeak Power. Dr. Thompson prepared the Air Quality Impact Analyses and Risk Management Plans for five peaking power generation facilities to be located throughout the state of California. The project involved interfacing with local regulatory agencies to develop permit application packages and Risk Management Plans for the facilities. The project also included conducting a screening human health risk assessment to evaluate the potential for significant impacts due to emissions of ammonia and trace contaminants from combustion.

Air Permit Applications – Panda Energy International. Dr. Thompson prepared the air permit applications and assisted in developing information in support of the Initial Studies for three power generation projects located in Solano County. The tasks included offsets negotiations, development of permitting strategies, and review of initial draft permits issued for the facilities. The project also involved attending and providing public testimony to assist the applicant. The project also included conducting a screening human health risk assessment to evaluate the potential for significant impacts due to emissions of ammonia and trace contaminants from combustion.

Permitting Assistance – Duke Energy. Dr. Thompson assisted Duke Energy in the preparation and approval of air permits for introducing operational flexibility into existing permits, permitting of burner modifications, and permitting of a selective catalytic reduction (SCR) system for the South Bay Power Plant in San Diego, California. The project involved demonstrating to the San Diego Air Pollution Control District that operational changes, burner modifications, and SCR operation do not result in significant emissions increases. In addition, Dr. Thompson assisted Duke Energy in evaluating options for increased operations at the facility.

CEC Application for Certification and New Source Review – Wildflower Larkspur Energy Facility. Dr. Thompson assisted in the preparation of an Application for Certification and Authority to Construct application for the Wildflower Larkspur Project, the first peaker project to be certified in California under the Governor’s 21-day Emergency Siting Process. The project included preparation of a regulatory review and Air Quality Impact Analysis, as well as assistance with sections of the AFC. The project also involved preparing an evaluation of the requirements for compliance with air toxics regulations.

Title V Permit Renewal and Compliance Assurance Monitoring Program – Ogden Martin Systems of Marion, Inc. Dr. Thompson prepared the Title V Permit Renewal and evaluated the requirements under 40 CFR Part 64 for a waste-to-energy facility located in Marion County, Oregon. The project involved preparing an update to the Title V Permit, including evaluating revisions to operating scenarios and inclusion of NOx controls in the permit application. The project also involved conducting a detailed review

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of existing monitoring systems and a review of the requirements of waste-to-energy facilities under 40 CFR Part 64. Dr. Thompson worked with the client and regulators to demonstrate that the facility should be exempted from the requirements of 40 CFR Part 64 due to the adoption of MACT standards for the industry.

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Air Permitting Strategies - Mojave Pipeline Northward Expansion. Dr. Thompson assisted the Mojave Pipeline Company in evaluating permitting requirements for proposed expanded compressor stations to be constructed in Arizona, the San Joaquin Valley, and the Mojave Desert. The project involved identification of permitting requirements for these facilities and evaluating permitting options. One of the key challenges for the proposed project was to identify potential sources of ozone-precursor offsets for a major facility located in Daggett in the Mojave Desert Air Quality Management District. The Mojave Desert Air Quality Management District had not established an emissions trading program. Dr. Thompson assisted the Mojave Pipeline Company in evaluating potential emissions trading strategies along with potential emissions control strategies.

New Source Review/Air Quality Impact Assessment - Solar Turbines, Inc. Dr. Thompson prepared an air quality impact assessment in support of two proposed modifications to Solar Turbines facilities in San Diego, California. The assessment involved negotiations with the San Diego Air Pollution Control District to evaluate the requirements for treating ozone-limiting calculations for multiple sources located at a single facility. Dr. Thompson developed an approach to evaluate the interaction between combustion turbine exhaust plumes that was accepted by the San Diego Air Pollution Control District. Both Solar Turbines facilities in San Diego were allowed to increase production and add new test cells based on the air quality impact assessment.

New Source Review - Cargill Flour Milling. Dr. Thompson prepared the application for Authority to Construct for an expansion of the Cargill Flour Milling facility in San Bernardino, California. The application included engineering design information, an air quality impact analysis, and offsets negotiations in accordance with the South Coast Air Quality Management District's requirements. The Authority to Construct was granted.

Title V Permit Application Preparation - ICI Paints - Sinclair. Dr. Thompson prepared the Title V Operating Permit Application for a paint manufacturing facility located in Commerce, California, in accordance with the requirements of the South Coast Air Quality Management District. The project involved performing a review of the current permits held by the facility, developing flexible operating scenarios and emissions inventories, and identification of applicable regulations. Dr. Thompson worked with the facility to identify operational flexibility concerns and to introduce adequate flexibility into the permit application.

Title V Permit Application Preparation - ICI Paints - Devoe Coatings. Dr. Thompson prepared the Title V Operating Permit Application for an industrial coatings

manufacturing facility in Riverside, California, in accordance with the requirements of the South Coast Air Quality Management District. The project involved performing a review of the operating scenarios and emissions inventories, and identification of applicable regulations. Dr. Thompson worked with the facility to identify operational flexibility concerns and to introduce adequate flexibility into the permit application.

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Title V Facility Review - Zynolyte Products, Inc. Dr. Thompson completed a Title V facility review to evaluate the applicability of the South Coast Air Quality Management's Title V requirements to a paint packaging facility in Carson, California. The project involves a review of applicable regulations and identification of potential process changes over the five-year permit term. Dr. Thompson is currently reviewing the emissions inventory to develop a more accurate inventory for the facility.

Title V Permit Application Preparation - ACE Cogeneration, Inc. Dr. Thompson prepared the Title V Operating Permit Application for a coal-fired cogeneration facility in Trona, California, which is located in the Mojave Desert Air Quality Management District. The project involved performing a review of the operating scenarios and emissions inventories, and identification of applicable regulations. Dr. Thompson worked with the facility to identify operational flexibility concerns and to introduce adequate flexibility into the permit application.

Title V Permit Application Preparation - Ogden Martin Systems of Marion, Inc. Dr. Thompson prepared the Title V Operating Permit Application for a waste-to-energy facility in Marion County, Oregon. The project involved evaluating the applicable local, state, and federal regulations, developing alternative operating scenarios, and assisting the facility with operational flexibility issues. The application was deemed complete by the Oregon DEQ, and issuance of the permit is pending.

Air Emission Inventories and Regulatory Review - U.S. Army Corps of Engineers, Europe District, Wuerzburg BSB. Dr. Thompson served as technical lead on a project to conduct air emission inventories at 9 U.S. Army installations in the Wuerzburg BSB in Germany. The air emission inventories included field visits to document potential sources of air emissions; gathering of data to develop estimates of air emissions on a maximum hourly and annual basis; evaluation of the facilities with respect to the Final Governing Standards for Germany; and development of a compliance tracking program for the U.S. Army installations to evaluate their continued compliance with the Final Governing Standards for Germany.

Title V Permit Application Preparation - Hawaiian Electric Company. Dr. Thompson managed a project to prepare permit applications for 13 facilities in the state of Hawaii for compliance with Title V of the Clean Air Act. The project involved performing a detailed emission inventory for all facilities and all operations and preparing an emission inventory database for the facilities. The project also involved evaluating

alternative operating scenarios and control technologies and assessing their impacts on the emission inventory. Permit applications were deemed complete by the Hawaii DOH.

Title V Permit Assistance - Salt River Project. Dr. Thompson provided Salt River Project environmental personnel with technical assistance in the preparation of Title V operating permit applications for coal, oil, and natural gas-fired power plants in the State of Arizona. The project involved performing facility audits, evaluating emission factors for criteria pollutants and hazardous air pollutants, identifying compliance issues, and evaluating alternative operating scenarios and operational flexibility issues for the facilities.

Title V Permit Application Preparation - Babcock & Wilcox, Idaho National Engineering Laboratory. Dr. Thompson managed a project to provide Title V permitting assistance to Babcock & Wilcox facilities located at the Idaho National Engineering Laboratory. The project involves performing a review of existing emission inventories, evaluating alternative operating scenarios and compliance issues, and development of recordkeeping and reporting systems for the facility. The work products developed provided the input for the operating permit application for the Specific Manufacturing Capability facility at INEL.

Title V Permit Application Preparation - Pearl Harbor Naval Station. Dr. Thompson has been involved in assisting with the preparation of and providing peer review of the operating permit applications for seven facilities at the Pearl Harbor Naval Station and Ford Island on the island of Oahu. Key issues include alternative operating scenarios, emissions trading, review of emission inventories, demonstration of compliance, reporting and recordkeeping, and identification of insignificant sources.

Title V Facility Reviews - TRW Vehicle Safety Systems, Inc. Dr. Thompson performed facility reviews and regulatory interface for two airbag manufacturing facilities in Mesa, Arizona. The project involved a review of the existing processes and emissions inventories to develop estimates of the maximum potential to emit. A review of the air pollution control devices and strategies was also performed. Applications for synthetic minor status will be prepared for the facilities.

Health Risk Assessments

HARP Training Course – Teaching Assistant. Dr. Thompson served as Teaching Assistant for the first Hotspots Analysis and Reporting Program (HARP) training session in Anaheim, California. Dr. Thompson's duties included assisting students with modeling and risk assessment concepts.

Residual Risk Evaluation – National Steel and Shipbuilding Co. Dr. Thompson has been providing assistance to the National Steel and Shipbuilding Company in preparation/evaluation of residual risks associated with their facility's operations

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following the implementation of the Shipbuilding MACT requirements. The assessment has included a reevaluation of emission factors and test data associated with welding operations, as well as a reevaluation of the source allocations at the facility.

Human Health Risk Assessment - Pearl Harbor Sediment Study. Dr. Thompson was the task manager for the human health risk assessment for the Pearl Harbor Sediment Study. The project involvee screening contaminants detected in marine sediments and marine tissue samples to identify those chemicals which may pose a potential human health risk; developing exposure scenarios for exposure to sediments and ingestion of fish and shellfish from Pearl Harbor; evaluating toxicity of contaminants detected in marine sediments, including PCB congeners, PAHs, dioxins/dibenzofurans, ordinance compounds, metals, and semi-volatile organics; and estimating the risks associated with exposure to contaminants. The screening human health risk assessment was completed in accordance with the requirements of the U.S. EPA Region IX and the Hawaii Department of Health. In addition, Dr. Thompson developed an innovative approach to identifying spatial patterns in risk calculations and effectiveness of cleanup options using a GIS-based methodology. The methodology links the ecological risk assessment with the human health risk assessment.

Screening Human Health Risk Evaluation – Campbell Shipyard Site. Dr. Thompson prepared the screening human health risk evaluation for closure of a contaminated site at the former Campbell Shipyard in San Diego, California. The health risk assessment involved evaluating exposure pathways for exposure to subsurface polycyclic aromatic hydrocarbons (PAHs) at the site, and assessing appropriate cleanup levels based on direct exposure and groundwater contamination. The human health risk evaluation was prepared for the Port of San Diego in accordance with the requirements of the Regional Water Quality Control Board.

Air Toxics Evaluation – National Steel and Shipbuilding Co. Dr. Thompson is assisting the National Steel and Shipbuilding Company in the preparation of an air toxics evaluation under San Diego Air Pollution Control District’s Rule 1200. The rule requires new sources to demonstrate that the risk associated with emissions from the source do not exceed acceptable levels.

AB 2588 Health Risk Assessment Update – GKN Chem-Tronics, Inc. Dr. Thompson is assisting an aerospace manufacturing facility in assessing its potential human health risks associated with operations at the facility. The project involves evaluating emission quantification methodologies and assessing their effect on health risk predictions. The project also includes preparing an update to the facility’s AB 2588 Health Risk Assessment to incorporate risk reduction measures employed at the facility.

Human Health Risk Assessment - Pearl Harbor Naval Station. Dr. Thompson performed a screening human health risk assessment for PCB-contaminated sites located at Pearl Harbor Naval Station in Honolulu, Hawaii. The purpose of the risk assessment

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was to provide assistance and guidance for the EE/CA and to develop risk-based cleanup goals for PCB sites. U.S. EPA and State of Hawaii guidance for PCB-contaminated sites was used to support the conclusions of the risk assessment.

Human Health Risk Assessment - Norton Air Force Base. Dr. Thompson performed a screening health risk assessment for contaminated sites located at Norton Air Force Base in California. Contamination at the site included petroleum hydrocarbons and metals contamination. The human health risk assessment was conducted to evaluate the effectiveness of recommended action at the site.

Human Health Risk Assessment - Giebelstadt Army Base. Dr. Thompson served as task manager for the preparation of a human health risk assessment for a contaminated site at the Giebelstadt Army Base in Germany. Concern was expressed by local agencies regarding the presence of chlorinated hydrocarbons in local ground water wells. The sampling program evaluated ground water and subsurface soils for a variety of contaminants, including total petroleum hydrocarbons, chlorinated hydrocarbons, and PCBs. A screening human health risk assessment was performed for ingestion of ground water in order to support a recommendation for no further action at the site.

Proposition 65 Compliance Support - National Steel and Shipbuilding Company and Southwest Marine. Dr. Thompson has been providing support to both the National Steel and Shipbuilding Company and Southwest Marine to assist them in demonstrating compliance with the notification requirements of California's Proposition 65. Both facilities submitted AB 2588 health risk assessments that were based on worst-case hexavalent chromium emission factors provided by the local Air Pollution Control District. Subsequent to that, Dr. Thompson assisted the facilities in evaluating alternative emission factors for welding and painting processes and in preparing alternative health risk assessments. The alternative health risk assessments were submitted both to the APCD and the California Attorney General's Office. The alternative emission factors and risk assessments were used to demonstrate that notification under Proposition 65 was not required despite the conservative AB 2588 health risk assessment results. Dr. Thompson has also written a windows-based program that evaluate's the facilities' status with regard to Proposition 65 compliance on a real-time basis.

Air Toxics Health Risk Assessment - National Steel and Shipbuilding Company. Dr. Thompson served as project manager for an air toxics emissions inventory and health risk assessment pursuant to the California AB 2588 Air Toxics "Hot Spots" Information and Assessment Act. The facility is a major shipbuilding facility operating in San Diego, California, with air toxics emissions from processes including combustion, welding, solvent use, and abrasive blasting operations. Dr. Thompson assisted facility environmental staff in preparing emission estimates for the processes, and prepared the multi-pathway health risk assessment to evaluate human health risks associated with air emissions. The risk was driven by emissions of hexavalent chromium from welding operations; Dr. Thompson also provided assistance to NASSCO in evaluating alternative

emission factors for metals from welding operations. The health risk assessment was reviewed and accepted by the San Diego County Air Pollution Control District and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA).

Air Toxics Health Risk Assessment - Southwest Marine. Dr. Thompson served as project manager for a health risk assessment that was prepared for the Southwest Marine facility pursuant to the California AB 2588 Air Toxics "Hot Spots" Information and Assessment Act. The facility is a major ship repair facility in San Diego, California. Major sources of emissions included welding operations, combustion operations, solvent use, and abrasive blasting. Dr. Thompson prepared the air toxics health risk assessment to evaluate human health risks associated with exposure to emissions from these sources. The health risk assessment was reviewed and accepted by the San Diego County Air Pollution Control District and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA).

Health Risk Assessment - U.S. Navy Comprehensive Long-Term Environmental Action Navy (CLEAN). Dr. Thompson managed a project to evaluate the human health risks associated with a former firefighting training area and drain field area at PMRF Barking Sands, Kauai, Hawaii. The contamination at the site included minor amounts of polynuclear aromatic hydrocarbons (PAHs) and elevated levels of metals. Dr. Thompson evaluated the risks associated with exposure to surface soils, ground water, and surface water. One of the important aspects of the health risk assessment was the evaluation of background health risks associated with naturally occurring levels of arsenic and other metals at the site.

Health Risk Assessment - U.S. Navy Comprehensive Long-Term Environmental Action Navy (CLEAN). Dr. Thompson managed a project to evaluate the human health risk associated with exposure to contaminants at a landfill at the South Finegayan Construction Battallion Landfill site on Guam. Contaminants detected at the site include PAHs, pesticides and PCBs, metals, and total petroleum hydrocarbons. The evaluation included an assessment of the risks associated with exposure to surface soils and to potable ground water underlying the site.

Air Toxics Health Risk Assessment - Mobil Platform Holly and Ellwood Oil and Gas Facility. Prepared the AB 2588 Air Toxics Health Risk Assessment for an offshore oil platform and an onshore oil and gas processing facility in Santa Barbara, California. The assessment involved evaluating health risks associated with air toxics emitting from oil and gas facilities, which included benzene, toluene, xylenes, and hydrogen sulfide. In a related project, Dr. Thompson also prepared an evaluation of the background health risks associated with emissions from natural offshore seeps in Santa Barbara County.

Air Toxics Health Risk Assessment - Hi-Shear Corporation. Prepared the AB 2588 Air Toxics Health Risk Assessment for an aerospace fastener manufacturing operation in

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Torrance, California. The main source of toxic emissions at the facility was the use of chromium-based paints. Dr. Thompson evaluated the health risk associated with hexavalent chromium emissions and assisted the facility in evaluating alternative emission factors for paint emissions.

Health Risk Assessment - South Miramar Landfill. Prepared a screening health risk assessment to evaluate the potential health risks associated with excavation of a portion of the South Miramar Landfill. The assessment included evaluating the potential emissions of landfill gases such as chlorinated hydrocarbons.

Risk Management Plans and Hazard Evaluations

Risk Management Plans – CalPeak Power, LLC. Dr. Thompson prepared seven Risk Management Plans for handling of 19.5% aqueous ammonia at seven power generation sites throughout the state of California. The project involved conducting a hazard review of the proposed system design, preparing an offsite consequence analysis to assess the potential worst-case impacts, and developing and documenting plans and programs for the facilities. The project included interface with regulatory agencies to obtain approval of the RMPs, as well as providing support in public meetings to address public concerns regarding potential risks and mitigation measures employed.

Risk Management Plans – Panda Energy International Dr. Thompson prepared three Risk Management Plans for handling of 19.5% aqueous ammonia at three 49 MW power generation facilities in Solano County, California. The project involved conducting a hazard review of the proposed system design, preparing an offsite consequence analysis to assess the potential worst-case impacts, and developing and documenting plans and programs for the facilities. The project included interface with regulatory agencies to obtain approval of the RMPs, as well as providing support in public meetings to address public concerns regarding potential risks and mitigation measures employed. As part of the CEQA process, the project also involved addressing potential impacts to sensitive species at locations near the site.

Hazard Review – Wildflower Larkspur Facility. Dr. Thompson served as team leader in conducting a hazard review for an aqueous ammonia system to be used at a peaking power generation facility in Otay Mesa, California. The project included conducting the review with participation from the County Hazardous Materials Division, and preparing a list of recommended action items for the facility to employ in the design of the aqueous ammonia system.

Hazard Review – PG&E Distributed Generation. Dr. Thompson served as team leader in conducting a hazard review for aqueous ammonia systems to be used at two peaking power generation facilities in Chula Vista and Escondido, California. The project included conducting the review with participation from the County Hazardous

Materials Division, and preparing a list of recommended action items for the facility to employ in the design of the aqueous ammonia system.

Hazard Review – National City Marine Terminal. Dr. Thompson served as team leader for a Hazard and Operability study for a cold storage facility located in National City, California. The project included evaluating the potential for hazards associated with the handling of anhydrous ammonia, and development of recommendations to improve the safety and operations at the facility.

Hazard Review – Otay Water District. Dr. Thompson served as team leader for a hazard review conducted for a water treatment facility in San Diego County. The system employed chlorine gas for use in water treatment systems. Dr. Thompson conducted the review with participation by the County Hazardous Materials Division, and also prepared an offsite consequence analysis for inclusion in the facility's Risk Management Plan.

Hazard and Operability Study – Praxair Corporation. Dr. Thompson conducted a fast-track Hazard and Operability Study for two hydrogen/specialty gas production facilities located in Louisiana. The facilities were under construction and the Hazard and Operability Study was required to be completed in a short time frame in order to proceed with permitting from the State of Louisiana. Dr. Thompson led the team and assisted the engineering staff in identifying potential modifications to the design of the system to increase safety and lessen the possibility of a release.

Hazard and Operability Study – Port of San Diego. Dr. Thompson served as team leader for a Hazard and Operability study for the Port of San Diego's use of methyl bromide in fumigation of produce received at the 10th Avenue Marine Terminal in San Diego, California. The project involved a review of the storage and handling system for methyl bromide and development of recommendations and a schedule for implementation of recommended actions to improve safety at the facility.

Risk Management and Prevention Program – Basic Vegetable Company. Dr. Thompson was the project manager for the preparation of a Risk Management and Prevention Program for a vegetable processing facility. The facility used a one-ton cylinder of chlorine in the purification of water involved in food processing. Dr. Thompson conducted a hazard review for the facility and developed the offsite consequence analysis and RMPP.

Hazard Evaluation - Rocky Mountain Arsenal, U.S. Army. Dr. Thompson served as team leader and scribe for a Preliminary Hazard Analysis and Hazard and Operability Study of a submerged quench incinerator proposed for treating Basin F liquids at the Rocky Mountain Arsenal in Denver, Colorado. The studies were conducted in conformance with the Army's PHA and SHAR requirements. The study served to evaluate safety concerns associated with the proposed incinerator and to develop recommendations to increase safety and reliability of the system.

Risk Management and Prevention Program - All-Pure Chemical Company. Dr. Thompson served as project manager to prepare a Risk Management and Prevention Program (RMPP) under the California AB 3777 program for a chlorine repackaging facility. The program involved assisting All Pure in developing up to date piping and instrumentation diagrams, performing a hazard and operability study on the facility, evaluating operating, maintenance, inspection and training procedures, and evaluating the potential consequence of off-site releases of chlorine, hydrochloric acid, and sulfur dioxide.

Risk Management and Prevention Program - All-Pure Chemical Company. Dr. Thompson served as project manager to prepare a Risk Management and Prevention Program (RMPP) under the California AB 3777 program for two facilities located in Pittsburg and Antioch, California, involved in the handling and repackaging of sulfuric acid, hydrochloric acid, and nitric acid. The program involved conducting a hazard and operability study on the facility, evaluating operating, maintenance, inspection and training procedures, and evaluating the potential consequence of off-site releases of sulfuric, nitric, and hydrochloric acids.

Risk Management and Prevention Program Update – Torch Operating Company. Dr. Thompson prepared an update to the RMPP for an oil and gas facility in Lompoc, California. The project included conducting a review of the Hazard and Operability study and reviewing the deviations and recommendations identified in the previous study. The RMPP was updated and approved by Santa Barbara County.

Risk Management and Prevention Program - Unocal Oil. Dr. Thompson prepared the off-site consequence analysis for an onshore oil and gas processing facility for Unocal. The consequence analysis involved performing accidental release modeling for releases of hydrogen sulfide-containing produced gases and oil from pipelines and from facility operations.

Hazard Evaluation of Gas Transmission Pipeline - City of Bakersfield. Dr. Thompson managed a project to evaluate the risk of a release from a gas transmission pipeline in the City of Bakersfield. The project involved evaluating the regulatory requirements for pipeline operation, the potential causes and frequencies of accidents involving gas transmission pipelines, and the potential consequences associated with an accidental release and subsequent explosion of natural gas.

Risk of Upset Evaluation - Lokern Hazardous Waste Landfill. Dr. Thompson prepared the Risk of Upset section of an Environmental Impact Report that was prepared in support of the proposed expansion of a hazardous waste landfill in western Kern County, California. The Risk of Upset section addressed the potential for accidental releases of hazardous wastes during transport and operation of the facility. The study

involved evaluating the potential types of waste to be transported and their subsequent risks upon release, and involved dispersion modeling for toxic and flammable events.

Hazard and Operability Study – DuPont Corporation. Dr. Thompson served as team leader and scribe for a Hazard and Operability study conducted for the imine processing facility operated by DuPont Corporation in Victoria, Texas. The project included evaluating operations and tank farm facilities at the plant and development of recommendations for improving safety for the facility.

Hazard and Operability Study - Exxon Las Flores Canyon. Dr. Thompson was involved in a detailed hazard and operability study for the proposed Exxon Las Flores Canyon facility. The HazOp study was conducted as part of the Santa Barbara County's requirements for preparation of a Risk Management and Prevention Program prior to construction, and was conducted on a 90% design of the facility. The HazOp study addressed all portions of the design include the oil and gas processing facilities, support facilities, and wastewater treatment facilities.

RMPP Qualified Person Review - Mobil Torrance Refinery. Dr. Thompson performed the Qualified Person Review as required under the California AB 3777 Risk Management and Prevention Program for the RMPP that was prepared for the Mobil Torrance Refinery's HF Alkylation Unit. The review involved evaluating and reviewing the hazard and operability study and recommendations and the off-site consequence analysis that was performed for accidental releases of HF from the facility.

PUBLICATIONS AND PRESENTATIONS

Thompson, V. L., and Westbrook, J. 2001. "Case Studies in Air Dispersion Modeling." Presented at AWMA West Coast Section Meeting, San Diego, California.

Thompson, V. L., Nakamura, P., Lester, W. C., and Clayton, J. R. Jr. 1998. "Multipathway Human Health Risk Assessment for Marine Sediments in Pearl Harbor, Hawaii." Presented at SETAC Annual Meeting, Charlotte, North Carolina.

Thompson, V. L. 1993. "Source Term Estimation for a Hydrochloric Acid Release." AWMA Proceedings, Annual Meeting, Denver, Colorado.

Thompson, V. L. 1990. "Acute vs. Chronic Risk." Presentation at A.I.Ch.E. Summer National Meeting, San Diego, California.

Thompson, V.L. and Greenkorn, R. A. 1988. "Non-Gaussian Dispersion in Model Smokestack Plumes," A.I.Ch.E. J., V. 34, p. 223.

Thompson, V. L. 1986. "Non-Ideal Dispersion in Power Plant Plumes," Ph.D. Thesis, Purdue University.

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LETTER NO. 18

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Rachael E. Koss
January 31, 2013

RESPONSE 18-1

The comment summarizes development considered under the proposed project. No further response is required.

RESPONSE 18-2

This comment provides a general introduction to the comments raised in this letter. Responses to the comments contained in this letter are provided below in **Responses 18-3** through **18-62**. Regarding the statement that the Draft EIR does not comply with the basic requirements of CEQA because it does not adequately describe the project, the existing environmental setting, or evidence to support the City's conclusions and therefore needs to be revised and recirculated, the responses provided below make it clear that this is not the case.

Section 15088.5 of the State *CEQA Guidelines* requires the recirculation of an EIR when "significant new information is added to the EIR after public is given notice of the availability of the Draft EIR for public review...but before certification." Under the *CEQA Guidelines*, new information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. In accordance with the *CEQA Guidelines*, recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. "Significant new information" requiring recirculation includes, for example, a disclosure showing:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it;
- (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The information provided in this Final EIR confirms the basic findings in the Draft EIR with certain clarifications, and makes insignificant modifications, as shown in Chapter 3.0, Corrections and Additions to

the Draft EIR, in this Final EIR. Accordingly, and as demonstrated in the responses provided below, there is no basis for recirculation of the Draft EIR.

RESPONSE 18-3

This comment is noted. Responses to the referenced Exhibits 1 and 2 (submitted as Attachments 1 and 2) are provided in **Responses 18-39** through **18-62**.

RESPONSE 18-4

This comment is noted. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

RESPONSE 18-5

This comment is noted. Potential exposure to soil contamination, air contaminants, and other health and safety hazards were analyzed in **Sections 4.B, Air Quality** and **4.E, Hazards and Hazardous Materials**. As concluded on page 4.B-50 of the Draft EIR, air quality impacts associated with the proposed project would be less than significant with incorporation of project design features. As stated on page 4.E-27 of the Draft EIR, impacts associated with hazards or hazardous materials would be less than significant with implementation of the recommended mitigation measures.

RESPONSE 18-6

This comment is noted. No further response is required because the comment does not raise any new significant environmental issues or address the adequacy of the environmental analysis included in the Draft EIR.

RESPONSE 18-7

The comments and citations to CEQA and associated case law are noted. Specific concerns regarding the Draft EIR and adequacy of the project description are addressed in **Responses 18-8, 18-9, 18-10, and 18-11**, below.

RESPONSE 18-8

The project components, locations and designs are described on pages 2-1 through 2-14 of the Draft EIR, including a Concept Plan (**Figure 2-3**) and two configurations for Unit GT-5 (**Figures 2-4** and **2-5**). As further described in **Responses 18-9** and **18-10**, no new or substantially more severe significant impacts have been identified. Furthermore, the information provided in this Final EIR confirms the basic findings in the Draft EIR with certain clarifications, and makes insignificant modifications, as shown in **Chapter 3.0, Corrections and Additions to the Draft EIR**, in this Final EIR. Accordingly, and as demonstrated in the responses provided below, there is no basis for preparing a revised Draft EIR.

RESPONSE 18-9

As discussed on page ES-2 of the Draft EIR's *Executive Summary*, the project would require the "rerouting or relocation of storm drains, underground water lines, electrical lines, and other utilities; the removal of existing mechanical equipment; and abatement of ACMs." These alterations would occur on-site and would

not involve any off-site construction that has not been addressed in the Draft EIR. Further, as discussed on page 53 of the Initial Study, provided in **Appendix A** of the Draft EIR, the project would not substantially alter existing drainage volumes or patterns or require the construction of new off-site storm water drainage facilities or the expansion of existing facilities. Also as discussed on page 53 of the Initial Study, existing water and wastewater facilities are available to serve the project, and no new water or expansion of existing facilities are expected to be required for project implementation. Because no off-site construction is anticipated, and the construction impact analysis for the project took into account the on-site work described in this paragraph, this issue has been adequately addressed in the Draft EIR.

RESPONSE 18-10

As with Units B-1 and B-2, which have been inactive since they were decommissioned in 2003, existing Unit B-3 would remain in place. The choices cited in the comment (demolition or deterioration) are not certain results of decommissioning. As with Units B-1 and B-2, there are no plans for demolition of Unit B-3. Further, “deterioration” of B-3 is not described by the commenter, and the City will not allow deterioration that would have any potentially significant environmental effects, just like the City has not allowed deterioration of Units B-1 and B-2 to have such effects over the past 10 years. Any evaluation of the manner, scale, or timing of demolition, which would not necessarily occur, would be entirely speculative and need not be addressed in the Draft EIR.

RESPONSE 18-11

This comment states that the Draft EIR does not adequately describe the amount of water that will be used during project construction, thereby not affording the decision-makers and public the opportunity to discern the proposed project’s impacts on water supplies. Construction of the project would last approximately 23 months, and construction-related water use would entail typical activities such as soil watering for site preparation, spraying for fugitive dust control, concrete preparation, painting, clean-up and other short-term activities, as described on page 4.H-24 of the Draft EIR. As discussed in **Response 18-16**, a thorough review of water supplies provided by Pasadena Water & Power indicates that there is sufficient water to operate the project, as well as provide for existing and projected needs, including those of future growth and development as may occur through related projects. Based on data from the U.S. Environmental Protection Agency (USEPA), the use of watering to control fugitive dust during grading activities is estimated to require about 160,360 gallons or about 0.5 acre-feet.¹ As stated on page 4.H-25 in **Section 4.H, Water Supply**, of the Draft EIR, operation of Unit GT-5 may increase water demand by up to 167.8 acre-feet per year. As stated on page 4.H-25, PWP would be able to meet the water demand of the project. Given that the construction water demand is estimated to represent less than one-half of one percent of the Unit GT-5 operational water demand and that construction water demand would be temporary, there will be sufficient water supply available for the 23-month project construction period for the typical construction activities described above. The project’s incremental increase in water demand during project construction will not have a significant impact on the City’s water supplies. The Draft EIR provides sufficient information to support this conclusion, as well as affording decision-makers and the public the opportunity to consider the project’s potential impacts on current and future water supplies in the City.

¹ USEPA, User’s Guide: Emission Control Technologies and Emission Factors for Unpaved Road Fugitive Emissions, (1987) 20. The construction water volume calculation is based on the following factors: two acres of watering corresponding to two acres of grading; application of water three times daily; a duration of 125 days; and a water intensity of 0.2 liters per square meter. The water intensity value corresponds to a control efficiency ranging from 59 to 69 percent, which is consistent with the 61 percent control efficiency value for watering three times daily recommended by the South Coast Air Quality Management District (SCAQMD).

RESPONSE 18-12

The comment does not describe which part of the existing setting discussion is considered incomplete or inaccurate. Because the description of existing conditions on a project site and within the affected surrounding area is intrinsic to the impact evaluations contained in an EIR, and required under the CEQA Guidelines, the Draft EIR describes land uses and conditions in the local area and, where, applicable, the region. Maps which identify major land uses, streets, and other transportation networks in the regional and local area, include Figure 2-1, *Regional Location and Vicinity Map*, and Figure 2-2, *Power Plant Site and Surrounding Uses*, are provided on pages 2-3 and 2-4, respectively, in **Section 2.0, Project Description**, of the Draft EIR. Land uses associated with these settings are described on page 2-1 in **Section 2.0. Section 3.0, General Description of Environmental Setting**, of the Draft EIR provides a general description of the existing settings and conditions associated with each of the issues addressed in the EIR, including the project location and surrounding uses. The existing visual character of the area and off-site public vantage points having regional and local views are described on pages 4.A-5 through 4.A-8 in **Section 4.A, Aesthetics**, of the Draft EIR. Page 4.A-15 of **Section 4.A** also describes the locations of light/glare-sensitive receptors in the area. Existing regional and local air quality conditions are described on pages 4.B-13 through 4.B-17 in **Section 4.B, Air Quality**, of the Draft EIR. Page 4.B-13 in Section 4.B describes land uses in the area that are considered sensitive receptors to the effects of air pollution. Page 4.F-5 in **Section 4.F, Land Use**, of the Draft EIR describes surrounding land uses and Figures 4.F-1, *General Plan Land Use Diagram*, on page 4.F-4 of Section 4.F illustrates land uses in a region extending north to south between north of California Boulevard to the city's south boundary and east and west between the city's east boundary to Arroyo Boulevard. **Figure 4.F-2, South Fair Oaks Specific Plan Area**, on page 4.F-3 of **Section 4.F** illustrates the project site and off-site area located within the specific plan; Figure 4.F-3, *Project Site Zoning Designations*, on page 4.F-7 of **Section 4.F**, illustrates that zoning within the off-site area surrounding the site. **Figure 4.G-1, Noise Sensitive Impact Evaluation Locations**, on page 4.G-5 in **Section 4.G, Noise**, of the Draft EIR provides the mapped locations of land uses in the area that would be sensitive to changes in noise levels. Because the evaluation of existing conditions in the local area and region have been described and illustrated in the Draft EIR, no further evaluation of setting is necessary.

RESPONSE 18-13

A detailed discussion of on-site contaminated soils is provided on pages 4.E-9 through 4.E-10 in **Section 4.E, Hazards and Hazardous Materials**, of the Draft EIR. The analysis is based on a *Limited Phase II Environmental Investigation*, attached as **Appendix D** of the Draft EIR. The commenter does not identify any missing analysis or information in this regard.

RESPONSE 18-14

The commenter indicated that a Phase I Environmental Site Assessment (ESA) was not prepared for the site. Phase I ESAs are routinely completed as part of the CEQA process to determine the presence of recognized environmental conditions (RECs) and sources of contamination on and surrounding the project Site. Phase I ESAs identify conditions on site that are indicative of a past release of a hazardous substance or sources of contamination that may pose risks to construction workers or off-site receptors. Phase I Environmental Assessments investigate prior use of the site to determine potential adverse environmental impact (on-site RECs) due to the past operation at the site or immediately adjacent to the site (off-site RECs). If potential adverse environmental impacts are determined to exist, then a Phase II Environmental Investigation is recommended.

The project site has long been used by the City of Pasadena as a power plant (since 1906) and all previous uses of the land were documented with the plans and aerial photographs. The site is bound to the east by Highway 110, to the north by Glenarm Street, to the west by Fair Oaks Avenue, and to the south by State Street (no adjacent site RECs). It is common practice for facilities such as refineries, gas stations, power plants, etc., to determine from the start the existence of the RECs without performing a Phase I Investigation and to proceed directly to a Phase II Investigation, and accordingly undertaking a formal Phase I would not disclose any impacts that have not already been disclosed. Several Phase II and Phase III investigations have previously been performed at the project site. In the *Limited Phase II Environmental Investigation* prepared by Hydrologue, Inc.² and included in Appendix D of the Draft EIR, these previous investigations are cited. Key studies relevant to this comment are listed below:³

1. Limited Phase II Environmental Investigation, Proposed 65 MW Combined Cycle – Repowering Project, City of Pasadena Power Plant, 72 East Glenarm Street, Pasadena, CA 91105, Hydrologue Report No. 3626-00-02, dated January 28, 2010.
2. Limited Phase II Environmental Investigation , Proposed Operation Building Center, 72 East Glenarm Street, Pasadena, CA 91105, Hydrologue Report No. 3626-01-02, dated February 2, 2010.
3. Summary of Additional Soil Assessment Activities (Phase III), Glenarm Steam Plant Property, City of Pasadena Water and Power Department, 72 East Glenarm Street, Pasadena, California, by Pacific Environmental Group/ The IT Group, Inc. Report No. 640-001.1B, dated September 3, 1999.
4. Report of Soil Investigation, Pasadena Water and Power Plant, by Hunter-Kennedy and Associates, Inc., dated July 30, 2003.
5. Phase II Environmental Site Assessment, Proposed Water Treatment Facility, 130 Wallis Street, Pasadena, California, Hydrologue Draft Report No. 2540-01, dated December 16, 2002.
6. Phase II Environmental Site Assessment for ASTs, 130 Wallis Street, Pasadena, California, Hydrologue Report No. 2435, dated July 18, 2002.
7. Phase II Environmental Site Assessment for Generator Turbine, Northeast Corner of Fair Oaks Avenue and State Street, Pasadena, California, Hydrologue Report No. 2391, dated July 17, 2002.
8. Phase II Environmental Site Assessment Proposed GT-1 and GT-2 SCR and Exhaust Stacks, City of Pasadena Power Plant-72 East Glenarm Street, Pasadena, California, Hydrologue Report No. 2555-01, dated January 30, 2003.
9. Soils Engineering Investigation, Proposed Gas Turbine Generators, Broadway and Glenarm Power Plant, Pasadena, California, Hydrologue report No. 2391-00, dated April 3, 2002.

² Hydrologue, Inc., *Limited Phase II Environmental Investigation, Proposed Glenarm Repowering Project (GT-5 Combined Cycle Installation)*, July 2011. This document is included in Appendix D of the Draft EIR.

³ *Ibid*, p. 28-29.

10. Soils Engineering Investigation, Proposed 65 MW Combined Cycle - Repowering Project, Pasadena Power Plant, Pasadena, California, 72 East Glenarm Street, Pasadena, CA 91105, Hydrologue report No. 3826-00-01, dated January 28, 2010.
11. Soils Engineering Investigation, Proposed Compressor, Cooler and Above Ground Storage Tank, 130 Wallis Street Power Plant, Pasadena, California, Hydrologue Report No. 2435-00, dated July 18, 2002.
12. Foundation Investigation Proposed Turbine Generators at Glenarm Plant Fair Oaks and Glenarm, Pasadena, California Converse Davis and Associates Project No. 73-026-A dated February 12, 1973.
13. Foundation Investigation Proposed Fuel Storage Tank Relocation Glenarm Steam Plant Fair Oaks Avenue and Glenarm Street, Pasadena, California Converse Davis and Associates Project No. 73-191-A dated October 23, 1973.
14. Soils Engineering Investigation, Proposes Water Treatment and Water Storage Tank, 130 Wallis Street Pasadena Power Plant, Hydrologue Report No. 2540-00, dated December 10, 2002.

Of particular interest are above referenced studies #3 and #4. Relevant documents from these studies were appended to the *Limited Phase II Environmental Investigation* (Appendixes C through G) provided in **Appendix D** of the Draft EIR. The commenter's assertion that the City failed to conduct a Phase I ESA and is unable to fully identify and disclose contamination on the project site is incorrect. As indicated previously, it is common practice for sites such as power plants to determine from the start the existence of the RECs without performing a Phase I Investigation and to proceed directly to a Phase II Investigation. The City has done so and conducted a number of studies regarding contamination on the site. Disclosure of the contamination is provided in **Section 4.E, Hazards and Hazardous Materials**, in the Draft EIR, in the supporting limited Phase II Report, prepared by Hydrologue, Inc.⁴ and provided in Appendix D of the Draft EIR, and in documents from prior studies that were appended to the *Limited Phase II Environmental Investigation* (Appendixes C through G), which are also provided in **Appendix D** of the Draft EIR. Thus, adequate information has been presented to decision makers and the public regarding the project's potential to result in impacts relative to the presence of hazardous materials. The commenter does not identify what additional information would be forthcoming if a Phase I were undertaken at this time.

RESPONSE 18-15

This comment states that the project site shows that historical sources of contamination and potential risks to construction workers and off-site receptors have not been identified. Research of historical Sanborn Fire Insurance maps showed that a city incinerator was located on part of the project site. The incinerator began operations in 1933 and continued to operate until 1966 when it was demolished. The incinerator was located where existing Units GT-3 and GT-4 are now located, in the southwestern portion of the Broadway Plant. The incinerator was not located in the area where soil disturbance is planned at the planned site of Unit GT-5 or associated construction. Nonetheless, the commenter states that aerial deposition of materials from the incinerator may have impacted soils that would pose a risk to construction workers or off-site receptors.

⁴ Hydrologue, Inc., *Limited Phase II Environmental Investigation, Proposed Glenarm Repowering Project (GT-5 Combined Cycle Installation)*, July 2011. This document is included in Appendix D of the Draft EIR.

The comment indicates that dioxins may have formed during incomplete combustion from the incinerator and settled with ash and other particulate matter on soils that could be disturbed during project construction. The commenter believes that deposition of dioxins on the project site from incinerator operations may impact the health of construction workers who may be exposed to contaminated soil via dermal contact and dust inhalation. Off-site receptors, such as nearby residents and school children at the Blair High School, may also be exposed during construction activities through inhalation of windblown dust.

The commenter states that sampling, to test for dioxins in soil, should be conducted in areas where project construction is scheduled to occur; that results should be compared to construction worker screening levels and human health screening levels and be included in a revised Draft EIR; and, if, results exceed screening levels, appropriate regulatory agencies should be notified and further site specific health risk evaluations should be conducted under their supervision. The commenter further notes that mitigation measures, if necessary, should be incorporated into a revised Draft EIR to ensure that workers, nearby residents, and schoolchildren will not be significantly impacted. The commenter recommends a screening level for dioxins for workers in direct contact with soil, as in the digging of a trench, of 230 parts per trillion.

Sampling of the project site was documented in a 2011 *Limited Phase II Environmental Investigation* (see **Appendix D** of the Draft EIR).⁵ According to this investigation, sampling did not identify or target the incinerator, a major source of contamination. The incinerator was not located in the area where soil disturbance is planned to occur at the proposed Unit GT-5 construction site. However, several Phase II and Phase III investigations were performed at the project site. These previous investigations are cited in the Phase II Investigation. Key studies relevant to this comment are in **Response 18-14**.

Relevant documents from these studies were appended to the *Limited Phase II Environmental Investigation* (Appendixes C through G) and provided in Appendix D of the Draft EIR. In Section 4.1 of the *Limited Phase II Environmental Investigation*, a summary of these investigations is as follows:

Summary of Additional Soil Assessment Activities (Phase III) (Reference #3 and #4 in Response 18-14)

3. Pacific Environmental Group/ The IT Group, Inc. (PEG/IT), Summary of Additional Soil Assessment Activities (Phase III), Glenarm Steam Plant Property, City of Pasadena Water and Power Department, 72 East Glenarm Street, Pasadena, California, Report No. 640-001.1B, September 3, 1999.
4. Hunter-Kennedy and Associates, Inc., *Report of Soil Investigation, Pasadena Water and Power Plant*, July 30, 2003.

The scope of the PEG/IT work included drilling forty soil borings to assess subsurface soil conditions at the site (Figures 3 and 4 of Reference #3, which are included in Appendix E of the *Limited Phase II Environmental Investigation*). Soil borings were located in areas of concern identified in PEG/IT's Phase II Report (PEG/IT, 1999). The Limited Phase II Environmental Investigation recommended further subsurface environmental assessment to better define impact to the soils in focused areas. The report also included a risk-based review to determine whether potential restrictions to development of the site may be warranted due to existence of the impacted soil.

⁵ *Hydrologue, Inc., Limited Phase II Environmental Investigation, Proposed Glenarm Repowering Project (GT-5 Combined Cycle Installation), July 2011. This document is included in Appendix D of the Draft EIR.*

The assessment was performed primarily in the central portion of the site, but also included a few additional locations as shown in Figures 4 and 5 of Reference #3, which are included in Appendix E of the Limited Phase II Environmental Investigation. The locations included the area near boring B-8A, at which the *Limited Phase II Environmental Investigation* identified elevated levels of mercury. Although mercury concentrations appeared to attenuate with depth, the *Limited Phase II Environmental Investigation* did not define its lateral extent. The *Limited Phase II Environmental Investigation* suggested further investigation for volatile organic compounds (VOCs), lead, copper, and heavy hydrocarbon impact near borings B-10A through B-10F. Although lead and copper concentrations appeared to attenuate with depth, the vertical and lateral extent of their impact was not defined to regulatory action limits. Finally, the area near borings B-12 and B-13A required further investigation for vertical and lateral definition of lead concentrations. Lead concentrations identified by the *Limited Phase II Environmental Investigation* in this area increased with depth. Figures 4 and 5 shows the boring location and detected concentrations of chemical of concerns in confirmation soil samples collected after remediation. Contrary to the commenter's statement, the former cooling tower area and its associated remedial excavation and oil pit (burning area) are shown in Figures 4 and 5.

In Reference #4, the consultant referenced a work plan used for their investigation. The work plan was developed by CH2MHILL and is summarized as follows:

A workplan for the collection of samples for the Reference #4 study was developed by CH2MHill under contract to the Pasadena Department of Water and Power. Sections of this workplan pertaining to soil sampling are included in Appendix B of Reference #4.

Regulatory Standards

Clean-up levels established for the Reference #4 study are:

Metal	Soil Clean-up Level mg/kg
TPH as diesel	10,000
Antimony	500
Arsenic	500
Barium	10,000
Beryllium	75
Cadmium	100
Chromium (total)	450
Cobalt	8,000
Copper	2,500
Lead	750
Molybdenum	3,500
Nickel	2,000
Selenium	100
Silver	600
Thallium	130
Vanadium	2,400
Zinc	5,000

Any soil samples with California Title 22 metal (CAM) concentrations exceeding the applicable Soluble Threshold Limit Concentrations (STLC) were considered hazardous. For worker protection, pH levels in soil was recommended to be 6-12.5.

Stockpiled soil, soils with a Total Petroleum Hydrocarbons level below Leaking Underground Fuel Tank Manual levels and total CAM metal and leachable CAM metal concentrations below the Total Threshold Limit Concentration and STLC, respectively were considered non-hazardous.

It should be noted that this remedial work was performed under oversight of the Pasadena Fire Department. Dioxin was not identified as a chemical of concern. All excavated soil associated with the oil pit (burn pit) was disposed off-site and confirmation soil samples were collected and analyzed (see Reference #4). Furthermore, dominant wind direction at the site is to the east/northeast and any wind transported deposit would have been deposited to the east of the incinerator.

It should be noted that chemicals in wind-transported deposits from the incinerator site are not limited to dioxin. They include polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs) such as dibenzofuran, and significant concentration of certain CAM metals:

Semi Volatile Organic Compounds (SVOCs)

Thirty soil samples collected from 5, 10 and 15 feet below ground surface were tested for SVOCs using EPA Method 8270C. It should be noted that dibenzofuran was not detected. Certain SVOCs were detected in only two soil samples: BH-2 at 5 to 6.5 feet and BH-9 at 4.5 to 6 feet. Concentrations of benzo(a)anthracene from 1,340 to 1,710 micrograms per kilogram ($\mu\text{g}/\text{kg}$), benzo(a)pyrene 948 to 1,500 $\mu\text{g}/\text{kg}$, benzo(b)fluoranthene 1,250 to 2,230 $\mu\text{g}/\text{kg}$, benzo(k)fluoranthene 478 to 1,400 $\mu\text{g}/\text{kg}$, chrysene 1,440 to 2,260 $\mu\text{g}/\text{kg}$, fluoranthene 1,130 to 4,610 $\mu\text{g}/\text{kg}$, phenanthrene at from ND to 2,100 $\mu\text{g}/\text{kg}$ and pyrene 1,410 to 4,230 $\mu\text{g}/\text{kg}$.

The above-mentioned SVOCs concentrations are considered non-problematic based on comparison with the deep soil screening levels for industrial sites (when groundwater is the drinking water source) of the San Francisco Water Quality Control Board (SFWQCB). The SFWQCB has developed highly conservative guidelines that include environmental screening levels (ESLs) for most contaminants of Potential Concerns (COPCs). In case where detected concentrations of COPCs exceed the SFWQCB ESL values, more relevant document such as State of California ESL values, USEPA Region IX Preliminary Remedial Goals (PRGs) or a site specific health risk assessment is consulted. The commenter referenced the SFWQCB ESLs; however, contrary to Hydrologue, the commenter incorrectly used the SFWQCB guidelines to conclude that remediation is necessary despite the fact that detected concentrations of chromium VI were below the State of California ESL and the USEPA PRGs for chromium VI. The use of the SFWQCB guidelines and ESLs are not mandatory.

As discussed above, the reported concentrations are well below the soil screening level for industrial and commercial land uses except for Benzo(a)pyrene concentration of BH-9@4.5-6' which is at 1,500 $\mu\text{g}/\text{kg}$ and is equal to screening level of SFWQCB.

Polychlorinated Biphenyls (PCBs)

Ten soil samples collected from the surface were tested for PCBs using EPA Method 8082. No PCBs concentration was detected in any soil samples analytically tested for PCBs except for Aroclor-1254 (PCB-1254) at 78 µg/kg in soil sample BH-6 at the surface.

The above-mentioned PCB concentration is considered non problematic based on comparison with DTSC PRGs for industrial sites. The reported PCB concentration is well below the soil screening level for industrial and commercial land uses.

Based on the detected concentration of CAM metal reported in References #3 and #4 and by Hydrologue, detected PCBs concentration and SVOCs concentrations reported in the Limited Phase II Environmental Investigation, and no detection of dibenzofuran, potential dioxin impact from wind deposited sediment within the proposed Unit GT-5 project area is considered low.

Forty soil samples collected from the surface and depths of 5, 10 and 15 feet below ground surface were tested for total chromium VI using Method SW 7196. Chromium VI concentrations were detected in only 5 soil samples. The detected concentrations vary from 0.51 mg/kg in BH-1@5-6' to 2.22 mg/kg in BH-10 at the surface.

Sample I.D	BH-1@5-6.5'	BH-8@ S	BH-9@4.5-6'	BH-10@S	BH-10@5-6.5'
Chromium VI mg/kg	0.51	0.75	1.08	2.22	0.52

None of the detected chromium VI concentrations exceed State of California residential soil action levels (17 mg/kg), commercial industrial soil action levels (37 mg/kg), or the EPA Preliminary Remedial Goal (PRG) for residential soils (30 mg/kg) and commercial industrial soils (64 mg/kg). Consequently, no remedial action was recommended in the *Limited Phase II Environmental Investigation*. The commenter compared the detected concentration of chromium VI with the calculated risk based levels direct exposure Soil Screening levels for Construction/Trench Worker Exposure Scenario of Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater of California Regional Water Quality Control Board San Francisco Region (revised May 2008). However, this document is only a screening guideline. The chromium VI concentration cited by the reviewer is 0.53 mg/kg, corresponding to a non-carcinogens risk for a hazard quotient of 0.2. The recommended number for a hazard quotient of 1 in the same document is 2.6 mg/kg and for carcinogens with a risk of 10^{-6} is 1.8 mg/kg.

The commenter also stated that the *Limited Phase II Environmental Investigation* failed to compare detected concentrations with the recommended construction worker exposure for non-carcinogens risk for a hazard quotient of 0.2. It should be noted that usually this kind of comparison is made during development of the health and safety plan for which the regulating agency is the California Division of Occupational Safety and Health (Cal/OSHA). The purpose of the comparison is to investigate the appropriate level of PPE and required monitoring program during construction.

A risk assessor normally combines information on exposure) and toxicity to predict the types of non-cancer and cancer effects that may occur and provide information on the probability and/or severity of the effects. Resources and guidance documents are available from the U.S. EPA.^{6,7,8}

Non-Cancer Risk

For most chemicals, the potential for non-cancer effects is evaluated by comparing the estimated daily intake of the chemical over a specific time period with the RfD for that chemical derived for a similar period of exposure. This comparison results in a non-cancer Hazard Quotient (HQ), as follows: $HQ=DI/RfD$, where HQ=Hazard Quotient, DI=Daily Intake (mg/kg-day), and RfD=Reference Dose (mg/kg-day). If the Hazard Quotient for a chemical is equal to or less than one (1E+00), there is no appreciable risk that non-cancer health effects will occur. If the Hazard Quotient exceeds 1E+00, there is some possibility that non-cancer effects may occur, although a hazard Quotient above 1E+00 does not indicate an effect will definitely occur. This is because of the margin of safety inherent in the derivation of all reference dose values.⁹ The larger the Hazard Quotient value, the more likely it is that an adverse effect may occur.

If an individual is exposed to more than one chemical, a screening-level estimate of the total non-cancer risk is derived simply by summing the hazard quotient values for that individual. This total is referred to as the Hazard Index. If the Hazard Index value is less than 1E+00, non-cancer risks are not expected from any chemical, alone or in combination with others. If the screening level Hazard Index exceeds 1E+00, it may be appropriate to perform a follow-on evaluation in which Hazard Quotient values are combined only if they affect the same target tissue or organ system (e.g., the liver). This is because chemicals that do not cause toxicity in the same tissues are not likely to cause additive effects.

The excess risk of cancer from exposure to a chemical is described in terms of the probability that an exposed individual will develop cancer because of that exposure by age 70. For each chemical of concern, this value is calculated from the daily intake of the chemical from the site averaged over a lifetime (DIL) and the slope factor (SF) for the chemical, as follows: $Excess\ Cancer\ Risk = 1 - \exp(-DIL \times SF)$. In most cases (except when the product of $DIL \times SF$ is larger than about 0.01), this equation may be accurately approximated by the following: $Excess\ Cancer\ Risk = DIL \times SF$. Excess cancer risks are summed across all chemicals of concern and all exposure pathways that contribute to exposure of an individual in a given population.

The level of total cancer risk that is of concern is a matter of personal, community, and regulatory judgment. In general, the USEPA considers excess cancer risks that are below about 1 chance in 1,000,000 (1×10^{-6} or 1E-06) to be so small as to be negligible, and risks above 1E-04 to be sufficiently large that some sort of remediation is desirable. Excess cancer risks that range between 1E-06 and 1E-04 are generally considered to be acceptable, although this is evaluated on a case-by-case basis and USEPA may determine that risks lower than 1E-04 are not sufficiently protective and warrant remedial action.

⁶ USEPA, "Risk Characterization, Non-Cancer Risk," http://www.epa.gov/region8/r8risk/hh_risk.html#noncancer. Accessed February 2013.

⁷ USEPA, "Risk Characterization, Excess Cancer Risk," http://www.epa.gov/region8/r8risk/hh_risk.html#cancer. Accessed February 2013.

⁸ USEPA, "Risk Characterization, Resources," http://www.epa.gov/region8/r8risk/hh_risk.html#docs. Accessed February 2013.

⁹ USEPA, "Risk Characterization," http://www.epa.gov/region8/r8risk/hh_toxicity.html. Accessed February 2013.

In order to estimate the potential effects from exposure to multiple COPCs, the hazard index (HI) approach was used. The Hazard Index is defined as the summation of the hazard quotients for each COPC, for each route of exposure, and is represented by the following equation:

$$HI = \frac{\text{Predicted Dose a}}{RfD_a} + \frac{\text{Predicted Dose b}}{RfD_b} + \dots + \frac{\text{Predicted Dose i}}{RfD_i}$$

A total Hazard Index less than or equal to unity is indicative of acceptable levels of exposure for chemicals assumed to exhibit additive health effects. To be truly additive in effect, chemicals must affect the same target organ system or result in the same critical toxic endpoint. A Hazard Index less than or equal to 1.0 suggests that adverse health effects would not be expected following a lifetime of exposure, even in sensitive members of the population.

Guidelines for selecting Hazard Quotients are:

- HQ <0.1, no hazard exists
- HQ 0.1–1.0, hazard is low
- HQ 1.1–10, hazard is moderate
- HQ >10, hazard is high

Based on the above discussion of the evaluation of risk, the chromium concentration based on a Hazard Quotient of 0.2 is too conservative and none of the detected concentrations of chromium VI exceed the recommended screening level of 2.6 mg/kg for Hazard Quotient = 1.

In conclusion, the information the commenter claims is missing is found in the Draft EIR in the *Limited Phase II Environmental Investigation*, which is included in **Appendix D** of the Draft EIR, and the associated studies listed in **Response 18-14** that the *Limited Phase II Environmental Investigation* referenced and relied on as a basis for its analysis and conclusion. Further, the description and analysis of current soil conditions on the site was adequately summarized in **Section 4.E, Hazards and Hazardous Materials**, in the Draft EIR on pages 4.E-9 through 4.E-10 and pages 4.E-16 through 4.E-17. The Draft EIR concluded that implementation of the proposed project would not result in any significant or unavoidable hazards or hazardous material impacts with implementation of the recommended mitigation measures (see pages 4.E-25 through 4.E-27 for a list of the recommended mitigation measures). None of the comments raised identify missing analysis or conclusions.

RESPONSE 18-16

This comment states that the Draft EIR did not disclose the City's future or current water supply amount, and therefore does not afford decision makers and the public the opportunity to discern the proposed project's impacts on water supplies. The Draft EIR provides a detailed review of all sources of water available to the City and concludes that there is sufficient supply available to meet the project's needs through the 2035 planning horizon. This conclusion was reached through an analysis of water demand, as compared to available supplies, in Pasadena Water & Power's January 2011 *Water Integrated Resources Plan* and the City's *2010 Urban Water Management Plan*, as discussed on pages 4.H-7 to 12 of the Draft EIR. Since water imported from the Metropolitan Water District of Southern California (MWD) contributes a major

proportion of the City's water supply, a thorough analysis of MWD supplies, including planning for water shortages and decreased allotments to member agencies, is provided on pages 4.H-12 to 20 of the Draft EIR.

This analysis of Pasadena Water & Power's entire supply mix concludes that there will be sufficient water available to meet customer demand through 2035. The projected demand for water in the City through the planning horizon is 43,300 acre-feet per year (AFY), as described on page 4.H-9 of the Draft EIR. The relevant studies indicate that not only will there be sufficient water available to supply the proposed project's needs (293 AFY), but there will be sufficient water available to meet the needs of the 32 related projects which may be built in the City (502.7 AFY), with a conservatively calculated total cumulative water demand of approximately 670.5 AFY, as described on pages 4.H-28 to 31 of the Draft EIR. Therefore, the Draft EIR provides sufficient information to support this conclusion, as well as affording decision-makers and the public the opportunity to consider the project's potential impacts on current and future water supplies in the City.

RESPONSE 18-17

The *CEQA Guidelines*, Section 21002.1 (a), state that the purpose of an EIR is to identify the significant effects on the environment and to mitigate or avoid significant effects whenever it is feasible to do so. The Draft EIR found significant adverse cultural resources impacts associated with the historic Glenarm Building; significant adverse impacts associated with turbine GHGs; significant adverse hazardous materials impacts associated with asbestos, lead-based paint, and contaminated soils; and significant adverse land use impacts associated with the inconsistency of the stack height with zoned height limitations (requiring a variance) and the location of the employee parking lot south of the Glenarm Building. In accordance with the *CEQA Guidelines*, Section 15126.4, mitigation measures were provided to minimize these significant adverse impacts to the extent feasible. Mitigation measures were also provided for potential impacts to archaeological, Native American, and paleontological resources in the Draft EIR. No feasible, enforceable mitigation measures have been identified to minimize significant adverse impacts associated with turbine GHG's or land use (stack height and employee parking), since these are intrinsic to the design of the facility and constraints of the site, respectively. The comment letter does not demonstrate that additional mitigation would be feasible, nor does it support the claim that the Draft EIR does not adequately evaluate the range of environmental factors potentially affected, as identified in the Initial Study.

RESPONSE 18-18

Please refer to **Response 18-17**. As discussed therein, the Draft EIR provides all feasible mitigation measures to minimize potentially significant adverse impacts associated with cultural resources and hazards materials. The Draft EIR concluded that no feasible mitigation measures, which must meet the standard of enforceability under the *CEQA Guidelines*, Section 15126.4 (a)(2), are available to reduce GHG emissions associated with the turbine. The comment letter has not suggested examples of enforceable or feasible mitigation measures to reduce estimated GHG emissions.

Under the *CEQA Guidelines*, Section 21002.1 provides that, if economic, social, or other conditions make it infeasible to mitigate one or more significant effects on the environment, the project may nonetheless be carried out or approved at the discretion of the public agency if it is otherwise permissible under applicable laws and regulations.

As described in **Section 5.0, Alternatives**, of the Draft EIR, no feasible alternatives were identified that would eliminate the significant unavoidable construction effects of the proposed project. As discussed on page 5-33 of the Alternatives section, the environmentally superior alternative (the Project Site Reconfiguration Alternative) would have similar GHG emissions to the project and would not avoid the project's significant adverse impact with respect to turbine GHG emissions. This alternative would avoid the project's significant adverse land use impact related to the location of employee parking at the south of the Glenarm Building, but would still have a 125-foot-high stack (a significant adverse land use impact), and thus would not avoid significant adverse land use impacts. In addition, the environmentally superior alternative would only partially achieve the objective of maximizing the use and efficiency of the facility, and would not achieve the project objective of designating the Glenarm Building as an essential facility, since only operational parameters would be changed under this alternative.

In accordance with the *CEQA Guidelines*, Section 15126.2(b), and as discussed on page 6-10 in **Section 6.0, Other Environmental Considerations**, of the Draft EIR, the Draft EIR provides reasons why the Project is being proposed, notwithstanding significant unavoidable impacts. The reasons for the project are provided in a comprehensive listing of Project Objectives included in **Section 2.0, Project Description**, of the Draft EIR.

RESPONSE 18-19

The analyses of impacts related to Air Quality, GHGs, and hazardous materials in the Draft EIR are compliant with the *CEQA Guidelines* and consistent with industry standards. This comment does not specifically identify any substantive gaps in information or methodology that would alter the conclusions of the Draft EIR.

RESPONSE 18-20

The following clarification and revision has been made in Section 4.B, Air Quality, of the Draft EIR based on this comment, as well a similar comment received from the South Coast Air Quality Management District (SCAQMD) (see **Response 3-8**). The change to the Draft EIR below has been incorporated into the Final EIR in Chapter 3.0, Corrections and Additions to the Draft EIR:

On page 4.B-2, under subsection **(b) New Source Performance Standards (NSPS)**, the paragraph is edited as follows:

The proposed project will be subject to Federal New Source Performance Standards (NSPS) Subpart ~~KKKK (Standards of Performance for Stationary Combustion Turbines) Dd (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)~~ which establishes standards for ~~PM~~ SO_x and NO_x emissions.

CEQA Guidelines §15088.5(b) states that “[r]ecirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.” The information provided in this Final EIR confirms the basic findings in the Draft EIR with certain clarifications, and makes insignificant modifications, as shown in Chapter 3.0, Corrections and Additions to the Draft EIR, in this Final EIR. Accordingly, there is no basis for recirculation of the Draft EIR.

RESPONSE 18-21

Prevention of Significant Deterioration (PSD) analysis applies to major sources and major modifications of major sources located in federal attainment areas. As stated on page 4.B-10 in Section 4.B, Air Quality, of the Draft EIR, Regulation XVII (PSD analysis) sets forth pre-construction requirement for stationary sources to ensure that the air quality in clean areas does not significantly deteriorate while maintaining a margin for future industrial growth.” The proposed project site is located in an area currently classified as a federal attainment area for carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂). However, as stated on 4.B-10, emissions of these attainment criteria pollutants are less than the PSD increment and are therefore exempt from Regulation XVII requirements.

The proposed project site is located in an area currently classified as a federal non-attainment area for respirable particulate matter (PM₁₀).¹⁰ While the California Air Resources Board (CARB) has transmitted a *Request for PM₁₀ Redesignation and Maintenance Plan for the South Coast Air Basin* (April 28, 2010), the U.S. Environmental Protection Agency (USEPA) has not published a final rule in the Federal Register designating the South Coast Air Basin as attainment for PM₁₀. Therefore, the South Coast Air Basin is non-attainment for PM₁₀ until such time that the USEPA publishes a final rule in the Federal Register that changes the designation. The USEPA has not published a draft rule indicating when or if the designation request will be made final. As of January 30, 2013, the Code of Federal Regulations indicates that the South Coast Air Basin is non-attainment for the federal PM₁₀ standards.¹¹ It should be noted that in **Comment 18-22**, the commenter agrees that PM₁₀ “is already in nonattainment under State and Federal Standards” in the South Coast Air Basin. Thus, because the South Coast Air Basin is designated as non-attainment for PM₁₀, the proposed project is not subject to Regulation XVII (PSD analysis) as it relates to emissions of PM₁₀. The South Coast Air Basin is also designated as a federal non-attainment area for fine particulate matter (PM_{2.5}). Furthermore, the potential for a future redesignation of an air basin is not a factor for determining the applicability of Regulation XVII for a project with a pending permit application.¹² The proposed project requires a Permit to Construct/Permit to Operate (PTC/PTO) from the SCAQMD and the permit application was submitted to the SCAQMD in June 2012. An excerpt of the PCT/PTO can be found in **Appendix C** of the Draft EIR. Therefore, the Draft EIR is not required to be revised as it already sufficiently discloses the applicability of Regulation XVII (PSD analysis).

Notwithstanding the above, the proposed project is subject to Regulation XIII (New Source Review). As discussed on page 4.B-10 in **Section 4.B, Air Quality**, of the Draft EIR, the “regulation limits the emissions of non-attainment contaminants and their precursors as well as ozone depleting compounds and ammonia by requiring the use of Best Available Control Technologies (BACT).” Because the region is non-attainment for PM₁₀, the proposed project is subject to PM₁₀ BACT under Regulation XIII. BACT is defined in SCAQMD Rule 1302(h) as follows:¹³

“BACT means the most stringent emission limitation or control technique which:

¹⁰ USEPA, “Air Quality Analysis – Particulate Matter (PM-10) Attainment Designations in Region 9,” http://www.epa.gov/region9/air/maps/pdfs/AIR1200072_1.pdf. Accessed February 2013.

¹¹ Code of Federal Regulations (CFR), Title 40, Section 81.305. CFR data current as of February 5, 2013.

¹² SCAQMD, “Rule 1701. General,” <http://www.aqmd.gov/rules/reg/reg17/r1701.pdf>. Accessed February 2013. The applicability provisions of this rule do not cite the potential for future redesignation of an air basin as applicability criteria.

¹³ SCAQMD, “Rule 1302. Definitions,” <http://www.aqmd.gov/rules/reg/reg13/r1302.pdf>. Accessed February 2013.

- (1) has been achieved in practice for such category or class of source; or
- (2) is contained in any state implementation plan (SIP) approved by the U.S. EPA for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitation or control technique is not presently achievable; or
- (3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board.”

The proposed project requires a Permit to Construct/Permit to Operate (PTC/PTO) from the SCAQMD. The permit application was submitted to the SCAQMD in June 2012 and an excerpt of the PCT/PTO can be found in Appendix C of the Draft EIR. As discussed previously, the South Coast Air Basin was and continues to be designated as non-attainment for PM₁₀ at the time of the permit application was submitted to the SCAQMD. There are numerous references in both **Section 4.B, Air Quality**, of the Draft EIR and the PTC/PTO application submitted to the SCAQMD that indicate that the proposed project would utilize BACT to control air pollutant emissions (see pages 2-6, 4.B-10, 4.B-12, 4.B-30, 4.B-31, 4B-52, and 4.B-53 of the Draft EIR). As described on page 2-5 in **Section 2.0, Project Description**, of the Draft EIR, the proposed project would be a “local natural gas-fueled generating unit.” The turbine would utilize efficient, clean-burning, pipeline quality natural gas.

Recent air quality analyses prepared by the California Energy Commission (CEC) for projects similar to the proposed project have indicated that pipeline quality natural gas constitutes BACT for PM₁₀ emissions from combustion turbines. In the application for certification for the Pio Pico Energy Center power generation facility located in San Diego County, Appendix G-5, Evaluation of Best Available Control Technology (BACT), states that “the use of natural gas as the primary fuel source constitutes BACT for PM₁₀ emissions from combustion gas turbines.”¹⁴ In the application for certification for the CPV Sentinel (CPVS), LLC electrical generating facility located in Riverside County, Appendix I-7, BACT Analysis, states that “[s]ulfur dioxide and PM₁₀ emissions will be controlled through the exclusive use of clean-burning pipeline quality natural gas. This control technology has been widely and uniformly implemented for control of SO₂ and PM₁₀ emissions from combustion turbines in California and throughout the United States, and is considered to be BACT for the CPVS facility.”¹⁵ Combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter.¹⁶ Since combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter, implementation of BACT would also control and reduce PM_{2.5} emissions. Thus, in accordance with recent BACT determinations from the CEC, use of clean-burning pipeline quality natural gas is considered to be PM₁₀ and PM_{2.5} BACT for the proposed project combustion turbine.

¹⁴ CEC, Pio Pico Energy Center, Application – Docket # 2011-AFC-01, Appendix G-5, (2011) G-5-16.

¹⁵ California Energy Commission, CPV Sentinel Energy Project, Final Staff Assessment, Air Quality Addendum, CEC 700-2008-005-FSA-AD, April 2010.

¹⁶ CARB, “Download Option for Speciation Profiles: PMSIZE,” <http://www.arb.ca.gov/ei/speciate/dnldoptvv10001.php#filelist>. Accessed February 2013. Particulate matter (PM) Profile IDs 120 (gaseous fuel combustion) and 121 (residential-natural gas) indicate that all PM is less than 2.5 microns in diameter.

RESPONSE 18-22

As shown in Table 4.B-2 in **Section 4.B, Air Quality**, of the Draft EIR, the South Coast Air Basin is designated as non-attainment for the state and federal PM10 standards. As shown in Table 4.B-3, the maximum ambient PM10 (24-hour) concentrations registered near the proposed project site between 2006 and 2010 ranged from a high of 109 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in 2007 and a low of 70 $\mu\text{g}/\text{m}^3$ in 2010. The monitoring data provides ambient pollutant concentrations that result from emissions from all existing sources in the air basin and in the specific source receptor area in which the monitoring station represents. Contrary to the commenter's claim, therefore, the emissions from the existing Units GT-1 through GT-4 were taken into account. The PM10 (24-hour) California Ambient Air Quality Standard (CAAQS) is 50 $\mu\text{g}/\text{m}^3$ and the National Ambient Air Quality Standard (NAAQS) is 150 $\mu\text{g}/\text{m}^3$. Table 4.B-2 also shows that the annual PM10 concentrations exceed the CAAQS (there is no annual PM10 NAAQS). Therefore, the maximum ambient PM10 concentrations already exceed the most stringent ambient air quality standard (i.e., CAAQS or NAAQS).

Although the Basin is non-attainment for PM10, the comment's statement that "the Project's PM10 emissions will result in a significant impact by causing an increase of criteria pollutants for which the Project is in nonattainment" is not consistent with Appendix G of the State *CEQA Guidelines* and the established thresholds of significance. The Lead Agency utilized Appendix G of the State *CEQA Guidelines* to determine if the project would have a significant impact. As shown on page 4.B-22 in **Section 4.B, Air Quality**, of the Draft EIR, criteria AQ-2 states that the project would have a significant impact if it would "[v]iolate any air quality standard or contribute substantially to an existing or projected air quality violation." As shown in Table 4.B-2 of the Draft EIR, the South Coast Air Basin is designated as non-attainment for the state and federal PM10 standards. The threshold used to determine whether the proposed project would "contribute substantially to an existing or projected air quality violation" for PM10 is based on a two-tiered approach. The first tier utilizes the SCAQMD daily mass threshold of 150 pounds per day for PM10. As shown in Table 4.B-4, construction emissions of PM10 from traditional activities, such as demolition or earthmoving activities, would not exceed 150 pounds per day. Therefore impacts from these activities would be less than significant.

As explained on page 4.B-23 of the Draft EIR, the second tier utilizes concentration-based criteria such as those established in the applicable SCAQMD Regulation XIII (New Source Review), Rule 1303, Table A-2.¹⁷ As discussed on pages 4.B-8 and 4.B-9 of the Draft EIR, the proposed project is subject to Regulation XIII for non-attainment pollutants, with the exception of nitrogen oxides (NO_x) and sulfur oxides (SO_x), which are covered by Regulation XX [Regional Clean Air Incentives Market (RECLAIM)]. The Rule 1303 threshold establishes that a "significant change in air quality concentration" for particulate matter less than 10 microns is 2.5 $\mu\text{g}/\text{m}^3$ for a 24-hour averaging period and 1 $\mu\text{g}/\text{m}^3$ for an annual averaging period. The thresholds apply to the incremental contribution from a source and do not include background or ambient concentrations.¹⁸ It should be noted that the SCAQMD recommends that lead agencies utilize the same PM10 (24-hour) threshold of 2.5 $\mu\text{g}/\text{m}^3$ when assessing the significance of operational impacts pursuant to the SCAQMD's *Final Localized Significance Threshold Methodology*.¹⁹ The *Final Localized Significance Threshold Methodology* references the concentration thresholds in Table A-2 in Rule 1303 as justification for the PM10

¹⁷ SCAQMD, "Rule 1302. Requirements," <http://www.aqmd.gov/rules/reg/reg13/r1303.pdf>. Accessed February 2013.

¹⁸ *Ibid.* As stated in Rule 1303, the 2.5 $\mu\text{g}/\text{m}^3$ and 1 $\mu\text{g}/\text{m}^3$ concentrations represent allowable changes in concentration.

¹⁹ SCAQMD, *Final Localized Significance Threshold Methodology*, (2003; Revised 2008).

(24-hour) concentration threshold.²⁰ The SCAQMD *Final Localized Significance Threshold Methodology* also establishes a construction PM₁₀ (24-hour) threshold of 10.4 µg/m³ based on compliance with its Rule 403 (Fugitive Dust). However, the Lead Agency relied upon the more stringent operational threshold of 2.5 µg/m³, as listed in Table A-2 in Rule 1303, to determine if commissioning emissions from the proposed project would result in a significant change in air quality concentration and thus result in a significant air quality impact.

As shown in Table 4.B-4 in **Section 4.B, Air Quality**, of the Draft EIR, PM₁₀ commissioning emissions would not exceed 150 pounds per day. Combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter.²¹ Therefore, dispersion modeling results for PM₁₀ are also representative of dispersion modeling results for PM_{2.5}. As discussed on page 4.B-34 of **Section 4.B, Air Quality**, of the Draft EIR, the proposed project would result in one-time and temporary commissioning emissions that would occur for up to 12 days, up to a total of 204 hours. Therefore, it is only necessary to evaluate commissioning with respect to the 24-hour threshold. It is not necessary to evaluate commissioning with respect to the annual threshold because commissioning would not result in an annual exceedance given its short duration. Commissioning is required for testing and certification of the combined-cycle power generation unit. Commissioning emissions would be exhausted through an approximately 125-foot tall exhaust stack, which is similar to other existing stacks on the site. Commissioning would occur after the completion of the traditional construction activities and there would be no other project-related emissions sources active at the same time. As shown in **Table 4.B-5 in Section 4.B, Air Quality**, of the Draft EIR, the dispersion modeling results demonstrate that the project's emissions during commissioning would result in an increase in ground level PM₁₀/PM_{2.5} concentrations less than 2.5 µg/m³. Therefore, in accordance with the limits in Table 2-A of Rule 1303, the proposed project would not result in a significant change in PM₁₀ concentrations and PM₁₀ impacts from commissioning would be less than significant.

In order to clarify impacts associated with the separate activities of construction and commissioning, formatting changes have been made to **Table 4.B-4** of the Draft EIR. In the Final EIR, **Table 4.B-4** has been replaced with **Table 4.B-4A**, which provides estimated emissions for construction activity, and **Table 4.B-4B**, which provides estimated emissions for commissioning activities. References to **Table 4.B-4** have also been formatted to refer to **Table 4.B-4A** for construction emissions and **Table 4.B-4B** for commissioning emissions. In addition, a new subheading, **(2) Commissioning**, has been added to page 4.B-34 of the Draft EIR to separate the portion of the text that assesses the emissions associated with commissioning activities. Subsequent subheadings have been renumbered as appropriate. These changes are incorporated into the Final EIR in **Section 3.0, Corrections and Additions to the Draft EIR**.

RESPONSE 18-23

As shown in Table 4.B-2 in Section 4.B, Air Quality, of the Draft EIR, the South Coast Air Basin is designated as non-attainment for the state and federal PM_{2.5} standards. As shown in Table 4.B-3, the maximum ambient PM_{2.5} (24-hour) concentrations registered near the proposed project site between 2006 and 2010 ranged from a high of 68.9 µg/m³ in 2007 and a low of 35.2 µg/m³ in 2010. The PM_{2.5} (24-hour) NAAQS is 35 µg/m³ (there is no 24-hour CAAQS for PM_{2.5}). Table 4.B-2 also shows that the annual PM_{2.5} concentrations

²⁰ *Ibid.*, 1-5.

²¹ CARB, "Download Option for Speciation Profiles: PMSIZE," <http://www.arb.ca.gov/ei/speciate/dnldoptvv10001.php#filelist>. Accessed February 2013. Particulate matter (PM) Profile IDs 120 (gaseous fuel combustion) and 121 (residential-natural gas) indicate that all PM is less than 2.5 microns in diameter.

exceed the CAAQS and NAAQS. Therefore, the maximum ambient PM_{2.5} concentrations already exceed the most stringent ambient air quality standard (i.e., CAAQS or NAAQS).

As discussed previously in **Response 18-22**, the Lead Agency utilized Appendix G of the State *CEQA Guidelines* to determine if the project would have a significant impact. Criteria AQ-2 states that the project would have a significant impact if it would “[v]iolate any air quality standard or contribute substantially to an existing or projected air quality violation.” The threshold used to determine whether the proposed project would “contribute substantially to an existing or projected air quality violation” for PM_{2.5} is based on a two-tiered approach. The first tier utilizes the SCAQMD daily mass threshold of 55 pounds per day for PM_{2.5}. As shown in Table 4.B-4, construction emissions of PM_{2.5} from traditional activities, such as demolition or earthmoving activities, would not exceed 55 pounds per day. Therefore impacts from these activities would be less than significant.

The second tier utilizes concentration-based criteria established in the applicable SCAQMD Regulation XIII, Rule 1303, Table A-2.²² The Rule 1303 threshold establishes that a “significant change in air quality concentration” for particulate matter less than 10 microns is 2.5 µg/m³ for a 24-hour averaging period and 1 µg/m³ for an annual averaging period. The thresholds apply to the incremental contribution from a source and do not include background concentrations.²³

As shown in Table 4.B-4 in **Section 4.B, Air Quality**, of the Draft EIR, the net increase in PM_{2.5} commissioning emissions would exceed 55 pounds per day. Therefore, dispersion modeling was conducted for PM_{2.5} commissioning emissions. As discussed on page 4.B-34 of the Draft EIR, the proposed project would result in one-time and temporary commissioning emissions that would occur for up to 12 days, up to a total of 204 hours. Therefore, it is only necessary to evaluate commissioning with respect to the 24-hour threshold. It is not necessary to evaluate commissioning with respect to the annual threshold because commissioning would not result in an annual exceedance given its short duration. As shown in **Table 4.B-5 in Section 4.B, Air Quality**, of the Draft EIR, the dispersion modeling results demonstrate that project emissions would result in an increase in ground-level PM_{2.5} of 1 µg/m³, which is less than the 2.5 µg/m³ incremental threshold. Therefore, in accordance with the limits in Table 2-A of Rule 1303, the proposed project would not result in a significant change in PM_{2.5} concentrations and PM_{2.5} impacts from commissioning would be less than significant.

RESPONSE 18-24

As discussed in **Response 18-22** and **Response 18-23**, construction of the project would result in emissions of PM₁₀ and PM_{2.5} from traditional activities such as demolition or earthmoving activities that would not exceed 150 and 55 pounds per day, respectively. Therefore impacts from construction activities would be less than significant. In accordance with the limits in Table 2-A of SCAQMD Rule 1303, commissioning activities would not result in a significant change in ground-level PM₁₀ or PM_{2.5} concentrations. Therefore, PM₁₀ and PM_{2.5} impacts from commissioning would also be less than significant.

CEQA Guidelines §15384(a) defines substantial evidence as “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though

²² SCAQMD, “Rule 1302. Requirements,” <http://www.aqmd.gov/rules/reg/reg13/r1303.pdf>. Accessed February 2013.

²³ *Ibid.* As stated in Rule 1303, the 2.5 µg/m³ and 1 µg/m³ concentrations represent allowable changes in concentration.

other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency." CEQA Guidelines §15384(b) also states that "[s]ubstantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." Based on the evidence presented in **Section 4.B, Air Quality**, of the Draft EIR and related technical appendices including the excerpts from the PTC/PTO application submitted to the SCAQMD, and the evidence discussed in **Response 18-22** and **Response 18-23**, is it determined that substantial evidence exists to support the reasonable and fair argument that construction and commissioning of the project would not result in PM10 or PM2.5 emissions that would cause a significant change in air quality concentrations and thus would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The City notes that the daily maximum commissioning emissions of NO_x, CO, and PM2.5 from the project represent 0.16, 0.03, and 0.07 percent of the Basin-wide inventories, respectively.^{24,25} Therefore, because the project would not exceed the thresholds of significance for PM10 and PM2.5 for construction and commissioning, impacts are less than significant.

RESPONSE 18-25

The Draft EIR provides an analysis of potentially significant impacts to sensitive receptors from toxic air contaminant (TAC) emissions on pages 4.B-45 through 4.B-48 in **Section 4.B, Air Quality**, of the Draft EIR. As discussed on page 4.B-45, impacts from TACs were assessed at the nearest sensitive receptors to the project site including residential uses approximately 64 meters (210 feet) to the west across Fair Oaks Avenue and 130 meters (427 feet) to the south of the project site, and Blair High School approximately 197 meters (646 feet) to the east of the project site.

The potential for health impacts to sensitive receptors were quantified in a health risk assessment (HRA) for project operations. The HRA calculated TAC emissions as the difference between the maximum annual potential to emit (PTE) for the proposed Unit GT-5, which is 8,760 operational hours per year, and the actual emissions from the existing Unit B-3. This assumption results in a conservative assessment compared to the significance thresholds which applies to the incremental increase in cancer risk.²⁶ The assumption is conservative because the proposed Unit GT-5 is not a base load unit and would only operate to generate electricity when called upon by the California Independent System Operator (CAISO) and when electrical system reliability is needed. The 8,760 operational hours per year corresponds to the requested permitted limit and is not based on the actual expected number of operational hours per year. The results of the HRA are provided in **Section 4.B, Air Quality**, in the Draft EIR and detailed calculations are provided in **Appendix B** of the Draft EIR.

Emissions of TACs were conservatively based on 8,760 hours per year of normal operation, which is the maximum number of hours the proposed project could operate in a given year, and at 100 percent load. As

²⁴ SCAQMD, *Final 2012 Air Quality Management Plan, Appendix III Base and Future Year Emission Inventories, (2012) III-2-2 and III-2-3*. The estimated percent is based on NO_x emissions of 1.19 tons per day (2,372 pounds per day) for commissioning and 758 tons per day for the Basin and PM2.5 emissions of 0.06 tons per day (113 pounds per day) for commissioning and 80 tons per day for the Basin in 2008, the most recent year for which data is available.

²⁵ CARB, "South Coast Air Basin, Emission Inventory Data, 2008 Estimated Basin Data," <http://www.arb.ca.gov/ei/maps/basins/abscmap.htm>. Accessed February 2013. The estimated percent is based on CO emissions of 1 ton per day (1,997 pounds per day) for commissioning and 3,413.5 tons per day for the Basin in 2008, the most recent year for which data is available.

²⁶ SCAQMD, "Air Quality Significance Thresholds," <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>. Accessed February 2013.

noted on page 2-6 in **Section 2.0, Project Description**, of the Draft EIR, "Unit GT-5 is likely to be used considerably less than 8,760 hours per year, as is the case with Unit-B-3." As a result, the quantification of TAC emissions is considered to be conservative (i.e., likely to overstate health risk impacts). Furthermore, in accordance with standard HRA procedures, the analysis was based on an exposure duration of 70 years. As stated on page 4.B-5 of the Draft EIR, "[l]ifetime cancer risk is defined as the increased chance of contracting cancer over a 70-year period as a result of exposure to a toxic substance or substances." A 70-year continuous exposure represents a worst-case analysis of cancer risk for all sensitive land uses in the vicinity of the project. Chronic impacts are assessed over an annual averaging period and acute impacts are assessed over a 1 to 8 hour averaging period depending on the specific compound.

Unlike normal operations, emissions of TACs from commissioning would only have the potential for short-term impacts. This is because commissioning would occur for up to 12 days, up to a total of 204 hours, which is much less than the lifetime cancer risk and chronic impact assessment period (70 years and annual, respectively). Thus, it is only necessary to evaluate the potential for commissioning health impacts with respect to the non-cancer acute Hazard Index (HI).

The fuel usage during most of the commissioning scenario would be lower than during the normal operation scenario (8,760 hours per year at 100 percent load) because most of the commissioning scenario would involve operating the combustion turbine at low loads (i.e., much less than 100 percent load as assumed under the normal operations scenario). However, because commissioning would generate emissions with different stack parameters compared to normal operations, the level of TAC emissions and associated health impacts could also be different (higher or lower). An analysis of the emissions profile during commissioning activities compared to the emissions profile during normal operations demonstrates that, while short-term TAC emissions during commissioning could be higher, the non-cancer acute health impacts would remain well below the threshold of significance. As shown in Table 3-13 of Appendix C of the Draft EIR, the TACs consist of organic compounds and are thus closely related to emissions of VOCs. As shown in Table 3-8 and Table 3-9 in Appendix C, the maximum ratio of the hourly VOC emissions from commissioning and normal operations are approximately 8.875 to 0.77 (about 11.5 to 1) for the GE LM 6000 option and 6.5 to 0.78 (about 8.3 to 1) for the Rolls-Royce Trent 60 option. Thus, it is estimated that commissioning could result in peak hourly TAC emissions that are up to 12 times higher than under normal operations.

The emissions are directly related to the concentrations generated from dispersion modeling. In turn, the concentrations are directly related to the potential health impact. As shown in Table 4.B-16 and Table 4.B-17, the proposed project would result in a maximum non-cancer acute impact of 0.003, which is several orders of magnitude less than the threshold of 1.0. Multiplying the non-cancer acute impact by 12 results in an impact of 0.036, which is less than the threshold of 1.0. Using a similar approach, it is estimated that peak hourly TAC emissions during startup and shutdown operations could be up to 5 times higher than under normal operations (based on a VOC ratio from startup/shutdown to normal operations of 3.465 to 0.78 or 4.4 to 1). Multiplying the non-cancer acute impact by 5 results in an impact of 0.015, which is less than the threshold of 1.0.

For these reasons, it is reasonably determined that commissioning, startup, and shutdown would not result in potential health risk impacts to sensitive receptors that are substantially different than those that have already been identified in the Draft EIR and it is unlikely they would be substantially greater than those identified in the Draft EIR as discussed on pages 4.B-46 through 4.B-48. Even in the case that the stack parameters during commissioning, startup, or shutdown are different from maximum operations,

substantially greater impacts from downwash effects are not expected because the duration of such activities are much shorter than the normal operations scenario, the combustion turbine would operate at low loads, and the fuel usage would be lower. Based on these reasons, and given that the proposed project under maximum operations would result in health risk impacts that are several orders of magnitude less than the cancer and non-cancer chronic and acute thresholds of significance, it is determined that substantial evidence exists to support the reasonable and fair argument that an HRA specific to commissioning, startup, and shutdown is unnecessary because impacts would not be substantially different than those that have already been identified in the Draft EIR and that impacts would not exceed the threshold of significance. As a result, revision of the Draft EIR is not required.

RESPONSE 18-26

As discussed on page 4.B-30, in **Section 4.B, Air Quality**, of the Draft EIR, according to the Office of Environmental Health Hazard Assessment (OEHHA) and SCAQMD methodology, health effects from carcinogenic TACs are described in terms of individual cancer risk, which is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. As discussed on page 4.B-46, the greatest potential for construction-generated TAC emissions would be related to DPM emissions from heavy-duty equipment use during grading and excavation activities. However, the construction schedule estimates that the activities which require the most heavy-duty diesel equipment usage, such as site grading and excavation, would last no more than two years (up to 23 months). According to OEHHA, short-term exposures (i.e., less than a maximum theoretical project life of 70 years) are not necessarily equivalent to low longer-term exposures:

[A]s the exposure duration decreases the uncertainties introduced by applying cancer potency factors derived from very long term studies increases. Short-term high exposures are not necessarily equivalent to longer-term lower exposures even when the total dose is the same. OEHHA therefore does not support the use of current cancer potency factor to evaluate cancer risk for exposures of less than 9 years.²⁷

Construction of the proposed project would not result in a long-term (i.e., 70 years, based on the SCAQMD cancer risk thresholds) exposure to construction-related TAC emissions and impacts would not exceed SCAQMD established health risk thresholds of significance.

It is stated on page 4.G-14 in **Section 4.G, Noise**, that a maximum of 20 haul truck trips per day would occur during site grading and excavation over a period of up to five months. Although these on-road trucks may travel along existing roadways that are adjacent to sensitive land uses, they would not load or unload at or adjacent to sensitive receptors. Unlike point or area sources, trucks would not continuously generate emissions at a single location. Therefore, the diesel trucks would not contribute to substantially elevated DPM concentrations and would pose a health risk to sensitive receptors adjacent to roadways. Furthermore, 20 haul trucks traveling on an adjacent roadway passing by a receptor is an insufficient number of trucks to result in elevated DPM concentrations at a single location that would exceed risk-based concentration thresholds. The South Coast Air Quality Management District (SCAQMD) recommends that health risk assessments be conducted for substantial sources of DPM (e.g., truck stops and warehouse distribution

²⁷ OEHHA, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, (2003) 8-4.

facilities) and has provided guidance for analyzing mobile source diesel emissions.²⁸ The California Air Resources Board (CARB) siting guidelines, *Air Quality and Land Use Handbook*,²⁹ which the SCAQMD cites in its own guidelines, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* (May 2005), defines a warehouse as having more than 100 truck trips or 40 refrigerated truck trips per day. Based on this, the project's 20 haul trucks traveling on an adjacent roadway passing by a receptor would not rise to a level of concern and is therefore not considered to be a substantial source of DPM. Thus, impacts are less than significant. Nonetheless, the proposed project will voluntarily commit to using newer diesel haul trucks that meet the stringent USEPA emission standards for model year 2007. Refer to **Response 3-5** for additional details regarding this and other voluntary measures that will be implemented during project construction to reduce diesel emissions.

In accordance with SCAQMD CEQA guidance, a construction localized significance threshold (LST) analysis was conducted to assess construction emission impacts to nearby sensitive receptors. While an LST analysis is not a health risk assessment per se, it is used to determine whether or not a project may generate significant adverse localized air quality impacts to sensitive receptors and whether or not a project may expose sensitive receptors to substantial pollutant concentrations. As shown in Table 4.B-4 on page 4.B-35, in **Section 4.B, Air Quality**, of the Draft EIR, according to the SCAQMD LST methodology, construction activities would not cause an exceedence of the thresholds of significance, including the threshold for PM2.5, which is associated with DPM emissions. Thus, localized air quality impacts during construction would be less than significant.

The SCAQMD CEQA guidance does not generally require that a refined HRA be conducted for short-term construction emissions because TAC emissions are generally not expected to rise to a level of concern. Furthermore, as discussed on page 4.B-6 of the Draft EIR, the California Air Resources Board (CARB) has adopted "emission standards for off-road diesel construction equipment" that would reduce emissions from these sources, including diesel TACs. The proposed project would comply with the applicable regulations as required.

Given the reasons discussed above, the Draft EIR addressed potential health risks from TAC emissions at an appropriate level. A refined HRA specific to construction is unnecessary because construction impacts are not anticipated or expected to exceed SCAQMD established health risk thresholds of significance.

RESPONSE 18-27

It is not appropriate to estimate the lifetime risks based on the additive risks from exposure to both DPM during construction and to emissions from operation of the on-site sources, including the turbine and cooling tower. As discussed in **Response 18-26**, the construction schedule estimates that the activities which require the most heavy-duty diesel equipment usage, such as site grading and excavation, would last no more than two years (up to 23 months). Thus, construction of the proposed project would not result in a long-term (i.e., 70 years, based on the SCAQMD cancer risk thresholds) exposure to construction-related TAC emissions. In comparison, long-term operational TAC emissions were assessed based on a lifetime 70-year exposure duration consistent with OEHHA and SCAQMD methodologies. Construction-generated DPM emissions would also not occur at the same time as the long-term operational emissions from the turbine

²⁸ SCAQMD, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, (2003).

²⁹ CARB, Air Quality and Land Use Handbook: A Community Health Perspective, (2005).

and the cooling tower. As a result, it is inappropriate to consider the additive risks from exposure to both DPM during construction and TAC emissions from operation.

The Draft EIR appropriately and correctly considered the potential health risk impacts from construction and operation. As discussed on page 4.B-46 in **Section 4.B, Air Quality**, of the Draft EIR, short-term construction-generated TAC emissions are not anticipated or expected to exceed SCAQMD established health risk thresholds of significance. As discussed on pages 4.B-46 through 4.B-48, long-term operational TAC emissions would be less than the thresholds of significance by several orders of magnitude. As such, the potential for health risk impacts from construction and operation are fully disclosed in the Draft EIR and no revision is required.

RESPONSE 18-28

As discussed in **Response 18-25, Response 18-26, and Response 18-27**, the potential for health risk impacts from construction-generated TAC emissions are fully disclosed in the Draft EIR. The analysis supports the finding that short-term construction-generated TAC emissions are not anticipated or expected to exceed SCAQMD established health risk thresholds of significance. A refined HRA specific to construction is unnecessary because construction impacts are not anticipated or expected to exceed SCAQMD established health risk thresholds of significance. As such, no revision to the Draft EIR is required.

RESPONSE 18-29

As shown in Table 4.B-6 on page 4.B-38 of **Section 4.B, Air Quality**, of the Draft EIR, normal operation of the proposed project would result in a net increase of operational PM_{2.5} emissions that would exceed the daily mass emission threshold of 55 pounds per day for the GE LM 6000 option. The Rolls-Royce Trent 60 option would not result in a net increase of operational PM_{2.5} emissions that exceeds 55 pounds per day. The emissions from the proposed Unit GT-5 would be exhausted through an approximately 125-foot tall exhaust stack, which is similar to other existing stacks on the site

The Lead Agency utilized Appendix G of the State *CEQA Guidelines* to determine if the project would have a significant impact, as discussed on pages 4.B-21 and 4.B-22. Criteria AQ-2 states that the project would have a significant impact if it would “[v]iolate any air quality standard or contribute substantially to an existing or projected air quality violation.” The CEC also utilizes this threshold when assessing the potential for air quality impacts for power generation projects in the South Coast Air Basin. Examples include the following projects: the Watson Cogeneration Steam and Electric Reliability Project³⁰ (pre-construction stage); and the CPV Sentinel Energy Project³¹ (under construction). The air quality analyses for these projects rely on dispersion modeling to determine if the project could create a new ambient air quality standard (AAQS) exceedance or substantially contribute to an existing AAQS exceedance. The air quality analysis prepared for the proposed project utilized this same approach. The relevant pages from the above-referenced CEC documents are provided in Appendix A of the Final EIR.

³⁰ California Energy Commission, Watson Cogeneration Steam and Electric Reliability Project, Final Staff Assessment, *CEC 700-2011-002-FSA, August 2011*.

³¹ California Energy Commission, CPV Sentinel Energy Project, Final Staff Assessment, Air Quality Addendum, *CEC 700-2008-005-FSA-AD, April 2010*.

As shown in **Table 4.B-2** in **Section 4.B**, *Air Quality*, of the Draft EIR, the South Coast Air Basin is designated as non-attainment for the state and federal PM_{2.5} standards. The applicable SCAQMD Regulation XIII (New Source Review), Rule 1303, Table A-2 establishes that a “significant change in air quality concentration” for particulate matter less than 10 microns is 2.5 µg/m³ for a 24-hour averaging period and 1 µg/m³ for an annual averaging period.³² The thresholds apply to the incremental contribution from a source and do not include background concentrations.³³ Combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter. Therefore, dispersion modeling results for PM₁₀ are also representative of dispersion modeling results for PM_{2.5}.

The determination of whether the project would violate or contribute substantially to an existing or project air quality violation (i.e., exceed the limits in Rule 1303, Table 2-A) was based on dispersion modeling using the USEPA and SCAQMD-approved AMS/EPA Regulatory Model (AERMOD) with meteorological data from the SCAQMD. As described on page 4.B-29, the AERMOD model calculates pollutant concentrations from the project’s operational emissions, which are then used to compare to the thresholds of significance.

The dispersion modeling analysis is described on pages 4.B-39 through 4.B-42 and states that dispersion modeling was conducted to determine the impact of the operational emissions exhausted through the stack on ground-based receptors. The receptors were placed out to 13 kilometers (8.1 miles) north of the site to account for the increase in elevation in that direction and 5 kilometers (3.1 miles) in all other directions. The design of the receptor grid allowed the dispersion model to fully evaluate the project’s maximum potential impacts from operational emissions in the project area while also considering local topography.

As shown in Table 4.B-13 and Table 4.B-15, the dispersion modeling determined that, under normal operations, PM_{2.5} emissions from the 125-foot tall stack would not result in concentrations of PM_{2.5} at receptors in excess of the allowable increase. As a result, the project would not violate or contribute substantially to an existing or project air quality violation. While PM_{2.5} can have regional effects, the highest concentrations from normal operations of the project would be localized to the project site. The dispersion modeling analysis, as discussed previously, determined that the peak concentrations of the modeled pollutants occurred well within the modeling domain defined by the receptor grid (i.e., 13 kilometers to the north and 5 kilometers in all other directions). Pollutant concentrations at receptors beyond the modeling domain would be less than the concentrations reported in the Draft EIR due to dispersion effects. As a result, regional pollutant concentrations due to normal operation of the proposed Unit GT-5 would be less than the concentrations reported in the Draft EIR. The City notes that the daily maximum commissioning emissions of PM_{2.5} from the project represents approximately 0.07 percent of the Basin-wide daily PM_{2.5} emission inventory.³⁴ Therefore, the project would not contribute substantially to an existing or projected air quality violation and would not result in regionally significant impacts and no mitigation measures are required.

RESPONSE 18-30

This comment provides a list of suggested mitigation measures to reduce PM_{2.5} emissions from normal operations of the proposed Unit GT-5. However, as shown in Table 4.B-13 and Table 4.B-15, the dispersion

³² SCAQMD, “Rule 1302. Requirements,” <http://www.aqmd.gov/rules/reg/reg13/r1303.pdf>. Accessed February 2013.

³³ *Ibid.* As stated in Rule 1303, the 2.5 µg/m³ and 1 µg/m³ concentrations represent allowable changes in concentration.

³⁴ SCAQMD, *Final 2012 Air Quality Management Plan, Appendix III Base and Future Year Emission Inventories, (2012) III-2-2 and III-2-3*. The estimated percent is based on PM_{2.5} emissions of 0.06 tons per day (113 pounds per day) for commissioning and 80 tons per day for the Basin in 2008, the most recent year for which data is available.

modeling determined that normal operations of the project would not result in concentrations of PM_{2.5} at receptors in excess of the allowable increase. As a result, the project would not result in a significant change in air quality concentration, as defined in the applicable SCAQMD Regulation XIII (New Source Review), Rule 1303, Table A-2, and would not violate or contribute substantially to an existing or project air quality violation. Therefore, mitigation measures are not required.

Nonetheless, as discussed on pages 4.B-30 through 4.B-32 of the Draft EIR, the proposed combined-cycle power generation unit will employ the BACT to reduce air pollutant emissions as part of the project design. The proposed Unit GT-5 would utilize efficient, clean-burning, pipeline quality natural gas. Recent air quality analyses prepared by the CEC for projects similar to the proposed project have indicated that pipeline quality natural gas constitutes BACT for PM₁₀ emissions from combustion turbines. In the application for certification for the Pio Pico Energy Center power generation facility located in San Diego County, Appendix G-5, Evaluation of Best Available Control Technology (BACT), states that “the use of natural gas as the primary fuel source constitutes BACT for PM₁₀ emissions from combustion gas turbines.”³⁵ In the application for certification for the CPV Sentinel (CPVS), LLC electrical generating facility located in Riverside County, Appendix I-7, BACT Analysis, states that “[s]ulfur dioxide and PM₁₀ emissions will be controlled through the exclusive use of clean-burning pipeline quality natural gas. This control technology has been widely and uniformly implemented for control of SO₂ and PM₁₀ emissions from combustion turbines in California and throughout the United States, and is considered to be BACT for the CPVS facility.” Combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter.³⁶ Since combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter, implementation of BACT would also control and reduce PM_{2.5} emissions. Thus, in accordance with recent BACT determinations from the CEC, use of clean-burning pipeline quality natural gas is considered to be PM₁₀ and PM_{2.5} BACT for the proposed project combustion turbine.

RESPONSE 18-31

As discussed on page 3-1 in **Section 3.0, General Description of the Environmental Setting**, of the Draft EIR, the proposed project is consistent with the City of Pasadena Integrated Resource Plan (IRP), which serves as a blueprint for the Pasadena Department of Water and Power (Pasadena Water & Power) to deliver reliable, environmentally responsible electricity service. The IRP recommends a reconfiguration of Pasadena Water & Power’s existing energy portfolio in order to significantly reduce GHG emissions by transitioning over the next two decades to a diverse and reliable mix of renewable energy resources and replacing the existing Unit B-3 with a new natural-gas fueled electricity generating unit of approximately equivalent size. Replacement of the existing Unit B-3 with a more efficient unit, such as the proposed Unit GT-5, would balance the City’s increasing use of renewable energy resources, such as wind and solar, which are less predictable, while maintaining the stability and reliability of the electrical system. The CEC has stated that natural gas-fired power plants cannot simply be replaced with renewable energy resources without endangering the reliability of the electric system:

The Energy Commission’s ‘Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California’ found that as California’s integrated electricity system

³⁵ CEC, Pio Pico Energy Center, Application – Docket # 2011-AFC-01, Appendix G-5, (2011) G-5-16.

³⁶ CARB, “Download Option for Speciation Profiles: PMSIZE,” <http://www.arb.ca.gov/ei/speciate/dnldoptvv10001.php#filelist>. Accessed February 2013. Particulate matter (PM) Profile IDs 120 (gaseous fuel combustion) and 121 (residential-natural gas) indicate that all PM is less than 2.5 microns in diameter.

*evolves to meet GHG emissions reduction targets, the operational characteristics associated with increasing renewable generation will increase the need for flexible generation to maintain grid reliability. The report asserts that natural gas-fired power plants are generally well-suited for this role and that **California cannot simply replace all natural gas fired power plants with renewable energy without endangering the safety and reliability of the electric system.**³⁷ [emphasis added]*

While the proposed project is consistent with the IRP, the proposed project would result in greenhouse gas (GHG) emissions that would be considered significant, as shown in **Table 4.D-3** in **Section 4.D**, *Greenhouse Gas Emissions*, of the Draft EIR. The primary source of the GHG emissions would result from power generation from the proposed Unit GT-5, which would represent approximately 99.9 percent of the project's total estimated GHG emissions. The GHG emissions shown in Table 4.D-3 represent potential maximum annual GHG emissions under a worst-case operational schedule of 750 shutdowns, 750 startups, and 8,760 continuous hours of operation per year. While the maximum annual increase in emissions are considered potentially significant, the proposed project would result in GHG emissions which are lower per kilowatt hour than the existing inefficient unit and in full compliance with the Global Warming Solutions Act of 2006 [Assembly Bill (AB) 32]. AB 32 requires the State to reduce its GHG emissions to 1990 levels by 2020. As discussed on page 4.D-5 of the Draft EIR, under AB 32:

[A]pproximately 85 percent of the State's GHG emissions are subject to the cap-and-trade program where covered sectors are placed under a declining emissions cap. The emissions cap incorporates a margin of safety whereby the 2020 emissions limit will still be achieved even in the event that uncapped sectors do not fully meet their anticipated emission reductions.

Pasadena Water & Power is an entity covered by the cap-and-trade program and is thus subject to compliance obligations. As such, Pasadena Water & Power would reduce its GHG emissions, including GHG emissions from the proposed project (if approved and operational) in accordance with its declining emissions allocations pursuant to AB 32.

The IRP established the Preferred Resource Plan to manage the supply and demand side of power consumption in Pasadena. Key objectives of the Preferred Resource Plan include:³⁸

- Reducing the import of power generated from high GHG-emitting resources (e.g., reducing coal power purchases by at least 35 MW by 2016);
- Replacing old technology at the local plant on Glenarm Street with a more efficient and reliable natural gas combined cycle plant;
- Implementing aggressive energy efficiency and load reduction programs;
- Increasing the proportion of green power in Pasadena Water & Power's mix to 40 percent by 2020;
- Achieving 19 megawatts (MW) of locally-owned solar photovoltaic power by 2024;

³⁷ CEC, 2009 Integrated Energy Policy Report, *CEC-100-2009-003-CMF*, December 5, 2007.

³⁸ City of Pasadena, "Integrated Resource Plan," <http://ww2.cityofpasadena.net/waterandpower/IRP/default.asp>. Accessed February 2013.

- Purchasing 10 MW of renewable power from “feed-in” sources within Pasadena (e.g., private solar installations); and
- Cutting carbon dioxide emissions by 40 percent by 2020.

While the proposed project is not responsible for implementing all of the objectives of the IRP, the proposed project is consistent with the key goals of reducing Pasadena Water & Power’s reliance on high GHG-emitting resources and replacing old and inefficient technology with an efficient state-of-the-art combined cycle plant that complies with all applicable BACT requirements. The proposed project would be a combined-cycle natural gas fueled power generation unit, which is the best technology available for natural gas fueled power generating equipment. The project would comply with and perform better than Emissions Performance Standards (EPS) requirements established by Senate Bill (SB) 1368. Thus proposed project would support the IRP and implementation of its goals of increasing energy efficiency, reducing load, increasing renewable power generation and purchases, and reducing GHG emissions without sacrificing the safety and reliability of the electric system.

In addition, the proposed project would incorporate project design features that would reduce GHG emissions from other sources. The proposed project would comply with the Tier 2 requirements of the City of Pasadena Green Building Standards. Under the City’s Green Building Standards, the renovation of the Glenarm Building to accommodate the control room as proposed under the project would be required to achieve the equivalent of a “Silver” rating from the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED)® green building program. Implementation of the project design features would provide flexibility to the project to achieve GHG reductions in the most cost-effective and efficient means possible.

The GHG reductions from the mitigation measures suggested in Comment18-31 and Comment18-60 are generally included in the measures that would be implemented as project design measures or features by Pasadena Water & Power in accordance with AB 32, SB 1368, the IRP, and the City’s Green Building Standards. For example, GHG offsets would be encompassed within the cap-and-trade program, solar power would be encompassed within the IRP and potentially the City’s Green Building Standards, and reduction of high GHG-emitting resources would be encompassed within the IRP. Nonetheless, there are no other feasible mitigation measures that would reduce the GHG emissions from the proposed Unit GT-5 beyond what is already included as project design measures or features that would allow the project to meet its stated intent and purpose.

RESPONSE 18-32

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-33

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-34

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-35

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-36

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-37

This comment states that CEQA requires recirculation of a Draft EIR for public review when significant new information is added to the Draft EIR following public review but before certification. Regarding the statement that the Draft EIR does not comply with the basic requirements of CEQA because it does not adequately describe the project, the existing environmental setting, or evidence to support the City's conclusions and therefore needs to be revised and recirculated, the responses provided in **Responses 18-3** through **18-62** make it clear that this is not the case.

Section 15088.5 of the State *CEQA Guidelines* requires the recirculation of an EIR when "significant new information is added to the EIR after public is given notice of the availability of the Draft EIR for public review...but before certification." Under the CEQA Guidelines, new information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. In accordance with the CEQA Guidelines, recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. "Significant new information" requiring recirculation includes, for example, a disclosure showing:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it;
- (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The information provided in this Final EIR confirms the basic findings in the Draft EIR with certain clarifications, and makes insignificant modifications, as shown in Chapter 3.0, Corrections and Additions to the Draft EIR, in this Final EIR. Accordingly, and as demonstrated in **Responses 18-3** through **18-62**, there is no basis for recirculation of the Draft EIR.

RESPONSE 18-38

Regarding the conclusion that the Draft EIR does not adequately describe the project, the existing environmental setting against which impacts related to soil contamination or water supply are measured, the identification and disclosure of applicable air quality standards and regulations, or evidence to support the City's conclusions and therefore needs to be revised and recirculated, the responses provided in **Responses 18-3** through **18-62** demonstrate that this is not the case. The information provided in this Final EIR confirms the basic findings in the Draft EIR with certain clarifications, and makes insignificant modifications, as shown in **Chapter 3.0, Corrections and Additions to the Draft EIR**, in this Final EIR. Accordingly, and as demonstrated in Responses **18-3** through **18-62**, there is no basis for recirculation of the Draft EIR.

RESPONSE 18-39

The comment summarizes development considered under the proposed project. No further response is required.

RESPONSE 18-40

Disclosure of on-site contamination is provided in **Section 4.E, Hazards and Hazardous Materials**, in the Draft EIR, in the supporting *Limited Phase II Environmental Investigation* prepared by Hydrologue, Inc. and provided in **Appendix D** of the Draft EIR, and in documents from prior studies that were appended to the *Limited Phase II Environmental Investigation* (Appendixes C through G), which are also provided in **Appendix D** of the Draft EIR. Accordingly, adequate information has been presented to decision makers and the public regarding the project's potential to result in impacts related to the presence of hazardous materials. Additional discussion of this issue is provided in **Response 18-14**.

RESPONSE 18-41

Refer to **Response 18-14** for discussion of the issues raised in this comment.

RESPONSE 18-42

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-43

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-44

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-45

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-46

Refer to **Response 18-14** and **Response 18-15** for discussion of the issues raised in this comment.

RESPONSE 18-47

This comment is Attachment A, the 1961 Sanborn Fire Insurance Map. Please see **Response 18-14** and **Response 18-15** for comments regarding this map.

RESPONSE 18-48

This comment is Attachment B: 1950 Sanborn Fire Insurance Map. Please see **Response 18-14** and **Response 18-15** for comments regarding this map.

RESPONSE 16-49

This comment presents the qualifications of Matthew F. Hagemann. Responses to comments provided by Mr. Hagemann are provided in **Response 18-14**, **Response 18-15** and **Response 18-39** through **Response 18-48**.

RESPONSE 18-50

This comment provides a brief introduction and summary of the comments raised in **Comment 18-52** through **Comment 18-61**. Detailed responses to these comments are provided in **Response 18-20** through **Response 18-31** and in **Response 18-52** through **Response 18-61**. In summary, the responses demonstrate that the air quality and greenhouse gas analyses in the Draft EIR fully address the potential for significant impacts and any required mitigation pursuant to CEQA.

RESPONSE 18-51

This comment summarizes the qualifications of Valorie L. Thompson, Ph.D. Responses to comments provided by Ms. Thompson are provided in **Response 18-20** through **Response 18-31** and in **Response 18-52** through **Response 18-61**. In summary, the responses demonstrate that the air quality and greenhouse gas analyses in the Draft EIR fully address the potential for significant impacts and any required mitigation pursuant to CEQA.

RESPONSE 16-52

Refer to **Response 18-20** for discussion of the issues raised in this comment.

RESPONSE 18-53

Refer to **Response 18-21** for discussion of the issues raised in this comment.

RESPONSE 18-54

Refer to **Response 18-21** for a detailed and complete response to this comment. In addition, the potential for a future redesignation of an air basin is not a factor for determining the applicability of Regulation XVII (PSD analysis) for a project with a pending permit application.³⁹ The proposed project requires a PTC/PTO from the SCAQMD and the permit application was submitted to the SCAQMD in June 2012. An excerpt of the PCT/PTO can be found in Appendix C of the Draft EIR. Therefore, the Draft EIR is not required to be revised as it already sufficiently discloses the applicability of Regulation XVII.

³⁹ SCAQMD, "Rule 1701. General," <http://www.aqmd.gov/rules/reg/reg17/r1701.pdf>. Accessed February 2013. The applicability provisions of this rule do not cite the potential for future redesignation of an air basin as applicability criteria.

Table 4.B-13

Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (ug/m³)^a

Configuration:	CO (1-hour) ^b		PM ₁₀ ^b (24-hour)	
	GE	RR	GE	RR
Operations				
Normal Operation	4,582	4,582	0.97	0.70
Startup	4,590	4,594	0.94	0.60
Shutdown	4,585	4,586	0.94	0.62
WI and Intercooler Tuning	4,583	4,589	0.96	0.64
AIG Tuning	4,582	4,585	0.93	0.60
Ambient Air Quality Standard [(CO)/ Significance Threshold per SCAQMD Rule 1303 (PM₁₀)	23,000		2.50	
Significant?	No	No	No	No

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

^b PM_{2.5} emissions were not provided by the project applicant. PM emissions from natural gas combustion are usually less than 1 micrometer in diameter, so it is assumed that all PM₁₀ emissions also represent PM_{2.5} emissions.

Source: PCR Services Corporation, 2012.

RESPONSE 18-55

Refer to **Response 18-22** and **Response 18-23** for a detailed response to this comment. In addition, the existing project site conditions are fully described on pages 2-2 through 2-5 in **Section 2.0, Project Description**, of the Draft EIR, including the statement that the Glenarm Plant contains four natural gas-fueled turbine generators. These four existing turbines are not part of the proposed project. Pursuant to CEQA Guidelines §15125(a), the four existing turbines constitute the baseline physical conditions from which the potential for significant impacts are determined.

As noted in the comment, Table 13 in **Appendix B** of the Draft EIR incorrectly labels 2.50 µg/m³ as the ambient air quality standard for PM₁₀. The error also occurs in **Table 4.B-13** in **Section 4.B, Air Quality**, of the Draft EIR. The correct label is: Significance Threshold per SCAQMD Rule 1303 (PM₁₀). This correction has been incorporated into **Section 3.0, Corrections and Additions to the Draft EIR**, of this Final EIR.

The following revision is made to **Table 4.B-13, Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (µg/m³)^a**, and this change is incorporated into **Section 3.0, Corrections and Additions to the Draft EIR**, of this Final EIR:

In Appendix B on page 57 in **Table 13, Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (µg/m³)^a**, the table is revised as follows, and this change is incorporated into **Section 3.0, Corrections and Additions to the Draft EIR**, of this Final EIR:

As discussed in **Response 18-22**, combustion of natural gas results in particulate matter emissions less than 2.5 microns in diameter. Dispersion modeling results for the proposed Unit GT-5 for PM₁₀ is also

Table 13

Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (ug/m³)^a

Configuration:	CO (1-hour) ^b		PM ₁₀ ^b (24-hour)	
	GE	RR	GE	RR
Operations				
Normal Operation	4,582	4,582	0.97	0.70
Startup	4,590	4,594	0.94	0.60
Shutdown	4,585	4,586	0.94	0.62
WI and Intercooler Tuning	4,583	4,589	0.96	0.64
AIG Tuning	4,582	4,585	0.93	0.60
Ambient Air Quality Standard [(CO)/ Significance Threshold per SCAQMD Rule 1303 (PM₁₀)]	23,000		2.50	
Significant?	No	No	No	No

^a Emission quantities are rounded to “whole number” values. As such, the “total” values presented herein may be one unit more or less than actual values.

^b PM_{2.5} emissions were not provided by the project applicant. PM emissions from natural gas combustion are usually less than 1 micrometer in diameter, so it is assumed that all PM₁₀ emissions also represent PM_{2.5} emissions.

Source: PCR Services Corporation, 2012.

representative of dispersion modeling results for PM_{2.5}, as indicated in footnote “b” of Table 13 in **Appendix B** of the Draft EIR. No changes to the Draft EIR are required in response to this comment.

RESPONSE 18-56

Refer to **Response 18-25** through **Response 18-28** for discussion of the issues raised in this comment.

RESPONSE 18-57

Refer to **Response 18-25** through **Response 18-28** for discussion of the issues raised in this comment.

RESPONSE 18-58

Refer to **Response 18-29** and **Response 18-30** for discussion of the issues raised in this comment.

RESPONSE 18-59

Refer to **Response 18-29** and **Response 18-30** for discussion of the issues raised in this comment.

RESPONSE 18-60

Refer to **Response 18-31** for discussion of the issues raised in this comment.

RESPONSE 18-61

This comment provides a brief conclusion of the comments raised in **Comment 18-52** through **Comment 18-60**. Detailed responses to these comments are provided in **Response 18-20** through **Response 18-31** and in **Response 18-52** through **Response 18-60**. In summary, the responses demonstrate that the air quality

and greenhouse gas analyses in the Draft EIR fully address the potential for significant impacts and any required mitigation pursuant to CEQA.

RESPONSE 18-62

This comment includes the qualifications of Valorie L. Thompson. Responses to her comments are provided in **Responses 18-50** through **18-61**.

December 7, 2012

Robert Avila, Management Analyst IV
85 E. State St.
Pasadena, CA 91105-3418

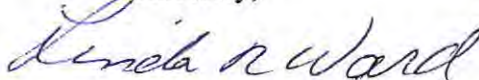
Re: Comment on Draft EIR for the proposed Glenarm Power Plant Repowering Project

Dear Mr. Avila,

Specifically, this regards section 3.0 General Description of Environmental Setting, A. Overview of Environmental Setting, Aesthetics, (1) View. I live in one of the multi-family residences south of the project, in South Pasadena. I am against the 125-foot stack because it would be an eyesore and also would interfere with a clear view of the mountains.

Thank you for your time and consideration.

Sincerely,

A handwritten signature in cursive script that reads "Linda R. Ward".

Linda R. Ward
204 Cedar Crest Ave., #3
South Pasadena, CA 91030

LETTER NO. 19

Linda R. Ward
204 Cedar Crest Ave., #3
South Pasadena, CA 91030
January 21, 2013

RESPONSE 19-1

As discussed on pages 4.A-23 and 24 in **Section 4.A, Aesthetics**, of the Draft EIR, impacts on panoramic views of more distant mountain ridgelines from the south, southwest, and west would cause a minor interruption of the distant horizon, under both options, because of the construction of the project's Unit GT-5 and 125-foot stack. The panoramic field of view is presently interrupted by existing industrial structures, including existing stacks, and the Draft EIR concluded that the project would not represent a substantial change from existing conditions and would not block or degrade a valued scenic vista. Existing views of the site compared to simulated views of the proposed project, are represented in **Figures 4.A-7 through 4.A-11** of the Draft EIR. As also stated on page 4.F-10 in **Section 4.F, Land Use**, of the Draft EIR, the project would not result in significant adverse impacts to the visual quality or character of the site and its surroundings, or result in significant impacts regarding views from surrounding land uses. However, the Draft EIR identifies the 125-foot stack as exceeding the maximum height limit established for the project site in the Zoning Code, which would require a zoning variance. Because the issue of the height of the stack has been addressed in the Draft EIR, no further analysis of this structure is necessary.

3.0 CORRECTIONS AND ADDITIONS TO THE DRAFT EIR

This section of the Final EIR provides changes and additions to the Draft EIR that have been made to clarify, correct, or add to the information provided in that document. Such changes and additions are a result of public and agency comments received in response to the Draft EIR and/or new information that has become available since publication of the Draft EIR. The changes described in this section do not result in any new or changed conclusions in the Draft EIR analyses or increased significant environmental impacts that would result from the proposed project.

EXECUTIVE SUMMARY

Starting on page ES-11 In **Table ES-1**, although no significant Air Quality impacts were determined to result from the project. voluntary new mitigation measures AQ-1 through AQ-9 are added to the Draft EIR in response to comments on the Draft EIR from the South Coast Air Quality Management District, as follows:

Table ES-1

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
B. AIR QUALITY		
<p>Construction Emissions</p> <p>Construction of the proposed project would result in temporary increases in air pollutants. Emissions from the soil remediation, demolition, and construction phases are not predicted to exceed regional daily mass emission or localized significance thresholds. Commissioning emissions would exceed SCAQMD daily mass emission thresholds for VOC, NO_x, CO and PM_{2.5}. Air dispersion modeling conducted to determine if a significant impact would occur at nearby sensitive receptors, demonstrated that no violations of applicable short-term ambient air quality standards would occur during commissioning. Based on the above, regional and local construction emissions would not violate an air quality standard and would not contribute significantly to an existing or projected air quality violation. Project impacts from constructions would be less than significant.</p>	<p><u>Mitigation Measure AQ-1: The Pasadena Water & Power Department and its contractors, via the City of Pasadena Public Works Department, shall require the implementation of a “Construction Staging and Traffic Management Plan” that provides for a temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.</u></p>	<p>Less Than Significant</p>
	<p><u>Mitigation Measure AQ-2: The Pasadena Water & Power Department and its contractors, in consultation with the City of Pasadena Department of Transportation, shall require the implementation of a “Construction Staging and Traffic Management Plan” that identifies an on-site dedicated turn lane for the movement of construction trucks and equipment. When turning off-site, trucks will be required to utilize the on-site dedicated turn lane described in the plan.</u></p>	<p>Less than Significant</p>
	<p><u>Mitigation Measure AQ-3: The Pasadena Water & Power</u></p>	

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p><u>Department and its contractors shall require the implementation of a "Construction Staging and Traffic Management Plan" that provides for a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation.</u></p>	
	<p><u>Mitigation Measure AQ-4:</u> <u>The Pasadena Water & Power Department and its contractors shall require that all vehicles and equipment are properly tuned and maintained according to manufacturers' specifications.</u></p>	
	<p><u>Mitigation Measure AQ-5:</u> <u>The Pasadena Water & Power Department and its contractors shall require the use of coatings and solvents with a VOC content that exceeds the requirements of Rule 1113 if available. All coatings and solvents shall at a minimum meet the requirements of Rule 1113 unless exempted.</u></p>	
	<p><u>Mitigation Measure AQ-6:</u> <u>The Pasadena Water & Power Department and its contractors shall use construction materials that do not require painting to the extent economically feasible and that meet the project's structural, acoustical, aesthetic, or other needs.</u></p>	
	<p><u>Mitigation Measure AQ-7:</u> <u>The Pasadena Water & Power Department and its contractors shall use pre-painted construction materials for major equipment. Materials that require field coating are exempt from this measure.</u></p>	
	<p><u>Mitigation Measure AQ-8:</u> <u>The Pasadena Water & Power Department and its contractors shall require contractors to use model year 2007 and newer diesel haul trucks (e.g., material delivery trucks and soil</u></p>	

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p><u>import/export) pursuant to California Code of Regulations, Title 13, §2025.</u></p>	
	<p><u>Mitigation Measure AQ-9:</u> <u>The Pasadena Water & Power Department and its contractors shall require the use of internal combustion engines/construction equipment that operate on the project site to meet the following:</u></p> <ul style="list-style-type: none"> ▪ <u>At least 50 percent of construction equipment greater than 250 hp, which are on-site for 6 or more consecutive work days, shall meet Tier 3 emissions standards and be outfitted with BACT devices (e.g., Level 3 diesel emissions control devices) certified by CARB.</u> ▪ <u>A copy of each unit’s certified tier specification and BACT documentation shall be available for inspection during construction. The contractor(s) shall monitor and record compliance for each project construction phase and document efforts undertaken to increase the use of compliant off-road vehicles, such as but not limited to bid solicitation documents, fleet registration of successful vendor(s), etc.</u> ▪ <u>Construction contractors supplying heavy duty diesel equipment, greater than 50 hp, will be encouraged to apply for AQMD SOON funds. Information including the AQMD website will be provided to each contractor which uses heavy duty diesel for on-site construction activities</u> 	

In **Table ES-1**, mitigation measures CULT-1, CULT-2, and CULT-3 are revised as follows, to incorporate recommendations from Pasadena Heritage:

Table ES-1

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>Mitigation Measure CULT-1: Recordation and Photography. Prior to removal of the boilers, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The boilers, their infrastructure, and the hallway created by the boilers shall be documented in as-built drawings, large format black-and-white photographs, and a written narrative in accordance with HABS requirements. Completion of the HABS level III recordation of the boilers should be implemented prior to their removal and before commencement of construction activities <u>is required before City issuance of demolition and building permits for the Glenarm Building.</u> This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic American Building Survey (HABS) photography. Original archival prints shall be submitted to the Library of Congress, the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library. Furthermore, copies of the Photographs shall be used in the Mitigation Measure <u>CULT-2</u> display.</p>	<p>Less Than Significant</p>
	<p>Mitigation Measure CULT-2: Interpretative Architectural Exhibit. An interpretive exhibit displaying the original layout and operation of the floor-to-ceiling hallway shall be constructed in the location of the existing character-defining hallway. This interpretive display shall be created with the assistance of a qualified architectural historian, historic architect historic preservation professional who satisfies the Secretary of the Interior’s Professional Qualification Standards for History, Architectural History, or Architecture,</p>	<p>Less than Significant</p>

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>pursuant to 36 CFR 61. Features of the hallway exhibit shall include the control panels, burner fronts, and the floating master gauge in their original location. If the metal panels supporting the burner fronts are destroyed during the demolition of the boilers, new in-kind panels shall be constructed. If the steel columns and beam supporting the floating gauge are destroyed during the demolition of the burners, new in-kind supports for the gauge shall be constructed. HABS photos taken before the demolition of the burners shall be displayed as part of the exhibit. <u>Issuance of the certificate of occupancy for the Glenarm Building shall be conditioned on the completed installation of the interpretive exhibit.</u></p> <p><u>During the planning phase for the interpretive exhibit, the Applicant shall ensure Pasadena Heritage is consulted and give the opportunity to provide input into the plans and specifications before they are finalized.</u></p>	
	<p>Mitigation Measure CULT-3: Demolition Monitoring. Due to the complexity of the demolition of the burners, potential damage may occur to historic character-defining features of the Glenarm Building. The proposed project shall be designed to avoid the potential for damage to historic fabric and features. Demolition plans shall be prepared for the proposed project <u>by a qualified historic architect and reviewed by a qualified preservation consultant.</u> The project shall also be conditioned to require <u>demolition and construction monitoring by a qualified preservation consultant qualified historic architect,</u> to ensure full conformance to the Standards with regard to the proposed project, and to ensure that the appropriate preservation</p>	

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>treatment for any unanticipated preservation issues encountered during demolition/construction is properly completed.</p> <p><u>In addition, a qualified historic architect and qualified historic engineer shall be retained by the Applicant to consult during the planning phase for seismic retrofitting of the Glenarm Building necessary for designation of the building as an essential facility.</u></p> <ul style="list-style-type: none"> ▪ <u>The demolition plan shall include a protection plan that details procedures, materials, and sequence of operations necessary to protect existing materials from damage.</u> ▪ <u>Protection shall be provided to existing historic materials wherever encountered adjacent to proposed demolition or construction work to prevent damage to or marring of materials, surfaces, and finishes. Such protection shall be of sufficient size and thickness to withstand impact from falling debris; rolling objects such as equipment, machinery and handcarts; movement of materials and debris; and residue from flame cuttings such as sparks.</u> ▪ <u>The demolition plan shall be completed prior to the issuance of demolition and construction permits for the project.</u> ▪ <u>Demolition and construction monitoring by a historic architect shall occur on a weekly basis and the historic architect shall prepare and submit reports with photographs of the work at 50 percent and 100 percent completion milestones for each phase, respectively.</u> 	

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

In **Table ES-1**, the following determinations of the level of significance after mitigation for Archaeological and Paleontological Resources were omitted from the table, and will be added as follows:

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Archaeological Resources</p> <p>Although the potential to encounter archaeological or Native American resources is considered remote, mitigation measures were identified in the Initial Study prepared for the proposed project to reduce impacts to a less than significant level in the unlikely event resources are encountered during project implementation.</p>	<p>Mitigation Measure CULT-4: Archaeological Resources Treatment. If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior’s Professional Qualification Standards (the “archaeologist”) shall be immediately notified and retained by the applicant and approved by the City to oversee and carry out these mitigation measures.</p> <p>The archaeologist shall coordinate with the applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered shall be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the find to be filed with Project Applicant, the City, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered. Interpretation will include full evaluation of the eligibility with respect to the National and California R Register and CEQA. The report shall also include all specialists’ reports as appendices. The Lead Agency shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter.</p>	<p><u>Less than Significant</u></p>

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>If warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.</p>	
<p>Paleontological Resources</p> <p>Although construction of the project is considered to have low potential to result in significant impacts associated with the permanent loss of, or loss of access to, a paleontological resource, mitigation was identified in the Initial Study prepared for the proposed project to reduce impacts to a less than significant level in the unlikely event that paleontological resources are encountered during project implementation.</p>	<p>Mitigation Measure CULT-5: Paleontological Resources Treatment. A qualified paleontologist shall attend a pre-grade meeting and develop a paleontological monitoring program to cover excavations in the event they occur into the older Quaternary Alluvium. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. If excavation into Quaternary deposits occurs, monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If it is determined that excavation will not encounter Quaternary deposits, no further measures need be taken. The frequency of monitoring inspections shall be based on the rate of excavation and grading activities, the materials being excavated, and if found, the abundance and type of fossils encountered.</p> <p>If a fossil is found, the paleontologist shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage. At the paleontologist’s discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository. Any fossils collected shall be donated to a public, non-profit</p>	<p><u>Less than Significant</u></p>

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.</p> <p>If fossils are found following completion of the above tasks, the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the applicant to the lead agency, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the project and required mitigation measures.</p>	

In **Table ES-1**, following mitigation measure CULT-5, Paleontological Resources, on pages ES-18-19, the following impact summary and mitigation measure will be added as follows to reflect the inclusion of this measure in the project Initial Study and its omission from the Draft EIR *Executive Summary*:

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>Human Remains</u></p> <p><u>A records search conducted through the California Historical Resources Information System South Central Coastal Information Center (CHRIS-SCCIC) did not indicate any known human burials on the project site or within a one-half-mile radius. The project site has been in continuous use as a Power Plant for more than a century and is heavily disturbed, and it is considered unlikely that project implementation would impact buried or previously</u></p>	<p><u>Mitigation Measure CULT-6: Human Remains Treatment.</u></p> <p><u>If human remains are encountered unexpectedly during construction excavations and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent of the deceased Native American,</u></p>	<p><u>Less than Significant</u></p>

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>unknown human burials. The overall sensitivity of the project site with respect to buried resources is therefore considered low.</u></p>	<p><u>who shall then help determine what course of action shall be taken in dealing with the remains. The applicant shall then under take additional steps as necessary in accordance with CEQA Guidelines Section 15064.5(e). Preservation of the remains in place or project design alternatives shall be considered as possible courses of action by the applicant, the City, and the Most Likely Descendent.</u></p>	

In Table ES-1. mitigation measures HAZ-1, HAZ-2, and a portion of HAZ-5, on pages ES-20 through -22 , are revised as follows:

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>Mitigation Measure HAZ-1: Prior to the issuance of demolition permits, the Applicant shall submit to the City of Pasadena Building and Safety Division <u>Pasadena Fire Department</u> a comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. All identified asbestos-containing materials shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.</p>	<p><u>Less than Significant</u></p>
	<p>Mitigation Measure HAZ-2: Prior to issuance of demolition permits, the Applicant shall submit to the City of Pasadena Building and Safety Division <u>Pasadena Fire Department</u> a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.</p>	
	<p>Mitigation Measure HAZ-5: During project design development and prior to initiation of excavation and</p>	

Table ES-1 (Continued)

Summary of Project Impacts and Mitigation Measures

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>grading activities, PWP shall retain a qualified City of Pasadena Building and Safety Division <u>Pasadena Fire Department</u> for review and approval. The soils management plan shall be implemented during excavation and grading activities on the project site to ensure that any contaminated soils are properly disposed of off-site. The plan shall include the following:</p> <ul style="list-style-type: none"> • A qualified environmental consultant shall be present as necessary during excavation or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination. • Any soil encountered during excavation or grading activities that appears to have been affected by hydrocarbons or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility. • Soils in the southwestern corner of the site near Boring Location GP32 and where TRPH concentrations exceed 1,000 ppm, as identified in the Limited Phase II ESA, shall be segregated and analyzed prior to offsite disposal per Mitigation Measure 4.E-1.C and 4.E-1.D, respectively. This may require over-excavation in these area and further analysis of this soil to determine the extent of soil contamination. • All identified contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility. 	

2.0 PROJECT DESCRIPTION

On page 2-12, subsection G, Intended Use of the EIR, the third and fourth sentences will be revised as follows:

This EIR is a Project EIR, as defined by Section 15161 of the *CEQA Guidelines* and, as such, serves as an informational document for the general public and the proposed project's decision-makers. The City has the principal responsibility for approving the proposed project and, as the Lead Agency, is responsible for the preparation and distribution of this EIR pursuant to *CEQA Guidelines* Section 21067. This EIR will be used in connection with all other permits, ~~and approvals,~~ and review necessary for the construction and operation of the proposed project. Approvals and review required for development of the project may include, but are not necessarily limited to, the following:

On page 2-13, the following agency and bullet points will be added:

Los Angeles County Metropolitan Transportation Authority

- Review of project plans and drawings
- Monitor construction activity

4.0 ENVIRONMENTAL IMPACT ANALYSIS

B. Air Quality

On page 4.B-2, under subsection **(b) New Source Performance Standards (NSPS)**, the paragraph is edited as follows:

The proposed project will be subject to Federal New Source Performance Standards (NSPS) Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) ~~Db (Standards of Performance for Industrial Commercial Institutional Steam Generating Units)~~ which establishes standards for PM SO_x and NO_x emissions.

On page 4.B-9, under the subheading **Regulation IX – Standards of Performance for New Stationary Sources**, the second sentence of the paragraph is edited as follows:

Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary gas turbines (Subpart KKKK GG).

On page 4.B-10, under the subheading **Regulation XIII – New Source Review**, the first bullet list item, **Rule 1303 – Requirements**, is edited as follows:

This rule specifies the application of BACT, modeling, offsetting and offset ratios to permitted sources within the SCAQMD. The proposed project is not exempt from BACT but is exempt from modeling and offsets from Rule 1303 due to Rule rule-1304(a)(2), below.

On page 4.B-32, under the subheading **(4) Continuous Emissions Monitoring System**, the following sentence is added to the end of the paragraph:

The CEMS shall be designed to monitor NO_x per the requirements of SCAQMD Rule 2012 and to monitor CO per the requirements of Rule 218.

On page 4.B-33, the first bullet point at the top of the page shall be changed as follows:

- The proposed project would reuse an existing building which would reduce waste and disposable construction. Any construction waste produced by the project would be reduced by recycling, reclaiming and reusing to reduce ~~95~~ 80 percent of the material by weight, from the waste stream and disposal in the landfill. Building materials used would have a minimum of 15 percent total value, high recyclable content, ~~such as structured steel with a 95 percent recycled content~~, be produced locally or those that contain rapidly renewable materials.

On page 4.B-34, under the subheading **(1) Regional Construction**, the second paragraph is edited as follows:

Construction emissions, which are the same for the GE LM 6000 and Rolls-Royce Trent 60, are presented in **Table 4.B-4A**, Estimate of Unmitigated Regional Construction Emissions, utilizing a project-specific equipment mix and a construction schedule.¹⁶ As indicated therein, the incremental increase in emissions from construction of the proposed project would not exceed SCAQMD mass emission thresholds for construction for any of the pollutants studied (VOC, NO_x, CO, SO_x, PM₁₀ and PM_{2.5}). Details of this analysis are available in **Appendix B** of this Draft EIR.

On page 4.B-34, under the subheading **(1) Regional Construction**, a subheading is added after the second paragraph and the third paragraph is edited as follows:

(2) Commissioning

Emissions produced by the commissioning of the two different configurations of Unit GT-5 under consideration are presented separately from construction, as this phase would occur after construction is completed. ~~Table 4.B-4~~ **Table 4.B-4B, Estimate of Unmitigated Commissioning Emissions**, also presents commissioning emissions for the GE LM 6000 and the Rolls-Royce Trent 60. Commissioning emissions would occur for 12 days, 204 hours. Unit GT-5 would be running at different loads for 16-24 hours at a time during this commissioning phase. It will also use the AIG and WI and intercooler on and off during this time. These emissions were evaluated against the SCAQMD daily mass emission thresholds for construction. As shown in ~~Table 4.B-4B~~, the commissioning emissions from the GE LM 6000 and Rolls-Royce Trent 60 would exceed the SCAQMD daily mass emission thresholds for VOC, NO_x, CO, and PM_{2.5}. The SCAQMD mass emission thresholds would not be exceeded for SO_x and PM₁₀. It is important to remember that these emissions are a one-time, short-lived occurrence (12 days). However, as shown, commissioning of Unit GT-5 would result in maximum daily emissions that exceed the SCAQMD mass emission thresholds. To determine if the emissions would indeed cause a potentially significant impact, project specific dispersion modeling for CO, NO₂, PM₁₀, and PM_{2.5} was conducted for both configurations under consideration and the results of the analysis are discussed below under Localized Construction.

On page 4.B-35 in **Table 4.B-4, Estimate of Unmitigated Regional Construction Emissions**^a, the table is edited as follows:

Table 4.B-4A

Estimate of Unmitigated Regional Construction Emissions^a
(pounds/day)

Stage	VOC	NO _x	CO	SO _x	PM ₁₀ ^b	PM _{2.5}
REGIONAL EMISSIONS						
Soil Remediation	3	23	11	<1	1	1
Export Haul Trucks	7	76	35	<1	21	4
Construction GT-5 (including import haul trucks)	13	99	60	<1	30	6
Construction Control Room	5	37	19	<1	3	2
Demolition	4	26	13	<1	2	1
Maximum Regional Daily Emissions	13	99	60	<1	30	6
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over/(Under)	(65)	(29)	(505)	(150)	(137)	(51)
Exceed Daily Mass Emission Threshold?	No	No	No	No	No	No
Commissioning Emissions GE LM 6000						
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	138	1076	626	(132)	(58)	37
Exceed Daily Mass Emission Threshold?	Yes	Yes	Yes	No	No	Yes
Commissioning Emissions Rolls-Royce Trent 60						
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	81	2274	1447	(131)	(19)	58
Exceed Daily Mass Emission Threshold?	Yes	Yes	Yes	No	No	Yes
LOCALIZED CONSTRUCTION EMISSIONS						
Soil Remediation	3	23	11	<1	1	1
Construction GT-5	10	71	45	<1	13	4
Construction Control Room	4	33	17	<1	2	2
Demolition	4	26	13	<1	2	1
Maximum Localized Emissions	10	71	45	<1	13	4
Localized Significance Thresholds ^c	N/A	98	1256	N/A	23	6
Over/(Under) Threshold	N/A	(27)	(1211)	N/A	(10)	(2)
Exceed Localized Significance Threshold?	No	No	No	No	No	No

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

^b PM₁₀ emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

^c The SCAQMD LSTs are based on Source Receptor Area 8 (West San Gabriel Valley) for a 2 acre site with sensitive receptors located further than or equal to 64 meters from the construction activity.

Source: PCR Services Corporation, 2012.

After Table 4.B-4, Estimate of Unmitigated Regional Construction Emissions ^a, the following table is added:

Table 4.B-4B

Estimate of Unmitigated Commissioning Emissions ^a
(pounds/day)

<u>Stage</u>	<u>VOC</u>	<u>NO_x</u>	<u>CO</u>	<u>SO_x</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
<u>Commissioning Emissions GELM 6000</u>	<u>213</u>	<u>1176</u>	<u>1176</u>	<u>18</u>	<u>92</u>	<u>92</u>
SCAQMD Construction Daily Mass Emission Threshold	<u>75</u>	<u>100</u>	<u>550</u>	<u>150</u>	<u>150</u>	<u>55</u>
Over (Under)	<u>138</u>	<u>1076</u>	<u>626</u>	<u>(132)</u>	<u>(58)</u>	<u>37</u>
<u>Exceed Daily Mass Emission Threshold?</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>No</u>	<u>No</u>	<u>Yes</u>
<u>Commissioning Emissions Rolls-Royce Trent 60</u>	<u>156</u>	<u>2374</u>	<u>1997</u>	<u>19</u>	<u>113</u>	<u>113</u>
SCAQMD Construction Daily Mass Emission Threshold	<u>75</u>	<u>100</u>	<u>550</u>	<u>150</u>	<u>150</u>	<u>55</u>
Over (Under)	<u>81</u>	<u>2274</u>	<u>1447</u>	<u>(131)</u>	<u>(19)</u>	<u>58</u>
<u>Exceed Daily Mass Emission Threshold?</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>No</u>	<u>No</u>	<u>Yes</u>

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

Source: PCR Services Corporation, 2012.

On page 4.B-36, subheading **(2) Localized Construction** and the first paragraph are edited as follows:

~~(2)~~ (3) Localized Construction

The localized construction emission thresholds, which are based on the construction site acreage and distance to the closest off-site sensitive receptor, were obtained for CO, NO₂, PM₁₀, and PM_{2.5} from the LST look-up tables and are listed in Table 4.B-4A. As shown in Table 4.B-4A, daily maximum localized emissions would not exceed the SCAQMD daily significance thresholds for NO_x, CO, PM₁₀, or PM_{2.5}. Therefore, localized construction emissions would result in a less than significant impact with regard to ambient air quality standards.

On page 4.B-37, subheading **(3) Regional Operation** is edited as follows:

~~(3)~~ (4) Regional Operation

On page 4.B-39, subheading **(4) Localized Operation** is edited as follows:

(4) (5) Localized Operation

On page 4.B-44 in **Table 4.B-13, Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (µg/m³)^a**, the table is edited as follows:

Table 4.B-13

Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (ug/m³)^a

Configuration:	CO (1-hour) ^b		PM ₁₀ ^b (24-hour)	
	GE	RR	GE	RR
Operations				
Normal Operation	4,582	4,582	0.97	0.70
Startup	4,590	4,594	0.94	0.60
Shutdown	4,585	4,586	0.94	0.62
WI and Intercooler Tuning	4,583	4,589	0.96	0.64
AIG Tuning	4,582	4,585	0.93	0.60
<u>Ambient Air Quality Standard (CO)/ Significance Threshold per SCAQMD Rule 1303 (PM₁₀)</u>	23,000		2.50	
Significant?	No	No	No	No

^a Emission quantities are rounded to “whole number” values. As such, the “total” values presented herein may be one unit more or less than actual values.

^b PM_{2.5} emissions were not provided by the project applicant. PM emissions from natural gas combustion are usually less than 1 micrometer in diameter, so it is assumed that all PM₁₀ emissions also represent PM_{2.5} emissions.

Source: PCR Services Corporation, 2012.

On page 4.B-45, **Table 4.B-14, Annual Operational Emissions for Unit GT-5 (tons/yr)**, is edited as follows:

Table 4.B-14

**Annual Operations Emissions for Unit GT-5
(tons/yr)**

GE LM 6000 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	6	17	10	3	18	18
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>15</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>5</u>
Total GE LM 6000	<u>9 6</u>	<u>32 17</u>	<u>23 10</u>	<u>4 3</u>	<u>23 18</u>	<u>23 18</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>8 5</u>	<u>27 12</u>	<u>3 -10</u>	<u>4 3</u>	<u>21 16</u>	<u>21 16</u>

Rolls-Royce Trent 60 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	7	19	11	4	22	22
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>16</u>	<u>16</u>	<u>1</u>	<u>6</u>	<u>6</u>
Total Rolls-Royce Trent 60	<u>10 7</u>	<u>35 19</u>	<u>27 11</u>	<u>5 4</u>	<u>28 22</u>	<u>28 22</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>9 6</u>	<u>30 14</u>	<u>7 -9</u>	<u>5 4</u>	<u>26 20</u>	<u>26 20</u>

Source: PCR Services Corporation, 2012.

On page 4.B-50 of the Draft EIR, subsection 3, Mitigation Measures, is revised as follows in response to South Coast Air Quality Management District comments on the Draft EIR:

~~The proposed project would have less than significant or no impact with incorporation of project design features. Therefore, no mitigation measures are needed. Although the project would result in less than significant or no impact with incorporation of project design features, the following mitigation measures are required to ensure compliance with Coast Air Quality Management District guidance:~~

Mitigation Measure AQ-1: The Pasadena Water & Power Department and its contractors, via the City of Pasadena Public Works Department, shall require the implementation of a "Construction Staging and Traffic Management Plan" that provides for a temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.

Mitigation Measure AQ-2: The Pasadena Water & Power Department and its contractors, in consultation with the City of Pasadena Department of Transportation, shall require the implementation of a "Construction Staging and Traffic Management Plan" that identifies an on-site dedicated turn lane for the movement of construction trucks and equipment. When turning off-site, trucks will be required to utilize the on-site dedicated turn lane described in the plan.

Mitigation Measure AQ-3: The Pasadena Water & Power Department and its contractors shall require the implementation of a "Construction Staging and Traffic Management Plan" that provides for a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM10 generation.

Mitigation Measure AQ-4: The Pasadena Water & Power Department and its contractors shall require that all vehicles and equipment are properly tuned and maintained according to manufacturers' specifications.

Mitigation Measure AQ-5: The Pasadena Water & Power Department and its contractors shall require the use of coatings and solvents with a VOC content that exceeds the requirements of Rule 1113 if available. All coatings and solvents shall at a minimum meet the requirements of Rule 1113 unless exempted.

Mitigation Measure AQ-6: The Pasadena Water & Power Department and its contractors shall use construction materials that do not require painting to the extent economically feasible and that meet the project's structural, acoustical, aesthetic, or other needs.

Mitigation Measure AQ-7: The Pasadena Water & Power Department and its contractors shall use pre-painted construction materials for major equipment. Materials that require field coating are exempt from this measure.

Mitigation Measure AQ-8: The Pasadena Water & Power Department and its contractors shall require contractors to use model year 2007 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) pursuant to California Code of Regulations, Title 13, §2025.

Mitigation Measure AQ-9: The Pasadena Water & Power Department and its contractors shall require the use of internal combustion engines/construction equipment that operate on the project site to meet the following:

- At least 50 percent of construction equipment greater than 250 hp, which are on-site for 6 or more consecutive work days, shall meet Tier 3 emissions standards and be outfitted with BACT devices (e.g., Level 3 diesel emissions control devices) certified by CARB.
- A copy of each unit's certified tier specification and BACT documentation shall be available for inspection during construction. The contractor(s) shall monitor and record compliance for each project construction phase and document efforts undertaken to increase the use of compliant off-road vehicles, such as but not limited to bid solicitation documents, fleet registration of successful vendor(s), etc.

- Construction contractors supplying heavy duty diesel equipment, greater than 50 hp, will be encouraged to apply for AQMD SOON funds. Information including the AQMD website will be provided to each contractor which uses heavy duty diesel for on-site construction activities.

C. Cultural Resources

On page 4.C-22, mitigation measure CULT-1 is revised as follows, at the recommendation of Pasadena Heritage:

Mitigation Measure CULT-1: Recordation and Photography. Prior to removal of the boilers, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The boilers, their infrastructure, and the hallway created by the boilers shall be documented in as-built drawings, large format black-and-white photographs, and a written narrative in accordance with HABS requirements. Completion of the HABS level III recordation of the boilers ~~should be implemented prior to their removal and before commencement of construction activities~~ is required before City issuance of demolition and building permits for the Glenarm Building. This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic American Building Survey (HABS) photography. Original archival prints shall be submitted to the Library of Congress, the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library. Furthermore, copies of the Photographs shall be used in the Mitigation Measure CULT-2 display.

On page 4.C-22, mitigation measure CULT-2 is revised as follows, at the recommendation of Pasadena Heritage:

Mitigation Measure CULT-2: Interpretative Architectural Exhibit. An interpretive exhibit displaying the original layout and operation of the floor-to-ceiling hallway shall be constructed in the location of the existing character-defining hallway. This interpretive display shall be created with the assistance of a qualified ~~architectural historian, historic architect, or historic preservation professional~~ who satisfies the Secretary of the Interior's Professional Qualification Standards for History, Architectural History, or Architecture, pursuant to 36 CFR 61. Features of the hallway exhibit shall include the control panels, burner fronts, and the floating master gauge in their original location. If the metal panels supporting the burner fronts are destroyed during the demolition of the boilers, new in-kind panels shall be constructed. If the steel columns and beam supporting the floating gauge are destroyed during the demolition of the burners, new in-kind supports for the gauge shall be constructed. HABS photos taken before the demolition of the burners shall be displayed as part of the exhibit. Issuance of the certificate of occupancy for the Glenarm Building shall be conditioned on the completed installation of the interpretive exhibit.

During the planning phase for the interpretive exhibit, the Applicant shall ensure Pasadena Heritage is consulted and give the opportunity to provide input into the plans and specifications before they are finalized.

On page 4.C-23, mitigation measure CULT-3 is revised as follows, to incorporate recommendations of Pasadena Heritage:

Mitigation Measure CULT-3: Demolition Monitoring. Due to the complexity of the demolition of the burners, potential damage may occur to historic character-defining features of the Glenarm Building. The proposed project shall be designed to avoid the potential for damage to historic fabric and features. Demolition plans shall be prepared for the proposed project by a qualified historic architect and reviewed by a qualified preservation consultant. The project shall also be conditioned to require demolition and construction monitoring by a qualified preservation consultant qualified historic architect, to ensure full conformance to the Standards with regard to the proposed project, and to ensure that the appropriate preservation treatment for any unanticipated preservation issues encountered during demolition/construction is properly completed.

- In addition, a qualified historic architect and qualified historic engineer shall be retained by the Applicant to consult during the planning phase for seismic retrofitting of the Glenarm Building necessary for designation of the building as an essential facility.
- The demolition plan shall include a protection plan that details procedures, materials, and sequence of operations necessary to protect existing materials from damage.
- Protection shall be provided to existing historic materials wherever encountered adjacent to proposed demolition or construction work to prevent damage to or marring of materials, surfaces, and finishes. Such protection shall be of sufficient size and thickness to withstand impact from falling debris; rolling objects such as equipment, machinery and handcarts; movement of materials and debris; and residue from flame cuttings such as sparks.
- The demolition plan shall be completed prior to the issuance of demolition and construction permits for the project.
- Demolition and construction monitoring by a historic architect shall occur on a weekly basis and the historic architect shall prepare and submit reports with photographs of the work at 50 percent and 100 percent completion milestones for each phase, respectively.

On page 4.C-34, the following mitigation measure is added, and restates the mitigation measure contained in the Initial Study prepared for the project:

Mitigation Measure CULT-6: Human Remains Treatment. If human remains are encountered unexpectedly during construction excavations and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent of the deceased Native American, who shall then help determine what course of action shall be taken in dealing with the remains. The applicant shall then under take additional steps as necessary in accordance with CEQA Guidelines Section 15064.5(e). Preservation of the remains in place or project design alternatives shall be considered as possible courses of action by the applicant, the City, and the Most Likely Descendent.

SECTION 4.E, HAZARDS AND HAZARDOUS MATERIALS

On page 4.E-26, mitigation measures HAZ-1, HAZ-2, and HAZ-5 are amended as follows:

Mitigation Measure HAZ-1: Prior to the issuance of demolition permits, the Applicant shall submit to the ~~City of Pasadena Building and Safety Division~~ Pasadena Fire Department a comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. All identified asbestos-containing materials shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.

Mitigation Measure HAZ-2: Prior to issuance of demolition permits, the Applicant shall submit to the ~~City of Pasadena Building and Safety Division~~ Pasadena Fire Department a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.

Mitigation Measure HAZ-5: During project design development and prior to initiation of excavation and grading activities, PWP shall retain a qualified ~~City of Pasadena Building and Safety Division~~ Pasadena Fire Department for review and approval. The soils management plan shall be implemented during excavation and grading activities on the project site to ensure that any contaminated soils are properly disposed of off-site. The plan shall include the following:

- A qualified environmental consultant shall be present as necessary during excavation or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination.
- Any soil encountered during excavation or grading activities that appears to have been affected by hydrocarbons or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility.
- Soils in the southwestern corner of the site near Boring Location GP32 and where TRPH concentrations exceed 1,000 ppm, as identified in the Limited Phase II ESA, shall be segregated and analyzed prior to offsite disposal ~~per Mitigation Measure 4.E-1.C and 4.E-1.D, respectively.~~ This may require over-excavation in these area and further analysis of this soil to determine the extent of soil contamination.
- All identified contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility.

APPENDIX B, AIR QUALITY ASSESSMENT FILES

In Appendix B of the Draft EIR on page 13, under the subheading **2.6.4 Continuous Emissions Monitoring System**, the following sentence is added to the end of the paragraph:

The CEMS shall be designed to monitor NO_x per the requirements of SCAQMD Rule 2012 and to monitor CO per the requirements of Rule 218.

In Appendix B of the Draft EIR on page 14, the first bullet point at the center of the page shall be changed as follows:

- The proposed project would reuse an existing building which would reduce waste and disposable construction. Any construction waste produced by the project would be reduced by recycling, reclaiming and reusing to reduce ~~95~~ 80 percent of the material by weight, from the waste stream and disposal in the landfill. Building materials used would have a minimum of 15 percent total value, high recyclable content, such as structured steel with a 95 percent recycled content, be produced locally or those that contain rapidly renewable materials.

In Appendix B of the Draft EIR on page 17, under subsection **New Source Performance Standards (NSPS)**, the paragraph is edited as follows:

The proposed project will be subject to Federal New Source Performance Standards (NSPS) Subpart ~~KKKK (Standards of Performance for Stationary Combustion Turbines) D_b (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)~~ which establishes standards for ~~PM~~ SO_x and NO_x emissions.

In Appendix B of the Draft EIR on page 23, under the subheading **Regulation IX – Standards of Performance for New Stationary Sources**, the second sentence of the paragraph is edited as follows:

Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary gas turbines (Subpart ~~KKKK~~ GG).

In Appendix B of the Draft EIR on page 23, under the subheading **Regulation XIII – New Source Review**, the first bullet list item, **Rule 1303 – Requirements**, is edited as follows:

This rule specifies the application of BACT, modeling, offsetting and offset ratios to permitted sources within the SCAQMD. The proposed project is not exempt from BACT but is exempt from modeling and offsets from Rule 1303 due to ~~Rule rule-1304(a)(2)~~, below.

In Appendix B of the Draft EIR on page 47, under the subheading **Regional Construction**, the second paragraph is edited as follows:

Construction emissions, which are the same for the GE LM 6000 and Rolls-Royce Trent 60, are presented in **Table 4.B-4A**, Estimate of Unmitigated Regional Construction Emissions, utilizing a project-specific

equipment mix and a construction schedule.¹³ As indicated therein, the incremental increase in emissions from construction of the proposed project would not exceed SCAQMD mass emission thresholds for construction significance thresholds for any of the pollutants studied, (VOC, NO_x, CO, SO_x, PM₁₀ and PM_{2.5}). Details of this analysis are available in **Appendix A** of this technical report.

In Appendix B of the Draft EIR on page 47, under the subheading **Regional Construction**, a subheading is added after the second paragraph and the third paragraph is edited as follows:

Commissioning

Emissions produced by the commissioning of the two different configurations of Unit GT-5 under consideration are presented separately from construction, as this phase would be occurring after construction is completed. ~~Table 4~~ **Table 4.B-4B, Estimate of Unmitigated Commissioning Emissions**, also presents commissioning emissions for the GE LM 6000 and the Rolls Royce Trent 60. Commissioning emissions would occur for 12 days, 204 hours. Unit GT-5 would be running at different loads for 16-24 hours at a time during this commissioning phase. It will also use the AIG and WI and intercooler on and off during this time. These emissions were evaluated against the SCAQMD daily significance thresholds. As shown in Table 4, the commissioning emissions from the GE LM 6000 and Rolls Royce Trent 60 would exceed the SCAQMD daily significance thresholds for VOC, NO_x, CO, and PM_{2.5}. The SCAQMD thresholds would not be exceeded for SO_x and PM₁₀. It is important to remember that these emissions are a one-time, short-lived occurrence (12 days). However, commissioning of Unit GT-5 would result in a potentially significant impact with regard to regional emissions based on exceedances of SCAQMD mass emission thresholds. To determine if emissions are indeed a potentially significant impact, project specific dispersion modeling for CO, NO₂, PM₁₀, and PM_{2.5} was conducted for both configurations being considered to determine localized impacts. Project specific modeling for localized impacts was conducted and the results and analysis are discussed below under Localized Construction

In Appendix B of the Draft EIR on page 4.B-47, under the subheading **Localized Construction**, the first paragraph is edited as follows:

Localized construction emission thresholds, based on the construction site acreage and distance to the closest off-site sensitive receptor, were obtained for CO, NO₂, PM₁₀, and PM_{2.5} from the LST look-up tables and are listed in Table 4A. As shown in Table 4A, daily maximum localized emissions do not exceed the SCAQMD daily significance thresholds for NO_x, CO, PM₁₀, or PM_{2.5}. Therefore, localized construction emissions will result in a less than significant impact with regard to ambient air quality standards.

In Appendix B of the Draft EIR on page 48 in **Table 4, Estimate of Unmitigated Regional Construction Emissions**^a, the table is edited as follows:

Table 4A

**Estimate of Unmitigated Regional Construction Emissions^a
(pounds/day)**

Stage	VOC	NO _x	CO	SO _x	PM ₁₀ ^b	PM _{2.5}
REGIONAL EMISSIONS						
Soil Remediation	3	23	11	<1	1	1
Export Haul Trucks	7	76	35	<1	21	4
Construction GT-5 (including import haul trucks)	13	99	60	<1	30	6
Construction Control Room	5	37	19	<1	3	2
Demolition	4	26	13	<1	2	1
Maximum Regional Daily Emissions	13	99	60	<1	30	6
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over/(Under)	(65)	(29)	(505)	(150)	(137)	(51)
Exceed Daily Mass Emission Threshold?	No	No	No	No	No	No
Commissioning Emissions GE LM 6000						
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	138	1076	626	(132)	(58)	37
Exceed Daily Mass Emission Threshold?	Yes	Yes	Yes	No	No	Yes
Commissioning Emissions Rolls-Royce Trent 60						
SCAQMD Regional Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	81	2274	1447	(131)	(19)	58
Exceed Daily Mass Emission Threshold?	Yes	Yes	Yes	No	No	Yes
LOCALIZED CONSTRUCTION EMISSIONS						
Soil Remediation	3	23	11	<1	1	1
Construction GT-5	10	71	45	<1	13	4
Construction Control Room	4	33	17	<1	2	2
Demolition	4	26	13	<1	2	1
Maximum Localized Emissions	10	71	45	<1	13	4
Localized Significance Thresholds ^c	N/A	98	1256	N/A	23	6
Over/(Under) Threshold	N/A	(27)	(1211)	N/A	(10)	(2)
Exceed Localized Significance Threshold?	No	No	No	No	No	No

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

^b PM₁₀ emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

^c The SCAQMD LSTs are based on Source Receptor Area 8 (West San Gabriel Valley) for a 2 acre site with sensitive receptors located further than or equal to 64 meters from the construction activity.

Source: PCR Services Corporation, 2012.

After Table 4, Estimate of Unmitigated Regional Construction Emissions ^a, the following table is added:

Table 4B

Estimate of Unmitigated Commissioning Emissions ^a
(pounds/day)

<u>Stage</u>	<u>VOC</u>	<u>NO_x</u>	<u>CO</u>	<u>SO_x</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
<u>Commissioning Emissions GE LM 6000</u>	<u>213</u>	<u>1176</u>	<u>1176</u>	<u>18</u>	<u>92</u>	<u>92</u>
SCAQMD Construction Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	<u>138</u>	<u>1076</u>	<u>626</u>	<u>(132)</u>	<u>(58)</u>	<u>37</u>
<u>Exceed Daily Mass Emission Threshold?</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>No</u>	<u>No</u>	<u>Yes</u>
<u>Commissioning Emissions Rolls-Royce Trent 60</u>	<u>156</u>	<u>2374</u>	<u>1997</u>	<u>19</u>	<u>113</u>	<u>113</u>
SCAQMD Construction Daily Mass Emission Threshold	75	100	550	150	150	55
Over (Under)	<u>81</u>	<u>2274</u>	<u>1447</u>	<u>(131)</u>	<u>(19)</u>	<u>58</u>
<u>Exceed Daily Mass Emission Threshold?</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>No</u>	<u>No</u>	<u>Yes</u>

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

Source: PCR Services Corporation, 2012.

In Appendix B of the Draft EIR on page 57 in Table 13, Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (µg/m³)^a, the table is edited as follows:

Table 13

Air Dispersion Modeling Analysis for CO and PM₁₀^a Emissions (µg/m³)^a

Configuration:	CO (1-hour) ^b		PM ₁₀ ^b (24-hour)		
	GE	RR	GE	RR	
Operations	Normal Operation	4,582	4,582	0.97	0.70
	Startup	4,590	4,594	0.94	0.60
	Shutdown	4,585	4,586	0.94	0.62
	WI and Intercooler Tuning	4,583	4,589	0.96	0.64
	AIG Tuning	4,582	4,585	0.93	0.60
<u>Ambient Air Quality Standard (CO)/ Significance Threshold per SCAQMD Rule 1303 (PM₁₀)</u>		23,000		2.50	
Significant?	No	No	No	No	

^a Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values.

^b PM_{2.5} emissions were not provided by the project applicant. PM emissions from natural gas combustion are usually less than 1 micrometer in diameter, so it is assumed that all PM₁₀ emissions also represent PM_{2.5} emissions.

Source: PCR Services Corporation, 2012.

In Appendix B of the Draft EIR on page 58, **Table 14, Annual Operational Emissions for Unit GT-5 (tons/yr)**, is edited as follows:

Table 14

**Annual Operations Emissions for Unit GT-5
(tons/yr)**

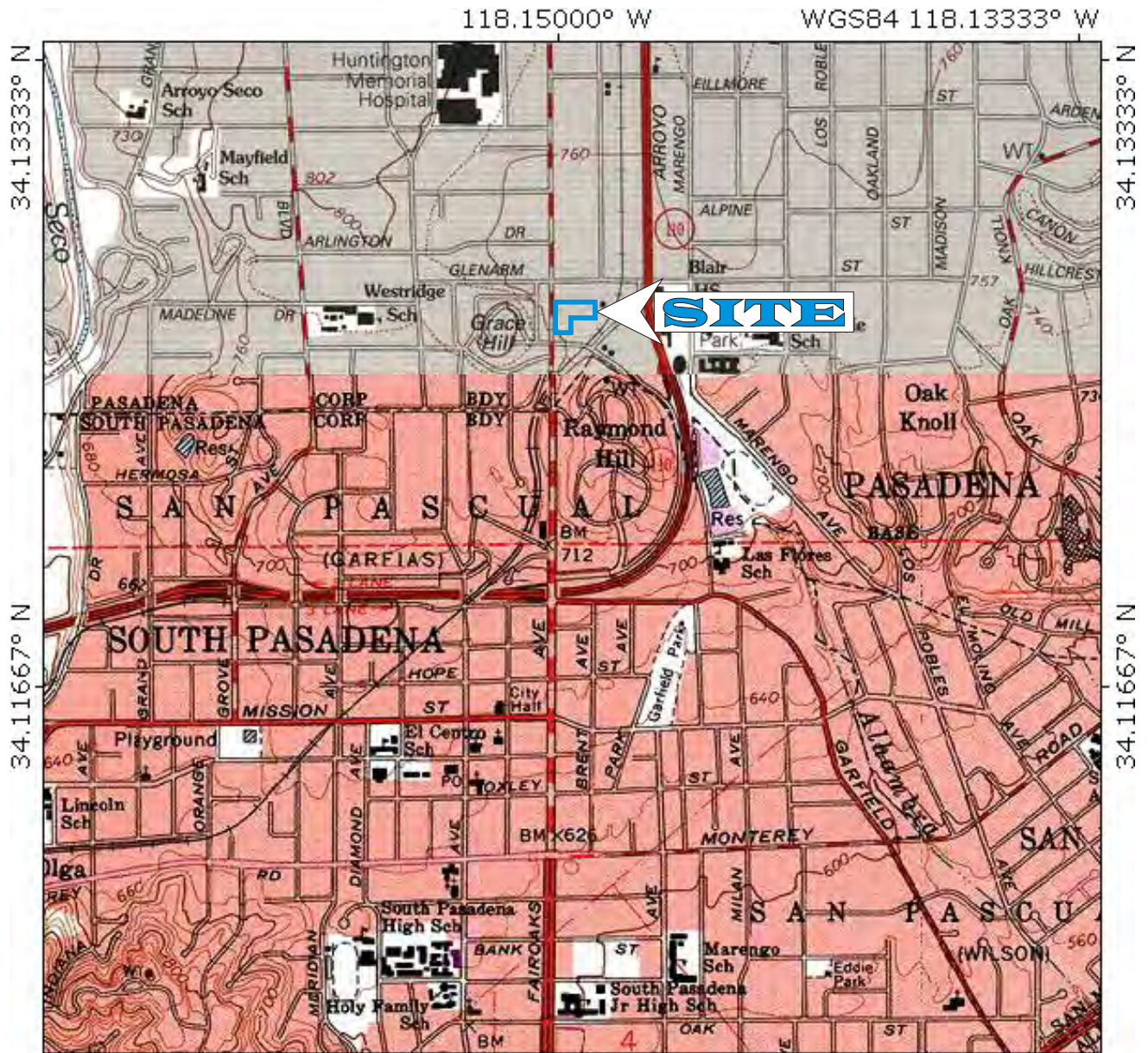
GE LM 6000 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	6	17	10	3	18	18
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>15</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>5</u>
Total GE LM 6000	<u>9 6</u>	<u>32 17</u>	<u>23 10</u>	<u>4 3</u>	<u>23 18</u>	<u>23 18</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>8 5</u>	<u>27 12</u>	<u>3 -10</u>	<u>4 3</u>	<u>21 16</u>	<u>21 16</u>

Rolls-Royce Trent 60 - Annual Emissions (tons/yr)						
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Normal Operations	7	19	11	4	22	22
WI & Intercooling Tuning	0	0	0	0	0	0
AIG Tuning	0	0	0	0	0	0
<u>Startups/Shutdowns (750 each)</u>	<u>3</u>	<u>16</u>	<u>16</u>	<u>1</u>	<u>6</u>	<u>6</u>
Total Rolls-Royce Trent 60	<u>10 7</u>	<u>35 19</u>	<u>27 11</u>	<u>5 4</u>	<u>28 22</u>	<u>28 22</u>
Existing B-3 Emissions	1	5	20	0.1	2	2
Net change	<u>9 6</u>	<u>30 14</u>	<u>7 -9</u>	<u>5 4</u>	<u>26 20</u>	<u>26 20</u>

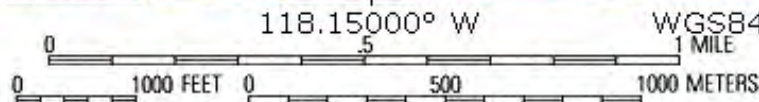
Source: PCR Services Corporation, 2012.

APPENDIX D, HAZARDOUS MATERIALS

In Appendix D of the Draft EIR, within the Limited Phase II Environmental Assessment technical report, Figures 1 through 13 following Chapter 21 and preceding the appendices were inadvertently omitted from the report. Those figures are provided on the following pages.



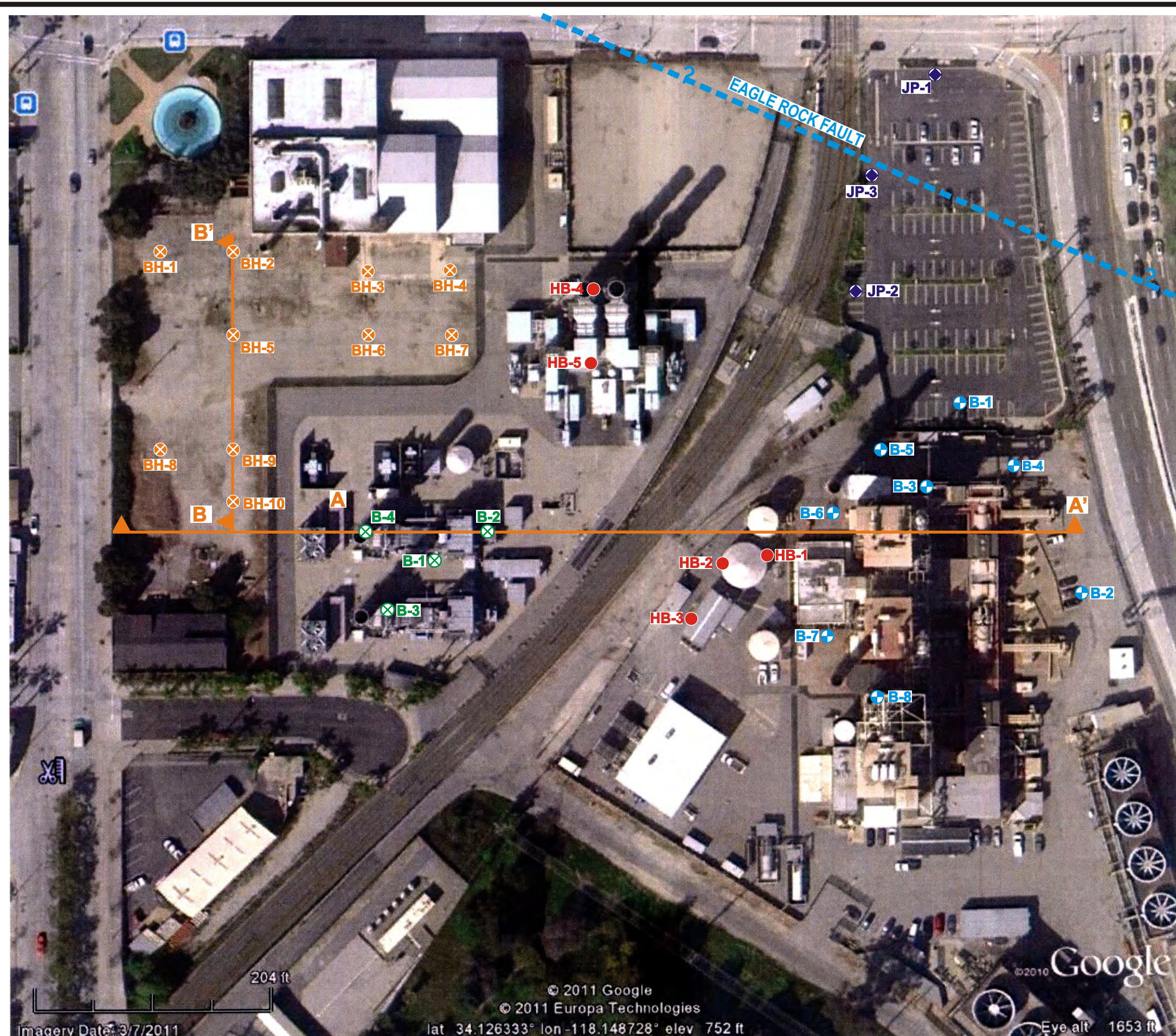
TN★MN
13½°



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CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE SITE LOCATION MAP	FIGURE NUMBER 1
PROJECT 3626-04-02	

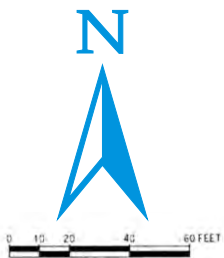
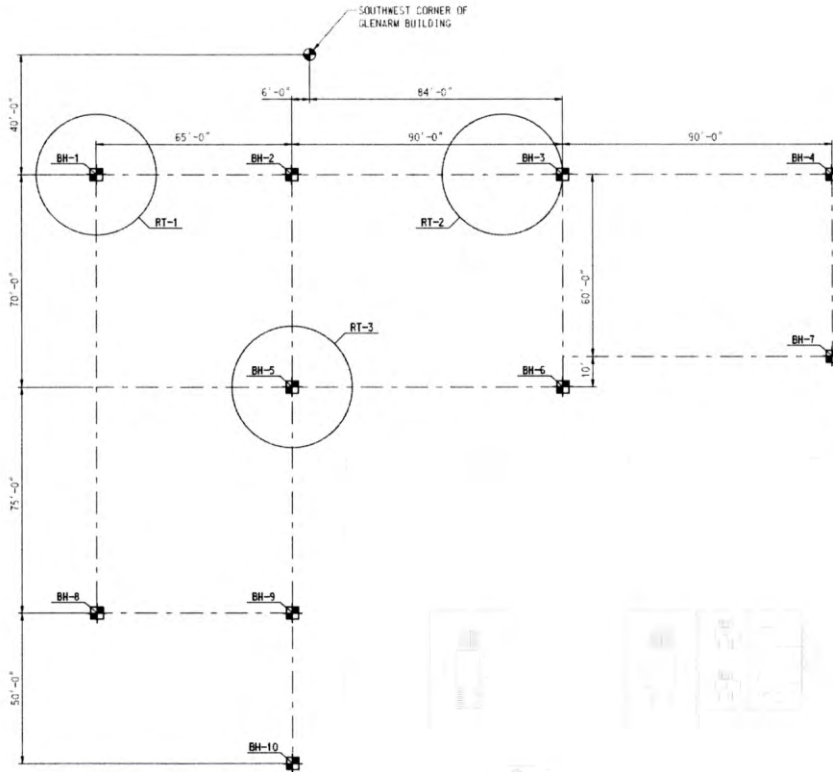


LEGEND




- B-2 ⊗ HI Borings - 2002
- HB-1 ● HI Borings - 2002
- B-4 ⊕ HI Borings - 2009
- JP-1 ◆ HI Borings - 2009
- BH-1 ⊗ HI Borings - 2011



CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE AERIAL PHOTOGRAPH	FIGURE NUMBER 2
PROJECT 3626-04-02	
hydrologue, Inc. <i>Consulting Engineers & Geologists</i>	
Z:Reports:Phase2:3626-00 Pasadena Power Plan PPP:3626-04-02:3626-04-02 figure 2.cdr	



LEGEND

-  BOREHOLE LOCATION
-  REFERENCE POINT
-  RESISTIVITY TEST AREA

NOTES

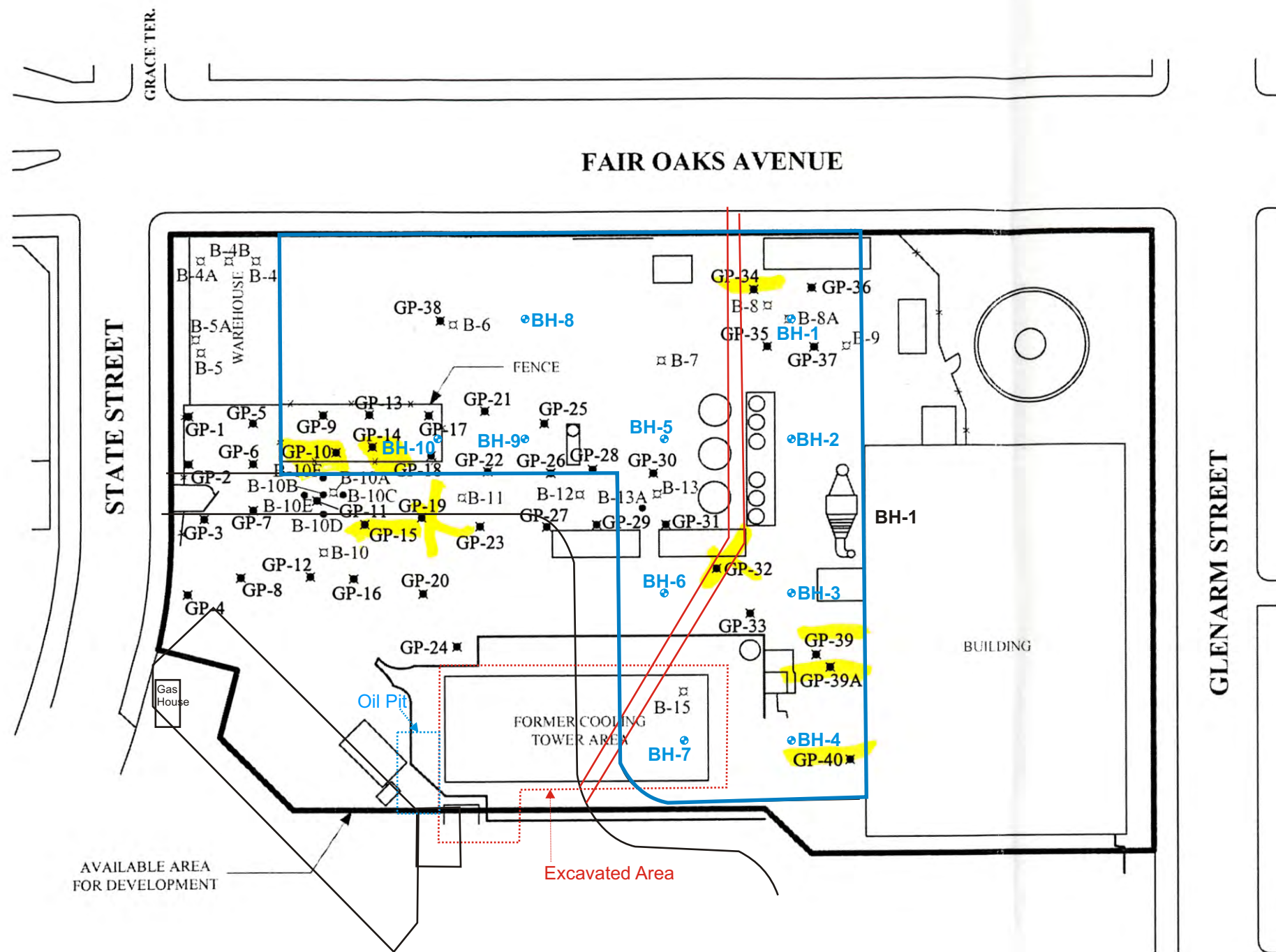
1. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UNDERGROUND UTILITY LOCATE SERVICES TO ESTABLISH THE LOCATION OF EXISTING UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF DRILLING OPERATIONS. ANY DAMAGE TO EXISTING FACILITIES, EITHER ABOVE OR BELOW GRADE, CAUSED BY CONTRACTOR DURING DRILLING OPERATIONS SHALL BE REPAIRED BY CONTRACTOR TO THE OWNERS SATISFACTION.
2. LOCATIONS DESIGNATED AS RESISTIVITY TEST AREAS ARE 40' DIAMETER AND LOCATED AS SHOWN. EARTH AND THERMAL RESISTIVITY TESTS CAN BE CONDUCTED ANYWHERE WITHIN THESE ZONES.

CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE BORING LOCATIONS PROPOSED 65 MW COMBINED CYCLE	FIGURE NUMBER 3
PROJECT 3626-04-02	

Source: Pasadena Power Plant

hydrologue, Inc.
Consulting Engineers & Geologists

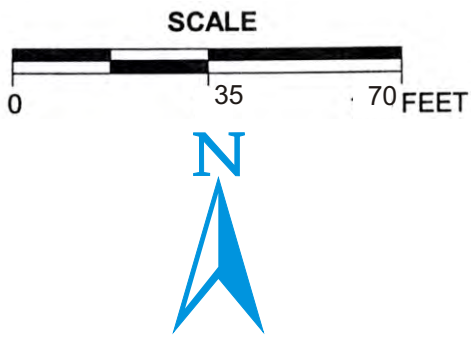
Z:Reports:Phase2:3626-00 Pasadena Power Plan
PPP:3626-04-02:3626-04-02 figs.cdr



- LEGEND**
- GP-1 ■ GEOPROBE BORING LOCATION AND DESIGNATION, 8/20/99
 - B-10D • GEOPROBE BORING LOCATION AND DESIGNATION, 6/15/99
 - B-4 □ HAND AUGER BORING LOCATION AND DESIGNATION, 4/15/99
 - MAIN STORM DRAIN
 - ▭ EXCAVATED AREA
 - ▭ PROPOSED DEVELOPMENT AREA
 - BH-1 • HI BORING 2011

Source: 1. Summary of Additional Soil Assessment Activities(Phase III), Pacific Environmental Group, Inc., Project 640-001.1B, Sept. 3, 1999.
 2. Report of Soil Investigation-Pasadena Water and Power Plant, Hunter-Kennedy and Associates, Inc., July 30, 2003.

CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE PEG/IT BORINGS	FIGURE NUMBER 4
PROJECT 3626-04-02	DATE 3/16/10
hydrologue, Inc. <i>Consulting Engineers & Geologists</i>	
<small>Z:\Reports\phase2\Pasadena Power Plant \3626-04-02\PEG-IT Borings Siteplan.cdr</small>	



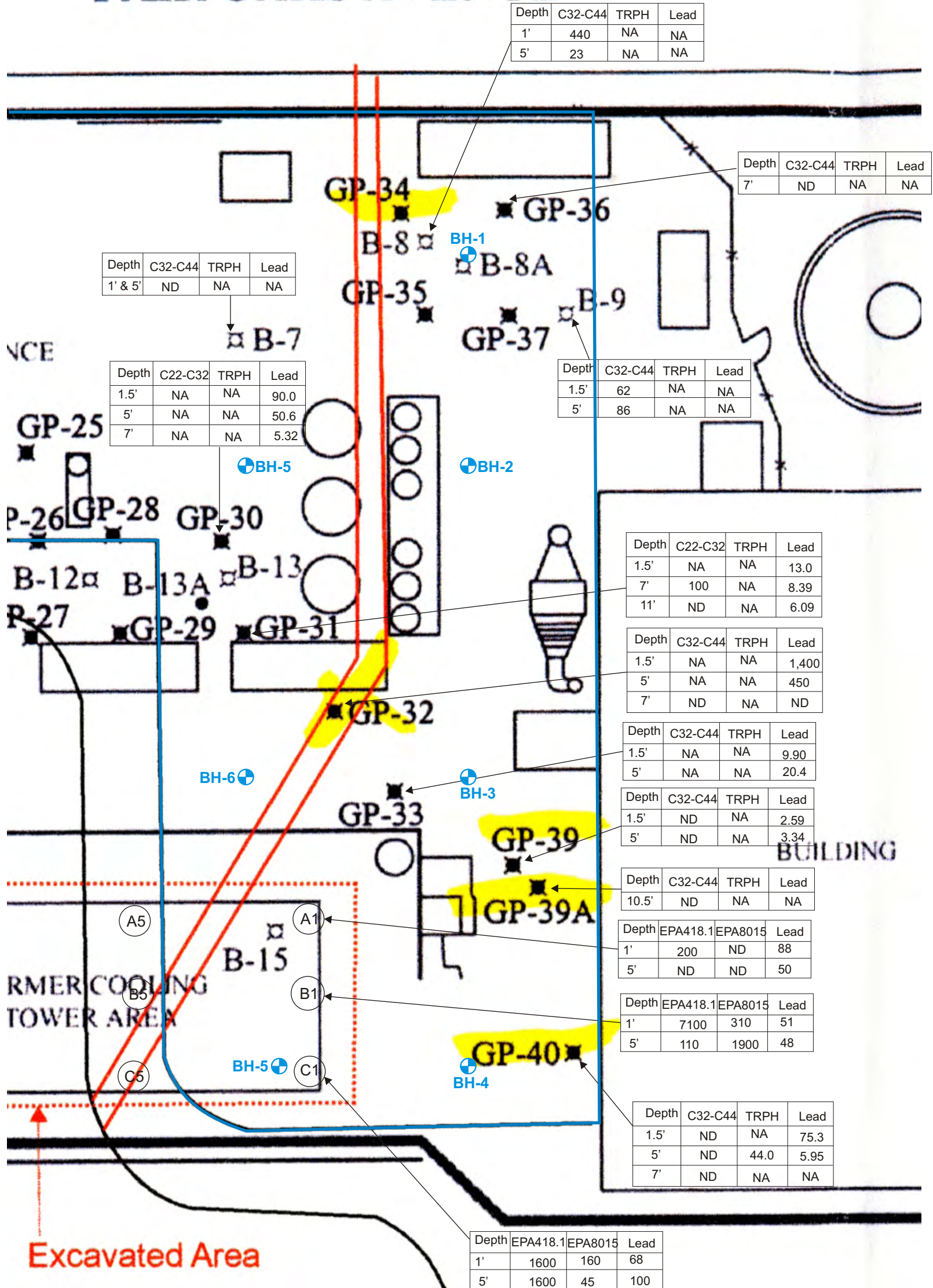
LEGEND

- GP-1 ■ GEOPROBE BORING LOCATION AND DESIGNATION, 8/20/99
- B-10D • GEOPROBE BORING LOCATION AND DESIGNATION, 6/15/99
- B-4 □ HAND AUGER BORING LOCATION AND DESIGNATION, 4/15/99
- MAIN STORM DRAIN
- EXCAVATED AREA
- ▭ PROPOSED DEVELOPMENT AREA
- 440 Concentration in mg/kg
- BH-1 ⊕ HI BORING 2011

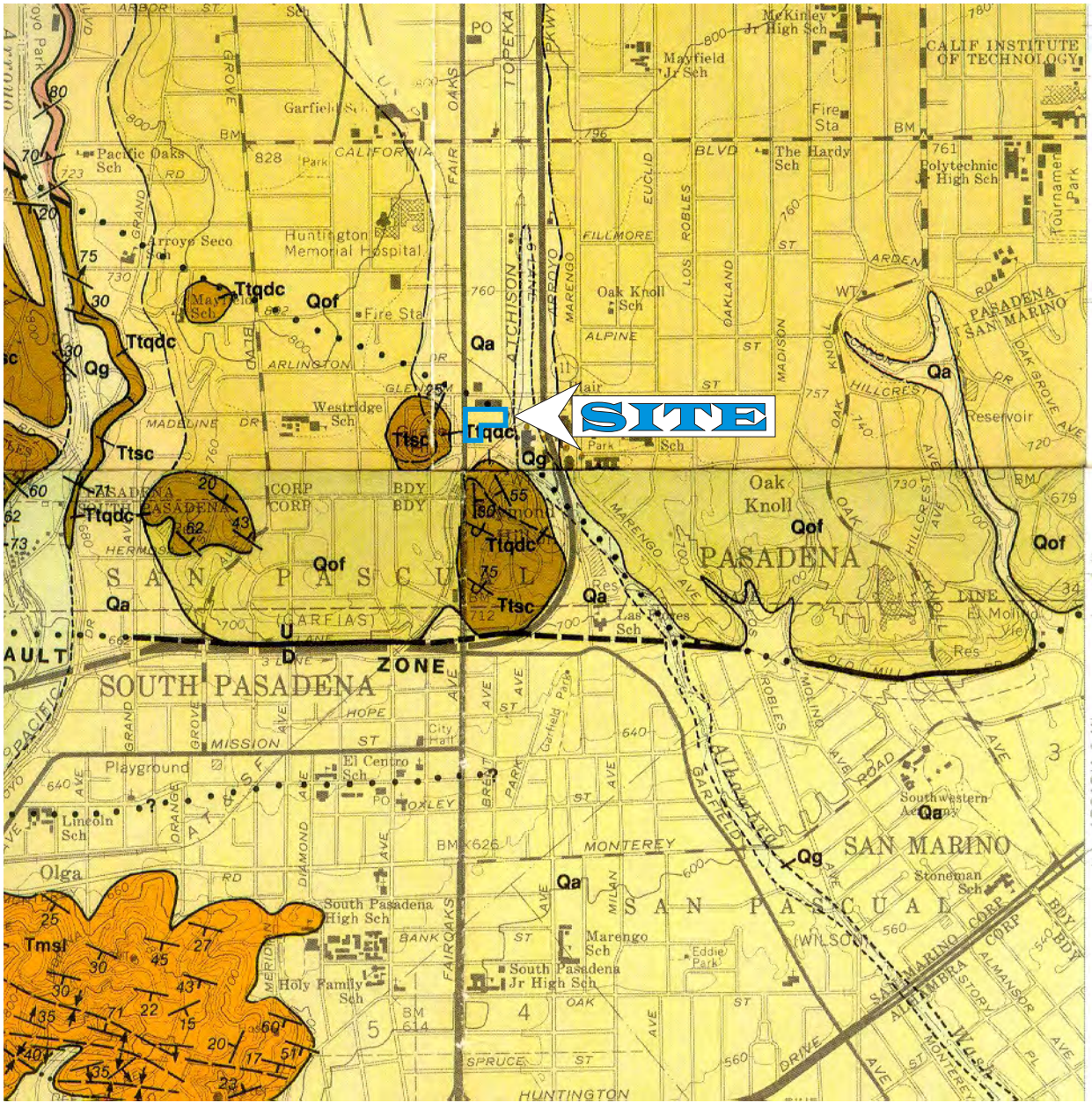
CLIENT	PASADENA POWER PLANT		
LOCATION	SE Corner of Fair Oaks Ave & Glenarm St, CA		
TITLE	FIGURE NUMBER	DATE	
	5	3/16/10	
PROJECT	3626-04-02	hydrologue, Inc. <i>Consulting Engineers & Geologists</i>	

Source: 1. Summary of Additional Soil Assessment Activities(Phase III), Pacific Environmental Group, Inc., Project 640-001.1B, Sept. 3, 1999.
 2. Report of Soil Investigation-Pasadena Water and Power Plant, Hunter-Kennedy and Associates, Inc., July 30, 2003.

FAIR OAKS AVENUE



Excavated Area



Abbreviated
LEGEND
(complete legend on reverse side)

- | | |
|-----|---|
| af | SURFICIAL SEDIMENTS
at artificial fill |
| Qg | |
| Qa | LANDSLIDE AND TALUS DEBRIS |
| Qof | |
| Qoa | OLDER DISSECTED SURFICIAL SEDIMENTS |
| Qog | |
- Qg** gravel and sand of stream channels, and alluvial fan outwash from major canyons; grades southward into Qa
Qa alluvium of valley areas
Qof alluvial fan gravel and sand, from San Gabriel Mtns.
Qoa low terrace remnants of alluvial gravel and sand
Qog elevated remnants of fan gravel and sand; includes San Dimas Formation of Morton, 1973
 — UNCONFORMITY —

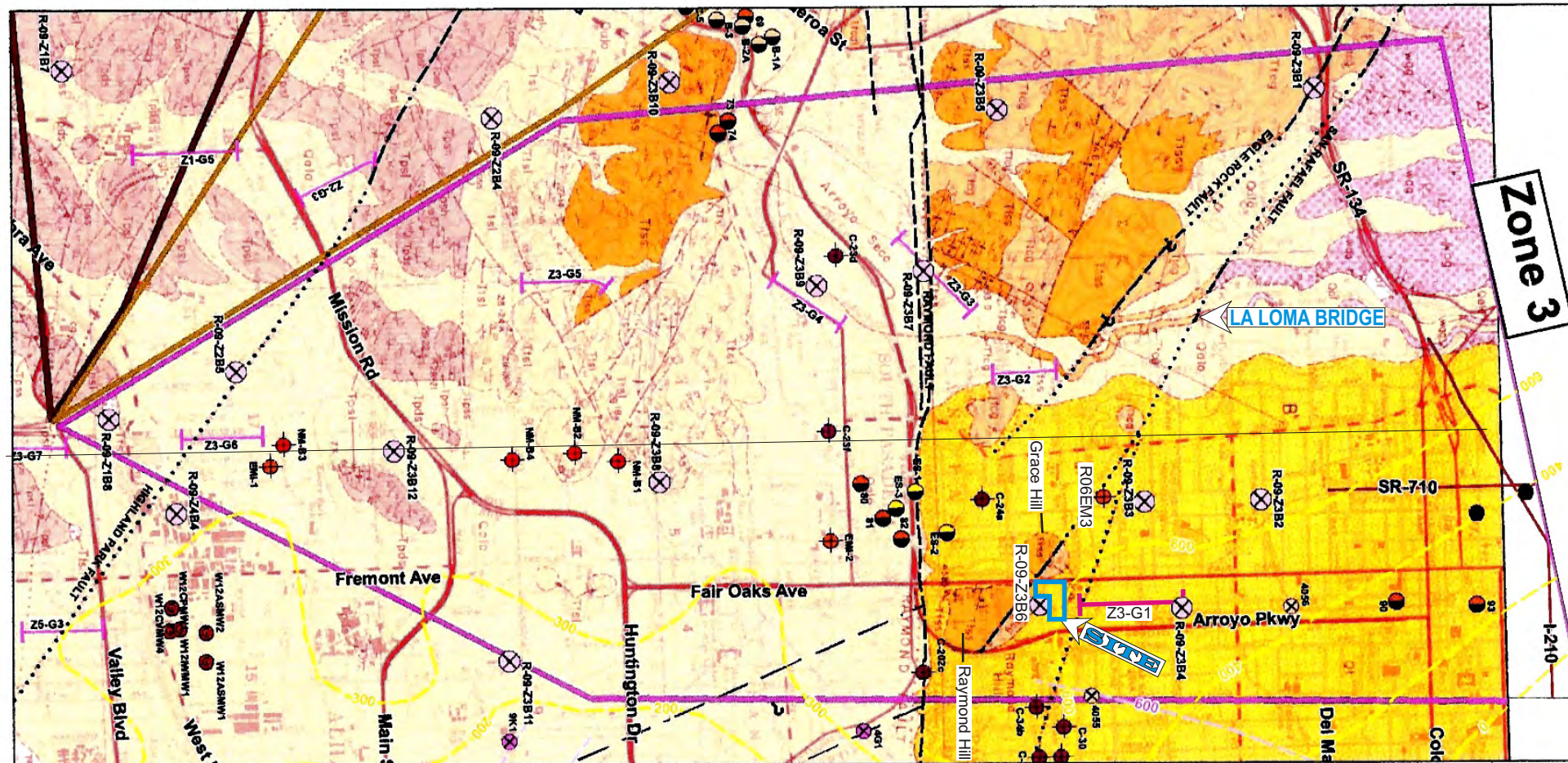
Holocene



SOURCE: Geological Maps of the Pasadena and Los Angeles Quadrangles, Los Angeles County, Thomas Dibblee, Jr., 1989

CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE GEOLOGY MAP	FIGURE NUMBER 6
PROJECT 3626-04-02	Z:Reports:Phase2:3626-00 Pasadena Power Plan PPP:3626-04-02:3626-04-02 figs.cdr

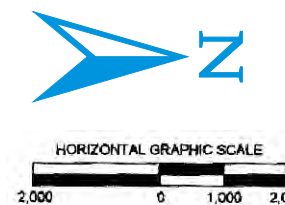
hydrologue, Inc.
Consulting Engineers & Geologists



Legend

(All Locations are Approximate)

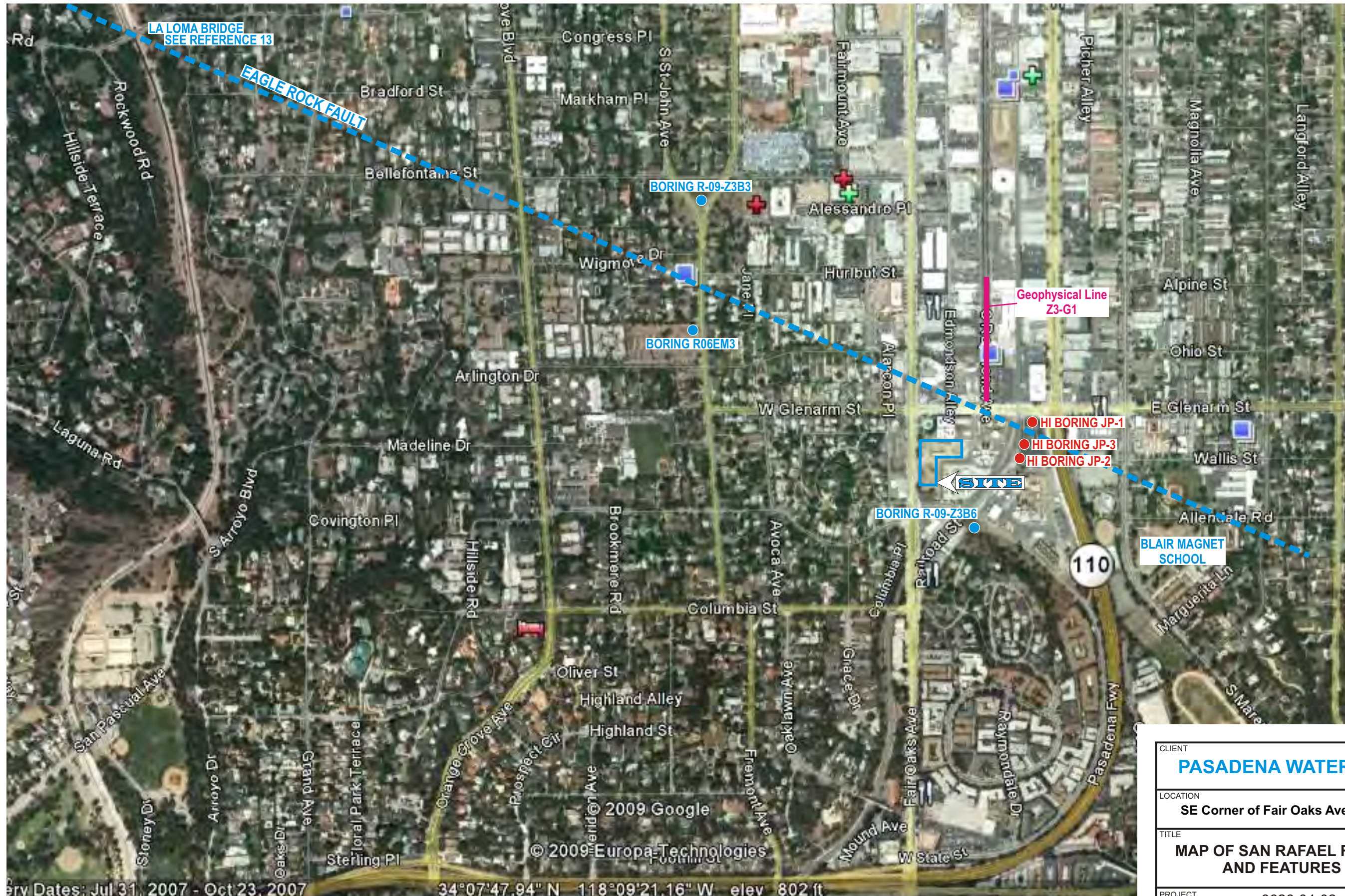
- | | | | |
|--|--|---|--|
| <ul style="list-style-type: none"> R-09-Z3B1 Continuous Core Boring (CH2M HILL, this study) W12ASINW2 Facility Monitoring Well (CH2M HILL, 2009) Caltrans As-built LOTB's (Various Locations) 40778 Water Production Well; Location for which only Groundwater Data is Available (LACDPW, 2009) EM-1 Continuous Core Boring (EM, 2006) A-1 and B-3 Geotechnical Boring (City of Los Angeles, 2000, 2005a, and 2006b) C-1 Geotechnical Boring (URS, 2006) MW-17 Groundwater Monitoring Well (CH2M HILL, 2006) | <ul style="list-style-type: none"> GA-D9W Water Production Well (Geosyntec, 2004) MW-1 Groundwater Monitoring Well (CH2M HILL, 2003) B-90 Geotechnical Boring (City of Los Angeles, 2001) NM-B1 Boring (Ninyo and Moore, 1999) 90 Geotechnical Boring (Law/Crandall, 1993) PC-103-162 Monitoring Well (JMMI, 1992 and CH2M HILL, 2007) 2796c Boring (Yerkes, et al, 1977) C-69/C-231 Boring (Caltrans, 1974a) ES-1 Geotechnical Boring (Caltrans, 1974b) | <ul style="list-style-type: none"> 802 Water Production Well (CDWR, 1966) -200 Depth to Bedrock in Feet Below Existing Ground Surface (Yerkes, et al, 1977) Structural Contour Line, Elevation at Top of Bedrock in Feet (MSL) (CDWR, 1966 and Geoscience, 2004) Groundwater Elevation in Feet (MSL) (San Gabriel Basin - MSGW, 2006 and Raymond Basin - RBMB, 2006 and 2007) Z3-G2 Seismic Reflection Line (CH2M HILL, this study) Zone 1 Limits Zone 2 Limits Zone 3 Limits | <ul style="list-style-type: none"> NEIS ECIS Metro Red Line Metro Gold Line Eastside Extension (Tunnel Portion) Existing Street, Road, or Highway <p>Source of Base Map: Lamar, 1970</p> |
|--|--|---|--|



CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE GEOLOGICAL MAP	FIGURE NUMBER 7
PROJECT 3626-04-02	

Source: Draft Geotechnical Summary Report SR-710 Tunnel Technical Study
Los Angeles County, California (Report No. EA-07-187900), prepared By CH2M HILL,
6 Hutton Centre Drive, Suite 700 Santa Ana, CA 92707, dated October 2009

hydrologue, Inc.
Consulting Engineers & Geologists
Z:Reports:Phase2:3626-00 Pasadena
Power Plan PPP:3626-04-02:
3626-04-02 geol map.cdr

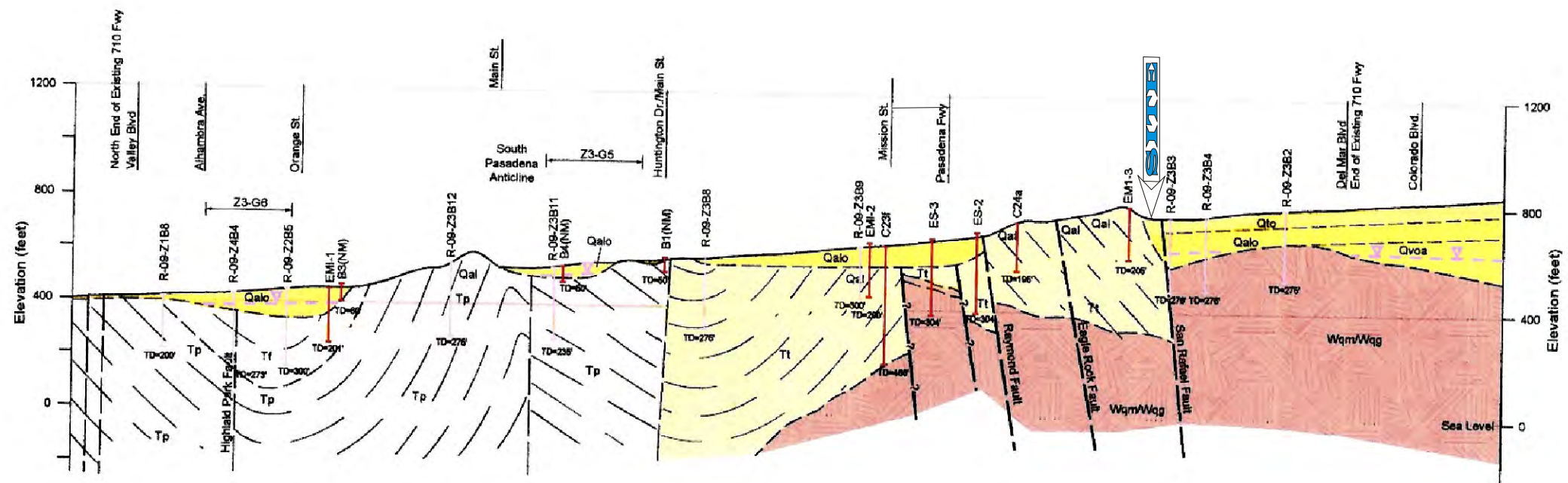


BORING R-09-Z3B6,
BORING R-063M3,
BORING R-09-Z3B3,
from Reference 7

Imagery Dates: Jul 31, 2007 - Oct 23, 2007 34°07'47.94" N 118°09'21.16" W elev 802 ft

Modified from: Eagle Rock-San Rafael Fault, report prepared by Schell Geological Consulting CO. dated November 19, 2009.

CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE MAP OF SAN RAFAEL FAULT AND FEATURES	FIGURE NUMBER 8
PROJECT 3626-04-02	
hydrologue, Inc. <i>Consulting Engineers & Geologists</i>	
<small>Z:\Reports\Phase2\3626-00 Pasadena Power Plan PPP\3626-04-02: 3626-04-02 Map of Fault.cdr</small>	



EXPLANATION

UNITS (from Lamar, 1970)

Quaternary Deposits

- Qto** Old Terrace and fan alluvium: primarily sand and gravel
- Qalo** Old Alluvium, sand and gravel
- Qvoa** Very Old Alluvium: primarily cobbles and coarse gravel

Fernando Formation (Pliocene; Undifferentiated)

- Tf** Siltstone: massive

Puente Formation (Late Miocene)

- Tp** Interbedded Siltstone, claysstone, mudstone, shale and sandstone, brown, gray, and black

Topanga Formation (Middle Miocene)

- Tt** Predominantly sandstone and conglomerate with abundant interbeds of siltstone and mudstone; brown, dark gray, and black.

Crystalline Basement Rocks (Mesozoic)

- Wqm/Wqg** Primarily Diorite and gneiss; generally highly fractured

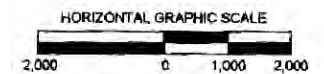
SYMBOLS (All locations are approximate)

- Z4-B4 Continuous Core Boring (CH2M HILL, this study)
- 14D1 Water Production Well (CDWR, 1966)
- Z5-G2 Seismic Reflection Line (CH2M HILL, this study)
- C23f Caltrans Boring (1974a)
- B4(NM) Ninyo and Moore (1999)
- EMI-2 Continuous Core Boring (EMI, 2006)
- ES-2 Caltrans Boring (1974b)

- Historically Highest Groundwater Level (CDMG, 1998f, 1998d)
- 2006 Groundwater Level (MSGW, 2006 and RBMB, 2006)
- Inactive Fault
- Active Fault
- Geologic Contact, dashed where inferred or indefinite

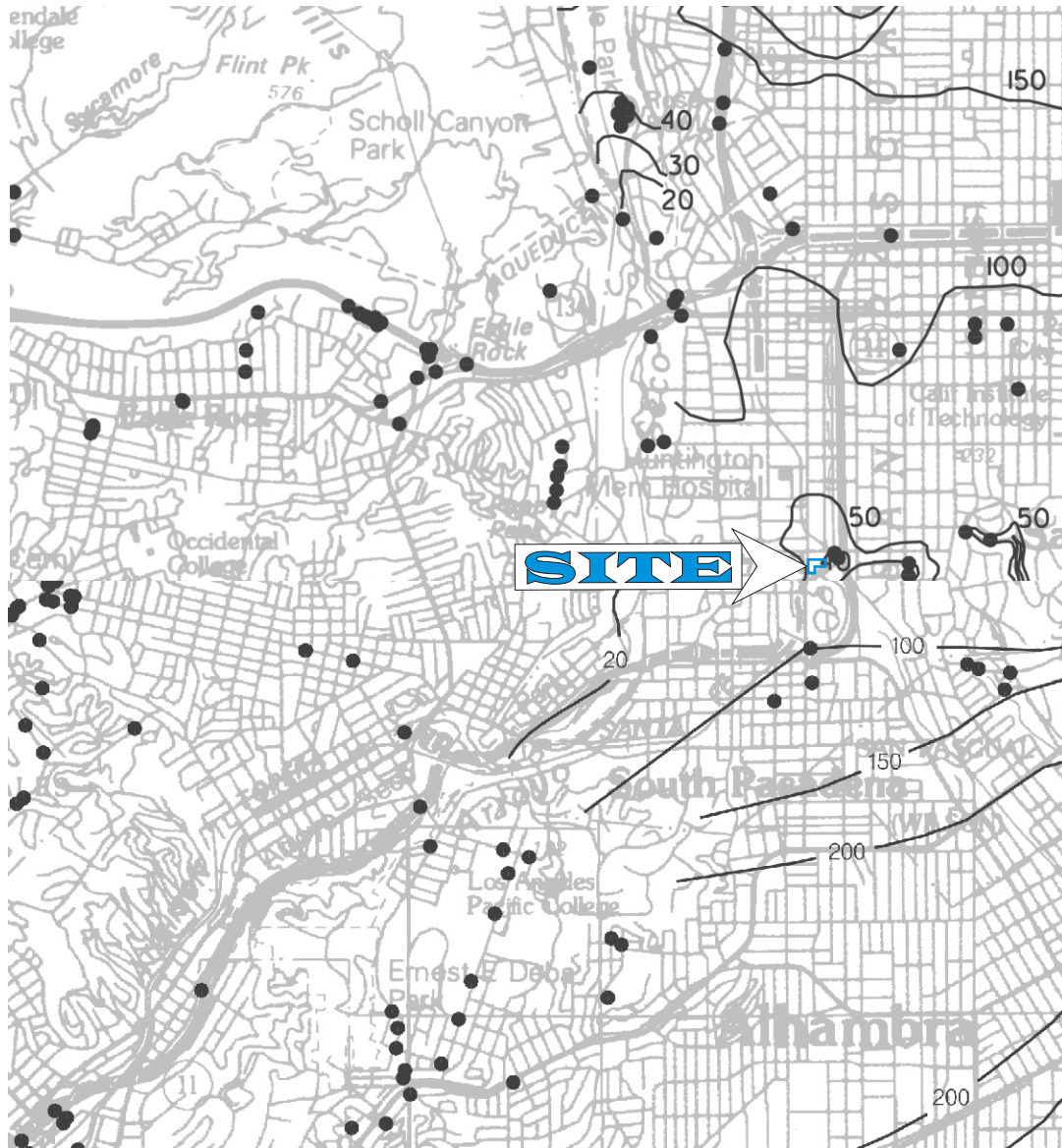
Data Sources:

- CDMG (1998d)
- CDWR (1966)
- CH2M HILL (2009)
- EMI (2006)
- Dibblee (1989b)
- Dibblee (1999)
- Geoscience (2004)
- Lamar (1970)
- MSGW (2006)
- Morton and Miller (2003)
- Tan (2000b)



CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE REPRESENTATIVE GEOLOGICAL PROFILE FOR ZONE 3	FIGURE NUMBER 9
PROJECT 3626-04-02	
<i>hydrologue, Inc.</i> <i>Consulting Engineers & Geologists</i>	

Z:Reports:Phase2:3626-00 Pasadena Power Plan PPP:3626-04-02: 3626-04-02 geol map.cdr

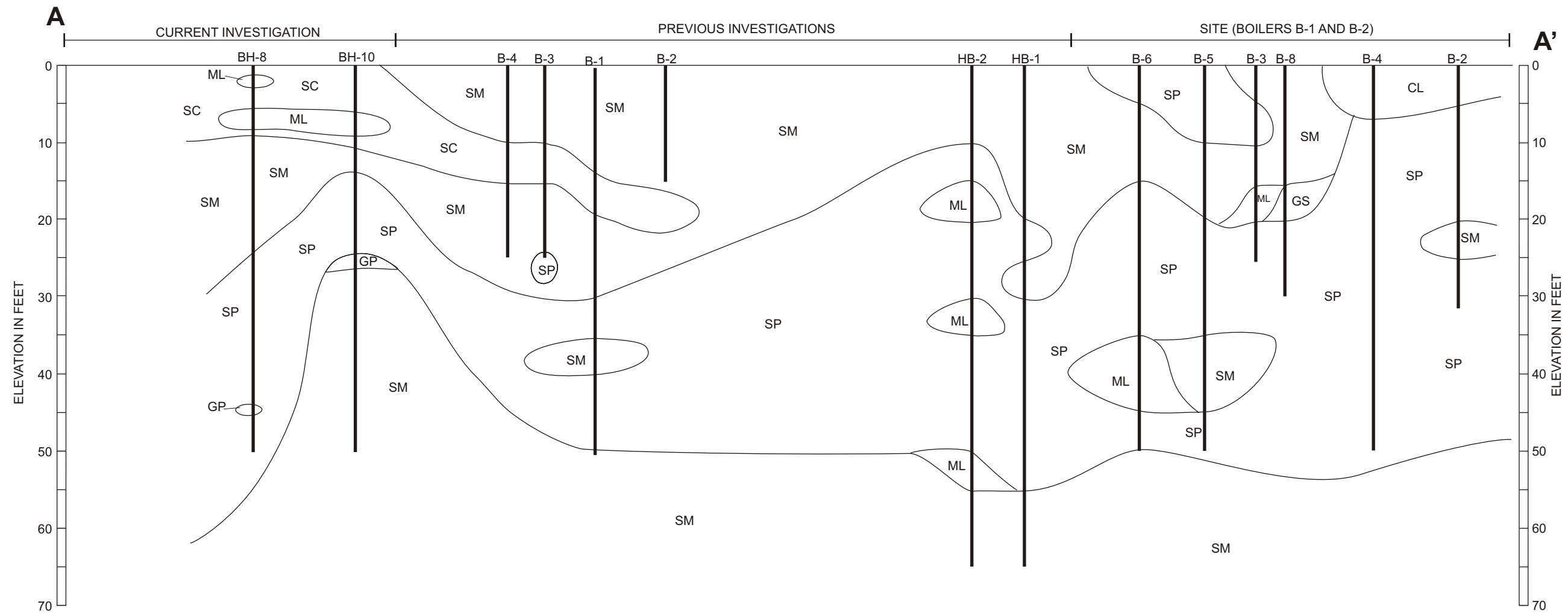


— 30 — Depth to ground water in feet

● Borehole Site

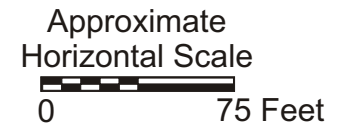
CLIENT PASADENA WATER AND POWER	
LOCATION SE Corner of Fair Oaks Ave & Glenarm St, CA	
TITLE HISTORICAL HIGHEST GROUNDWATER CONTOUR MAP	FIGURE NUMBER 11
PROJECT 3626-04-02	
hydrologue, Inc. <i>Consulting Engineers & Geologists</i>	
<small>Z:Reports:Phase2:3626-00 Pasadena Power Plan PPP:3626-04-02:3626-04-02 figs.cdr</small>	

Source: Seismic Hazard Zone Map for Pasadena & Los Angeles Quadrangle, dated 1998

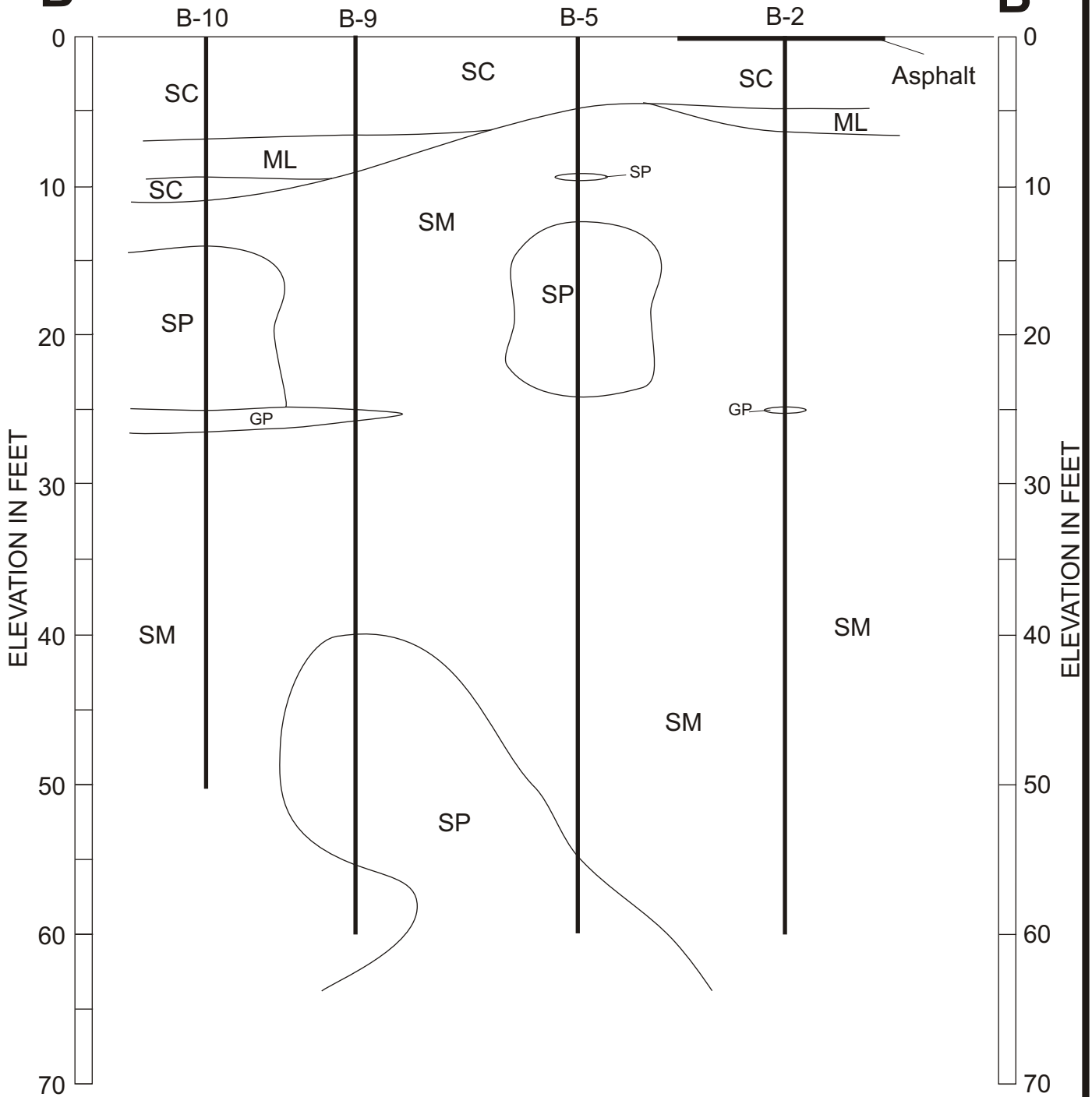


LEGEND

CL	Clay
ML	Silt
SC	Clayey Sand
SM	Silty Sand
SP	Poorly Graded Sand
GP/GS	Sandy Gravel



CLIENT PASADENA WATER AND POWER	
LOCATION 72 EAST GLENARM STREET, PASADENA, CA	
TITLE CROSS SECTION A-A' FROM FIGURE 2	FIGURE NUMBER 12
PROJECT 3626-04-02	
<i>hydrologue, Inc.</i> <small>Consulting Engineers & Geologists</small>	
<small>Z:\Reports:Phase2:3626-00 Pasadena Power Plan PPP:3626-04-02: 3626-04-02 cross sec AA'.cdr</small>	

B**B'****LEGEND**

- CL Clay
- ML Silt
- SC Clayey Sand
- SM Silty Sand
- SP Poorly Graded Sand
- GP Gravel / Sandy Gravel

Approximate
Horizontal Scale
0 50 Feet

CLIENT PASADENA WATER AND POWER	
LOCATION 72 EAST GLENARM STREET, PASADENA, CA	
TITLE CROSS SECTION B-B' FROM FIGURE 2	FIGURE NUMBER 13
PROJECT 3626-04-02	

hydrologue, Inc.
Consulting Engineers & Geologists

Z:\Reports:Phase2:3626-00 Pasadena
Power Plan PPP:3626-04-02:
3626-04-02 cross sec BB'.cdr

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

A. INTRODUCTION

Section 21081.6 of the Public Resources Code requires a Lead Agency to adopt a “reporting or monitoring program for changes to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment.” In addition, Section 15097(a) of the California Environmental Quality Act (CEQA) Guidelines requires that:

[I]n order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.

The City of Pasadena (City) has been designated as the Lead Agency for the proposed project.

Where appropriate, the project’s Draft and Final EIRs identified mitigation measures to avoid or to mitigate potential impacts identified to a level where no significant impact on the environment would occur. This Mitigation Monitoring and Reporting Program (MMRP) is designed to monitor implementation of the project’s mitigation measures.

As shown on the following pages, each required mitigation measure for the proposed project is listed, according to environmental impact area, together with the following information:

- **Monitoring/ Enforcement Agency:** The agency responsible for verifying compliance with and implementation of required mitigation measures, and/or the agency with the power to enforce required mitigation measures.
- **Timeframes for Mitigation Implementation & Enforcement:** Defines **1)** the precise phase(s) of the project during which each mitigation measure must be implemented or completed by the project Applicant (Pasadena Water & Power Department), including the performance of monitoring and submittal of required monitoring/certification reports to demonstrate compliance, and **2)** the project milestone(s) at which mitigation compliance must be verified by the Monitoring/Enforcement Agency. These phases and milestones may be pre-demolition or pre-construction; during demolition or construction; or prior to, during, or post-project operation or occupancy.
- **Verification of Compliance:** Confirmation by the Monitoring/Enforcement Agency that compliance with required mitigation measures has been achieved.

The Glenarm Power Plant Repowering Project’s MMRP will be in place during the design development, pre-demolition, demolition, and construction phases of the project. The project Applicant or qualified designee will be responsible for implementing all mitigation measures as noted in **Table 4-1, Mitigation Monitoring and Reporting Program**, and will also be obligated to provide certification, as identified below, to the

appropriate monitoring or enforcement agency that compliance with the required mitigation measure has been achieved. The City's existing planning and other pertinent administrative processes will be used as the basic foundation for the MMRP procedures.

The substance and timing of each certification report that is submitted to the City will be at the discretion of the City. Generally, each report will be submitted to the City in a timely manner following completion/implementation of the applicable mitigation measure and shall include sufficient information to allow the City to reasonably determine whether the intent of the measure has been satisfied. The City, in conjunction with the project Applicant, will assure that project demolition and construction occurs in accordance with the MMRP.

B. MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP is presented in below, in **Table 4-1**, *Mitigation Monitoring and Reporting Program*, and it lists each mitigation measure, phase of implementation, frequency and/or duration of required monitoring, method of reporting monitoring results to the City, and the responsible monitoring party.

Table 4-1

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
1. Air Quality						
Mitigation Measure AQ-1: The Pasadena Water & Power Department and its contractors, via the City of Pasadena Public Works Department, shall require the implementation of a “Construction Staging and Traffic Management Plan” that provides for a temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			
Mitigation Measure AQ-2: The Pasadena Water & Power Department and its contractors, in consultation with the City of Pasadena Department of Transportation, shall require the implementation of a “Construction Staging and Traffic Management Plan” that identifies an on-site dedicated turn lane for the movement of construction trucks and equipment. When turning off-site, trucks will be required to utilize the on-site dedicated turn lane described in the plan.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			
Mitigation Measure AQ-3: The Pasadena Water & Power Department and its contractors shall require the implementation of a “Construction Staging and Traffic Management Plan” that provides for a construction relations officer to act as a community liaison concerning on-site construction activity	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
including resolution of issues related to PM10 generation.						
Mitigation Measure AQ-4: The Pasadena Water & Power Department and its contractors shall require that all vehicles and equipment are properly tuned and maintained according to manufacturers' specifications.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			
Mitigation Measure AQ-5: The Pasadena Water & Power Department and its contractors shall require the use of coatings and solvents with a VOC content that exceeds the requirements of Rule 1113 if available. All coatings and solvents shall at a minimum meet the requirements of Rule 1113 unless exempted.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			
Mitigation Measure AQ-6: The Pasadena Water & Power Department and its contractors shall use construction materials that do not require painting to the extent economically feasible and that meet the project's structural, acoustical, aesthetic, or other needs.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			
Mitigation Measure AQ-7: The Pasadena Water & Power Department and its contractors shall use pre-painted construction materials for major equipment. Materials that require field coating are exempt from this measure.	City of Pasadena Planning Division (Zoning Administrator)	During construction	During construction			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>Mitigation Measure AQ-8: The Pasadena Water & Power Department and its contractors shall require contractors to use model year 2007 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) pursuant to California Code of Regulations, Title 13, §2025.</p>	<p>City of Pasadena Planning Division (Zoning Administrator)</p>	<p>During construction</p>	<p>During construction</p>			
<p>Mitigation Measure AQ-9: The Pasadena Water & Power Department and its contractors shall require the use of internal combustion engines/construction equipment that operate on the project site to meet the following:</p> <ul style="list-style-type: none"> • At least 50 percent of construction equipment greater than 250 hp, which are on-site for 6 or more consecutive work days, shall meet Tier 3 emissions standards and be outfitted with BACT devices (e.g., Level 3 diesel emissions control devices) certified by CARB. • A copy of each unit’s certified tier specification and BACT documentation shall be available for inspection during construction. The contractor(s) shall monitor and record compliance for each project construction phase and document efforts undertaken to increase the use of compliant off-road vehicles, such as but not limited to bid 	<p>City of Pasadena Planning Division (Zoning Administrator)</p>	<p>During construction</p>	<p>During construction</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>solicitation documents, fleet registration of successful vendor(s), etc.</p> <ul style="list-style-type: none"> Construction contractors supplying heavy duty diesel equipment, greater than 50 hp, will be encouraged to apply for AQMD SOON funds. Information including the AQMD website will be provided to each contractor which uses heavy duty diesel for on-site construction activities. 						
2. CULTURAL RESOURCES						
<p>Mitigation Measure CULT-1: Recordation and Photography. Prior to removal of the boilers, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The boilers, their infrastructure, and the hallway created by the boilers shall be documented in as-built drawings, large format black-and-white photographs, and a written narrative in accordance with HABS requirements. Completion and submittal of the HABS level III recordation of the boilers is required before City issuance of demolition and building permits for the Glenarm Building. This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic</p>	<p>City of Pasadena Design and Historic Preservation Section to review HABS Level III documentation, verify submittal to the required repositories, and verify preparation of photographs for use in interpretive display required by mitigation measure CULT-2.</p> <p>City of Pasadena Planning Division to verify receipt of completed HABS documentation from Applicant.</p>	<p>Prior to any demolition within the Glenarm Building, Applicant to retain qualified architectural historian or historic architect and photographer to complete HABS documentation.</p> <p>Prior to any demolition within the Glenarm Building, Applicant to ensure submittal of completed HABS documentation to the required repositories and</p>	<p>Prior to City's issuance of demolition and building permits for the Glenarm Building, Design and Historic Preservation Section to review and approve HABS documentation.</p> <p>Prior to City's issuance of demolition and building permits for the Glenarm Building, Design and Historic Preservation Section to verify submittal of completed HABS</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
American Building Survey (HABS) photography. Original archival prints shall be submitted to the Library of Congress, the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library. Furthermore, copies of the photographs shall be used in the mitigation measure CULT-2 display.		the Planning Division. Prior to the commencement of project operation, Applicant to ensure preparation of photographs for inclusion in interpretive exhibit as required by mitigation measure CULT-2.	documentation. Prior to the commencement of project operation, Design and Historic Preservation Section to verify preparation of photographs for inclusion in the interpretive exhibit, as required by mitigation measure CULT-2.			
Mitigation Measure CULT-2: Interpretive Architectural Exhibit. An interpretive exhibit displaying the original layout and operation of the floor-to-ceiling hallway shall be constructed in the location of the existing character-defining hallway. This interpretive display shall be created with the assistance of a qualified historic architect who satisfies the Secretary of the Interior's Professional Qualification Standards for History, Architectural History, or Architecture, pursuant to 36 CFR 61. Features of the hallway exhibit shall include the control panels, burner fronts, and the floating master gauge in their original location. If the metal panels supporting the burner fronts are destroyed during the demolition of the boilers, new in-kind panels shall be constructed. If the steel columns and beam supporting the floating gauge are destroyed during the demolition of the	City of Pasadena Design and Historic Preservation Section to review draft and final plans and specifications for interpretive architectural exhibit, ensure Applicant consultation with Pasadena Heritage during planning phase for exhibit, and verify inclusion of HABS documentation in exhibit. City of Pasadena Building and Safety Division to verify completed installation of the interpretive architectural exhibit prior to issuance of certificate of occupancy.	Prior to demolition within the Glenarm Building, Applicant to hire qualified architectural historian, historic architect, or historic preservation professional to prepare plans and specification for interpretive exhibit, including HABS documentation. Following demolition and prior to commencing construction within the Glenarm Building. Applicant to prepare final plans and specifications for the interpretive architectural exhibit that address construction of	Prior to City's issuance of demolition permits for the Glenarm Building. Design and Historic Preservation Section to review and approve draft plans and specifications for interpretive architectural exhibit, ensure Applicant consultation with Pasadena Heritage during planning phase for exhibit, and confirm the inclusion of HABS documentation. Prior to City's issuance of the certificate of occupancy for the Glenarm Building. Design and Historic Preservation Section to review and approve final plans and specifications for interpretive exhibit, including any new			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>burners, new in-kind supports for the gauge shall be constructed. HABS photos taken before the demolition of the burners shall be displayed as part of the exhibit. Issuance of the certificate of occupancy for the Glenarm Building shall be conditioned on the completed installation of the interpretive exhibit.</p> <p>During the planning phase for the interpretive exhibit, the Applicant shall ensure Pasadena Heritage is consulted and give the opportunity to provide input into the plans and specifications before they are finalized.</p>		new, in-kind burner front panels and floating gauge supports, if needed.	construction, and verify completed installation.			
<p>Mitigation Measure CULT-3: Demolition Monitoring. Due to the complexity of the demolition of the burners, potential damage may occur to historic character-defining features of the Glenarm Building. The proposed project shall be designed to avoid the potential for damage to historic fabric and features. Demolition plans shall be prepared for the proposed project by a qualified historic architect. The project shall also be conditioned to require demolition and construction monitoring by a qualified historic architect, to ensure full conformance to the Standards with regard to the proposed project, and to ensure that the appropriate preservation treatment for any unanticipated preservation issues</p>	<p>City of Pasadena Design and Historic Preservation Section to verify Applicant’s retention of a qualified preservation consultant to review and approve demolition plans for, and monitor demolition and construction within, the Glenarm Building; and to verify Applicant retention of a qualified historic architect and qualified historic engineer during the planning phase for seismic retrofitting of the Glenarm Building.</p>	<p>Prior to commencing demolition and construction, Applicant to retain qualified preservation consultant to review demolition plans for the Glenarm Building and serve as construction monitor during Glenarm Building demolition and construction.</p>	<p>Prior to City’s issuance of demolition and construction permits for the Glenarm Building. Design and Historic Preservation Section to verify with Applicant that historic architect has prepared demolition plans; that historic architect has been retained for demolition and construction monitoring; and that historic architect and historic engineer have been for planning phase of seismic retrofitting of the Glenarm Building.</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
encountered during demolition/construction is properly completed.	City of Pasadena Planning Division (Zoning Administrator) to review demolition and construction monitoring reports.					
<p>In addition, a qualified historic architect and qualified historic engineer shall be retained by the Applicant to consult during the planning phase for seismic retrofitting of the Glenarm Building necessary for designation of the building as an essential facility.</p> <ul style="list-style-type: none"> The demolition plan shall include a protection plan that details procedures, materials, and sequence of operations necessary to protect existing materials from damage. Protection shall be provided to existing historic materials wherever encountered adjacent to proposed demolition or construction work to prevent damage to or marring of materials, surfaces, and finishes. Such protection shall be of sufficient size and thickness to withstand impact from falling debris; rolling objects such as equipment, machinery and handcarts; movement of 	City of Pasadena Planning Division (Zoning Administrator) to verify receipt of all construction monitoring reports.	For the duration of Glenarm Building demolition and construction activities, Applicant is responsible for ensuring construction monitor regularly performs monitoring and submits required monitoring reports to the City to demonstrate ongoing compliance.	Throughout Glenarm Building demolition and construction phases, Design and Historic Preservation Section to verify construction monitoring is conducted and demolition and construction monitoring reports submitted by Applicant at the required weekly intervals and 50 percent/100 percent completion milestones.			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>materials and debris; and residue from flame cuttings such as sparks.</p> <ul style="list-style-type: none"> The demolition plan shall be completed prior to the issuance of demolition and construction permits for the project. Demolition and construction monitoring by a historic architect shall occur on a weekly basis and the historic architect shall prepare and submit reports with photographs of the work at 50 percent and 100 percent completion milestones for each phase, respectively. 						
<p>Mitigation Measure CULT-4: Archaeological Resources Treatment. If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior’s Professional Qualification Standards (the “archaeologist”) shall be immediately notified and retained by the applicant and approved by the City to oversee and carry out these mitigation measures.</p> <p>The archaeologist shall coordinate with the applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be</p>	City of Pasadena Planning Division (Zoning Administrator)	During grading and excavation, in the event that archaeological resources are encountered, Applicant to notify Planning Division and retain a qualified archaeologist to implement this mitigation measure.	If notified by Applicant of the presence of archaeological resources during construction, Planning Division to verify Applicant retention of qualified archaeologist for implementation of this mitigation measure. Following project grading and excavation and prior to project construction, Planning Division to review and approve final report submitted by Applicant or qualified			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered shall be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the find to be filed with Project Applicant, the City, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered. Interpretation will include full evaluation of the eligibility with respect to the National and California Register and CEQA. The report shall also include all specialists' reports as appendices. The Lead Agency shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter.</p> <p>If warranted, the archaeologist will develop a monitoring program in coordination with a Native American</p>			archaeologist.			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
representative (if there is potential to encounter prehistoric or Native American resources), the applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.						
<p>Mitigation Measure CULT-5: Paleontological Resources Treatment. A qualified paleontologist shall attend a pre-grade meeting and develop a paleontological monitoring program to cover excavations in the event they occur into the older Quaternary Alluvium. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. If excavation into Quaternary deposits occurs, monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If it is determined that excavation will not encounter Quaternary deposits, no further measures need be taken. The frequency of monitoring inspections shall be based on the rate of excavation and grading activities, the materials being excavated, and if found, the abundance and type of fossils encountered.</p>	City of Pasadena Planning Division (Zoning Administrator)	During grading and excavation, in the event that paleontological resources are encountered, Applicant to notify Planning Division and retain a qualified paleontologist to implement this mitigation measure.	<p>If notified by Applicant of the presence of paleontological resources during grading and excavation, Planning Division to confirm Applicant retention of qualified paleontologist for implementation of this mitigation measure.</p> <p>Following project grading and excavation and prior to project construction, Planning Division to confirm receipt of final report from Applicant or qualified paleontologist.</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>If a fossil is found, the paleontologist shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage. At the paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository. Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.</p> <p>If fossils are found following completion of the above tasks, the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the applicant to the lead agency, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the</p>						

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
satisfactory completion of the project and required mitigation measures.						
<p>Mitigation Measure CULT-6: Human Remains Treatment.</p> <p>If human remains are encountered unexpectedly during construction excavations and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent of the deceased Native American, who shall then help determine what course of action shall be taken in dealing with the remains. The applicant shall then under take additional steps as necessary in accordance with <i>CEQA Guidelines</i> Section 15064.5(e). Preservation of the remains in place or project design alternatives shall be considered as possible courses of action by the applicant, the City, and the Most Likely Descendent.</p>	City of Pasadena Planning Division (Zoning Administrator)	During grading and excavation, in the event that human remains are encountered, Applicant to notify Planning Division and initiate consultation the NAHC and follow that agency’s recommended course of action to implement this mitigation measure.	<p>If notified by Applicant of the presence of human remains during grading and excavation, Planning Division to confirm Applicant consultation with the NAHC for implementation of this mitigation measure.</p> <p>Following project grading and excavation and prior to project construction, Planning Division to confirm Applicant has completed the NAHC’s recommended course of action.</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
3. HAZARDS AND HAZARDOUS MATERIALS						
Mitigation Measure HAZ-1: Prior to the issuance of demolition permits, PWP shall submit to the City of Pasadena City of Pasadena Fire Department a comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. All identified asbestos-containing materials shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.	City of Pasadena Fire Department	Prior to demolition, Applicant to submit comprehensive pre-demolition survey. Following demolition, Applicant to submit proof of asbestos abatement and disposal to Building and Safety Division.	Prior to issuance of demolition permits, demolition, Building and Safety Division to verify receipt of pre-demolition asbestos survey from Applicant. Prior to construction, Building and Safety Division to verify receipt of proof of asbestos abatement and disposal from Applicant.			
Mitigation Measure HAZ-2: Prior to issuance of demolition permits, PWP shall submit to the City of Pasadena Fire Department a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.	City of Pasadena Fire Department	Prior to demolition, Applicant to submit comprehensive pre-demolition survey. Following demolition, Applicant to submit proof of lead-based paint abatement and disposal to Building and Safety Division.	Prior to demolition, Building and Safety Division to verify receipt of pre-demolition lead-based paint survey from Applicant. Prior to issuance of building permit(s), Building and Safety Division to verify receipt of proof of lead-based paint abatement and disposal from Applicant.			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
Mitigation Measure HAZ-3: Shallow soil contamination at the proximity of GP32 (total lead concentration of 1,400 ppm at 1.5 feet bgs), as indicated in the Phase II Environmental Site Assessment, shall be excavated and disposed of off-site. The lateral extent of the remedial excavation may extend to GP-31, GP-33, and BH-7. The vertical extent of remedial excavation is anticipated to be less than 5 feet. In addition, if the soil at the vicinity of the above-mentioned locations is planned for off-site disposal, then the excavated soil shall be stockpiled and a WET test shall be made on stockpile soil samples to determine the soluble lead concentration of the stockpiled soil for soil disposal purposes.	City of Pasadena Fire Department	During grading and excavation, Applicant to implement this mitigation measure.	Prior to the commencement of construction, Building and Safety Division to verify Applicant compliance with this mitigation measure.			
Mitigation Measure HAZ-4: If the soil at the vicinity of the locations (as identified in the Phase II Environmental Site Assessment) where TRPH concentrations exceed 1,000 ppm is planned for off-site disposal, then the excavated soil shall be stockpiled and analytically tested for TPH and VOCs using EPA Method 8015 M and 8260B or per soil disposal facility requirements.	City of Pasadena Fire Department	During grading and excavation, Applicant to implement this mitigation measure.	Prior to the commencement of construction, Building and Safety Division to verify Applicant compliance with this mitigation measure.			
Mitigation Measure HAZ-5: During project design development and prior to initiation of excavation and grading activities, PWP shall retain a qualified	City of Pasadena Fire Department	During project design development and prior to excavation and grading, Applicant to retain	Prior to the commencement of grading and excavation, Building and Safety Division to			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
<p>environmental consultant to prepare a soils management plan that shall be submitted to the City of Pasadena Fire Department for review and approval. The soils management plan shall be implemented during excavation and grading activities on the project site to ensure that any contaminated soils are properly disposed of offsite. The plan shall include, but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> • A qualified environmental consultant shall be present as necessary during excavation or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination. • Any soil encountered during excavation or grading activities that appears to have been affected by hydrocarbons or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility. • Soils in the southwestern corner of the site near Boring Location GP32 and where TRPH concentrations exceed 1,000 ppm, as identified in the Limited Phase II ESA, shall be segregated and analyzed prior to 		<p>qualified consultant to prepare soils management plan and submit plan to Building and Safety Division for approval.</p> <p>During grading and excavation, Applicant to implement approved soils management plan. Upon completion of grading and excavation, Applicant to notify Building and Safety Division of completion of implementation of soils management plan.</p>	<p>review and approve soils management plan.</p> <p>Following grading and excavation and prior to construction, Building and Safety Division to verify completion of implementation of soils management plan.</p>			

Table 4-1 (Continued)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring or Enforcement Agency	Timeframes for Mitigation Implementation & Enforcement		Verification of Compliance		
		Applicant Implementation	Agency Enforcement	Initial	Date	Remarks
offsite disposal. This may require over-excavation in these area and further analysis of this soil to determine the extent of soil contamination. <ul style="list-style-type: none"> All identified contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility. 						

Appendix A - Example Air Quality Impact Methodology

This appendix includes a copy of relevant pages from the following California Energy Commission (CEC) documents as referenced in **Section 2.0, Comments and Responses on the Draft EIR**, Letter No. 5 and Letter No. 18:

*CEC, CPV Sentinel Energy Project, Final Staff Assessment, Air Quality Addendum, CEC
700-2008-005-FSA-AD, April 2010.*

*CEC, Watson Cogeneration Steam and Electric Reliability Project, Final Staff Assessment, CEC
700-2011-002-FSA, August 2011.*

Final Staff Assessment
Air Quality Addendum

**CALIFORNIA
ENERGY
COMMISSION**

CPV Sentinel Energy Project

Application For Certification (07-AFC-3)
Riverside County



**DOCKET
07-AFC-3**

DATE 04/15/10

RECD. 04/15/10

STAFF REPORT

APRIL 2010
(07-AFC-3)
CEC-700-2008-005-FSA-AD



PROOF OF SERVICE (REVISED 3/24/10) FILED WITH
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MS

percent oxygen averaged over one hour. This is consistent with emissions levels used in other projects and is agreed to by staff.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Energy Commission staff assesses four kinds of primary and secondary² impacts: construction, operation, closure and decommissioning, and cumulative. Construction impacts result from the onsite and offsite emissions occurring during site preparation and construction of the proposed project. Operational impacts result from the emissions of the proposed project during operation, which includes all of the onsite auxiliary equipment emissions (emergency engine and gasoline tank), the onsite maintenance vehicle emissions, and the offsite employee and material delivery trip emissions. Closure and decommissioning impacts occur from the onsite and offsite emissions that would result from dismantling the facility and restoring the site. Cumulative impacts result from the proposed project's incremental effect, together with other closely related past, present and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355.)

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

CEC staff evaluates potential impacts per Appendix G of the CEQA Guidelines (CCR 2006) as appropriate for the project. A CEQA significant adverse impact is determined if potentially significant CEQA impacts cannot be mitigated appropriately through the adoption of Conditions of Certification. Specifically, Energy Commission staff uses health-based ambient air quality standards (AAQS) established by the ARB and the U.S.EPA as a basis for determining whether a project's emissions would cause a significant adverse impact under CEQA. The standards are set at levels that include a margin of safety and are designed to adequately protect the health of all members of the public, including those most sensitive to adverse air quality impacts such as the aged, people with existing illnesses, children, and infants. Staff evaluates the potential for significant adverse air quality impacts by assessing whether the project's emissions of criteria pollutants and their precursors (NO_x, VOC, PM₁₀ and SO₂) could create a new AAQS exceedance (emission concentrations above the standard), or substantially contributes to an existing AAQS exceedance.

Staff evaluates both direct and cumulative impacts. Staff would find that a project or activity would create a direct adverse impact when it causes an exceedance of an AAQS. Staff would find that a project's effects are cumulatively considerable when the project emissions in conjunction with ambient background, or in conjunction with reasonably foreseeable future projects, substantially contribute to ongoing exceedances of an AAQS. Factors considered in determining whether contributions to ongoing exceedances are substantial include:

1. the duration of the activity causing adverse air quality impacts;

Watson Cogeneration Steam and Electric Reliability Project

Final Staff Assessment



CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown, Jr., Governor

AUGUST 2011
CEC 700-2011-002-FSA

DOCKET NUMBER 09-AFC-1

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ORIGINAL MAILED FROM SACRAMENTO ON 8/31/11

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ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Energy Commission staff assesses four kinds of primary and secondary impacts: construction, operation, closure and decommissioning, and cumulative. Construction impacts result from the onsite and offsite emissions occurring during site preparation and construction of the proposed project. Operational impacts result from the emissions of the proposed project during operation, which includes all applicable new onsite auxiliary equipment emissions, and the offsite employee and material delivery trip emissions. Closure and decommissioning impacts occur from the onsite and offsite emissions that would result from dismantling the facility and restoring the site. Cumulative impacts result from the proposed project's incremental effect, together with other closely related past, present and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355.)

Method and threshold for determining significance

Energy Commission staff evaluates potential impacts per Appendix G of the CEQA Guidelines (CCR 2006) as appropriate for the project. A CEQA significant adverse impact is determined if potentially significant CEQA impacts cannot be mitigated appropriately through the adoption of Conditions of Certification. Specifically, Energy Commission staff uses health-based ambient air quality standards (AAQS) established by the ARB and the U.S.EPA as a basis for determining whether a project's emissions would cause a significant adverse impact under CEQA. The standards are set at levels that include a margin of safety and are designed to adequately protect the health of all members of the public, including those most sensitive to adverse air quality impacts such as the aged, people with existing illnesses, children, and infants. Staff evaluates the potential for significant adverse air quality impacts by assessing whether the project's emissions of criteria pollutants and their precursors (NO_x, VOC, PM₁₀ and SO₂) could create a new AAQS exceedance (emission concentrations above the standard), or substantially contributes to an existing AAQS exceedance.

Staff evaluates both direct and cumulative impacts. Staff would find that a project or activity would create a direct adverse impact when it causes an exceedance of an AAQS. Staff would find that a project's effects are cumulatively considerable when the project emissions in conjunction with ambient background, or in conjunction with reasonably foreseeable future projects, substantially contribute to ongoing exceedances of an AAQS. Factors considered in determining whether contributions to ongoing exceedances are substantial include:

1. the duration of the activity causing adverse air quality impacts;
2. the magnitude of the project emissions, and their contribution to the air basin's emission inventory and future emission budgets established to maintain or attain compliance with AAQS;
3. the location of the project site, i.e., whether it is located in an area with generally good air quality where non-attainment of any ambient air quality standard is primarily or solely due to pollutant transport from other air basins;



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