City of Pasadena
Department of Water and Power

ADDENDUM NO. 3
to

Specifications LD-13-14
for
PROVIDING LABOR AND MATERIALS FOR
GLENARM REPOWERING BALANCE OF PLANT DESIGN AND CONSTRUCTION

This addendum is issued to correct and clarify the above Specifications. All addenda will be issued electronically. This addendum shall be considered in the bid proposal and become a part of any contract made pursuant thereto:

1. Add the Q & A Table Rev 1 as part of the Specifications. See Enclosure 1. The Q&A Table Rev 0 in Enclosure 7 of Addendum 2 is deemed deleted.

2. Replace the Notice inviting Bids page in Addendum 1 with the revised sheet marked “Addendum 3” in Enclosure 2.

3. Replace the Instructions to Bidders in the Specification with the revised sheet marked “Addendum 3” in Enclosure 3.

4. Revise items 6 and 7 on page 2 of Attachment A.1 Section A.2 as follows:

   Final date to submit questions – March 21, 2014.
   Bid opening – April 8, 2014”

5. Replace the Bidder’s Proposal Form in its entirety with the revised sheets marked “Addendum 3” in Enclosure 4.

6. The Maintenance Building and Welding Shop have been deleted from the BOP Scope of Work. All reference and information related to the Maintenance Building and Welding Shop are deemed deleted.

7. Notice that the inlet air heating portion of the combustion turbine chiller system has been deleted. Replace P&IDs M3-3-2, M3-11-1, M3-11-2, M3-13-1, M3-25-1, and M3-25-2 from the Preliminary Drawings in the BOP Scope of Work Attachment A.2.D. See Enclosure 5.

8. Notice that General Electric will contract with BOP Contractor for supply and installation of steam turbine generator platforms and stairs. See Enclosure 6.

9. Delete the following words from Page 6 of the BOP Scope of Work, Attachment A.1 Section A.5, Item 6 Page 6:

   "6. All other subcontractors necessary for the BOP Contractor to perform its scope of work subject to the 50% self-performance requirement."

10. Delete the following words from Page 7 of the BOP Scope of Work, Attachment A.1 Section A.7:

    "3. Mothballing of the Glenarm Building including sealing of roof and wall penetrations and stabilizing doors and windows."

11. Revise the last sentence of the second paragraph on Page 12 of the BOP Scope of Work, Attachment A.1 Section C, to read;

    "Storm water SWPPP will need to be prepared and submitted by the BOP Contractor for approval to the General Manager."

12. Revise the first paragraph of Page 20 of the BOP Scope of Work, Attachment A.1 Section C.6, to read:

    "*Approximately two (2) weeks after the Effective Date of the Agreement, the BOP Contractor shall conduct a project kick-off to include the basis of design, constructability, commissioning, testing, and turnover with the General Manager and the Power Island Contractor. The meeting shall be held at a mutually agreed place. In addition, the BOP Contractor shall attend a meeting with the Building Officials of the City of Pasadena to discuss demolition and construction permitting requirements. The meeting will be at Pasadena as scheduled by the General Manager. "*

13. Delete the following words from the fifth paragraph of on Page 35 of the BOP Scope of Work in Attachment A.1 Section G.2:

    "Additionally, part of this scope is to have the soil tested for dioxins while excavation is being performed."

14. Revise the last sentence in the eighth paragraph on Page 36 of the BOP Scope of Work, Attachment A.1 Section G.2, to read:

    "The transformers contains oil that has <2 ppm PCB."

15. Add the following as the last sentence of the first paragraph on Page 41 of the BOP Scope of Work, Attachment A.1 Section G.3:

    "BOP Contractor shall submit the design of the storm drain to the City of Pasadena Public Works department for review and approval. The work for the storm drain modification shall start only upon obtaining approval of the design."

16. Add the following as the second paragraph of Page 40 of the BOP Scope of Work, Attachment A.1 Section G.2:

    "Refer to the "Statement of Work for Design and Construction of New Concrete Wall to Seal Existing Tunnels at South Wall of Glenarm Power Plant Building January 15, 2014", contained in Addendum #3 Enclosure 7. The BOP Contractor shall prepare detailed design drawings for submission to the Building Department as part of the Building permit. The BOP Contractor shall not commence wall construction without approval of the Building Department."

    Statement of Work for Design and Construction of New Concrete Wall to Seal Existing Tunnels at South Wall of Glenarm Power Plant Building January 15, 2014. See Enclosure 7.

17. Hazard Assessment Survey of Asbestos Containing Areas. See Enclosure 8

18. Replace Plant Fire Prevention & Protection Specification (Section 458956) Revision B of the BOP Scope of Work Attachment A.2.B with Revision C. See Enclosure 9. This revision implements three changes:

    - Revise the fire protection system for the above floor portion of the Power Distribution Center to be smoke detection with pre-action water mist (dry pipe) systems.

    - Revise the fire protection system for the above floor portions of GT-5 Control Room and DCS Server Room in the Control Building to be smoke detection with pre-action water mist (dry type) systems.

    - Deleted Sections 2.5.A.4 and 2.5.A.7 to clarify the responsibilities of the BOP Contractor.

    - Deleted portions related to inert gas systems as there are no longer any inert gas systems within the BOP Contractor's scope of work.

- Delete references to the Maintenance Building and Welding Shop.

20. Add GE Drawing and Equipment Delivery Dates from GE CO #1 draft as agreed upon between GE and PWP. These dates are the same as contained in the responses to Bidder Q&A items #15 and #18. See Enclosure 10.

21. Replace Document List Revision 3 for the BOP Scope of Work Attachment A.2 with Revision 4. See Enclosure 11

22. Replace Reference Documents List Revision 2 for the BOP Scope of Work Attachment A.3 with Revision 3. See Enclosure 12.

23. An example advertisement for local participation efforts. Used with the permission of i+iconENERGY. See Enclosure 13.

Dan Angeles

Date: 1/30/14

Dan Angeles
Principal Engineer
City of Pasadena Water and Power Department

Enclosures:

RECEIPT OF ADDENDUM NO. 3

Specifications LD-13-14

for
PROVIDING LABOR AND MATERIALS FOR
GLENARM REPOWERING BALANCE OF PLANT DESIGN AND CONSTRUCTION
FOR
PASADENA WATER & POWER
PASADENA, CALIFORNIA

This Receipt must be signed and returned with your bid. Failure to include signed acknowledgements of all addenda will cause the bid to be deemed incomplete and nonresponsive.

I hereby acknowledge receipt of Addendum No. 3 for Specifications LD-13-14 for Providing Labor and Materials for Glenarm Repowering Balance of Plant Design and Construction.

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_____
Date

_____
Company Name

_____
Authorized Signature

Enclosure 1

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Last Updated January 29, 2014

Question #	Question	Answer	Status	Responsible Party
1	Drawing E~~3~~6-10 shows a vault identified under note 4 and located at the east end of the Glenarm building. The scope document indicates that this vault is for the 17.2 kV feed form the dispatch center. Given it's location it would appear that it is intended to be inserted in the existing 17.2kV trench on the east of the building as shown on sketch 6-1. Please clarify the intended use and location of this vault.	Location to be determined by the BOP with the intention of feeding through this vault for 17.2Kv feed to the PDC.	CLOSED	
2	The fire marshal (FM) has dictated that the auxiliary lube oil skids/containers be misted/sprinkled. We heard this at the bid meeting on 1/8/14. What does PW&P expect for containment of the oil & water. Depending on the spray volume, this could be a significant quantity and flow of oil & water.	For indoors, the containment would be expected to hold the contents of the largest single container of material, plus 20 minutes of fire flow. For outdoors, the containment would be expected to contain the same, plus the volume of 24 hours of rainfall from a 25 year storm unless it's protected from rainfall. Drainage from the containment area should be sized for the amount of fire flow and rainfall, as applicable.	CLOSED	
3	The scope requires a soil resistivity test after soil removal & recompaction. Presumably this is for grounding design. Is the engineer required to wait to complete a grounding design until after this is complete?	Resistivity values provided can be used to initiate design. Post-backfilling tests should be performed to confirm values.	CLOSED	
4	The containment area fill for future lay down appears to be at a different elevation than the surrounding roads/asphalt. Please confirm elevations to determine if we need to dedicate space in the area for ramping.	The lay down area is approximately 12" higher than the surrounding asphalt. The BOP Contractor will need to plan how to deal with the change in elevation.	CLOSED	
5	Confirm whether a licensed structural engineer is required for the project. i.e. is a licensed civil engineer is acceptable for design of structures for this project.	PWP requires a licensed structural engineer.	CLOSED	
6	Clarify how ADA requirements apply for the site. i.e. what buildings are required to be ADA?	ADA requirements apply to the control ~~and maintenance~~ building~~s~~.	CLOSED	
7	Does the new fence/wall along Fair Oaks need to be built first, or can it be built near the end of the project?	The decision lies with the BOP contractor.	CLOSED	
8	Clarify if a firewall or blast wall is required between gas compressors and control building.	It is a protection wall and yes it is required.	CLOSED	
9	Section 262600 (Power Distribution Center) Section 2.9-B-1 requires a 5' clearance under the PDC and Section 5.5 states 8' clearance; please clarify	Actual clearance is to be 6' to bottom of steel.	CLOSED	
10	Specification LD-13-14, 7.2 states water use cost by contractor and scope of work page 140 states water use cost by City of Pasadena; please clarify.	Point of water connection provided by city; cost of water usage by BOP	CLOSED	

Question #	Question	Answer	Status	Responsible Party
11	Is any epoxy grout required for the GE supplied equipment?	Assume none for bid purposes. Grout specifications (in accordance with project design specifications) grout shall be non-shrinkable, at all ages, when tested in accordance with American Society for Testing and Materials (ASTM) C-827. Effective bearing area shall not be less than 95% in hardened state when tested in accordance with ASTM C-827. If using an epoxy grout for use around turbine and generator skid and anchor bolt, grout must meet requirements of Corps of Engineers CRD C-621 and ASTM C-1107. Peak exotherm of a cylinder of grout material 2 inches in diameter and 4 inches high shall not exceed 95 °F (35 °C), when tested at material and laboratory temperatures of 75 °F (24 °C). Working life of grout shall be 60 minutes minimum at 75 °F (24 °C).	CLOSED	
12	Can testing water be supplied?	Yes at metered cost to the BOP Contractor	CLOSED	
13	Can 70F testing water be supplied for Section 1 hydros?	Assume a package boiler may be required.	CLOSED	
14	Is the onsite resident engineer requirement of scope of work Section C.4.1.2 for a full time requirement?	It is the responsibility of the BOP Contractor to provide engineers as needed.	CLOSED	
15	Attachment 4 of GE document (schedule major component, RTS and delivery dates) based on GE provided NTP of September 27, 2013. Was NTP provided on September 27, 2013?	NTP was provided on September 27. However since that time the delivery dates have been re-negotiated to obtain a better delivery sequence to support expected construction needs as well provide more time for preparation of the site and foundations. These are the current Ready to Ship (RTS) and Guaranteed Delivery (GD) dates as contained in the draft of GE's Change Order #1: Inlet Chiller - RTS 12/17/14 GD 1/28/15 Gas Turbine - RTS 1/23/15 GD 3/2/15 CEMS - RTS 1/30/15 GD 3/13/15 Fuel Gas Compressor -RTS 2/9/15 GD 3/23/15 OTSG - RTS 2/20/15 GD 3/30/15 GSU Transformer - RTS 2/13/15 GD 4/3/15 Steam Turbine - RTS 2/27/15 GD 4/6/15 Auxiliary Boiler - RTS 2/25/15 GD 4/8/15 Auxiliary Boiler Superheater - RTS 2/27/15 GD 4/10/15 Condensate Polisher - RTS 2/27/15 GD 4/10/15 Circulating Water, Condensate, and Feedwater Pumps - RTS 3/4/15 GD 4/15/15 STG Bypass Valve - RTS 3/4/15 GD 4/15/15 Cooling Tower - RTS 3/6/15 GD 4/17/15 Condenser - RTS 3/9/15 GD 4/20/15 Compressed Air Skid - RTS 3/27/15 GD 5/8/15	CLOSED	
16	Section 485312 (circulating water pumps) section 1.2-A-2 states one speed drive motors and Section 1.7-A-8 states two speed motors; please clarify.	The circulating water pump motors are single speed	CLOSED	
17	Section 480031-2 (noise control performance) section 2.2 refers to attachment 6 - performance guarantees and part 3 refers to contract liquidated damages. Can not located liquidated damages in contract.	The BOP contractor does not need the GE Liquidated Damages as they do not apply to the BOP	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Last Updated January 29, 2014

Question #	Question	Answer	Status	Responsible Party
18	When will design information be received for the PIE equipment?	These are the current initial drawing delivery dates for major groups of drawings. A more detailed listing can be made available if needed. Following the initial release by General Electric, there is a 3 week period for the City to review and comment on the drawings. General Electric will then issue final drawings seven to eight weeks thereafter depending on the drawing set. These dates do not include erection manuals, procedures, O&M manuals, etc. ; just the design drawings. Gas Turbine Foundation Drawings - 2/7/14 Gas Turbine Electrical and Balance of Drawings - 3/7/14 OTSG Foundation Drawings - 3/21/14 OTSG Balance of Drawings - 5/9/14 STG Foundation Drawings - 5/2/14 STG Electrical Drawings - 7/25/14 STG Enclosure Drawings - 6/6/14 STG Balance of Drawings - 10/17/14 Condenser Drawings - 5/9/14 Cooling Tower EXCEPT Electrical Drawings - 6/27/14 Cooling Tower Electrical Drawings - 7/25/14 Pump EXCEPT Electrical Drawings - 7/25/14 Pump Electrical Drawings - 8/8/14 Fuel Gas Compressor Foundation Drawings - 4/4/14 Fuel Gas Compressor Balance of Drawings - 5/16/14 Chiller EXCEPT Electrical Drawings - 4/4/14 Chiller Electrical Drawings - 5/2/14 Condensate Polisher Drawings - 6/6/14 GSU Transformer Drawings - 7/25/14	CLOSED	
19	Are there permit requirements tied to construction of the wall along Fair Oaks?	There are permit requirements tied to the construction of the wall, the Planning Department for Design Review and Building Department for structural review.	CLOSED	
20	IST is a mandatory subcontractor that is not local. The welding could be self-performed. How will the IST subcontract be considered towards the local content criteria?	The orbital welding on the IST equipment is proprietary in both equipment and procedure and the BOP Contractor must subcontract with IST. As IST is not local to Pasadena, this subcontract does not count towards the 15% goal.	CLOSED	
21	In the RFP documents, there are two references mentioned for seismic design criteria. One is based on 2013 CA Building Code (CBC), the other is based on ASCE 7-05 which is 2010 CBC. Which version of CBC is to be used for project design?	CBC 2013 is required.	CLOSED	
22	Have you had conversations with the building trades on how they could support the 25% local hire requirements considering their collective bargaining provisions?	Yes and the building trades feel confident that the 25% requirement can be achieved.	CLOSED	
23	GE BOP equipment lists 'preferred suppliers' as opposed to chosen suppliers. Are these suppliers fixed or subject to change?	General Electric should have all of their suppliers defined by mid-February. At this time the OTSG is by IST, the STG by Shin Nippon, the steam turbine enclosure by ATCO, and the fuel gas compressors by Kobelco. As pieces of equipment is finalized by GE, we will notify the bidders by Addendum.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
24	Will a water analysis data sheet be provided for the BOP to design and procure the chemical feed system?	Yes. Refer to condensate polisher spec. A3	CLOSED	
25	Are start up and commissioning chemicals to be provided by BOP as well as initial 'fills'	Yes. See Section 480032.1 Item 1.3.A.8 in Attachment A.1 of the Specifications.	CLOSED	
26	Does the BOP contractor work with GE and/or ATCO (the steam turbine enclosure provider) directly during proposal development for load requirement of piping and cable trays?	The steam turbine enclosure will only be used to support the fire sprinkler piping.	CLOSED	
27	For what equipment will GE supply 3D models? GTG? STG? OTSG?	3D models will not be available during the bidding period. A 3D model of the LM6000 will not be available. A 3D model of IST's Once Through Steam Generator will be available. A 3D model for the STG will be available. The 3D model will be a surface type model showing terminal point connections. A few clarifications: 1) the 3D model is not a contract deliverable and is provided as a matter of convenience for the BOP engineer, 2) the 2D drawings take precedence over the 3D model - the BOP engineer will need to check for dimensional differences between 2D drawings and the 3D model. 3) The 2D drawings (contract deliverables) will accurately reflect changes in equipment that might not be updated in the model. 4) The 3D model will be issued after the 2D drawings are issued and after Shin Nippon receives 3D models from their sub-suppliers. GE does not have contract dates with Shin Nippon for a 3D model and will provide it after these activities are complete. GE will provide other 3D models of their power island equipment if and as they become available.	CLOSED	
28	The BOP contractor is required to contract with the cooling tower manufacturer for field erection; provide cooling tower vendor information.	GE expects to finalize their cooling tower selection by the end of February. This response will be updated once the selection is made.	OPEN	Diane Donovan
29	Please confirm material requirement for feed water & condensate piping, or if carbon steel A106 is suitable	Please refer to P&IDs. Given the need for high purity water for the OTSG, all condensate & BFW piping is stainless steel.	CLOSED	
30	Is hazard assessment surrey reports on all asbestos containing areas available?	Yes, and will be provided in Addendum 3	CLOSED	
31	Is a list of hazardous waste sites available?	No, the Bidder will have to propose and include in the haz waste plan submittal	CLOSED	
32	What permits and inspections are required for historical structures?	Building Permit for the sealing of tunnel openings of the Glenarm Building.	CLOSED	
33	Should fire protection system for control be water mist or FM200?	The control room will have water mist pre-action system.	CLOSED	
34	Please specifically state that the STG fire protection by the BOP Contractor shall be pre-action fire water and deluge if required for STG bearings and lube/hydraulic oil systems. No clean agent gasses are planned.	The STG fire protection requirements are defined in the Specification. No clean agent is required. STG roof preaction, STG bearings preaction with rate of rise detections, and STG lube oil deluge are all required.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
35	Please confirm aircraft warning lights are supplied if required by local codes for the exhaust stack.	No aircraft warning lights are required	CLOSED	
36	Please confirm all IST pressure/temperature instruments are provided and rack mounted and that the BOP Contractor is responsible only for junction boxes, tubing, and wiring.	Refer to M195 in A.3 owner supplied equipment. Items shown with an asterisk are supplied by IST. TEs will be supplied by IST. All other instruments by BOP.	CLOSED	
37	In the RFP documents seismic design values based on CBC 2010 have been provided. During pre-bid meeting, it has been cleared that 2013 version of CBC will be used. Can you provide us with the new seismic design values based on CBC, 2013 version	The seismic design values did not change from 2010 to 2013. However it is up to the Bidder to select the proper values as they will be the responsible engineer for the project. The values provided in the Specification are to be used as general guidance only.	CLOSED	
38	Clarify/confirm/identify what drawings/calculations are required to be submitted to city for review	The project will be reviewed under one building permit. The Building Department will be happy to sit down with the BOP Contractor to discuss plan requirements and submission after award. To operate under one permit, the BOP Contractor will need to submit a Foundation Key Plan for all of the equipment foundation drawings. This will serve as a placeholder for the permit. Once the first equipment foundation is finalized, it will be submitted as a revision to the original permit and the Building Department will then review it. The same process will take place for the succeeding foundation drawings as they are ready for submission. The Building Department will perform the review internally (they do not plan to hire an outside consultant). At a minimum the following will be reviewed: * Soil design, rebar, concrete, bolting, seismic design * Grading and drainage plans * All foundation designs and calculations will be reviewed * All systems containing hazardous materials will be reviewed * The fire protection systems will be reviewed (detection and suppression) * Access for fire and emergency vehicles * The Control Room building will be subject to a complete review * The pre-cast wall along Fair Oaks * The Glenarm Building tunnel seals An NPDES SWPPP for construction is required to be complied with by the BOP Contractor.	CLOSED	
39	Hyrdologue Inc. representative stated during the pre-bid meeting that additional soil samples have been taken for soil contamination determination. Hyrdologue also stated that no critical contamination levels are anticipated for the project site. Will it be possible for us to get the new soil contamination results as they are available?	Initial test results show that the Dioxin levels on-site at 6" and 12" below grade are below the off-site background levels. DTSC's initial review was to accept the City's recommendation that no further action was needed.	CLOSED	
40	Please define all GE loads & utilities after an emergency shutdown as well as duration, voltage phase, etc. Relevant to safe & proper shutdown of GT & STG & other BOP equipment within GE/IST scope of supply.		OPEN	Diane Donovan

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
41	Please define length and diameter of P91/P11/P21 alloy piping materials for interconnecting piping to silencer and/or any other known equipment interconnects to IST/GE equipment		OPEN	Diane Donovan
42	Please confirm if SS liner is required by GE/IS for any de-superheater or bypass piping interconnections or if P91/P11/P21 is required.		OPEN	Diane Donovan
43	Equipment doors on west side open into firewall behind GSU XFMR. What is concept for truck access for equipment removal?	The platforms provided by BOP will need to allow for equipment removal	CLOSED	
44	Are the GE provided panels that are shown on E1-2 shown correctly? TCP Mark VIE panels for CTG and STG often are 6-10 units. Including GPP for 2 units, exciter/AVR for STG, etc., is the allocated space sufficient?	We believe we there is adequate room in the PDC for the referenced panels.	CLOSED	
45	Is battery room required for QEL-CEL battery stacks? If required, is space shown sufficient for 125v battery and 24v battery?	Battery room is basis of bid and is required.	CLOSED	
46	In regards to local business participation obtaining 15% local procurement and subcontracting; do team members count as self-perform?	People performing work that are employees of the BOP Contractor count for self-performed work. Work performed by the any of the BOP Contractor's sub-contractors does not count as self-performed.	CLOSED	
47	In regards to local business participation obtaining 15% local procurement and subcontracting; how do you satisfy 15% requirement at bid time if 7% is material procurement from local Pasadena business?		OPEN	Antonio Watson
48	Will the prime receive credit towards the 15% local business, for transactions generated by our subcontractor?	Yes, the goal is that 15% of the BOP Contractor's subcontracted work be spent with local Pasadena businesses.	CLOSED	
49	Local participation of 15% is required. It is understood this requirement pertains to subcontractor and procuring content combined. In other words if our price for subcontracted work is $10,000,000 and our price for procurement is $10,000,000 the aggregate is $20,000,000 therefore we would need to spend 15% of $20,000,000 ($3,000,000) on local Pasadena subcontractors and/or vendors. Please confirm this is correct	That is correct.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
50	When calculating total subcontractor and procurement dollars are we to include other costs such as sales tax, bonds, markup in the calculation? Example: If procuring dollars are $10,000,000 exclusive of sales taxes and say sales taxes are 9% total procurement cost would be $10,900,000. If subcontractor content is $10,000,000 exclusive of bonds and bond cost are an additional 1% sub-value would then be $10,100,000. In summary, do we shoot for 15% of $20,000,000 or do we shoot for 15% of $10,900,000 plus $10,100,000 which totals $21,000,000?		OPEN	Antonio Watson
51	Does procuring for project apply only to permanent plant materials or could it include items such as small tools and consumables as well?	Small tools, equipment, and consumables count towards the 15%.	CLOSED	
52	Clarify the 15% local requirement. I.E. 15% applies to total subcontracted plus total procurement. Confirm if this includes taxes/fees, etc.	See responses to items 49 and 50.	CLOSED	
53	What is the evaluation criteria for the local preference point system? I.E., advertising is worth 5 points. What determines if the bidder receives full points at 5/5 versus partial points?		OPEN	Antonio Watson
54	GE is supplying the STG enclosure (building). Is GE responsible for building official/building permit requirements? If BOP contractor is responsible, who is responsible if the building official requires changes/additions?	General Electric is responsible for providing the design of the steam turbine enclosure. The BOP Contractor is responsible for working with the City's Building Department. If changes to GE supplied equipment are needed, those will be worked through the City's GT5 Project Team.	CLOSED	
55	On page 12 of scope of work, it is stated that "SWPPP and SUSMP permits will need to be obtained by the BOP contractor". On page 49 of the same document, under section G.11 it is mentioned "… development of SWPPP meeting all state and EPA regulators and supporting PWP in updating their SUSMP permit." Please clarify the scope of this SUSMP (standard urban storm water mitigation plan) on the BOP contractor side.	The BOP Contractor shall only prepare SWPPP. A SUSMP is not required.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
56	What are the options of locations for hazardous material disposal?	The BOP Contractor will have to retain and pay for the services of an environmental consultant to prepare , submit, and obtain fire department approval of hazardous waste work plan as well as manage the remediation, waste characterization, waste profiling, transportation, & disposal of hazardous waste in accordance with local, state, and federal environmental regulation. Depending on how it's sub-contracted out, this could be one work plan for everything or several separate ones. The BOP Contractor shall submit work plans for the following: - Lead/asbestos abatement on structures - Electrical transformer removal (assuming they are not just being sent as hazardous waste) - Cleaning and removal of fuel oil piping (assuming they are not just being sent as hazardous waste) - Soil remediation The work plans will need to demonstrate that the proposed contractor is suitably qualified and licensed for the work, document the procedures used to remove and manage the hazardous materials from generation through disposal, and propose cleanup levels and sampling criteria based upon current regulatory standards. Pasadena Fire Department review of submittals and reports, as well as required inspections, The current billing rate for reviews is $202/hr for the time required. Lead and asbestos work are also likely regulated by CalOSHA and/or AQMD and may require additional submittals and/or permits for those agencies.	CLOSED	
57	What are the technical specs for flowable fill; if used?	This is the responsibility of the BOP Contractor since they are performing the construction. Flowable fill mixtures are usually specified to meet either a compressive strength or unit weight requirement. The compressive strength is typically measured by testing a 4 x 8 inch cylindrical test specimen in compression. The National Ready Mixed Concrete Association defines an "excavatable" flowable fill mixture as one with a compressive strength not exceeding 150 pounds per square inch. We do not have a formal technical spec for flowable fill. Standard criteria are: * Unit weight: 20#/CF to 145#/CF * Compressive Strength: 150psi max (any more than this will not allow for future ease of excavation) A typical mix uses approx. 100# cement, 250-300# fly ash, and the rest clean sand, water and selected admixtures…on a per cubic yard basis.	CLOSED	
58	On page 34 of scope of work there is a statement, "organics removed from the site will most likely be reduced this soil, if cleared organic material, can be used for fill on site per the geotech report." For proposal preparation, should we assume 1.3000cy is accurate and price accordingly?	You should base your bid upon the quantities provided.	CLOSED	
59	What are the safety training requirements for workers at the site? (how many hours?)	No specific requirements but it will be dicussed on the pre-construction meeting. BOP Contractor is responsible for the haz mat training required under local, state, & federal environmental regulations.	CLOSED	
60	Are drawings of maintenance shop available?	The Maintenance Building has been removed from the scope of the project.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
61	Are extended hours allowed for monolithic pours on the center-line foundation?	You should assume that the monolithic pours must be completed within the standard allowed work hours.	CLOSED	
62	Are there any extended time curing requirements?	Per ACI mass concrete requirements	CLOSED	
63	Will plant operations be allowed on Sunday?	Operations: yes Construction: no	CLOSED	
64	Will any historic building inspections be required?	Building Department on sealing of tunnel openings.	CLOSED	
65	Will we utilize the plant's EPA processes for hazardous material?	Yes	CLOSED	
66	Will there be any CBO involvement?	There will not be a CBO in the sense of a California Energy Commission jurisdictional project. However the Pasadena Building Department does expect to review the project design as well as field inspections.	CLOSED	
67	Does the 15% requirement apply to the aggregate of subcontracting and procurement?	See responses to items 49 and 50.	CLOSED	
68	If we use a company that the city of Pasadena uses, but is not located within the city of Pasadena, does it count towards the 15%?	No	CLOSED	
69	Is the list of Pasadena firms classified by business type?	No, business type is not the criteria, location within the City of Pasadena is the critical criterion.	CLOSED	
70	Are there extraction points for the gear box?	There is a removable panel on the GTG per the GE presentation. The STG gear box should be accessible through the roof.	CLOSED	
71	Is the generator rotor located out of the back?	The generator rotor for both the STG and the GTG will be to the west. Removable panels will be provided by GE for both.	CLOSED	
72	Does the steam turbine include a removable roof?	Sections of the roof are removable.	CLOSED	
73	Will GE define the requirements for the chemical feed systems?	They are included in the issued specifications	CLOSED	
74	Will GE be treating the boiler feed pumps for acoustics?	Yes, If necessary to meet their noise guarantee.	CLOSED	
75	Will the slides from GE's presentation be included in the addendum?	They are being distributed as part of Addendum #2.	CLOSED	
76	Is GE's equipment data current?	Yes	CLOSED	
77	Are the GE preferred vendors confirmed or yet to be determined?	See response to item 23.	CLOSED	
78	When will the bidders know GE's final equipment selections?	See response to item 23.	CLOSED	
79	It was noted that the steam turbine included shims, but are they also included with the gas turbine?	Shear lugs only for gas turbine	CLOSED	
80	Are the generator protective panels included with all devices?	Yes; the BOP is to have them installed in the PDC furnished by the BOP Contractor.	CLOSED	
81	Are the power requirements after shutdown defined?	See response to Item 40.	CLOSED	
82	Is the steam turbine grout or epoxy?	See response to Item 11.	CLOSED	
83	Are the erection plates designed for seismic activity?	Yes	CLOSED	
84	Will the erection plates be bolted and welded?	Yes	CLOSED	
85	Do the modules come prime or painted?	They will be delivered in a primed condition. It is the BOP contractor's responsibility to do touch ups	CLOSED	
86	Is there a recommended traffic-rated cover to protect pipes onsite?	It is the BOP Contractor's responsibility to provide adequate protection.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
87	Are the soil resistivity levels defined?	See response to Item 3.	CLOSED	
88	Are there any requirements for soil remediation in the lay-down yard following use?	The BOP Contractor must restore the laydown area to its as found condition	CLOSED	
89	Are there any architectural details for the 10' protection wall?	There are no architectural requirements.	CLOSED	
90	Is the PDC considered a habitable structure with ADA requirements?	No, there are no ADA requirements for the PDC.	CLOSED	
91	Can additional site visits be requested?	Yes, if scheduled in advance with at least one week's notice.	CLOSED	
92	Which version of the building code will be used on the project?	See response to Item 21.	CLOSED	
93	Are there any requirements to have external condensate storage during drain down of IST's equipment?	The plant design includes a 5,000 gal. Condensate Storage Tank	CLOSED	
94	Are gas blows allowed on the project?	No, natural gas blows are not allowed.	CLOSED	
95	Will the erection procedures for the LM6000 and OTSG be included in the bid package?	Yes, to the extent shown at the pre-bid meeting.	CLOSED	
96	Will the sign-in sheet be made available?	They are being distributed as part of Addendum #2.	CLOSED	
97	Does the CEMS package include the umbilical?	Yes	CLOSED	
98	Will the project primarily be using Donaldson filter houses?	Yes	CLOSED	
99	Does the existing 6’ x 4’ storm drain culvert lie within an easement? If so, please provide the recorded easement document with legal description and any encroachment restrictions.	No	CLOSED	
100	Since the boilers and burners in the Glenarm Building are not being removed and there is no “seismic retrofitting” of the Glenarm Building, are “demolition” & “protection” plans and a “Historic American Building Survey (HABS) Level III recordation” required prior to any demolition within the Glenarm Building (see Mitigation Monitoring and Reporting Program (MMRP) Mitigation Measures CULT-1, -2 & -3), or for any other existing structure? And is an “interpretive architectural exhibit” required per MMRP Mitigation Measure CULT-2?	There is no demolition within the confines of the Glenarm Building. Therefore a plan is not required.	CLOSED	

Question #	Question	Answer	Status	Responsible Party
101	Has PWP submitted "comprehensive pre-demolition asbestos" and "lead-based paint" surveys "for all existing buildings located on the project site" and a "soils management plan" for "excavation and grading activities on the project site" to the City of Pasadena Fire Department per MMRP Mitigation Measures HAZ-1, -2 & -5? If so, please provide the surveys and plan. If not, please let us know when they will be submitted and their expected approval.	The GT5 Repower EIR Mitigation Measure indicated that an asbestos/lead survey and soil management plan shall be submitted to Pasadena Fire prior to demo. The Mitigation Measure and reporting Program (MMRP) from the EIR is in the BOP Contractor Specification. As the City will not be occupying the Glenarm Building as part of this project, the asbestos and lead abatement will be limited to the structures that will be removed on the south side of the building (i.e., smoke stack, air compressor building, restroom, and piping in the tunnels outside the building that will be removed). There will be organic & lead contaminated dirt remediation. There are electrical transformers that contain < 2 ppm PCB based on PWP's latest sampling and analysis and there are old fuel oil lines in the tunnels that will be removed. The BOP Contractor could handle this as one work plan for everything or several separate ones. They'll need work plans for the following: - Lead/asbestos abatement on structures - Electrical transformer removal (assuming they are not just being sent as hazardous waste) - Cleaning and removal of fuel oil piping (assuming they are not just being sent as hazardous waste) - Soil remediation The work plans will need to demonstrate that the proposed contractor(s) is suitably qualified and licensed for the work, document the procedures used to remove and manage the hazardous materials from generation through disposal, and propose cleanup levels and sampling criteria based upon current regulatory standards. Pasadena Fire will charge $202/hour for review of submittals and reports, as well as required inspections. This rate is subject to escalation each fiscal year. Lead and asbestos work may also require additional submittals and/or permits from CalOSHA and/or AQMD.	CLOSED	
102	Can we design flexible & rigid pavement sections per the Soils Engineering Investigation's R-value tests of "60 and 67" (page 22) instead of per the paving thickness designs "outlined in section 9.0 Paving of the Soils Investigation Report" based on "an assumed R value of 35" (section 9.2, page 43)	The BOP Contractor will be responsible for the pavement design and layer thickness for surface and base courses. The BOP Contractor may use either CALTRANS or AASHTO methods of flexible and rigid pavement design and will need to select the input values for either method based on information provided in the geotechnical investigation and the Contractors design experience and expertise. The road layer thickness provided in Section 9.2 are based on an R value of 35 as noted and provides expected layer thickness based on that value. The actual R values from lab results for two boreholes are 60 and 67, respectively as noted. The BOP Contractor may use these or other R values based on experience.	CLOSED	
103	Is the reinforced concrete paving covering the "operating areas" to be designed for "heavy truck drives" (2nd to last paragraph in SOW, page 46)?	The intent is to have all concrete H-20 rated, with thickened areas for crane loading on the west side of the GTG and then also south of the cooling tower.	CLOSED	
104	Please clarify the conflicting statements in the 3rd paragraph of SOW, page 49, regarding spill containment areas: "The containments shall be provided with sumps to pump out rain water or contaminated water." and "All spill containment areas shall be set to gravity drain to grade . . ."	Sump pumps are needed to pump out rain water or contaminated water if the containment is located below grade and will not have the proper slope towards the oily water separator.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
105	Is the existing on-site AC roadway running N. – S. between East State St. and the new plant proper to be removed and replaced, or can it be left in place to connect with the proposed new roadways on its west and north ends?	The existing AC paving can be left in place. However, the BOP Contractor is responsible to bring it back to its pre-construction condition before final acceptance of the City of the project.	CLOSED	
106	What volume of "residual fuel oil" in the "asbestos insulated fuel oil piping" and "asbestos containing materials (ACM)" needs to be removed, remediated, and properly disposed (SOW sections A.7.1.i., page 6, and G.2, page 39)?	BOP Contractor shall include in his bid the price for the removal of oil in the fuel oil piping and assume that pipe is full of fuel oil and shall include in his bid the price for removal of all insulation based on the assumption that the insulation is ACM. BOP Contractor is responsible for determining the quantity of the material to be removed.	CLOSED	
107	Per SOW, paragraph 2, pages 5 & 6, of Addendum No. 1, can Hyrdologue serve as both the "geotechnical firm . . . present for all excavation and backfill activities on site" and the "third party geotechnical firm . . . required to be on site for all inspections, testing and reporting including compaction, soil testing, etc.?	Yes, the City does not have any restrictions insofar as the Bidder using Hydrologue as a 3rd party geotechnical firm. It is solely the Bidder's determination as to what firm to use for this role.	CLOSED	
108	Please confirm that the contractor-provided "unit rates" for the "Quantities of soil to be excavated and recompacted, organic materials and lead contaminated soils to be removed from the site and concrete volumes to be demolished" will be used as both an extra to "account for additional material to be handled/removed" and as a "credit for materials not handled and removed" (SOW, section G.1, 3rd paragraph).	Yes, the unit rates that were requested are to be used to adjust up or down the BOP Contractor's cost based on actual volumes.	CLOSED	
109	Where is the Ground Penetrating Radar report in the RFP bid documents? If missing, please provide.	The GPR report is in the document 3626-03 Geophysical Investigation found in A.3.C/Reference & Preliminary Design Scoping/ Geotech Report and GPR / Geotech	CLOSED	
110	Does the 10 minute start requirement apply to the BOP Contractor?	Yes, the plant must meet a 10 minute start. The plant control system, plant design, and any equipment supplied by the BOP Contractor must work with the GE supplied equipment to achieve the 10 minute start. Addedum 4 will contain additional definition.	CLOSED	
111	Can the payment of the Contract Price be by Milestone Payments according to mutually agreed milestones and percentages of the Contract Price (Appendix D 4.1)	Appendix D 4.1 contains the successful Bidder's Not to Exceed price to perform the project. Section 9.0 of Specification describes how payments will be handled. In order to submit a responsive bid, the Bidder must accept Section 9.0 in its entirety.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
112	Typical contract would permit change orders for change in laws; unknown and unexpected underground conditions (obstructions, hazardous materials, artifacts); delays or costs caused by owner or owners other contractors; suspension by the City; grid connection not available by the schedule date; delays in customs not attributable to Contractor; Failure in the acquisition of licenses, permits and approvals due to governmental authority delays and or Statute rules, regulations issued by any governmental authority (in addition to force majeure and changes in scope). Will the BOP Contract include such? (Appendix D 4.2)	This is addressed in Sections 11 and 13 of the Specification.	CLOSED	
113	Contractor interprets this clause to mean that intellectual property of Contractor and Equipment suppliers shall remain their intellectual property. City will own the documents and have the right to use the documents with respect to the operation, maintenance and repair of the Plant. Please confirm. (Appendix D 6.3)	All work product prepared by the BOP Contractor that is a required deliverable under the contract becomes the property of the City of Pasadena.	CLOSED	
114	Contractor requests clarification that this clause does not prevent Contractor's ability to assign payment receivables to a financial entity. (Appendix D 6.7)		OPEN	Larry Hammond
115	Can you add clarity that in the case of termination other than due to Contractor's default, City shall pay Contractor any and all payments due owing to Contractor on or prior to the date of termination, any prorated payments amount based on the services performed as per contractual requirements and timely performed prior to the service of the notice of termination, refund Contractor the Surety Bond/s and pay all reasonable, actual and direct costs including without limitation the cost of cancellation of subcontracts. (Appendix D 7.15)	This is addressed in Section 3.7 of the Specification.	CLOSED	
116	Contractor interprets that the period time to cure the material breach are 10 Business Days and request that the City confirm this interpretation (Appendix D 7.16)	Section 7.16 of the Contract speaks for itself. If a party sends a notice of default and termination, "the Contract shall terminate unless such default is cured before the effective date of termination stated in such notice, which date shall be no sooner than ten (10) days after the date of the notice."	CLOSED	
117	Typically there would be a clause excluding incidental and consequential damages. Please confirm whether such will be included. (Appendix D)		OPEN	Dan Angeles

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Last Updated January 29, 2014

Question #	Question	Answer	Status	Responsible Party
118	Typically there would be a clause limiting the Contractors liability. (Appendix D)		OPEN	Dan Angeles
119	What is the length of time for the material and workmanship warranty? (Appendix D)	The BOP Contractor will warrant materials and workmanship for a period of 12 months or the vendors warranty, whichever is longer, following the Acceptance of Work by the City per Part II (City Standard Spec), Section 10 (Completion of Work and Acceptance) of the Specifications.	CLOSED	
120	We note that City Council approval is required if change orders cause Contractors total compensation to exceed a certain amount. Approximately how much above the contract price is this expected to be? (Appendix D)	Section 4.2 of Appendix D will contain an amount that is greater than the Bidder's price as bid to perform the work which is contained in Section 4.1 of Appendix D. The standard change order for City contract is 10% of the contract amount. The City Manager has the authority to approve change orders up to this 10% amount. Change orders that are more than 10% of contract amount will need City Council approval.	CLOSED	
121	Please provide confirmation/clarification that "specialty" contractors (e.g.: insulation, painting, etc…) do not need to be identified in the bid	In accordance with Section 3.4 of the Specification, subcontractors that represent more than one-half of one percent (0.5%) of the Bidders bid price must be identified on Attachment 1 to the Specification.	CLOSED	
122	PLA agreement: Attachment E is blank. It is the document that is designed to list the unions signatory to this agreement. Please provide this list. (Appendix D)	The Project Labor Agreement is located in Appendix I (the letter "I") of the Specification.	CLOSED	
123	We are requesting a 3 week bid extension to April 8, 2014.	The bid due date is extended to April 8. The last day to submit questions is extended by the same amount to March 21.	CLOSED	
124	Please advise on the project tax exempt status for materials and equipment incorporated into the project.	There is no special tax exempt status for materials for this project.	CLOSED	
125	With the Maintenance Building removed from the scope of the project, per Pre-Bid Meeting Question 60, Rev. 0, is the Welding Shop also removed?	Yes	CLOSED	
126	Can the area around the Maintenance Building still be used for “parking and proposed laydown/staging area”?	Yes	CLOSED	
127	Is it acceptable to distribute material in the bid specification to third parties for the purposes of obtaining bids from suppliers and vendors.	Yes, however GE proprietary material may not be distributed beyond the Bidder.	CLOSED	
128	Attachment A.1 Scope of Work states in item 6 at the top of page 6 "…subject to the 50% self-performance requirement." Is there still a 50% self-performance requirement?	No, there is not a 50% self-performance requirement.	CLOSED	
129	Please clarify the meaning of items 53010 and 53020 in the Division of Responsibility.	53010 - The PIE Contractor is responsible for delivering their equipment to the site. Any equipment that the PIE Contractor ships to the site via rail, will be delivered to the site by the PIE Contractor. The BOP Contractor assumes care, custody, and control of the PIE Contractor equipment when they off-load it from the PIE Contractor's truck/transporter. The BOP Contractor is responsible for the PIE from the time they off-load it from the truck/transporter until placement onto the foundation. 53020 - The BOP Contractor is responsible for movement from the rail siding to the site for equipment that the BOP Contractor procures and ships by rail.	CLOSED	

Question #	Question	Answer	Status	Responsible Party
130	Part ID of the "Bidder's Proposal" in Specifications LD-13-14 appears to have some typos. Shouldn't the referenced attachments refer to section "G" vs. "F" of the Scope of Work, Attachment A.1? In addition, please confirm that Part ID only covers the bid items described in the "Demolition Requirements" portion of Attachment A.1.G. (i.e. – demolition of existing improvements), while Part IE covers the bid items described in the "Civil Requirements" portion of Attachment A.1.G. (i.e. – construction of new improvements)?	Yes, in Specification LD-13-14, Section D of the Bidder's Proposal Form should have referred to Attachment A.1.G instead of A.1.F. Yes, Part ID of the Bidder's Proposal Form only covers the bid items described in the "Demolition Requirements" portion of Attachment A.1.G. (i.e. – demolition of existing improvements), while Part IE of the Bidder's Proposal Form covers the new GT5 construction items described in the "Civil Requirements" portion of Attachment A.1.G.	CLOSED	
131	In Part ID of the "Bidder's Proposal" in Specifications LD-13-14, what is "Attachment A.1X"?	Attachment A.1.X is a placeholder for the Glenarm Building Mothballing Requirements which are being issued via Addendum. The Glenarm Building requirements are included within Addendum 3.	CLOSED	
132	In Part ID of the "Bidder's Proposal" in Specifications LD-13-14, shouldn't the unit process for Item Nos. D.2 – D.6 be in "CY" vs. "Ton" to maintain consistent units?	Yes, we will change these to cubic yards to maintain consistency.	CLOSED	
133	In Part ID of the "Bidder's Proposal" in Specifications LD-13-14, shouldn't there also be separate items with unit prices for the provided allowances for "Remove old house concrete foundations, bricks & asphalt near new tanks (100 CY)", and "Removal and recompaction of 2' – 3' of fill soil below AC roadways (3,380 CY)"?	Yes, they will be provided in Addendum #4	OPEN	Dick Fine
134	Can the cooling tower be moved to the south by 5-10 feet?	There is no latitue to move the cooling tower.	CLOSED	
135	What are the STG auxiliary heat loads?	The steam turbine auxiliary equipment cooling loads from GE/Shin Nippon are as follows: Lube oil cooler = 300 kW Generator cooler = 450 kW	CLOSED	
136	Section 2.3.A.18 of the Shop Fabricated Tanks specification (Section 485173) indicates "All longitudinal and girth welds shall be 100% x-rayed." Can applicable requirements of API 650 and/or ASME be used instead?	The BOP Contractor should use the applicable code requirement for girth weld inspection.	CLOSED	
137	Will the design engineer be responsible for determining the Design Pressure and Design Temperature for the systems or are we to use what is listed in the Service Index?	Yes, the BOP contractor's engineer is responsible for determining design temperature and pressure.	CLOSED	
138	Are different pipe materials allowed to be substituted if deemed acceptable by the design engineer and if they will provide equivalent or superior long-term performance?	Use the pipe materials listed for the BOP Contractor's bid. Alternative materials may be considered after award of contract.	CLOSED	

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Question #	Question	Answer	Status	Responsible Party
139	Are Electrical Load lists for the following PIE supplied equipment available? We need these to adequately size and price the 480 V MCCs located in the PDC. · Chiller Electrical Load List · Shin Nippon STG Electrical Load List · IST OTSG Electrical Load List	We can provide estimates of the electrical loads, but the final power requirements are not available from the Power Island Equipment Contractor as yet. Here are estimates based on POWER Engineer's preliminary design and compared against GE's proposal: GT fuel compressor 1,095 kW GT electric chiller 370 kW GT chiller/heater water pump 330 kW HRSG feedpump 145 kW Cooling water pump 170 kW Cooling tower fans 180 kW Lights 10 kW Aux. from PEACE running motor/load list 485 kW Miscellaneous gas turbine auxiliaries 105 kW Miscellaneous steam cycle auxiliaries 35 kW Miscellaneous plant auxiliaries 40 kW Transformer losses 355 kW	CLOSED	
140	Is there an MCC located in the PIE supplied Chiller Package or are the Chiller 480 V loads being fed from the PIE MCC? A chiller MCC is not called out in the PDC layout plan.	The Chiller package is to be fed from the PIE MCC with two (2) 4160V feeds and two (2) 480 Feeds.	CLOSED	
141	Bid Form - Can the City of Pasadena provide the bid form in native Excel format?		OPEN	Dan Angeles
142	Addendum #2 - Page #37 of Part 1 shows an elevation of the condensor. Can you please provide more complete information - plans, loads etc.	This is the best information we have from General Electric at this time. General Electric expects to finalize the condenser vendor selection at the end of Fenruary.	CLOSED	
143	Addendum #2 - Page #38 shows information for the foundation of the STG. Please provide the drawing that is referenced on this sheet: 5065A0-C23. There is also a conflict in the top of concrete elevation shown on this sheet with the top of concrete shown on Page 1700 of Attachment #3. Please clarify what the top of concrete elevation is for the STG.	This is the best information we have from General Electric at this time. The elevation of the steam turbine has not been set as yet.	CLOSED	
144	Attachemnt #2 - BOI 037-5056 - Architectural Scope of Work Page 13 - Part 7: This calls for required activities in the Existing Glenarm Building and makes reference to details on drawing XXXXXX. Please provide this drawing so that we can comply with the required scope of work.		OPEN	Gregg Harwood
145	Bid Form - Item #27 - Air Compressor & Receiver - What is the size of the enclosure for this equipment?		OPEN	Gregg Harwood

City of Pasadena - Glenarm GT5
Pre-Bid Meeting Questions
Revision 1

Last Updated January 29, 2014

Question #	Question	Answer	Status	Responsible Party
146	Appendix G - In the "Local Subcontractor Solicitation Process for Contractors bidding on the Project:" section, it states in the second paragraph that "Forms shall be provided to the contractors to assist them in documenting the following steps." Please provide these forms.		OPEN	Antonio Watson
147	During the 1/8/14 project site visit, we overheard a PWP rep. state that the two existing on-site power poles, located on the west and south sides of the site, and their overhead utility lines would be removed by the City. Please confirm.	The overhead power line to the southwest of the Glenaerm Building will be modified as follows: 1) the end pole to the southwest of the Glenarm Building will be removed 2) the next pole to the south, closer to the Pacific Electric building will remain. At that pole PWP will provide a 480V service drop. From there it is the BOP Contractor's responsibility recieve and distribute the temporary construction power on-site.	CLOSED	
148	Due to the unknown hydraulic characteristics of the 6’ x 4’ storm drain box culvert, are backflow prevention valves required on any storm drain line connection to the 6’ x 4’ storm drain box culvert to prevent potential flooding of the site should the culvert become surcharged?		OPEN	Gregg Harwood
149	We assume that PWP wants the BOP Contractor to preserve and adjust as needed the existing catch basin at the west end of the 6’ x 4’ storm drain box culvert, while the two existing manholes (identified as “4’ & 5’ Dia. Lid Unknown” on Topo Survey), which lie in the middle of the plant proper, are to be removed. Please confirm.		OPEN	Gregg Harwood
150	We assume that the existing south plant entrance gate off State St. is to be removed and the bare ground around the PWP-removed backflow preventer is to be paved to match the existing roadway pavement elevations. Please confirm.		OPEN	Gregg Harwood
151	Please provide missing GE Packaged Power, Inc.’s Work Order No. 20001, “Area 1 Civil Plan Paving/Grading & U.G. Sewer”, Dwg. No. 20001-C-002-02 (“Issued for Construction 1/24/03”), on the Pasadena Powerplant Upgrade Project. The four associated Dwg. Nos. 20001-C-002-01 & -03 thru -05 were provided as part of A.3, but Dwg. No. 20001-C-002-02 is missing.		OPEN	Gregg Harwood
152	What is the extent of the existing gate and fence removal/replacement at the SE corner of the Glenarm Building where “New Asphalt Pavement” is shown on Dwg. No. C3-1?		OPEN	Gregg Harwood

Enclosure 2

City of Pasadena

NOTICE INVITING BIDS

SPECIFICATIONS LD-13-14
PROVIDING LABOR AND MATERIALS
FOR
GLENARM REPOWERING BALANCE OF PLANT DESIGN AND CONSTRUCTION

Three (3) copies of sealed bids will be received prior to **April 8, 2014 at 11:00 AM,** by the City Clerk, 100 North Garfield, S228, Pasadena, CA 91109, and will be opened at that time and place.

The bids shall be clearly titled:

"Glenarm Repowering Balance of Plant Design and Construction"

A mandatory pre-bid conference will be held at which each bidder will have the opportunity to clarify and ask questions regarding the Specifications. The pre-bid will be held on **January 8, 2013, at 8:00AM** at the Glenarm Power Plant, 85 East State, Pasadena, CA 91105.

Bid security in the amount of five percent (5 %) of the total bid price in the form of a certified or cashier's check, money order, or surety bond must accompany the proposal.

Refer to the Specifications for complete details and bid requirements. The Specifications and this Notice shall be considered a part of any contract made pursuant thereunder.

DATED: January 30, 2014

MICHAEL BECK
City Manager

Enclosure 3

CITY OF PASADENA

Instructions to Bidders
and
Specifications LD-13-14

PROVIDING LABOR AND MATERIALS

FOR

GLENARM REPOWERING BALANCE OF PLANT DESIGN AND CONSTRUCTION

City personnel with whom prospective bidders will deal with are:

Art Silva, Power Production Superintendent, Power Supply Business Unit, 85 E. State Street, Pasadena, CA 91105, (626) 744-4568.

Antonio Watson, Project Manager, Purchasing Division, 100 N. Garfield Avenue, Room 328, Pasadena, CA 91101, (626) 744-8382.

Bid opening time is on **April 8, 2014 at 11:00AM.**

Bids will be received and opened at the Office of the City Clerk, 100 North Garfield Avenue, Room S228, Pasadena, CA 91101.

The bid must be received by the City Clerk prior to the time set for bid opening. A bid received by the City Clerk after the time set for the bid opening shall not be considered.

Enclosure 4

ADDENDUM 3

SPECIFICATIONS LD-13-14

BIDDER'S PROPOSAL

FOR
PROVIDING LABOR AND MATERIALS

FOR

GLENARM REPOWERING BALANCE OF PLANT DESIGN AND CONSTRUCTION

To the Honorable City Council
of the City of Pasadena, California

Gentlemen:

In response to the Notice Inviting Bids for the Glenarm Repowering Balance of Plant Design and Construction for the City of Pasadena, Water and Power Department, the undersigned hereby proposes and agrees to provide all necessary and incidental labor, supervision, transportation, materials, construction equipment, tools, engineering, testing, sampling, and analysis , to satisfactorily complete the Work in strict conformity with the Specifications all approved Addenda for the firm prices hereinafter indicated.

PART I - ITEMIZED COST PROPOSAL					
	Bid Item	**Quantity**	**Description**	**Unit Price**	**Total Amount**
A	**GENERAL CONDITIONS**				
	A.1	LS	Insurances, Bonds, Mobilization, Offices, Overheads	Lump Sum	$_____
	A.2	LS	Building Permits	Lump Sum	$_____
	A.3		Part IA SUBTOTAL		$_____
B	**ENGINEERING**				
	B.1	LS	Detailed Engineering, Studies and Submittals	Lump Sum	$_____
	B.2		Part IB SUBTOTAL		$_____

ADDENDUM 3

C	**EQUIPMENT SUPPLY**				
	C.1	LS	Furnish Plant Control System software, programming, cabinets and all necessary hardware per Attachment A.2 PCS/Control System Specification (037-4780).	Lump Sum	$_____
	C.2	LS	Furnish, Power Distribution Center, including switchgear, breakers and all other associated equipment per Attachment A.2 Section 262600 Power Distribution (PDC)	Lump Sum	$_____
	C.3	LS	Furnish auxiliary transformers per Attachment A.2 Section 261200-2 (Medium Voltage Auxiliary Transformers)	Lump Sum	$_____
	C.4	LS	Balance of Engineered Equipment	Lump Sum	$_____
	C.5		Part IC SUBTOTAL		$_____

ADDENDUM 3

D	**DEMOLITION, REMEDIATION, EARTHWORK, PAVING**				
	D.1	LS	Exclusive of D.2 through D.8 which are provided separately below: Demolition of Existing Above Grade Site Infrastructure; Storm Drain Relocation, including demolition and haul-off of existing storm drain culvert; Stockpiling, Backfilling, Dirt Importation, Topo & Site Survey; Site fences and gates; Site Preparation, Grading & Drainage, Roads & Paving, Sidewalks & Landscaping; State Street Improvements; Erosion & Sediment Controls; Sanitary Sewer Connections; & Making of all Facility Interfaces per BOP Scope of Work in Attachment A.1 Section G of the Specifications as well as all applicable and approved Addenda.	Lump Sum	$_____
	D.2	700 CY (Cubic Yards)	Concrete demolition for tunnels, stack foundations, train tracks, gantry crane per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the transportation and disposal of 700 CY, and a $/CY for adjustments up and down from 700 CY.	$____/CY	$_____

ADDENDUM 3

D	**DEMOLITION, REMEDIATION, EARTHWORK, PAVING**				
	D.3	2,500 CY	Import fill to fill tunnel voids per the BOP Scope of Work in Attachment A.1 Section G.2 and any approve Addenda. Provide lump sum price for the transportation and disposal of 2,500 CY and a $/CY for adjustments up and down from 2,500 CY.	$____/CY	$_____
	D.4	1,300 CY	Organics removed from site per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the transportation and disposal of 1,300 CY and a $/CY for adjustments up and down from 1,300 CY.	$____/CY	$_____
	D.5	13,000 CY	Over-excavate and re-compact soils, but not removed from site per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the 13,000 CY and a $/CY for adjustments up and down from 13,000 CY.	$____/CY	$_____
	D.6	25 CY	Lead contaminated soil, removed from site and disposed per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the 25 CY and a $/CY for adjustments up and down from 25 CY.	$____/CY	$_____

ADDENDUM 3

D	**DEMOLITION, REMEDIATION, EARTHWORK, PAVING**				
	D.7	100 CY	Remove old house concrete foundations, bricks, and asphalt near new tanks from the project site and dispose of them per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the 100 CY and a $/CY for adjustments up and down from 100 CY.	$____/CY	$_____
	D.8	3,000 CY	Remove and recompaction of 2' – 3' of fill soil below AC roadways per the BOP Scope of Work in Attachment A.1 Section G.2 and any approved Addenda. Provide lump sum price for the 3,000 CY and a $/CY for adjustments up and down from 3,000 CY.	$____/CY	$_____
	D.9		Part ID SUBTOTAL		$_____

E	**GT5 CONSTRUCTION EXCLUSIVE OF DEMOLITION CONTAINED IN PART D**				
	E.1	LS	Civil Construction as described in Attachments A.1, A.2, and A.3 of the Specifications and any approved Addenda.	Lump Sum	$_____
	E.2	LS	Structural Construction as described in Attachments A.1, A.2, and A.3 of the Specifications and any approved addenda	Lump Sum	$_____

ADDENDUM 3

E	GT5 CONSTRUCTION EXCLUSIVE OF DEMOLITION CONTAINED IN PART D				
	E.3	LS	Mechanical Construction as described in Attachments A.1, A.2, and A.3 of the Specifications and any approved Addenda.	Lump Sum	$_____
	E.4	LS	Electrical Construction as described in Attachments A.1, A.2, and A.3 of the Specifications and any approved Addenda.	Lump Sum	$_____
	E.5	LS	I&C Construction as described in Attachments A.1, A.2, and A.3 of the Specifications and any approved Addenda.	Lump Sum	$_____
	E.6	LS	Furnish all materials and labor for the erection of the new Water Lab per the BOP Scope of Work in Attachment A.1 Section F, Attachment A.2 Architectural Scope of Work, and any approved Addenda	Lump Sum	$_____
	E.7	LS	34.5kV work between GSU and on-site 34.5kV vault per the BOP Scope of Work in Attachment A.1 Section J and any approved Addenda.	Lump Sum	$_____
	E.8	LS	17kV work between Aux Transformer Bank and on-site 17kV vault per the BOP Scope of Work in Attachment A.1 Section J and any approved Addenda.	Lump Sum	$_____
	E.9		Part IE SUBTOTAL		$_____

ADDENDUM 3

F	**STARTUP, COMMISSIONING AND TRAINING**				
	F.1	LS	Startup and Commissioning per the BOP Scope of Work Attachment A.1 Section P and any approved Addenda.	Lump Sum	$_____
	F.2	LS	Allowance for craft support for power island contractor based on two pipe fitters and two electricians for a period of 3 months working a 6-10 schedule. Time will be billed on a T&M basis.	Lump Sum	$_____
	F.3	LS	Training, and O&M Manual Assembly per the BOP Scope of Work in Attachment A.1 Section Q and any approved Addenda.	Lump Sum	$_____
	F.4	LS	Operating procedures development	Lump Sum	$_____
	F.5		Part IF SUB TOTAL		$_____

G	**CONTROL ROOM**				
	G.1	LS	Furnish all materials and labor for the erection of the new Operations and Control Building per the BOP Scope of Work in Attachment A.1 Section F and Attachment A.2, Architectural Scope of Work and any approved Addenda	Lump Sum	$_____

ADDENDUM 3

H	OTHER CONSTRUCTION REQUIREMENTS				
	H.1	LS	Provide all materials and labor for Spare Parts, tools, & Storage requirements of Section M, as well as the construction requirements in Section N of the BOP Scope of Work in Attachment A.1 and any approved Addenda.	Lump Sum	$_____

PART II - GRAND TOTAL PRICING		
Grand Total = A.3 + B.2 + C.5 + D.9 + E.9 + F.5 + G.1 + H.1	Lump Sum	$_____

Each bidder must bid on all of the above items. If any bidder makes any alteration, interlineation or deviation in any of the printed matter of the proposal or if the signature of the bidder is incomplete, the bid will be considered informal and may be rejected.

Refer to section 3.2 in case of a discrepancy between the Item Prices and the Total Price.

The prices quoted herein include all applicable federal, state, local, and other taxes.

The undersigned bidder agrees to commence work on the start date indicated in the Notice to Proceed and proposes and agrees to have the Work completed by the date specified in Section 8.1.

The undersigned bidder acknowledges receipt of the following addenda issued for the above project. If no addenda have been received, write "none". FAILURE TO ACKNOWLEDGE RECEIPT OF ANY ADDENDA ISSUED WILL RENDER THE CONTRACTOR'S BID NON-RESPONSIVE.

List of Addenda Received:

Addendum No.	Bidder's Initials
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

The bidder declares that neither he nor any member of his firm or corporation is an officer or an employee of the City of Pasadena.

ADDENDUM 3

California State Contractor's License Number _____

The undersigned certifies that he is an official legally authorized to bind their firm and to enter into a contract should the City accept this proposal.

Bid proposal by

_____
(Name of Firm)

Legal status of bidder: (Please check the appropriate box)

A. Corporation ____ State of Incorporation _____

B. Partnership ____ List Names _____
_____
_____

C. DBA ____ State Full Name _____ DBA
_____
_____

D. Other ____ Explain _____
_____
_____

Signature of Bidder _____ Title _____
(Authorized Signature)

Print Name _____

Address _____ City _____ Zip _____

Telephone No. _____

Signed this _____ day of _____ 2014

Enclosure 5

Deletion of the Inlet Air Heating Portion of the Combustion Turbine Chiller Package

The inlet air heating portion of the LM6000 chiller package has been deleted.

All of the elements that perform mechanical chilling of the LM6000 inlet air have been retained.

The heat exchanger which received and condensed main steam to heat the chiller fluid has been deleted.

The plate and frame heat exchanger which used cooling water to cool the chiller fluid when switching from inlet air heating to inlet air chilling has been deleted.

An electric heater has been added to heat the chiller fluid for anti-icing protection.

The following drawings contained in Attachment A.2.D "Preliminary Drawings" are affected:

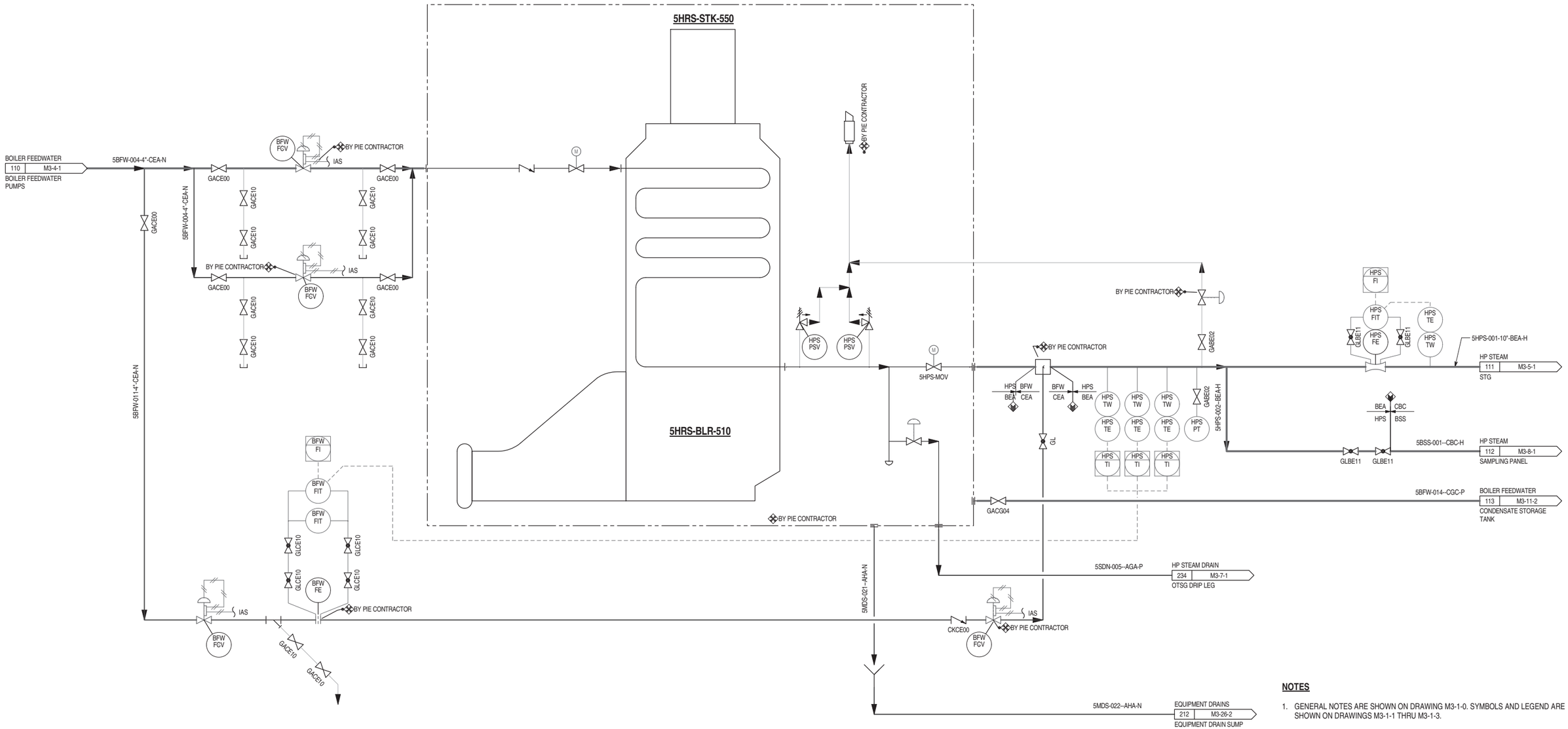
- Drawing Number M3-3-2 Rev. H
  Piping and Instrumentation Diagram OTSG Interconnections (Steam)
- Drawing Number M3-11-1 Rev. H
  Piping and Instrumentation Diagram Condensate System
- Drawing Number M3-11-2 Rev. H
  Piping and Instrumentation Diagram Condensate System
- Drawing Number M3-13-1 Rev. H
  Piping and Instrumentation Diagram Circulating Water System
- Drawing Number M3-25-1 Rev. G
  Piping and Instrumentation Diagram Chilled Water System
- Drawing Number M3-25-2 Rev. G
  Piping and Instrumentation Diagram Chilled Water System

5HRS-BLR-510
OTSG

Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: Spec: 485413

5HRS-STK-550
STACK

Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: Spec: 485413



NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "5XXX" UNLESS OTHERWISE NOTED.

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE						
INIT						

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
H	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
G	ISSUED FOR REVIEW	12/06/13	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	10/15/13	AJG	ADD	SEG	TRC
D	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/13/12
DRN	VBD	09/13/12
CKD	SEG	09/13/12
SCALE:	NONE	

CITY OF PASADENA INCORPORATED JUNE 1886

POWER ENGINEERS

PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
OTSG INTERCONNECTIONS (STEAM)

JOB NUMBER 123374
REV H
DRAWING NUMBER **M3-3-2**

5CDS-CND-510
CONDENSER
Opr Cap:
Opr Press:
Opr Temp: 110.00 F
Proc Cap:
Drv Rtg:
Spec: 485432

5CDS-PMP-520A
CONDENSATE PUMP A
Opr Cap: 350.0 gallon/min
Opr TDH Press: 281.51 psi
Opr Temp: 97.00 F
Proc Cap:
Drv Rtg:
Spec: 485311.10

5CDS-PMP-520B
CONDENSATE PUMP B
Opr Cap: 350.0 gallon/min
Opr TDH Press: 281.51 psi
Opr Temp: 97.00 F
Proc Cap:
Drv Rtg:
Spec: 485311.10

CONDENSATE
146 | M3-11-2
CONDENSATE MAKE-UP PUMPS
5CDS-037--AHA-N
GAAE11
IAS
BY PIE CONTRACTOR
CDS ZI
CDS LCV
GLAE11
CDS PI
GLCE10
5CDS-018--CGC-N
GACE10
CDS FCV
CONDENSATE
M3-11-3 | 125
GLAND STEAM CONDENSER

GLAND STEAM CONDENSATE
132 | M3-12-1
GLAND STEAM CONDENSER
5CDS-027--CGC-P
GACG04
NOTE 3
5CDS-CND-510
BY PIE CONTRACTOR

DEMINERALIZED WATER
147 | M3-23-1
DEMINERALIZED WATER SUPPLY
5DWS-031-2"-CHB-N
GACE12
GACG04

BOILER FEEDWATER
115 | M3-4-1
BOILER FEEDWATER PUMPS MIN RECIRC
5BFW-006--CGC-N

CDS LIC
CDS LIT
GLAE11

AUXILIARY STEAM
197 | M3-27-1
AUXILIARY BOILER
5AXS-003--BEA-H
GABE02

GLAND STEAM DUMP
119 | M3-10-1
GLAND STEAM HEADER
BY PIE CONTRACTOR

GACH02
GACH02
5CDS-002-6"-CHE-N
5CDS-001-6"-CHE-N

CWS TI
CWS TE
CWS TW
CWS PI
GLAE10
BFEH40
5CWS-003-30"-AHD-N
CIRCULATING WATER
148 | M3-13-1
COOLING TOWER

CWS PDIT
CWS PDI
CWS TI
CWS TE
CWS TW
CWS PI
GLAE10
BFEH40
5CWS-001-30"-AHD-N
CIRCULATING WATER
M3-13-1 | 149
COOLING TOWER

CDS FIC
CDS PI
GLCE10

CDS FIT
CDS FIT
CDS FE
GLCE10
CDS TI
CDS TE
CDS TW
CDS PI
CDS PI
CDS PIT
CDS PIT
GLCE10

IAS
CDS LGV
5CDS-012--CGC-N
CONDENSATE
150 | M3-11-2
CONDENSATE STORAGE TANK
5CDS-013--CGC-N
CONDENSATE
151 | M3-11-2
ATTEMPERATION SPRAY
5CDS-003-6"-CGC-N
CONDENSATE
152 | M3-11-2
GLAND STEAM CONDENSER

CDS YC
M
5CDS-006--CGC-N
SET@
CDS PCV
GACE10
CDS PI
CDS PIT
GLCE10
5CDS-008--CHE-N
CKCG00
GACG04
CDS PDI
CDS PDIT
GLCE10
GACE10
DR
5CDS-PMP-520A
BY PIE CONTRACTOR

5CDS-004-6"-CGC-N

CDS YC
M
5CDS-005--CGC-N
SET@
CDS PCV
GACE10
CDS PI
CDS PIT
GLCE10
5CDS-009--CHE-N
CKCG00
GACG04
CDS PDI
CDS PDIT
GLCE10
GACE10
DR
5CDS-PMP-520B
BY PIE CONTRACTOR

NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "SXXX" UNLESS OTHERWISE NOTED.
3. REFER TO GE DRAWING M106 SHEET 1 & 2 FOR ADDITIONAL HOTWELL AND WATER BOX LEVEL INDICATING INSTRUMENTATION.

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE						
INIT						

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
H	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
G	ISSUED FOR REVIEW	12/06/13	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	10/15/13	VBD	ADD	SEG	TRC
D	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/17/12
DRN	VBD	09/17/12
CKD	SEG	09/17/12
SCALE:	NONE	

CITY OF PASADENA INCORPORATED JUNE 1886

POWER ENGINEERS

PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
CONDENSATE SYSTEM

JOB NUMBER 123374
REV H
DRAWING NUMBER M3-11-1

5CDS-TNK-010
CONDENSATE STORAGE TANK
Opr Cap:
Opr Press:
Opr Temp: 117.00 F
Proc Cap:
Vol Cap: 5000.0 gallon
Spec: 485173

5CDS-PMP-020A
CONDENSATE MAKE-UP PUMP A
Opr Cap: 22.0 gallon/min
Opr TDH Press: 40.00 psi
Opr Temp: 97.00 F
Proc Cap:
Drv Rtg:
Spec: 485311.11

5CDS-PMP-020B
CONDENSATE MAKE-UP PUMP B
Opr Cap: 22.0 gallon/min
Opr TDH Press: 40.00 psi
Opr Temp: 97.00 F
Proc Cap:
Drv Rtg:
Spec: 485311.11

CONDENSATE 151 M3-11-1 CONDENSATE PUMPS
5CDS-013--CGC-N
GACG04
CKCG00
GACE10
DR
CDS TI
CDS TW
CDS PDI
CDS PDIT
GACG04
GACG04
GACE10
DR
GACG04
GACG04
GACE10
DR
5CDS-013-CGC-N
GACE10
GACE10
GACE10
5CDS-020--CGC-N
CONDENSATE 145 M3-10-1 GLAND STEAM SYSTEM
5CDS-031--CGC-N
CONDENSATE 130 M3-6-1 STG EXHAUST HOOD SPRAY
5CDS-013--CGC-N
CONDENSATE 122 M3-5-1 BYPASS ATTEMPERATOR

CONDENSATE 152 M3-11-1 CONDENSATE PUMPS
5CDS-003-6"-CGC-N
GACE10
GACE10
CDS PDIT
CDS PDIC
CDS ZI
CDS YC
IAS
GACG04
GACG04
CDS PCV
BY PIE CONTRACTOR
GLCE10
CDS PDI
CDS PDIT
GACE10
GACE10
GACG04
GACG04
GACE10
DR
GLCE10
CKCG00
GACG04
5CDS-003-6"-CGC-N
CONDENSATE 154 M3-11-3 CONDENSATE POLISHER

DEMINERALIZED WATER 153 M3-23-1 DEMINERALIZED WATER SUPPLY
5DWS-032--CHB-N
GACE12
CKCE12
CHB
CGC
DWS
CDS
5CDS-003--CGC-N
5DWS-033--CHB-N
HEPA FILTER
CDS PSV XXX
SET@
CKCE12
GACE12
5CDS-301--AHA-N
CDS LI
5CDS-TNK-010
GAAE11
CKAE11
5CDS-040--AHA-N
GAAE11
CKAE11
5CDS-039--AHA-N
EMERGENCY SUPPLY
GAAH01
GAAE11
GAAE11
5CDS-035--AHA-N
GAAE11
CDS PDI
CDS PI
GLAE11
GLAE11
GLAE11
M
CDS YC
5CDS-PMP-020A
CDS PI
GLAE11
CKAE11
GAAE11
CDS FI
CDS PIC
CDS FIT
CDS PIT
CDS PI
CDS TI
CDS TW
GLAE11
GLAE11
GLAE11
GLAE11
GLAE11
CDS FE
5CDS-037--AHA-N
CONDENSATE 146 M3-11-1 CONDENSER
IAS
5CDS-041--AHA-N
CONDENSATE 195 M3-27-1 AUXILIARY BOILER
CDS FCV
BOILER FEEDWATER 113 M3-3-2 OTSG DRAIN
5BFW-014--CGC-P
GACE10
CONDENSATE 150 M3-11-1 CONDENSATE PUMPS
5CDS-012--CGC-N
GACE10
5CDS-301--AHA-N
GAAH01
TO GRADE
GAAE11
GLAE11
CDS LIT
CDS LI
5CDS-036--AHA-N
GAAE11
CDS PDI
CDS PI
GLAE11
GLAE11
GLAE11
M
CDS YC
5CDS-PMP-020B
CDS PI
GLAE11
CKAE11
GAAE11
5CDS-038--AHA-N

NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "5XXX" UNLESS OTHERWISE NOTED.
3. ALL CONDENSATE TANK CONNECTIONS SHALL BE SUPPLIED WITH ISOLATION VALVES.

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE						
INIT						

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
H	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
G	ISSUED FOR REVIEW	12/06/13	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	10/15/13	VBD	ADD	SEG	TRC
D	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/17/12
DRN	VBD	09/17/12
CKD	SEG	09/17/12
SCALE:	NONE	

CITY OF PASADENA INCORPORATED JUNE 1886

POWER ENGINEERS

PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
CONDENSATE SYSTEM

JOB NUMBER 123374
REV H
DRAWING NUMBER **M3-11-2**

5CWS-CTW-510
COOLING TOWER
Opr Cap: 15789.0 gallon/min Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: 97.00 F Spec: 485491

5CWS-FAN-520A
COOLING TOWER FAN A
Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: Spec: 485491

5CWS-FAN-520B
COOLING TOWER FAN B
Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: Spec: 485491

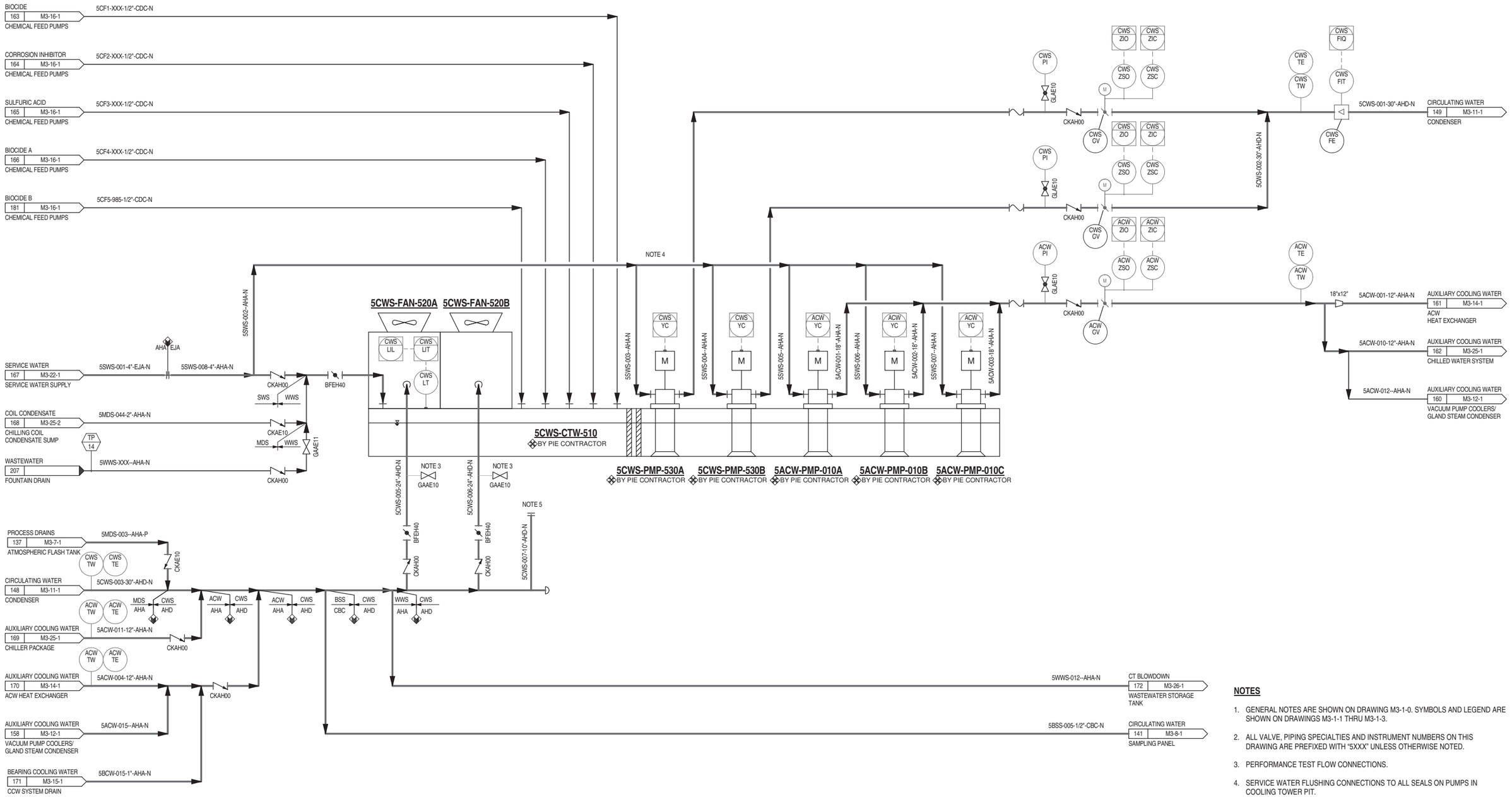
5CWS-PMP-530A
CIRCULATING WATER PUMP A
Opr Cap: 10100.0 gallon/min Proc Cap:
Opr Press: 35.3 psi-g Drv Rtg:
Opr Temp: Spec: 485312

5CWS-PMP-530B
CIRCULATING WATER PUMP B
Opr Cap: 10100.0 gallon/min Proc Cap:
Opr Press: 35.3 psi-g Drv Rtg:
Opr Temp: Spec: 485312

5ACW-PMP-010A
AUX COOLING WATER PUMP A
Opr Cap: 2700.0 gallon/min Proc Cap:
Opr Press: 35.3 psi-g Drv Rtg:
Opr Temp: Spec: 485312.10

5ACW-PMP-010B
AUX COOLING WATER PUMP B
Opr Cap: 2700.0 gallon/min Proc Cap:
Opr Press: 35.3 psi-g Drv Rtg:
Opr Temp: Spec: 485312.10

5ACW-PMP-010C
AUX COOLING WATER PUMP C
Opr Cap: 2700.0 gallon/min Proc Cap:
Opr Press: 35.3 psi-g Drv Rtg:
Opr Temp: Spec: 485312.10



NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "5XXX" UNLESS OTHERWISE NOTED.
3. PERFORMANCE TEST FLOW CONNECTIONS.
4. SERVICE WATER FLUSHING CONNECTIONS TO ALL SEALS ON PUMPS IN COOLING TOWER PIT.
5. FLANGE AT GRADE FOR ACCESS.

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE						
INIT						

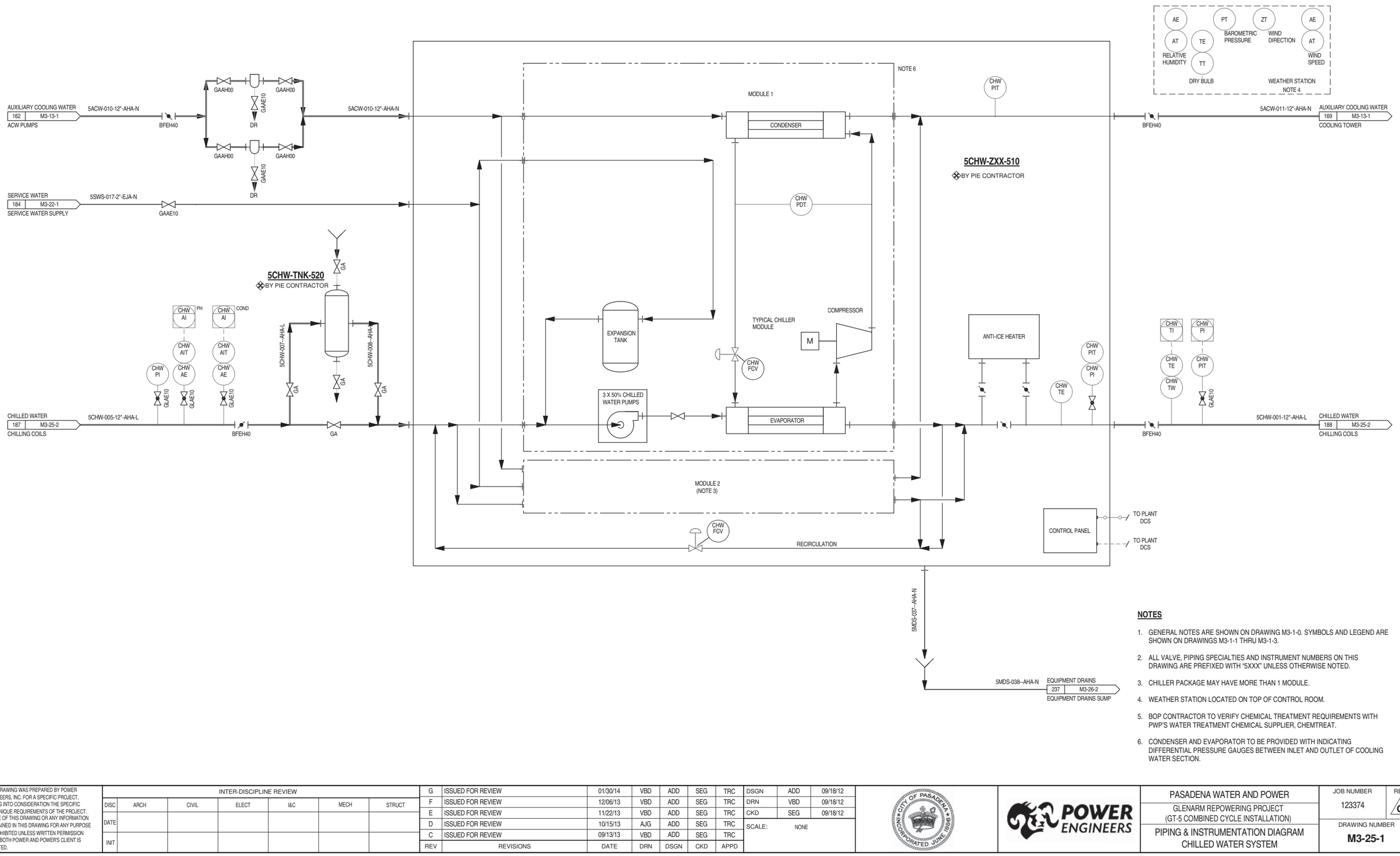
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
H	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
G	ISSUED FOR REVIEW	12/06/13	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	10/15/13	VBD	ADD	SEG	TRC
D	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/18/12
DRN	VBD	09/18/12
CKD	SEG	09/18/12
SCALE:	NONE	

POWER ENGINEERS

PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
CIRCULATING WATER SYSTEM

JOB NUMBER 123374
REV H
DRAWING NUMBER **M3-13-1**



NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "5XXX" UNLESS OTHERWISE NOTED.
3. CHILLER PACKAGE MAY HAVE MORE THAN 1 MODULE.
4. WEATHER STATION LOCATED ON TOP OF CONTROL ROOM.
5. BOP CONTRACTOR TO VERIFY CHEMICAL TREATMENT REQUIREMENTS WITH PWP'S WATER TREATMENT CHEMICAL SUPPLIER, CHEMTREAT.
6. CONDENSER AND EVAPORATOR TO BE PROVIDED WITH INDICATING DIFFERENTIAL PRESSURE GAUGES BETWEEN INLET AND OUTLET OF COOLING WATER SECTION.

INTER-DISCIPLINE REVIEW

	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DISC						
DATE						
INIT						

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
G	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	12/06/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
D	ISSUED FOR REVIEW	10/15/13	AJG	ADD	SEG	TRC
C	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/18/12
DRN	VBD	09/18/12
CKD	SEG	09/18/12

SCALE: NONE

CITY OF PASADENA INCORPORATED JUNE 1886

POWER ENGINEERS

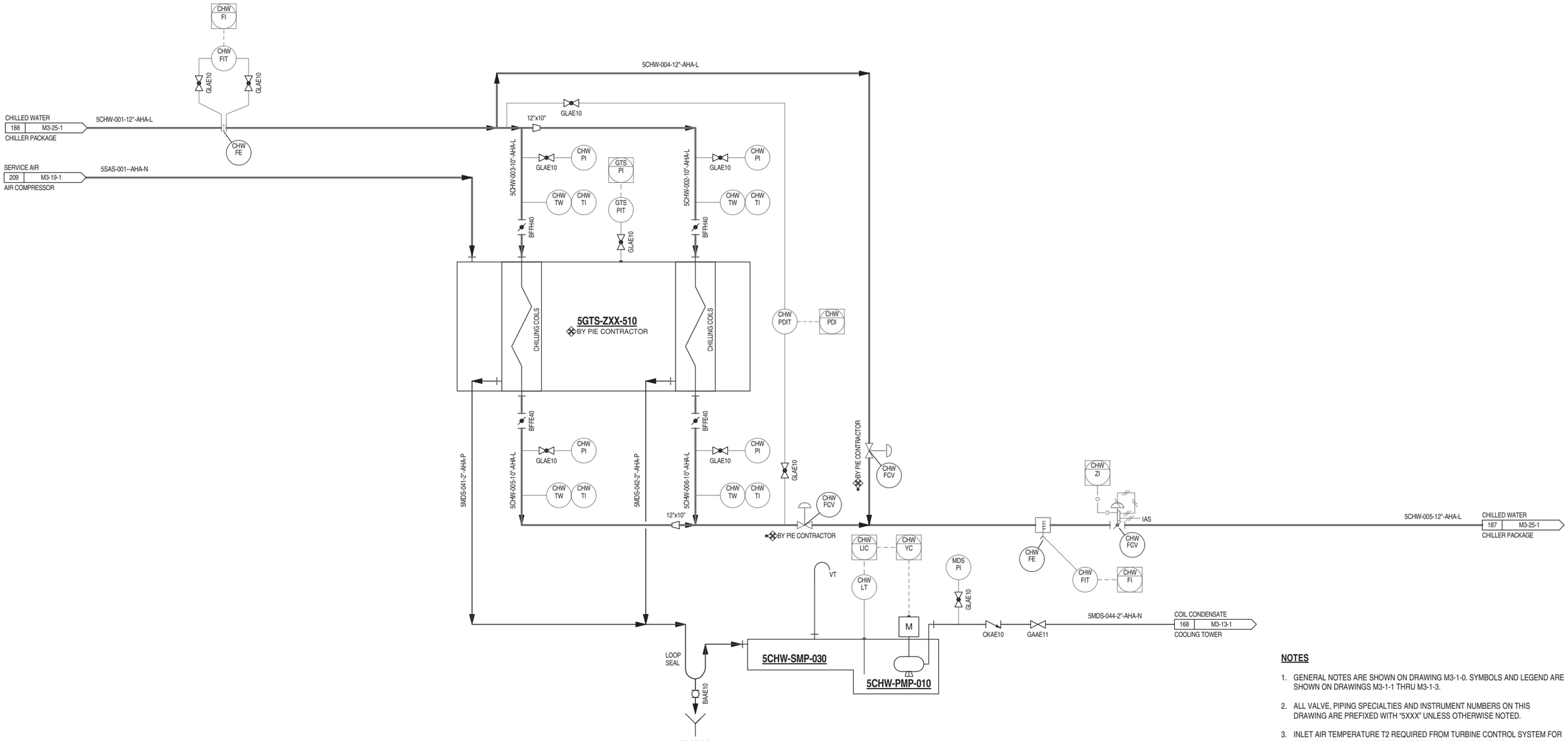
PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
CHILLED WATER SYSTEM

JOB NUMBER 123374
REV G
DRAWING NUMBER M3-25-1

5GTS-ZXX-510
GAS TURBINE GENERATOR
Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: Spec: 485222

5CHW-PMP-010
COIL CONDENSATE SUMP PUMP
Opr Cap: 20.0 gallon/min Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: 97.00 F Spec: 485951.63

5CHW-SMP-030
COIL CONDENSATE SUMP
Opr Cap: Proc Cap:
Opr Press: Drv Rtg:
Opr Temp: 97.00 F Spec: 485951.63



NOTES

1. GENERAL NOTES ARE SHOWN ON DRAWING M3-1-0. SYMBOLS AND LEGEND ARE SHOWN ON DRAWINGS M3-1-1 THRU M3-1-3.
2. ALL VALVE, PIPING SPECIALTIES AND INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED WITH "5XXX" UNLESS OTHERWISE NOTED.
3. INLET AIR TEMPERATURE T2 REQUIRED FROM TURBINE CONTROL SYSTEM FOR FLOW CONTROL LOOP. OTHERWISE TEMPERATURE ELEMENTS IN TURBINE INLET REQUIRED.

INTER-DISCIPLINE REVIEW

	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DISC						
DATE						
INIT						

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
G	ISSUED FOR REVIEW	01/30/14	VBD	ADD	SEG	TRC
F	ISSUED FOR REVIEW	11/22/13	VBD	ADD	SEG	TRC
E	ISSUED FOR REVIEW	10/15/13	AJG	ADD	SEG	TRC
D	ISSUED FOR REVIEW	09/13/13	VBD	ADD	SEG	TRC
C	ISSUED FOR REVIEW	07/16/13	VBD	ADD	SEG	TRC

DSGN	ADD	09/18/12
DRN	VBD	09/18/12
CKD	SEG	09/18/12
SCALE:	NONE	

PASADENA WATER AND POWER
GLENARM REPOWERING PROJECT
(GT-5 COMBINED CYCLE INSTALLATION)
PIPING & INSTRUMENTATION DIAGRAM
CHILLED WATER SYSTEM

JOB NUMBER 123374
REV G
DRAWING NUMBER **M3-25-2**

Enclosure 6

Steam Turbine Generator Platforms and Stairs

Included within the scope of General Electric's scope of supply as the Power Island Equipment Contractor was the supply of platforms and stairs for the steam turbine generator. General Electric will contract directly with the BOP Contractor to supply and install these platforms and stairs.

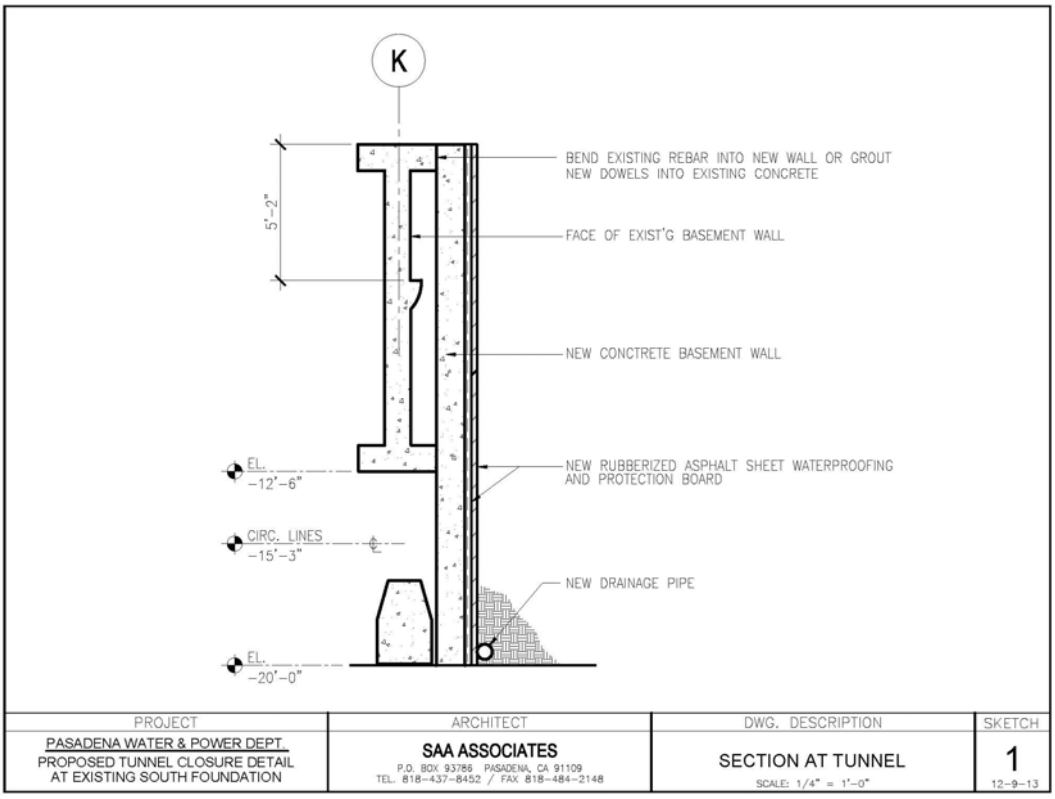
Enclosure 7

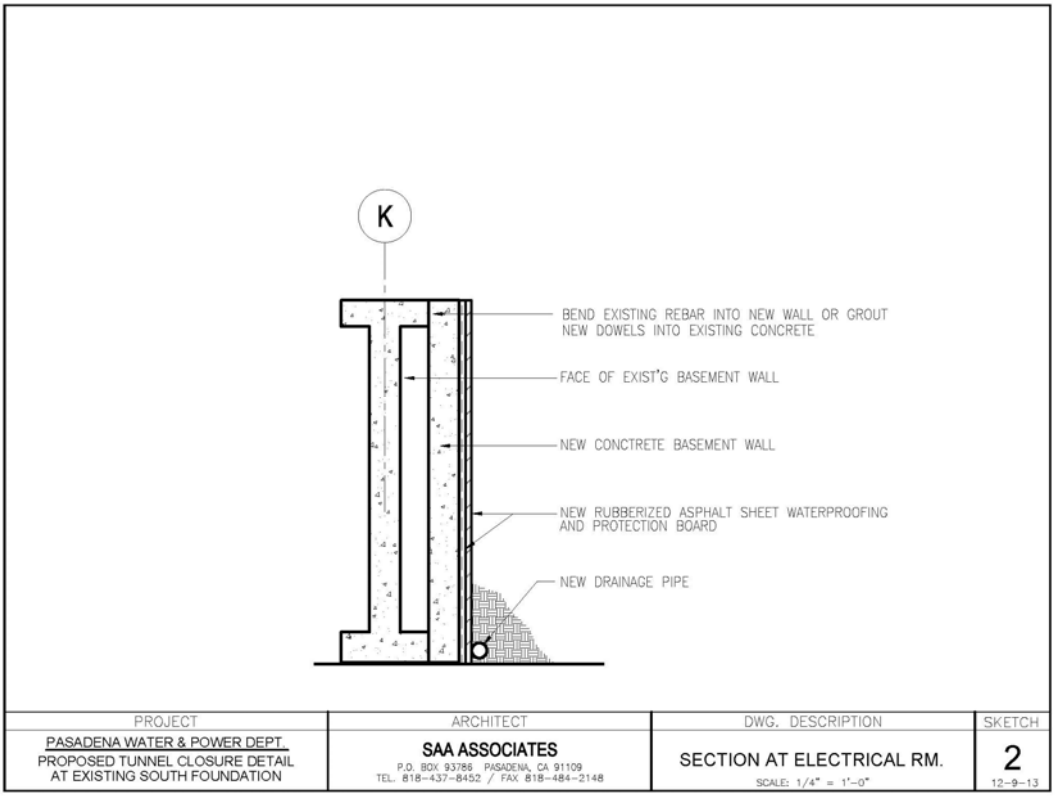
STATEMENT OF WORK (SOW)
FOR
DESIGN AND CONSTRUCTION OF NEW CONCRETE WALL TO SEAL EXISTING TUNNELS AT SOUTH WALL OF
GLENARM POWER PLANT BUILDING
JANUARY 15, 2014

The contractor shall plan, design, prepare technical specifications and construct new concrete waterproofed walls to seal existing tunnels based on the SOW noted below and use Drawing No: 8-2-1337 for reference regarding approximate location of new concrete wall. Planning, design and implementation of this scope of work shall be coordinated with BOP ENGINEERING PROCUREMENT AND CONSTRUCTION (SOW) FOR GLENARM REPOWERING PROJECT, GT-5 COMBINED CYCLE INSTALLATION SECTIONS F AND G.

1. Remove walls and floor slab within six feet of the south face of the basement walls of the Glenarm building at existing tunnel openings. (This is to facilitate construction of new walls and waterproofing of the face of the wall and to allow subsurface water to drain at the base of the basement walls. See Drawing No: 8-2-1337 for approximate location of new concrete wall.
2. Construct a new concrete wall that will vary in height from 12 feet to 20 feet and the thickness from 12 inches to 20 inches. See SK1 and SK2 for profile detail. When the existing concrete construction is demolished, there will be rebars that can be bent into the new wall. If this is not enough, new dowels can be grouted into the existing concrete. The new walls ideally can sit on existing foundations and bear against the existing beams at the top of the wall. If the wall falls outside existing footings, then a new "L" shaped footing will be needed 2 to 4 feet wide.
3. Waterproof wall exterior surfaces.
4. Backfill and compact soil per geotechnical engineer's recommendation.
5. Provide as-built survey of existing south wall foundation.
6. Punch holes in existing concrete floor to top of soil to facilitate drainage.
7. Field verify all dimensions, including height and prepare as built condition drawing of the openings to be sealed for the City's review and approval.
8. New concrete wall shall terminate at least two feet (2'-0") past tunnel openings to be sealed at each end. This condition shall define the maximum length of the new concrete wall.
9. Develop design and construction drawings for review and approval by the City prior to the commencement of construction work.
10. Develop a schedule for this scope of work and identify critical preceding and subsequent activities that will have schedule and or cost impact for review by the City.

11. Coordinate, determine and obtain all required agency approvals including, but, not limited to permits, inspections and associated payment of fees.
12. Provide shoring design/construction required to facilitate the implementation of the new wall.
13. Provide a unit cost for each type of wall.
14. Provide confirmation whether the Prime Contractor will self perform this scope of work. If not, please submit subcontractor questionnaire identifying which entity will perform this work
15. Submit a component cost for the design and construction of this scope of work.





Prepared by:

SAA Associates

January 15, 2014

EXISTING TRANS. PAD.

48'-6"

32'-0"

16'-6"

13'-6"

30'

#2/0 WIRE 7 STR. SOFT

#2/0 WIRE 7 STR. SOFT

1#1 V

FOR ENCLOSURE DETAILS SEE DRAWING 8-2-1336.

3400 VOLT SWITCHGEAR

CORE THRU WALL.

SWITCHBOARD NO. 1. 400 AMP LOW VOLTAGE SWITCHBOARD WITH 400 AMP MAIN.

SUB #1

3" LIGHTING SEC. TO PANEL NO. 1.

3" G.S.C. PRI. TO NO. 8 VAULT.

STUB 3" G.S.C. F.U.T. 240 V. POWER.

NO. 8 GEN. 480 VOLT VAULT.

NEW WATER PROOFED CONCERTE WALL LOCATION AT TUNNEL OPENING

NEW WATER PROOFED CONCRETE WALL LOCATION AT TUNNEL OPENING

SWITCHBOARD NO. 2. 400 AMP LOW VOLTAGE SWITCHBOARD WITH 400 AMP MAIN.

SUB #2

3" LIGHTING SEC. TO PANEL NO. 2.

N

Scale 0 8 16

1" = 673

DISTRIBUTION	NO	DATE	REVISIONS	BY	CHKD	APVD	NO	DATE	REVISIONS	BY	CHKD	APVD	REFERENCE DRAWINGS	FILE NO
ENGINEERING FILE	1													
SUPV. ELEC. COUSTIE	3													

DRFTSMN	A. CARIFFE	7-23-58
CHECKED	J.K. GEDDES	1-2-58
CHECKED		
CIVIL		
ELECT.		
MECH.		DATE

MUNICIPAL LIGHT AND POWER DEPT.
CITY OF PASADENA

APPROVED _____ ENGR. DATE _____

APPROVED _____ GEN. MGR. DATE _____

GLENARM STEAM PLANT ELECTRICAL LAYOUT STATION SERVICE PLOT-PLAN

AUTH. NUMBER
ENG. W.O.
PRINT FILE
SCALE SHOWN
DRAWING NUMBER 8-2-1337

Enclosure 8

Privileged and Confidential

Asbestos Survey and Lead-Based Paint Assessment Report Glenarm Power Plant 72 East Glenarm Street Pasadena, California

Prepared by:

Pacific Environmental Company
30101 Town Center Drive, Suite 107
Laguna Niguel, California 92677
(949)363-7200

Pacific Environmental Project No. 98199

Privileged and Confidential

Asbestos Survey and Lead-Based Paint Assessment Report Glenarm Power Plant 72 East Glenarm Street Pasadena, California

Prepared for:

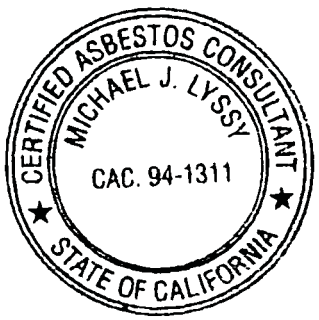
City of Pasadena
100 North Garfield Avenue
Pasadena, California 91109

Prepared by:

Pacific Environmental Company
30101 Town Center Drive, Suite 107
Laguna Niguel, California 92677
(949)363-7200

Robert Clark
Lead Inspector/Assessor #I-8

Michael J. Lyssy, REA, CAC 94-1311
President



Pacific Environmental Project No. 98199

February 24, 1999

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APPENDICES

EXECUTIVE SUMMARY

The City of Pasadena retained Pacific Environmental to:

- Perform an asbestos and lead survey to identify suspect asbestos-containing materials (ACM) and lead-based paint (LBP) at the Glenarm Power Plant, located at 72 East Glenarm Street in the City of Pasadena, California.
- Conduct a review of existing sampling and analytical information.
- Collect bulk samples of suspect ACM, and perform assessment of suspect LBP by X-Ray Fluorescent Spectrometer (XRF) and/or paint chip sampling.
- Document the physical condition, friability, and location of suspect materials.
- Submit ACM samples and paint chip samples to a certified laboratory under chain-of-custody procedures for analysis.
- Prepare a report of finding, conclusions and recommendations.

The survey was conducted from December 16 through December 30, 1998 and February 18, 1999, by Pacific Environmental Personnel under the supervision of Michael J. Lyssy, a Registered Environmental Assessor and a DOSH Certified Asbestos Consultant. The field Inspection team included Paul Maura, a DOSH Certified Asbestos Consultant, Robert Clark, a DHS Certified Lead Inspector/Assessor and Matt Crochet, a DHS Certified Lead Inspector/Assessor.

Suspect asbestos-containing building materials and suspect lead-containing paints were visually identified and evaluated. The scope of work was conducted in compliance with current State and Federal asbestos and lead regulations. Representative samples of each suspect material were tested and evaluated.

All suspect ACM samples were analyzed by Polarized Light Microscopy (PLM) using EPA Method 600/R-93/116, July 1993, in accordance with 40 CFR 763 Subpart F, appendix A (AHERA).

All suspect LBP was assessed by XRF to determine whether lead was present.

Based on Pacific Environmental's survey conducted on the aforementioned dates, the following materials sampled were found to contain asbestos (with approximate quantities):

Interior:

Main Room

Basement and Lower Levels:

- Heaters - 3x32" o.d. by 14' long and caps
- 4" o.d. pipe - pipe insulation - 23 LF
- 6" o.d. pipe - pipe insulation - 37 LF
- 8" o.d. pipe - pipe insulation - 19 LF

- 10" o.d. pipe - pipe insulation - 169 LF
- 12" o.d. pipe - pipe insulation - 56 LF
- 15" o.d. pipe - pipe insulation - 50 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Fire Door Insulation - Vault No. 8 - 40 SF
- Cloth Pipe Wrap (Insulation) - Limited Quantities

Turbine Room

Main Level:

- Inside Steam Turbines 4" o.d. pipe - pipe insulation - 70 LF
- Inside Steam Turbines 6" o.d. pipe - pipe insulation - 70 LF
- Inside Steam Turbines 8" o.d. pipe - pipe insulation - 50 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Access to the turbines inside their housing was restricted, additional suspect materials (e.g. fireproofing or insulation) may be encountered during dismantling or demolition.

Basement and Lower Levels including Tunnels:

- 4" o.d. pipe - pipe insulation - 99 LF
- 6" o.d. pipe - pipe insulation - 137 LF
- 8" o.d. pipe - pipe insulation - 58 LF
- 10" o.d. pipe - pipe insulation - 124 LF
- 12" o.d. pipe - pipe insulation - 219 LF
- 15" o.d. pipe - pipe insulation - 42 LF
- 20" o.d. pipe - pipe insulation - 127 LF
- 24" o.d. pipe - pipe insulation - 58 LF
- 4'x4' Insulated Tank
- Feeder pumps and piping - insulation, fittings and valves - 500 SF
- Associated Gate Valves, Flanges, Elbows and Fittings

Machine Shop

Main Level:

- North area (suspended) - Abandoned 10" o.d. pipe with gate valve and flange - 38 LF
- South wall - 8" o.d. pipe-pipe insulation - 14 LF

Lower Level, Pump Room and Tunnels:

- 4" o.d. pipe - pipe insulation - 83 LF
- 6" o.d. pipe - pipe insulation - 168 LF
- 8" o.d. pipe - pipe insulation - 208 LF
- 10" o.d. pipe - pipe insulation - 132 LF
- 12" o.d. pipe - pipe insulation - 67 LF
- 15" o.d. pipe - pipe insulation - 40 LF
- 20" o.d. pipe - pipe insulation - 146 LF
- Associated Gate Valves, Flanges, Elbows and Fittings

Boiler Room

- Boiler Control Room - 12"x12" Vinyl Floor Tile and Mastic- 60 square feet

- Boiler No. 14 - 4" o.d. pipe - pipe insulation - 279 LF
- Boiler No. 14 - 6" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 14 - 8" o.d. pipe - pipe insulation - 1039 LF
- Boiler No. 14 - 10" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 14 - 15" o.d. pipe - pipe insulation - 52 LF
- Boiler No. 14 - 16" o.d. pipe - pipe insulation - 235 LF
- Boiler No. 14 - 20" o.d. pipe - pipe insulation - 101 LF
- Boiler No. 14 - 24" o.d. pipe - pipe insulation - 36 LF
- Boiler No. 14 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 14 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 14 - Boiler Insulation (Behind Steel Plates) - 1400 SF
- Boiler No. 14 - Boiler Insulation (at Foundation) - 530 SF
- Boiler No. 14 - Pre-heater and duct insulation - 2500 SF
- Boiler No. 14 - Heater duct insulation below pre-heater - 500 SF
- Boiler No. 14 - Door Gaskets - Burner Doors and all steel access panels and doors

- Boiler No. 15 - 4" o.d. pipe - pipe insulation - 279 LF
- Boiler No. 15 - 6" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 15 - 8" o.d. pipe - pipe insulation - 1039 LF
- Boiler No. 15 - 10" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 15 - 15" o.d. pipe - pipe insulation - 52 LF
- Boiler No. 15 - 16" o.d. pipe - pipe insulation - 235 LF
- Boiler No. 15 - 20" o.d. pipe - pipe insulation - 101 LF
- Boiler No. 15 - 24" o.d. pipe - pipe insulation - 36 LF
- Boiler No. 15 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 15 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 15 - Boiler Insulation (Behind Steel Plates) - 1400 SF
- Boiler No. 15 - Boiler Insulation (at Foundation) - 530 SF
- Boiler No. 15 - Pre-heater and duct insulation - 2500 SF
- Boiler No. 15 - Heater duct insulation below pre-heater - 500 SF
- Boiler No. 15 - Door Gaskets - Burner Doors and all steel access panels and doors

- Boiler No. 16 - 4" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 16 - 6" o.d. pipe - pipe insulation - 218 LF
- Boiler No. 16 - 8" o.d. pipe - pipe insulation - 128 LF
- Boiler No. 16 - 10" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 16 - 15" o.d. pipe - pipe insulation - 28 LF
- Boiler No. 16 - 16" o.d. pipe - pipe insulation - 65 LF
- Boiler No. 16 - 20" o.d. pipe - pipe insulation - 148 LF
- Boiler No. 16 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 16 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 16 - Boiler Insulation - 4900 SF
- Boiler No. 16 - Pre-heater Insulation (upper level) - 3000 SF
- Boiler No. 16 - Air Duct/Shaft Insulation - 1800 SF

- Boiler No. 17 - 4" o.d. pipe - pipe insulation - 219 LF
- Boiler No. 17 - 6" o.d. pipe - pipe insulation - 193 LF
- Boiler No. 17 - 8" o.d. pipe - pipe insulation - 128 LF
- Boiler No. 17 - 10" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 17 - 15" o.d. pipe - pipe insulation - 28 LF

- Boiler No. 17 - 16" o.d. pipe - pipe insulation - 65 LF
- Boiler No. 17 - 20" o.d. pipe - pipe insulation - 148 LF
- Boiler No. 17 - Tank and Manifold Insulation - 1500 SF
- Boiler No. 17 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 17 - Boiler Insulation - 4900 SF
- Boiler No. 17 - Pre-heater Insulation (upper level) - 3000 SF
- Boiler No. 17 - Air Duct/Shaft Insulation - 1800 SF

Miscellaneous Areas:

- Fuel oil heaters - 4" o.d. pipe - pipe insulation - 1200 LF
- Fuel oil heaters - 6" o.d. pipe - pipe insulation - 98 LF
- Fuel oil heaters - Associated Gate Valves, Flanges, Elbows and Fittings
- Upper Level General Area between and around boilers - 4" o.d. pipe - pipe insulation 6 LF
- Upper Level General Area between and around boilers - 6" o.d. pipe - pipe insulation 45 LF
- Upper Level General Area between and around boilers - 8" o.d. pipe - pipe insulation 140 LF
- Upper Level General Area between and around boilers - 10" o.d. pipe - pipe insulation 80 LF
- Upper Level General Area between and around boilers - 15" o.d. pipe - pipe insulation 90 LF
- Upper Level General Area between and around boilers - 18" o.d. pipe - pipe insulation 181 LF
- Upper Level General Area between and around boilers - Gate Valves, Flanges, Elbows and Fittings
- Cloth Pipe Wrap (Insulation) - Limited Quantities

Exterior

General Area:

- North Exterior Wall - Exterior Stucco - 9900 SF
- West Exterior Wall - Exterior Stucco - 9690 SF
- East Turbine Room Exterior Wall (above main room roof) - Exterior Stucco - 1700 SF
- East Wall at Office Extension - Exterior Stucco - 600 SF
- Elevator Exterior Walls at Roof Level - Felt/Mastic on Siding - 1200 SF

Roof:

- 4" o.d. pipe - pipe insulation - 13 LF
- 8" o.d. pipe - pipe insulation - 31 LF
- 10" o.d. pipe - pipe insulation - 48 LF
- 12" o.d. pipe - pipe insulation - 3 LF
- 15" o.d. pipe - pipe insulation - 17 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Northwest Roof (Turbine Room) - Roof Composite - 7100 SF
- Southwest Roof (Boiler Room) - Roof Composite - 8600 SF
- Northeast Roof (Main Room) - Transite Panels and Mastic - 9350 SF
- Southeast Roof (Machine Shop) - Transite Panels and Mastic - 5500 SF
- South Central Roof (High Bay) - Transite Panels and Mastic - 5500 SF
- All Roofs - Penetration Mastics

Throughout the subject property, several of the painted components indicated the presence of lead-based paint at or above the federal action level. These positive results were not consistent throughout the plant and the application of LBP appears to be related to the installation of specific pieces of machinery and equipment. The following is a brief summary listing the types of components that tested above the federal action level:

Interior:

- Components with a concrete substrate: column, machinery foundations, wall and striping on the floor.
- Components with a metal substrate: beams, catwalks, ceiling, closet door components, columns, 50 ton crane, door components, drill presses, electrical panel, fence, machinery foundations, gate, handrails, ladders, lathe, light fixtures, motors, pipes, railings, shaper, stair components, tanks, valves, and walls.
- Components with a wood substrate: beam, cabinet components, door components, and window components.
- Some of the tiles walls (wainscot) also tested positive for lead. These surfaces were not painted and the lead is most likely in the glazing or the matrix of the tile itself.

Exterior:

- Components with a concrete substrate: foundations and walls.
- Components with a metal substrate: access panels, beams, bollards, catwalks, columns, deck, door components, downspout, electrical panel, foundations, garage door components, handrail, ladders, pipes, railings, stringer, tanks, vents, walls and window components.
- Components with a stucco substrate: walls.
- Components with a fiberglass substrate: wall.
- Components with a wood substrate: Door and window components.
- Some of the tiled fountain surfaces also tested positive for lead. These surfaces were not painted and the lead is most likely in the glazing or the matrix of the tile itself.

A detailed listing of the specific components that tested above the action level and their respective locations may be found in Appendix E. Complete field data results for all paint sampling (both positive and negative) may be found in Appendix F.

Sampling for this inspection was representative and any components that were not tested but similar to those components that tested positive for LBP should be considered and treated as lead laden.

RECOMMENDATIONS - ASBESTOS

Due to the large amounts of damaged friable asbestos-containing insulation at the subject site, Pacific Environmental recommends that access to the building remain restricted. Future plans for the building include de-energizing and demolition or renovation. During the de-energizing of the building workers exposed to the friable damaged asbestos-containing materials should be warned of the potential health risks associated with asbestos exposure through an operations and maintenance training program.

Steps should be taken to clean-up the asbestos-containing debris and to remove the damaged friable materials. A licensed and certified asbestos abatement contractor must remove the asbestos-

containing materials that are to be disturbed by renovation or demolition activities. Our firm can assist you in the development of asbestos removal specifications as well as asbestos abatement proposal solicitation and project management.

Regardless of the various recommendations which have been made throughout this report, we strongly recommend that certain interim measures be considered in cases where abatement is not immediately feasible or possible.

These measures can best be addressed through the initiation of a formal Operations and Maintenance Program. An O&M Program sets guidelines and procedures for dealing with asbestos containing materials until some type of abatement or remedial action is undertaken. Although an O&M Program is considered to be a type of abatement in itself, it does not replace other methods of abatement such as removal, encapsulation or enclosure. When encapsulation or enclosure is selected as a means of abatement, an O&M Program must be instituted. The O&M Program is a temporary means of protecting people from asbestos-related hazards until final action becomes possible.

RECOMMENDATIONS - LEAD-BASED PAINT

The greatest potential for lead exposure from lead painted architectural components occurs when the paint has become defective, when the paint is applied to a friction or impact component where the paint is continually disturbed or when the paint is disturbed through routine maintenance or renovation activities.

With this in mind, the following are Pacific Environmental's recommendations regarding the lead-based paints for this property:

- The results should be provided to any individuals that may disturb the painted surfaces. It is encouraged to utilize professionals that have experience working with LBP.
- If renovation is scheduled in the near future, all lead painted components that have been previously targeted for replacement should be replaced utilizing "lead safe" containment and work practices.
- All components that have been identified with defective lead paint should have the paint repaired as soon as possible. Any paint repair should be done utilizing "lead safe" containment, work practices and clean-up techniques.
- All components with lead painted friction or impact surfaces should be treated to minimize the friction or impact as necessary.
- Lead painted components that have not been targeted for replacement should either be considered for abatement (replacement, enclosure, encapsulation, etc.) or included in an Operations and Management (O&M) Program that will help minimize exposures to lead hazards.
- All lead painted surfaces that are not expected to be impacted in the near future should also be included in the O&M Program.
- Occupants of the facility should be notified of the test results and instructed in actions that they may perform to keep areas "lead safe"

- The tile surfaces are not a likely source of lead dust contamination as long as they remain intact. If future renovation or repair activities require that the tile be removed, or the surfaces disturbed, it should be done in a manner that does not break the tiles. If this is not feasible, this task should be assigned to a lead certified contractor.

As a result of the findings of this asbestos and lead assessment, Pacific Environmental recommends that all future renovation, demolition, construction or abatement activities, with the potential for disturbing identified LBP and/or ACM product, be performed by properly trained and qualified personnel. These activities should employ state-of-the-art techniques, and be conducted in accordance with all applicable local, State and Federal laws and regulations.

1.0 SCOPE OF WORK

This report presents the results of Pacific Environmental Company's survey for the identification of asbestos-containing material (ACM) and lead-based paint (LBP) at the project site which is identified as the Glenarm Power Plant, located at 72 East Glenarm Street in the City of Pasadena, California. This survey was performed in accordance with Pacific Environmental's proposal number 98.6050 dated October 15, 1998. The purpose of the survey was to evaluate the presence, extent and condition of the ACM and LBP at the Glenarm Power Plant to enable the City of Pasadena to properly manage the ACM and LBP at the facility.

The survey was conducted from December 16 through December 30, 1998 and February 18, 1999, by Pacific Environmental Personnel under the supervision of Michael J. Lyssy, a Registered Environmental Assessor and a DOSH Certified Asbestos Consultant. The field Inspection team included Paul Maura, a DOSH Certified Asbestos Consultant, Robert Clark, a DHS Certified Lead Inspector/Assessor and Matt Crochet, a DHS Certified Lead Inspector/Assessor.

Pacific Environmental's scope of work included:

- Conducting a survey of the building at the project site to:
  - Identify materials suspected of containing asbestos and lead.
  - Assess the condition of the ACM and LBP.
  - Quantify ACM and LBP for cost estimating purposes.
  - Identify any imminent health hazards associated with identified ACMs and LBPs.
  - Indicate the presence of ACMs and LBPs by marking ACMs with red paint and LBPs with blue paint.
  - Provide photo documentation of ACMs, LBPs, and site conditions.

- Collecting bulk samples of suspect asbestos-containing materials per a modified AHERA protocol.

- The performance of a lead-based paint inspection modeled after modified inspection protocol in Chapter 7 of the Housing and Urban Development Guidelines for the Evaluation and Control of Lead-Based Paint Hazards (1997 Revision).

- Submitting ACM and LBP samples to a certified laboratory, under chain-of-custody procedures, for analysis.

- Preparing single line floor plans to indicate approximate sample locations.

- Preparing and submitting an asbestos and lead survey report that describes our findings and recommendations.

2.0 PROPERTY DESCRIPTION

The Pasadena Water and Power Department's Glenarm Power Plan is located at 72 East Glenarm Street in the City of Pasadena, California. It is situated on the northwest corner of the fourteen acre site historically occupied by the City's power generating facilities. The building consists of two additions to the original 1907 Power plant building which has since been demolished. The 1921 eastern half of the building is constructed of concrete shear walls with concrete spandrel beams and columns and the 1931 western half is structural steel frame encased in reinforced concrete shear walls. The imposing structure is 216 feet long by 149 feet wide and varies in height from 30 to 70 feet.

The entire substructure consisting of large vaults and passageways serves to access the turbine decks and other equipment and connects to the Dispatch Center by means of tunnels. A decorative fountain built in 1938 is located at the northwest corner of the property.

The building's northeast quadrant housed the Mechanical Engineering Division. The northwest quadrant contains two large generators and a maintenance area for large equipment with a 100 ton crane. An adjacent area originally housed two additional generators and a 50 ton traveling crane remains functional in this area. The southeast portion consists of a machine shop, small office, storage area and locker room. The southwest portion houses four large boilers

Interior finishes of the building include formed concrete and plaster walls with sand or smooth finish, ceramic tile wainscot in the main gallery and turbine rooms, quarry tile and concrete floors. There is an independently supported system of intricate catwalks, stairs and boiler support framing built inside the high-bay space at the southwest quadrant of the building.

The building's exterior has various types of finishes. The eastern half of the building has a double gambrel corrugated roof. The east wall is board-formed concrete with corrugated panels above following the roof truss shape. The gallery office projects approximately 3 feet beyond the face of the building with a heavy sand finish stucco. The west wall is constructed of stucco and plaster on a wood frame which could be removed to allow for future expansion. The elevator shaft projecting thorough the roof is covered with corrugated panels as is the upper portion of the east wall following the roof truss shape. The north wall is sand finish stucco over concrete and the south wall is a combination of board-formed concrete and stucco over concrete.

3.0 SAMPLING/ASSESSMENT AND ANALYSIS PROTOCOL-ASBESTOS

A visual assessment of the building materials located throughout the site was completed prior to the collection of samples. During the visual assessment, building materials suspected of containing asbestos were categorized by homogeneous areas. Materials are classified as homogenous when they appear uniform, have a consistent texture and appear to have been installed at the same time. Pacific Environmental quantified and assessed the condition of the materials as described in this section.

3.1 Survey Procedures

3.1.1 Review of Existing Relevant Data

An Asbestos Hazard Assessment Report was prepared for the subject property in March of 1995 by CT&E Environmental Services, Inc.. The bulk sampling conducted for their report was limited to plaster and thermal system insulation materials. Their report indicates that asbestos is present in the thermal system insulation materials at the subject site. Furthermore their report addresses the assessment of the ACMs, ambient airborne concentrations of asbestos fibers and settled asbestos dust concentrations. The recommendations made by CT&E were to patch and repair the damaged insulation materials and to continue housekeeping practices to reduce the risk of fiber release episodes at the facility. It does not appear that these recommendations were followed and the scope of our project is to further assess and quantify all of the ACMs at the subject site.

3.1.2 Field Investigation

The field investigation began with an initial site walk-through and identification of homogenous building materials suspected of containing asbestos. Samples were collected based on building layout, structural features, and mechanical and plumbing systems. Pacific Environmental then performed the following tasks:

- Evaluated whether materials suspected of containing asbestos were present at the site.
- Collected bulk samples as required to adequately characterize the suspect materials.
- Identified approximate sample locations and locations of identified ACM on field drawings.

- Estimated the amount of ACM where access allowed.
- Assessed the condition of the suspected and known ACMs.

Materials are assessed to be in either good, damaged or significantly damaged condition based on how their condition at the time of the survey relates to the following:

Good Condition - No or very limited visible damage or deterioration was observed.

Damaged Condition - Crumbling, blistering, water damage, gouges or other damage was observed over less than 25% of the materials (one-tenth if evenly distributed); or accumulation of suspect powder, dust or debris below the material was observed.

Significantly Damaged - Crumbling, blistering, water damage, gouges or other damage was observed over greater than 25% of the materials (one-tenth if evenly distributed); material is delaminating or showing adhesive failure; or accumulation of suspect powder, dust or debris below the material was observed.

Based on the site reconnaissance, Pacific Environmental sampled the following suspect materials: Thermal system insulation (including boilers, pipes, fittings, flanges, elbows, tees, manifolds, tanks, wraps, doors, etc.), boiler bricks and mortar, gaskets, wire insulation, vinyl floorings, plaster, ceiling tiles, joint compounds, window putty, stucco, paint, textured finishes, roofing materials and mastics.

3.2 Sampling Procedures

3.2.1 Identification of Homogeneous Sampling Areas

After identifying those materials suspected of containing asbestos, the materials were grouped into homogeneous sampling areas. A homogeneous sampling area includes building materials that are uniform in texture and color and appear identical in every other respect.

3.2.2 Number of Samples

A modified AHERA protocol was used in estimating the number of samples to be collected. Actual samples collected were determined by field conditions. A total of one hundred and fifteen (115)

bulk samples were collected. Our independent laboratory, Continental Envirotech, Inc. further stratified the samples by layers so that a total of one hundred and forty (140) samples were analyzed.

3.2.3 Sample Collection Method

The sampling was carried out by AHERA Certified Building Inspectors.

Bulk samples were collected by wetting the suspect material with amended water and cutting, scrapping or coring it from its substrate using an appropriate sampling tool. Sampling tools were cleaned before and after each use to prevent cross contamination of samples.

Small quantities of material, about 1/2 square inch, were extracted from suspect materials and placed in a sterile, air tight bag or vial, and sealed. Each sample was labeled with a unique identification number, referencing the project number and the sequential numbering system. The sample was logged in on the bulk survey sheet and a description noted on the type of sample. Each sample container was then placed inside a larger sterile, air tight bag. As other samples were taken from each area they were also placed inside this larger air tight bag.

Sample locations were repaired using caulk, spray glue, encapsulant, or patching material as needed, but were not always returned to their original condition.

The samples were transported under chain-of-custody to an independent NVLAP participating laboratory for analysis utilizing polarized light microscopy.

3.3 Analytical Procedures

3.3.1 Analytical Method

Identification of the mineral asbestos in a bulk sample is done by microscopic analysis, this section describes the laboratory techniques used with this procedure.

The laboratory testing was conducted in accordance with the EPA Interim Method for Determination of Asbestos in Bulk Samples (EPA-600/R-93/116, July 1993). Samples were

examined for homogeneity and non-homogeneous samples were ground to ensure homogeneity. Microscopic slides were prepared from each sample using a refractive index liquid such as trisection and ethyl cinnamate having a refractive index of 1.550; 1-bromo-naphthalene and 1-Iodonaphthalene having a refractive index of 1.680; or hydrogenated terthenyl and 1-bromonaphtahlene having a refractive index of 1.605. The slides were then examined for the presence of asbestos utilizing polarized light microscopy (PLM) and dispersion staining techniques.

The percentage of asbestos was estimated by visual examination of fibers greater than five microns in length and with an aspect ratio of 3:1 or greater. The aspect ratio of 3:1 refers to the length of the fiber being three times as long as its width. If present, the identity of asbestos fibers was confirmed with appropriate refractive index liquids, application of dispersion staining and other techniques. The results were tabulated and detailed in the attached report.

4.0 FINDINGS - ASBESTOS

4.1 Previous Asbestos Surveys

An Asbestos Hazard Assessment prepared by CT&E Environmental Services Inc., was prepared on March 24, 1995. The results of this survey indicate that asbestos is present in the thermal system insulation materials at the site. It further identifies that asbestos is present in the settled dust in various locations throughout the facility.

4.2 Previous Abatement Activities

Pacific Environmental was not provided with any records indicating previous abatement activity at the subject site. There was however, a copy of a South Coast Air Quality Management District Notification posted on a bulletin board outside of the Boiler Control Office, that indicated that some minor removal/repair work had been completed at the site.

4.3 Inaccessible Areas

All of the areas of the building were accessed for our inspection except for the electrical vaults. Some of the vault areas were inspected and no suspect materials were present. The vaults were energized at the time of the inspection and were not accessed for safety concerns. Special confined space permitting procedures were followed for entry into the boilers. Proper personal protective equipment was donned while working in confined spaces as well as in areas where friable damaged ACMs were present.

4.4 Survey and Assessment Findings

Bulk sample summary sheets are presented in Appendix C. Approximate sample locations are depicted on the site drawings in Appendix A. The results of Pacific Environmental's bulk sampling and analysis are summarized below.

4.4.1 Asbestos-Containing Materials

The Federal Environmental Protection Agency (EPA), the South Coast Air Quality Management District (SCAQMD), and the Occupational Safety and Health Administration (OSHA) define an asbestos-containing material as a material that contains greater than one percent (>1.0%) asbestos. The California Department of Occupational Safety and Health (Cal/OSHA) defines an asbestos-containing material as a material that contains greater than one tenth of one percent (>0.1%) asbestos.

Based on Pacific Environmental's survey conducted from December 16-30, 1998 and February 18, 1999, asbestos was detected in quantities of greater than one percent (>1.0%) in the following materials (with approximate quantities):

Interior:

Main Room

Basement and Lower Levels:

- Heaters - 3x32" o.d. by 14' long and caps
- 4" o.d. pipe - pipe insulation - 23 LF
- 6" o.d. pipe - pipe insulation - 37 LF
- 8" o.d. pipe - pipe insulation - 19 LF
- 10" o.d. pipe - pipe insulation - 169 LF
- 12" o.d. pipe - pipe insulation - 56 LF
- 15" o.d. pipe - pipe insulation - 50 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Fire Door Insulation - Vault No. 8 - 40 SF
- Cloth Pipe Wrap (Insulation) - Limited Quantities

Turbine Room

Main Level:

- Inside Steam Turbines 4" o.d. pipe - pipe insulation - 70 LF
- Inside Steam Turbines 6" o.d. pipe - pipe insulation - 70 LF
- Inside Steam Turbines 8" o.d. pipe - pipe insulation - 50 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Access to the turbines inside their housing was restricted, additional suspect materials (e.g. fireproofing or insulation) may be encountered during dismantling or demolition.

Basement and Lower Levels including Tunnels:

- 4" o.d. pipe - pipe insulation - 99 LF
- 6" o.d. pipe - pipe insulation - 137 LF
- 8" o.d. pipe - pipe insulation - 58 LF
- 10" o.d. pipe - pipe insulation - 124 LF

- 12" o.d. pipe - pipe insulation - 219 LF
- 15" o.d. pipe - pipe insulation - 42 LF
- 20" o.d. pipe - pipe insulation - 127 LF
- 24" o.d. pipe - pipe insulation - 58 LF
- 4'x4' Insulated Tank
- Feeder pumps and piping - insulation, fittings and valves - 500 SF
- Associated Gate Valves, Flanges, Elbows and Fittings

Machine Shop

Main Level:

- North area (suspended) - Abandoned 10" o.d. pipe with gate valve and flange - 38 LF
- South wall - 8" o.d. pipe-pipe insulation - 14 LF

Lower Level, Pump Room and Tunnels:

- 4" o.d. pipe - pipe insulation - 83 LF
- 6" o.d. pipe - pipe insulation - 168 LF
- 8" o.d. pipe - pipe insulation - 208 LF
- 10" o.d. pipe - pipe insulation - 132 LF
- 12" o.d. pipe - pipe insulation - 67 LF
- 15" o.d. pipe - pipe insulation - 40 LF
- 20" o.d. pipe - pipe insulation - 146 LF
- Associated Gate Valves, Flanges, Elbows and Fittings

Boiler Room

- Boiler Control Room - 12"x12" Vinyl Floor Tile and Mastic- 60 square feet

- Boiler No. 14 - 4" o.d. pipe - pipe insulation - 279 LF
- Boiler No. 14 - 6" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 14 - 8" o.d. pipe - pipe insulation - 1039 LF
- Boiler No. 14 - 10" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 14 - 15" o.d. pipe - pipe insulation - 52 LF
- Boiler No. 14 - 16" o.d. pipe - pipe insulation - 235 LF
- Boiler No. 14 - 20" o.d. pipe - pipe insulation - 101 LF
- Boiler No. 14 - 24" o.d. pipe - pipe insulation - 36 LF
- Boiler No. 14 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 14 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 14 - Boiler Insulation (Behind Steel Plates) - 1400 SF
- Boiler No. 14 - Boiler Insulation (at Foundation) - 530 SF
- Boiler No. 14 - Pre-heater and duct insulation - 2500 SF
- Boiler No. 14 - Heater duct insulation below pre-heater - 500 SF
- Boiler No. 14 - Door Gaskets - Burner Doors and all steel access panels and doors

- Boiler No. 15 - 4" o.d. pipe - pipe insulation - 279 LF
- Boiler No. 15 - 6" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 15 - 8" o.d. pipe - pipe insulation - 1039 LF
- Boiler No. 15 - 10" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 15 - 15" o.d. pipe - pipe insulation - 52 LF
- Boiler No. 15 - 16" o.d. pipe - pipe insulation - 235 LF

- Boiler No. 15 - 20" o.d. pipe - pipe insulation - 101 LF
- Boiler No. 15 - 24" o.d. pipe - pipe insulation - 36 LF
- Boiler No. 15 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 15 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 15 - Boiler Insulation (Behind Steel Plates) - 1400 SF
- Boiler No. 15 - Boiler Insulation (at Foundation) - 530 SF
- Boiler No. 15 - Pre-heater and duct insulation - 2500 SF
- Boiler No. 15 - Heater duct insulation below pre-heater - 500 SF
- Boiler No. 15 - Door Gaskets - Burner Doors and all steel access panels and doors

- Boiler No. 16 - 4" o.d. pipe - pipe insulation - 247 LF
- Boiler No. 16 - 6" o.d. pipe - pipe insulation - 218 LF
- Boiler No. 16 - 8" o.d. pipe - pipe insulation - 128 LF
- Boiler No. 16 - 10" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 16 - 15" o.d. pipe - pipe insulation - 28 LF
- Boiler No. 16 - 16" o.d. pipe - pipe insulation - 65 LF
- Boiler No. 16 - 20" o.d. pipe - pipe insulation - 148 LF
- Boiler No. 16 - Tank and Manifold Insulation - 2500 SF
- Boiler No. 16 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 16 - Boiler Insulation - 4900 SF
- Boiler No. 16 - Pre-heater Insulation (upper level) - 3000 SF
- Boiler No. 16 - Air Duct/Shaft Insulation - 1800 SF

- Boiler No. 17 - 4" o.d. pipe - pipe insulation - 219 LF
- Boiler No. 17 - 6" o.d. pipe - pipe insulation - 193 LF
- Boiler No. 17 - 8" o.d. pipe - pipe insulation - 128 LF
- Boiler No. 17 - 10" o.d. pipe - pipe insulation - 195 LF
- Boiler No. 17 - 15" o.d. pipe - pipe insulation - 28 LF
- Boiler No. 17 - 16" o.d. pipe - pipe insulation - 65 LF
- Boiler No. 17 - 20" o.d. pipe - pipe insulation - 148 LF
- Boiler No. 17 - Tank and Manifold Insulation - 1500 SF
- Boiler No. 17 - Associated Gate Valves, Flanges, Elbows and Fittings
- Boiler No. 17 - Boiler Insulation - 4900 SF
- Boiler No. 17 - Pre-heater Insulation (upper level) - 3000 SF
- Boiler No. 17 - Air Duct/Shaft Insulation - 1800 SF

Miscellaneous Areas:

- Fuel oil heaters - 4" o.d. pipe - pipe insulation - 1200 LF
- Fuel oil heaters - 6" o.d. pipe - pipe insulation - 98 LF
- Fuel oil heaters - Associated Gate Valves, Flanges, Elbows and Fittings
- Upper Level General Area between and around boilers - 4" o.d. pipe - pipe insulation 6 LF
- Upper Level General Area between and around boilers - 6" o.d. pipe - pipe insulation 45 LF
- Upper Level General Area between and around boilers - 8" o.d. pipe - pipe insulation 140 LF
- Upper Level General Area between and around boilers - 10" o.d. pipe - pipe insulation 80 LF
- Upper Level General Area between and around boilers - 15" o.d. pipe - pipe insulation 90 LF
- Upper Level General Area between and around boilers - 18" o.d. pipe - pipe insulation 181 LF
- Upper Level General Area between and around boilers - Gate Valves, Flanges, Elbows and Fittings
- Cloth Pipe Wrap (Insulation) - Limited Quantities

Exterior

General Area:

- North Exterior Wall - Exterior Stucco - 9900 SF
- West Exterior Wall - Exterior Stucco - 9690 SF
- East Turbine Room Exterior Wall (above main room roof) - Exterior Stucco - 1700 SF
- East Wall at Office Extension - Exterior Stucco - 600 SF
- Elevator Exterior Walls at Roof Level - Felt/Mastic on Siding - 1200 SF

Roof:

- 4" o.d. pipe - pipe insulation - 13 LF
- 8" o.d. pipe - pipe insulation - 31 LF
- 10" o.d. pipe - pipe insulation - 48 LF
- 12" o.d. pipe - pipe insulation - 3 LF
- 15" o.d. pipe - pipe insulation - 17 LF
- Associated Gate Valves, Flanges, Elbows and Fittings
- Northwest Roof (Turbine Room) - Roof Composite - 7100 SF
- Southwest Roof (Boiler Room) - Roof Composite - 8600 SF
- Northeast Roof (Main Room) - Transite Panels and Mastic - 9350 SF
- Southeast Roof (Machine Shop) - Transite Panels and Mastic - 5500 SF
- South Central Roof (High Bay) - Transite Panels and Mastic - 5500 SF
- All Roofs - Penetration Mastics

4.4.2 Non-Asbestos-Containing Materials

Based on Pacific Environmental's survey conducted from December 16-30, 1998 and February 18, 1999, asbestos was not detected in the following materials:

Sample No.	Sample Description	Sample Location
98199.01	Pipe Insulation	Boiler 15 Interior-east wall
98199.02	Pipe Insulation	Boiler 15 Interior-south wall
98199.03	Floor Insulation-top layer	Boiler 15 Interior-floor
98199.04	Floor Insulation-2nd layer	Boiler 15 Interior-floor
98199.05	Floor Insulation-3rd layer	Boiler 15 Interior-floor
98199.06	Mortar	Boiler 15-Mid-level interior
98199.07	Mortar	Boiler 15-Mid-level interior
98199.08	Mortar	Boiler 15-Burner Wall
98199.09	Insulation Material	Boiler 15-East Interior Wall
98199.10	Insulation Material	Boiler 15-South Interior Wall
98199.11	Insulation Material	Boiler 15-South Interior Wall
98199.16	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.17	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.18	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.19	Top Layer Brick	Boiler 17 Interior-floor
98199.20	Second Layer Brick	Boiler 17 Interior-floor
98199.21	Wall Insulation-under 1st layer of brick	Boiler 17 Interior-east wall
98199.22	Wall Insulation-under 1st layer of brick	Boiler 17 Interior-south wall
98199.23	Brick	Boiler 17-west wall
98199.24	Brick	Boiler 17-Burner wall

98199.25	Mortar	Boiler 17-Peep hole
98199.37	Insulation	North Air Shaft Boiler 14
98199.44	Air Duct Insulation	Boiler 15-South Duct
98199.45	Wall Plaster	South Wall by Boilers
98199.47	Red Brick	Boiler 15-West at 20'
98199.48	Mortar	Boiler 15-West at 20'
98199.49	Red Brick	Boiler 14-West at 20'
98199.50	Mortar	Boiler 14-West at 20'
98199.60	Brick	Boiler 16-West side at 40'
98199.62	Wire Insulation	Boiler 14-Blower Motor Wires
98199.65	Tank Insulation	Boiler Roof Central-Tank
98199.67A	Stucco	Boiler Roof Parapet Wall
98199.69	Window Putty	Window at Roof
98199.72	Stucco	Boiler roof-East Parapet
98199.75	Window Putty	West Boiler room window
98199.76	Insulation	Machine Shop Wall-South
98199.77	Drywall/Joint Compound	2nd Floor office-north
98199.78	Drywall/Joint Compound	2nd Floor office-south
98199.79	2'x4' Ceiling Tile	Office Area
98199.80	Wall Plaster	Turbine Room-South wall
98199.81	Wall Plaster	Above Office Area
98199.82	Wire Insulation	Above Office Area
98199.85	Insulation	Turbine Housing
98199.97	Plaster	Open Pit at Tunnel
98199.98	Floor Felt	Under Concrete Formed Floor
98199.100	Plaster	Northwest Wall
98199.104	Exterior Stucco	Exterior Wall-South by Stack
98199.105	Mastic on Water Pipe	Main Water Feed Pipe
98199.106	Plaster	Locker Room
98199.107	Tank Insulation	Tank-Boiler Room Roof
98199.108	Tank Insulation	Tank-Boiler Room Roof
98199.109A	Texture Coat	Elevator Room Access Exterior Wall
98199.111	Exterior Stucco	North Boiler Room High Wall
98199.112	Air Shaft Insulation	Air Shaft North of Boiler 14
98199.113	Air Shaft Insulation	Air Shaft South of Boiler 15
98199.114	Paint and Texture Coat	South Exterior Wall

4.5 Management Program Discussion

Regardless of the various recommendations which have been made throughout this report, we strongly recommend that certain interim measures be considered in cases where abatement is not immediately feasible or possible.

These measures can best be addressed through the initiation of a formal Operations and Maintenance Program. An O&M Program sets guidelines and procedures for dealing with asbestos containing materials until some type of abatement or remedial action is undertaken. Although an O&M Program is considered to be a type of abatement in itself, it does not replace other methods of abatement such as removal, encapsulation or enclosure. When encapsulation or enclosure is selected as a means of abatement, an O&M Program must be instituted. The O&M Program is a

temporary means of protecting people from asbestos-related hazards until final action becomes possible.

An O&M Program includes the preparation of a written document which will define procedures for the following:

1. Notification to employees and building users of the presence of asbestos containing materials.

2. A formal training program for maintenance personnel which will address the potential health hazards associated with asbestos and instruction on the policies and methods for working with asbestos containing materials.

3. A plan for the periodic inspection of asbestos containing materials to monitor their condition.

4. A plan for periodic air sampling/monitoring with phase contrast microscopy analysis.

An Operations and Maintenance Program relies on competent, well trained personnel and a qualified asbestos coordinator. Building occupants should be notified of the presence of asbestos containing materials per Proposition 65 and Assembly Bill 3713, as well as being informed that an O&M Program is in effect. It should be emphasized that all work around asbestos-containing materials will be performed by trained authorized personnel in conjunction with the asbestos coordinator.

5.0 SAMPLING/ASSESSMENT AND ANALYSIS PROTOCOL - LEAD

5.1 Survey Procedures

5.1.1 Review of Existing Relevant Data

A Lead-Based Paint Hazard Assessment Report was prepared for the subject property in March of 1995 by CT&E Environmental Services, Inc.. The scope of their assessment was limited to the performance of dust wipe sampling from limited locations. The results of their investigation indicated the presence of lead-based paint, however the assessment was limited and did not attempt to identify specific components that were coated with LBP.

5.1.2 Field Investigation

The field investigation began with an initial site walk-through in order to identify major site features, surfaces or components suspected of containing LBP. Samples were collected based on site and building layouts and structural features. Pacific Environmental then performed the following tasks:

- Evaluated whether materials suspected of containing LBP were present at the site.
- Performed XRF assessments as required to adequately characterize suspect paint products.
- Estimated the quantity of LBP materials and components, where access allowed.
- Assessed the condition of the suspected and known LBPs.

5.2 Sampling and Assessment Methodologies and Protocols

5.2.1 Identification of Lead-Based Paint

Testing of the painted surfaces was patterned after the inspection protocol in the 1997 revision of Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead Based Paint Hazards. In every "room equivalent" within the tested property, one representative surface of each "testing

combination" was tested. Multiple readings were collected to resolve inconsistencies in the test results.

Several public (government) agencies have published "regulatory action level" to classify LBP. To further complicate matters, some of the established "levels" are quantified in different units of measurement. Listed below are the current regulatory agencies that have defined LBP, along with the respective action level:

Agency	Ordinance No.	Action Level (mg/cm2)	Action Level (ppm)
HUD/EPA	24 CFR 35.86 & 40 CFR 745.103	1.0 mg/cm2	5000 ppm
OSHA/CAL OSHA	29 CFR 1926.62 & Title 8, 1532.1	Not Specified	600 ppm

HUD/EPA have recently issued the following guidance regarding units of measurement for paint samples: "Report lead paint amounts in mg/cm2 because this unit of measurement does not depend on the number of layers of non-lead-based paint and can usually be obtained without damaging the paint surface. All measurements of lead in paint should be in mg/cm2, unless the surface area cannot be measured or if all paint cannot be removed from the measured surface area. In such cases, concentrations may be reported in weight percent (%) or parts per million by weight (ppm)."

Furthermore, the EPA has previously issued guidance on lead content classification as follows: "...The rule, at 24 CFR 35.86 and 40 CFR 745.103 states that a lead-based paint free finding must demonstrate that the building is free of "paint or other surface coatings that contain lead in excess of 1.0 milligrams per square centimeter or 0.5 percent by weight (5000 ppm)." The State standards are not applicable, whether more or less stringent, since a State cannot amend Federal requirements."

In recognition of the various action levels the testing results are classified as follows for this report:

Painted surfaces with readings at or above 1.0 mg/cm2 are considered - Positive
Painted surfaces with readings at or below 0.9 mg/cm2 are considered - Negative

The individual readings have been provided on the field data sheets. Any future changes in action levels by one of the regulatory agencies may affect the classification of results.

5.2.2 XRF Assessment

The method employed for paint testing was X-Ray Fluorescence (XRF) using a Radiation Monitoring Device Lead Paint Analyzed (RMD LPA-1), with the capability to measure the lead content in dry paint films, in the range of 0 to 50 milligrams per centimeter square. The on-site assessment capability of the XRF equipment typically reduces and may even eliminate the number of paint chip samples which may need to be collected and sent for laboratory analysis.

The instrument was operated in "Quick Mode", where the duration for each test result is determined by a combination of the actual reading relative to the designated action level, the age of the radioactive source, and the substrate on which the test was taken.

The instrument's calibration was verified according to the manufacturer's specifications in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument.

The readings from this instrument produce a 95% confidence level that the "lead" reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level.

A total of 1,867 assays (XRF readings) were taken at the project site, not including instrument calibration. The results of these assays are presented in the XRF Inspection Field Data Reports in Appendix F.

All information regarding the specific instrument used may be found in Appendix G.

5.2.3 Lead-Containing Materials

Throughout the subject property, several of the painted components indicated the presence of lead-based paint at or above the federal action level. These positive results were not consistent throughout the plant and the application of LBP appears to be related to the installation of specific pieces of machinery and equipment. The following is a brief summary listing the types of components that tested above the federal action level:

Interior:

- Components with a concrete substrate: column, machinery foundations, wall and striping on the floor.

- Components with a metal substrate: beams, catwalks, ceiling, closet door components, columns, 50 ton crane, door components, drill presses, electrical panel, fence, machinery foundations, gate, handrails, ladders, lathe, light fixtures, motors, pipes, railings, shaper, stair components, tanks, valves, and walls.
- Components with a wood substrate: beam, cabinet components, door components, and window components.
- Some of the tiles walls (wainscot) also tested positive for lead. These surfaces were not painted and the lead is most likely in the glazing or the matrix of the tile itself.

Exterior:

- Components with a concrete substrate: foundations and walls.
- Components with a metal substrate: access panels, beams, bollards, catwalks, columns, deck, door components, downspout, electrical panel, foundations, garage door components, handrail, ladders, pipes, railings, stringer, tanks, vents, walls and window components.
- Components with a stucco substrate: walls.
- Components with a fiberglass substrate: wall.
- Components with a wood substrate: Door and window components.
- Some of the tiled fountain surfaces also tested positive for lead. These surfaces were not painted and the lead is most likely in the glazing or the matrix of the tile itself.

A detailed listing of the specific components that tested above the action level and their respective locations may be found in Appendix E. Complete field data results for all paint sampling (both positive and negative) may be found in Appendix F.

Sampling for this inspection was representative and any components that were not tested but similar to those components that tested positive for LBP should be considered and treated as lead laden.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Asbestos-Containing Materials

Due to the large amounts of damaged friable asbestos-containing insulation at the subject site, Pacific Environmental recommends that access to the building remain restricted. Future plans for the building include de-energizing and demolition or renovation. During the de-energizing of the building workers exposed to the friable damaged asbestos-containing materials should be warned of the potential health risks associated with asbestos exposure through an operations and maintenance training program.

Steps should be taken to clean-up the asbestos-containing debris and to remove the damaged friable materials. A licensed and certified asbestos abatement contractor must remove the asbestos-containing materials that are to be disturbed by renovation or demolition activities. Our firm can assist you in the development of asbestos removal specifications as well as asbestos abatement proposal solicitation and project management.

Regardless of the various recommendations which have been made throughout this report, we strongly recommend that certain interim measures be considered in cases where abatement is not immediately feasible or possible.

These measures can best be addressed through the initiation of a formal Operations and Maintenance Program. An O&M Program sets guidelines and procedures for dealing with asbestos containing materials until some type of abatement or remedial action is undertaken. Although an O&M Program is considered to be a type of abatement in itself, it does not replace other methods of abatement such as removal, encapsulation or enclosure. When encapsulation or enclosure is selected as a means of abatement, an O&M Program must be instituted. The O&M Program is a temporary means of protecting people from asbestos-related hazards until final action becomes possible.

6.2 Lead-Containing Materials

The greatest potential for lead exposure from lead painted architectural components occurs when the paint has become defective, when the paint is applied to a friction or impact component where

the paint is continually disturbed or when the paint is disturbed through routine maintenance or renovation activities.

With this in mind, the following are Pacific Environmental's recommendations regarding the lead-based paints for this property:

- The results should be provided to any individuals that may disturb the painted surfaces. It is encouraged to utilize professionals that have experience working with LBP.

- If renovation is scheduled in the near future, all lead painted components that have been previously targeted for replacement should be replaced utilizing "lead safe" containment and work practices.

- All components that have been identified with defective lead paint should have the paint repaired as soon as possible. Any paint repair should be done utilizing "lead safe" containment, work practices and clean-up techniques.

- All components with lead painted friction or impact surfaces should be treated to minimize the friction or impact as necessary.

- Lead painted components that have not been targeted for replacement should either be considered for abatement (replacement, enclosure, encapsulation, etc.) or included in an Operations and Management (O&M) Program that will help minimize exposures to lead hazards.

- All lead painted surfaces that are not expected to be impacted in the near future should also be included in the O&M Program.

- Occupants of the facility should be notified of the test results and instructed in actions that they may perform to keep areas "lead safe"

- The tile surfaces are not a likely source of lead dust contamination as long as they remain intact. If future renovation or repair activities require that the tile be removed, or the surfaces disturbed, it should be done in a manner that does not break the tiles. If this is not feasible, this task should be assigned to a lead certified contractor.

6.3 Summary

As a result of the findings of this asbestos and lead assessment, Pacific Environmental recommends that all future renovation, demolition, construction or abatement activities, with the potential for disturbing identified LBP and/or ACM product, be performed by properly trained and qualified personnel. These activities should employ state-of-the-art techniques, and be conducted in accordance with all applicable local, State and Federal laws and regulations.

7.0 LIMITATIONS

This report is not intended to identify all hazards or unsafe conditions or to imply that others do not exist. This survey was planned and implemented on the basis of a mutually agrees scope of work and Pacific Environmental's experience in performing building surveys for ACM and LBP.

Pacific Environmental has performed this survey in a professional manner using the degree of skill and care exercised for similar projects under similar conditions, by reputable and competent environmental consultants. Pacific Environmental shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time that this survey was conducted.

Pacific Environmental further states that no warranties, expressed or implied, are made regarding the quality, fitness, results to be achieved as a consequence of this report or impacted by information not properly disclosed to Pacific at the time of this report. It further states that no responsibility is assumed for the control or correction of conditions or practices existing at the premises of the client.

8.0 REFERENCES

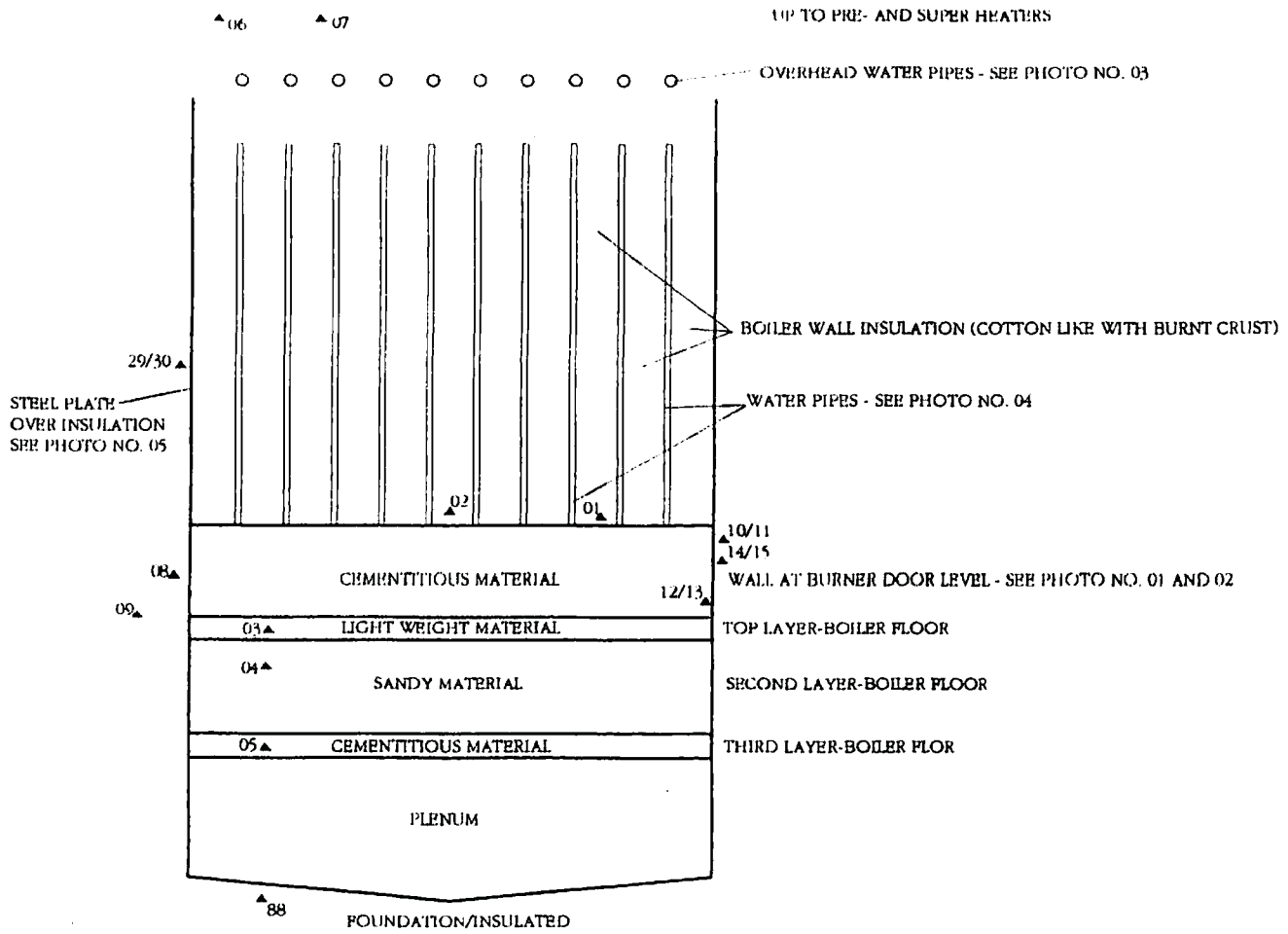
CT&E Environmental Services, Inc.. 1995. *Lead-Based Paint Hazard Assessment Report*. Prepared for Pasadena Water and Power Department, CT&E Job # 43058. March 24, 1995.

CT&E Environmental Services, Inc.. 1995. *Asbestos Hazard Assessment Report*. Prepared for Pasadena Water and Power Department, CT&E Job # 43058. March 24, 1995.

Mirales Associates Inc.. 1996. *Glenarm Power Plant A/E Evaluation Report*. Prepared for Pasadena Water and Power Department, FEMA 1008-DR-CA, P.A.. 037-56000, DSR 12210. June 14, 1996.

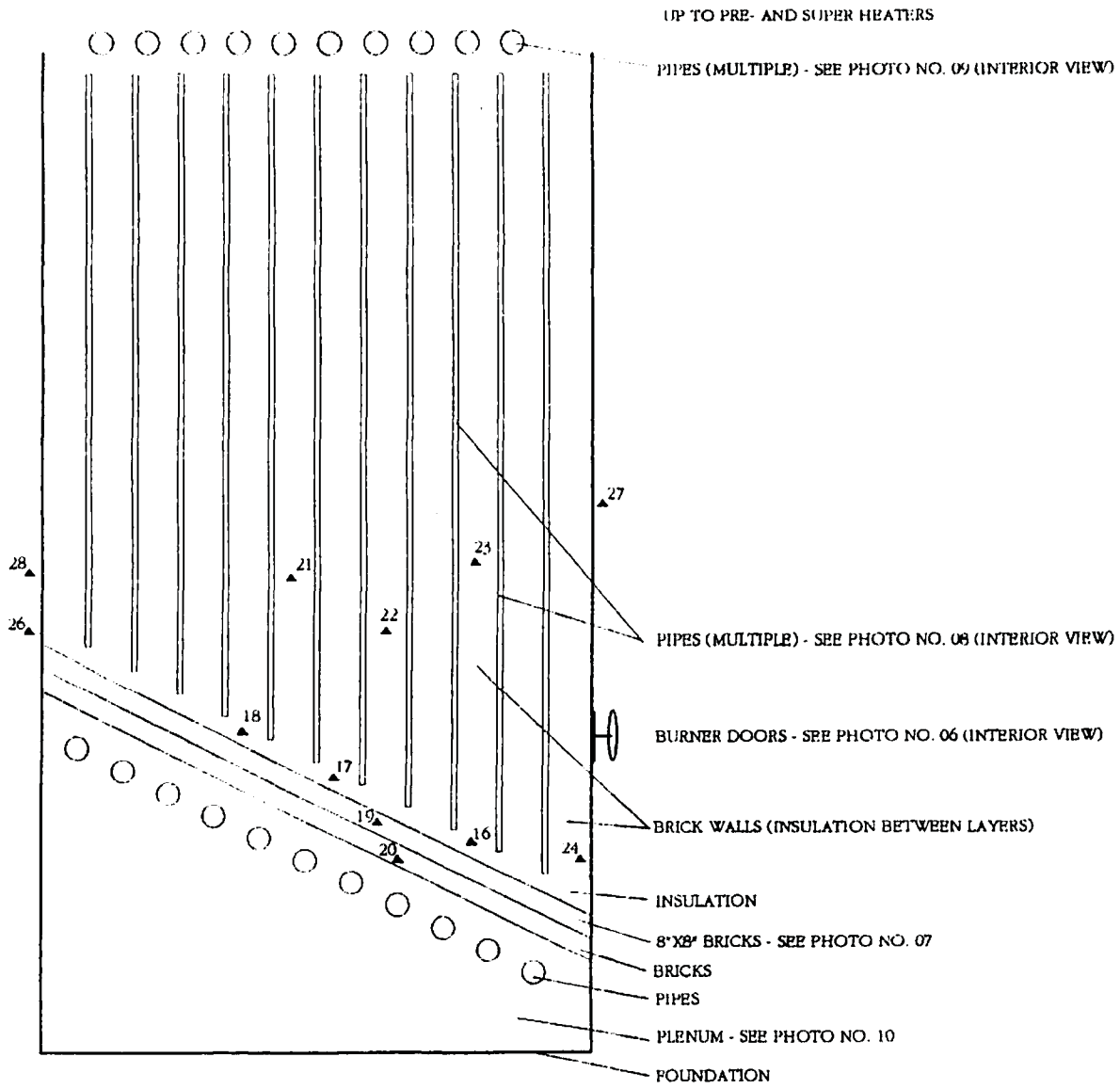
APPENDIX A

Site Plans



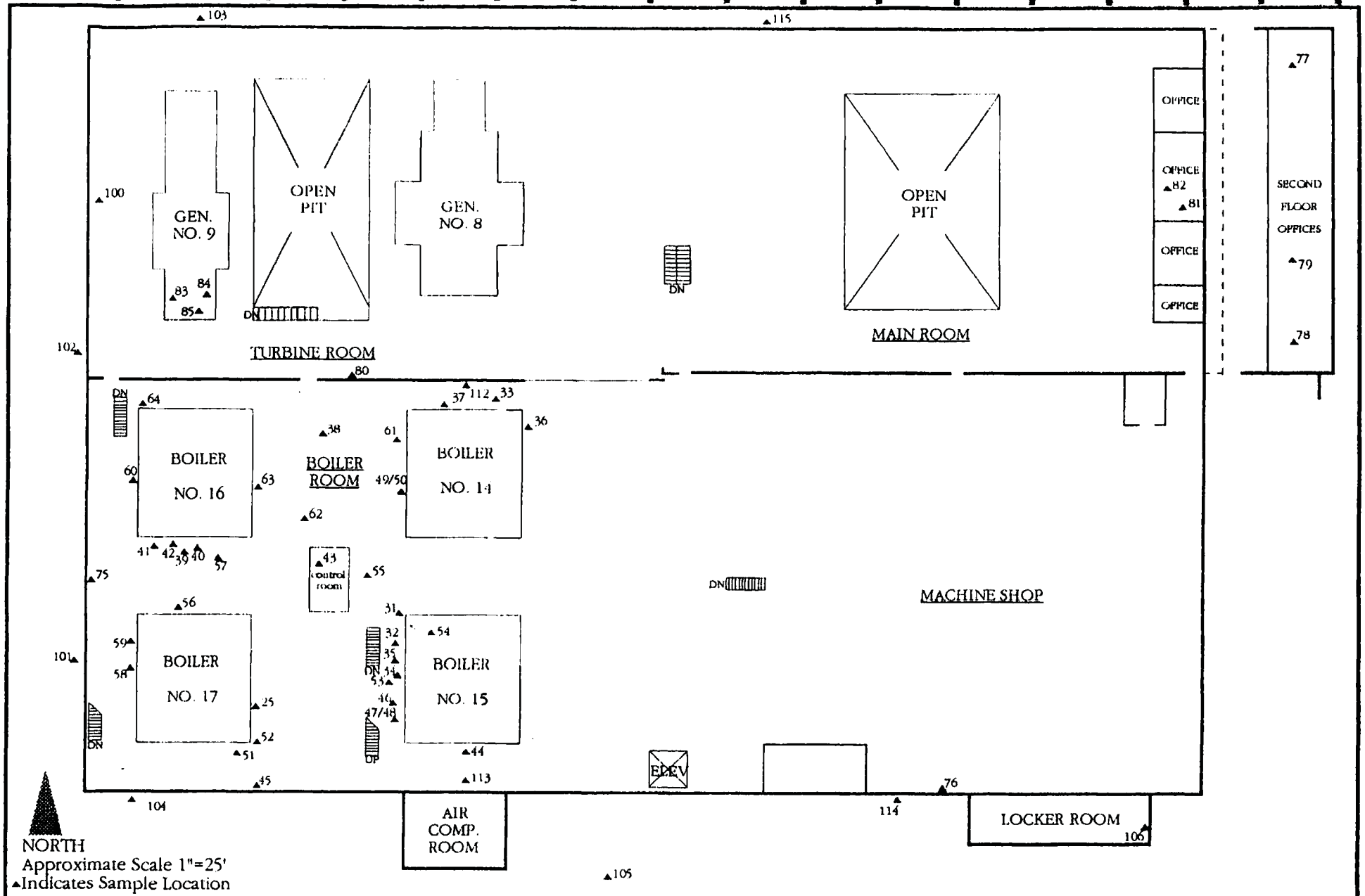
Not To Scale
▲Indicates Sample Location

CITY OF PASADENA ASBESTOS AND LEAD-PAINT SURVEY GLENARM POWER PLANT 72 East Glenarm Street Pasadena, California	PACIFIC ENVIRONMENTAL COMPANY	PROJECT CODE: 98199 DATE: FEBRUARY 1999 CROSS SECTION-BOILERS 14 & 15 INTERIOR ASBESTOS SAMPLE LOCATIONS



Not To Scale
▲Indicates Sample Location

CITY OF PASADENA ASBESTOS AND LEAD-PAINT SURVEY GLENARM POWER PLANT 72 East Glenarm Street Pasadena, California	PACIFIC ENVIRONMENTAL COMPANY	PROJECT CODE: 98199 DATE: FEBRUARY 1999 CROSS SECTION-BOILERS 16 & 17 INTERIOR ASBESTOS SAMPLE LOCATIONS



CITY OF PASADENA
ASBESTOS AND LEAD-PAINT SURVEY

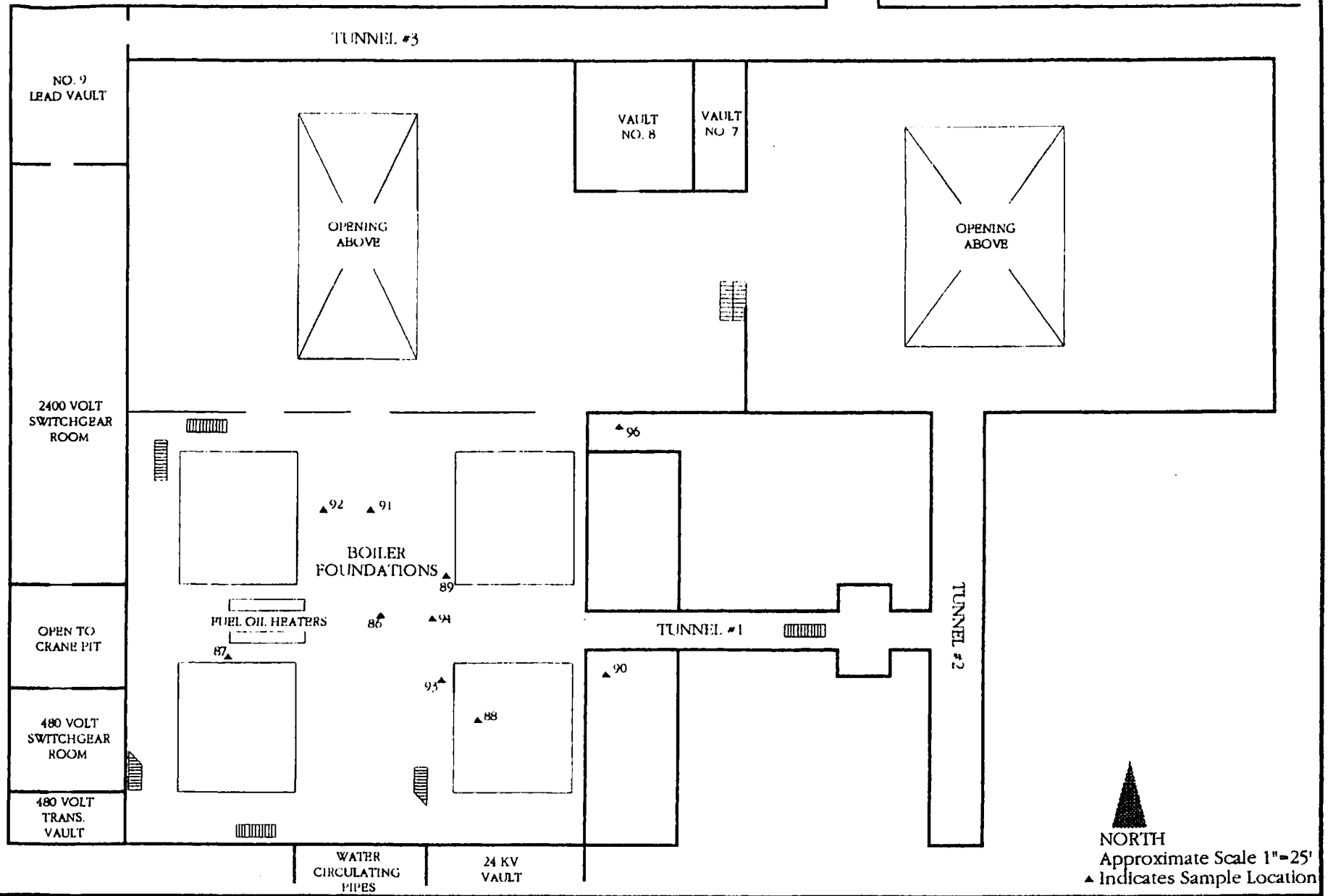
GLENARM POWER PLANT
72 East Glenarm Street
Pasadena, California

PACIFIC ENVIRONMENTAL COMPANY

PROJECT CODE: 98199

DATE: FEBRUARY 1999

ASBESTOS SAMPLE LOCATION PLAN
MAIN FLOOR AND GALLERY



CITY OF PASADENA
ASBESTOS AND LEAD-PAINT SURVEY

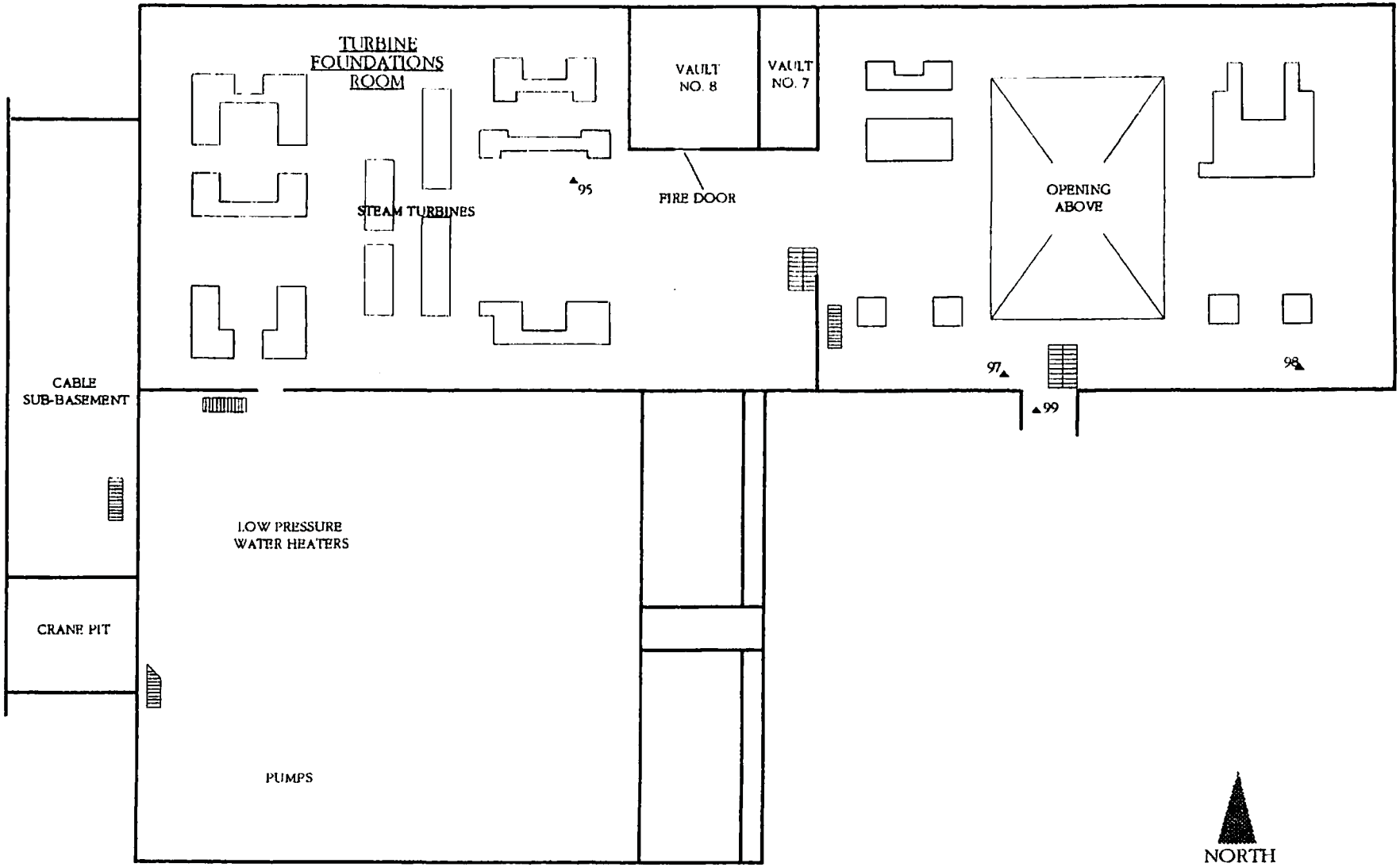
GLENARM POWER PLANT
72 East Glenarm Street
Pasadena, California

PACIFIC ENVIRONMENTAL COMPANY

PROJECT CODE: 98199

DATE: FEBRUARY 1999

ASBESTOS SAMPLE LOCATION PLAN
LOWER LEVEL



CITY OF PASADENA
ASBESTOS AND LEAD-PAINT SURVEY

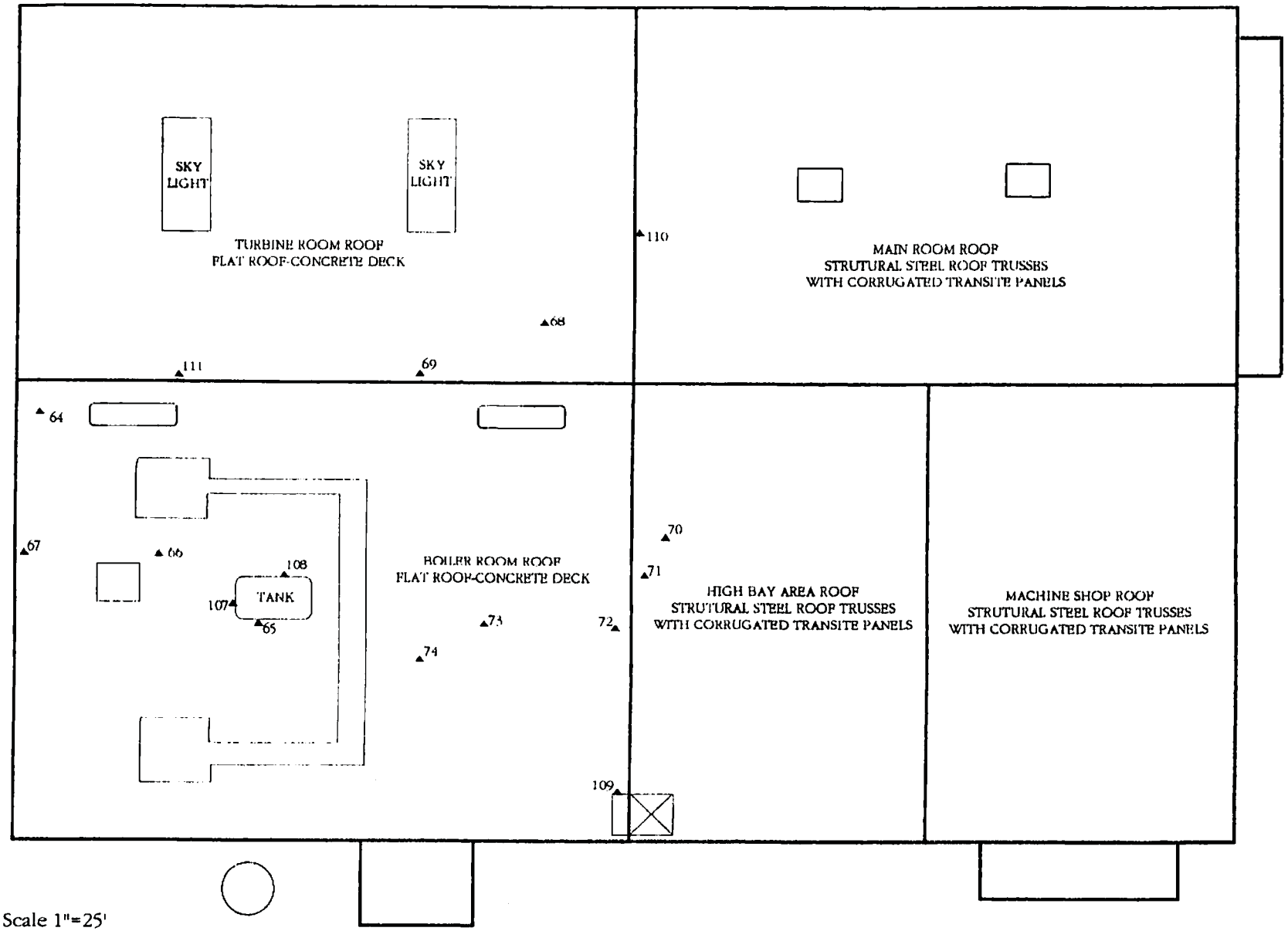
GLENARM POWER PLANT
72 East Glenarm Street
Pasadena, California

PACIFIC ENVIRONMENTAL COMPANY

PROJECT CODE: 98199

DATE: FEBRUARY 1999

ASBESTOS SAMPLE LOCATION PLAN
BASEMENT LEVEL



NORTH
Approximate Scale 1"=25'
▲Indicates Sample Location

CITY OF PASADENA
ASBESTOS AND LEAD-PAINT SURVEY

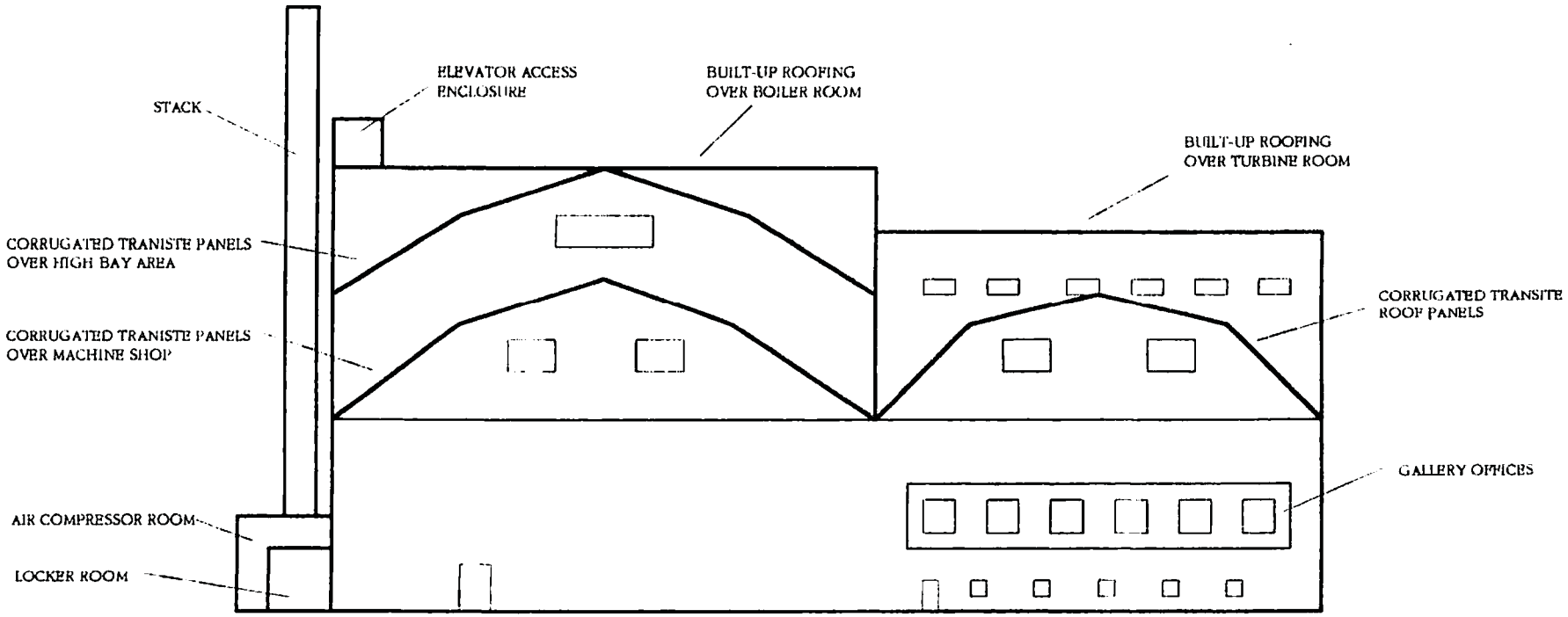
GLENARM POWER PLANT
72 East Glenarm Street
Pasadena, California

PACIFIC ENVIRONMENTAL COMPANY

PROJECT CODE: 98199

DATE: FEBRUARY 1999

ASBESTOS SAMPLE LOCATION PLAN
ROOF



Not To Scale

CITY OF PASADENA
ASBESTOS AND LEAD-PAINT SURVEY

GLENARM POWER PLANT
72 East Glenarm Street
Pasadena, California

PACIFIC ENVIRONMENTAL COMPANY

PROJECT CODE: 98199

DATE: FEBRUARY 1999

EAST ELEVATION
ROOF SUMMARY

APPENDIX B

Site Photographs

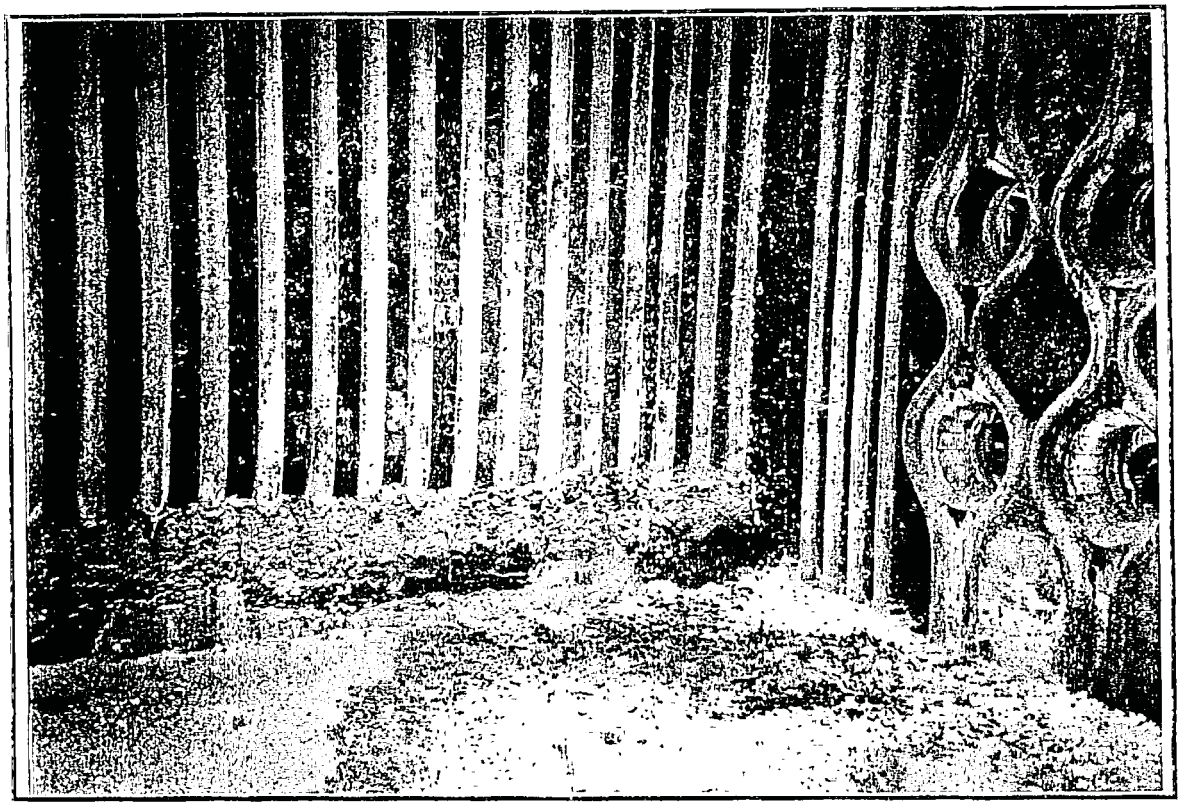


PHOTO 1 - INTERIOR VIEW OF BOILER AND BURNER WALL OF BOILER 15.

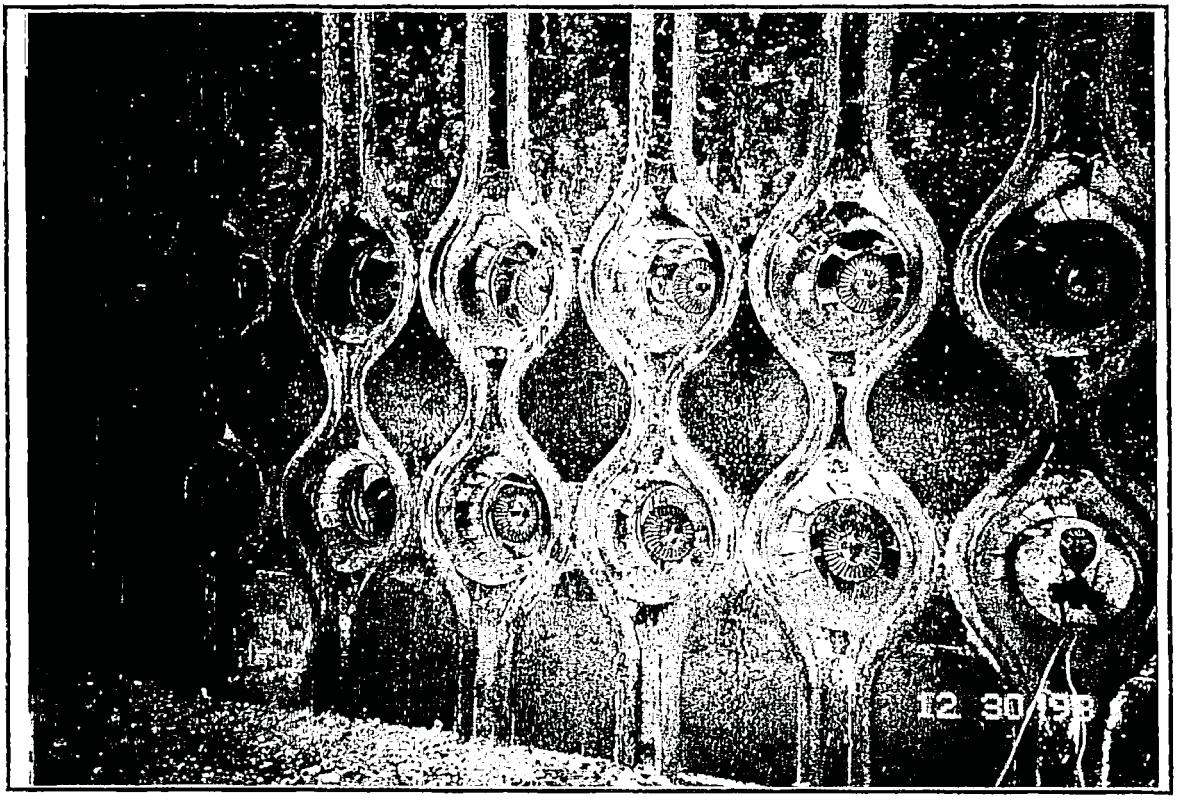


PHOTO 2 - INTERIOR VIEW OF BOILER 15 BURNER WALL.

PACIFIC *ENVIRONMENTAL* COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

PHOTO 3 - INTERIOR VIEW OF BOILER 15 WALL AND OVERHEAD PIPES.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

PHOTO 4 - INTERIOR VIEW OF BOILER 15 WHERE STEAM PIPES ENTER FLOOR.

PHOTO 5 - EXTERIOR VIEW OF BOILER 14-STEEL PLATES OVER INSULATION AT GROUND LEVEL (98199.30).

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99189 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

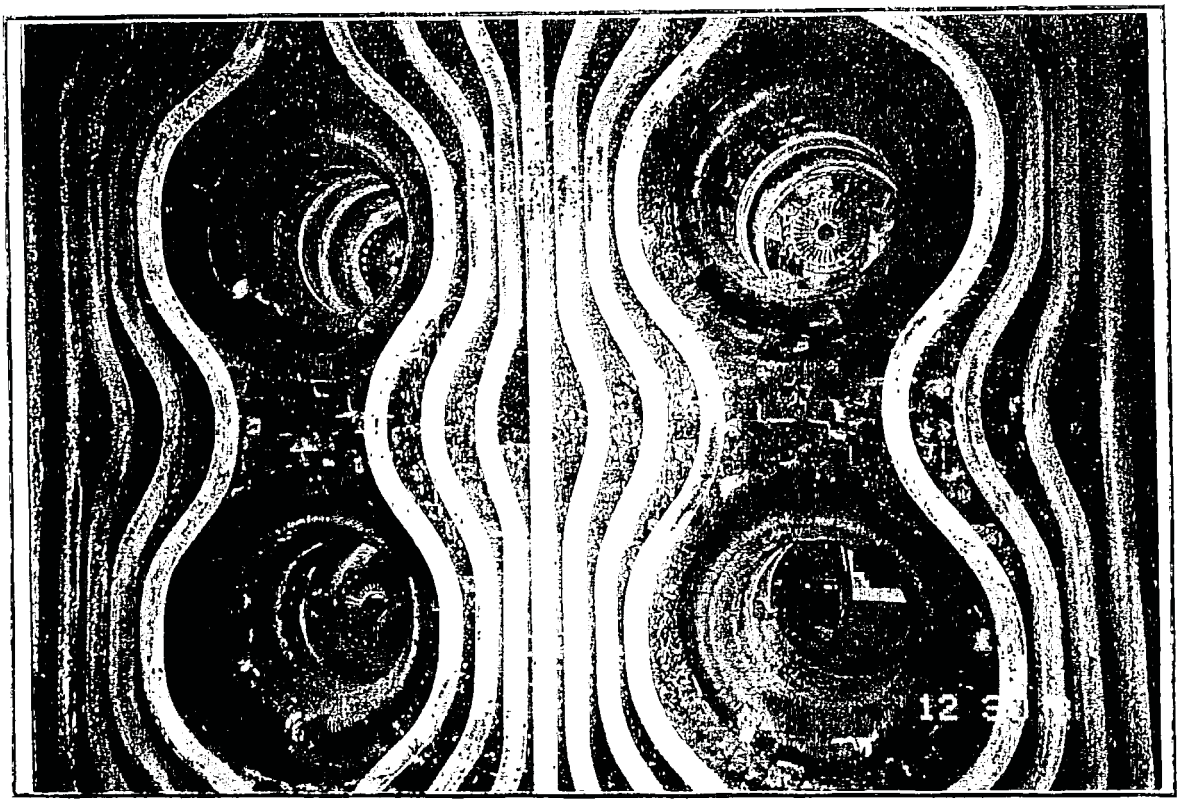


PHOTO 6 - INTERIOR VIEW OF BOILER 17 BURNER DOORS.

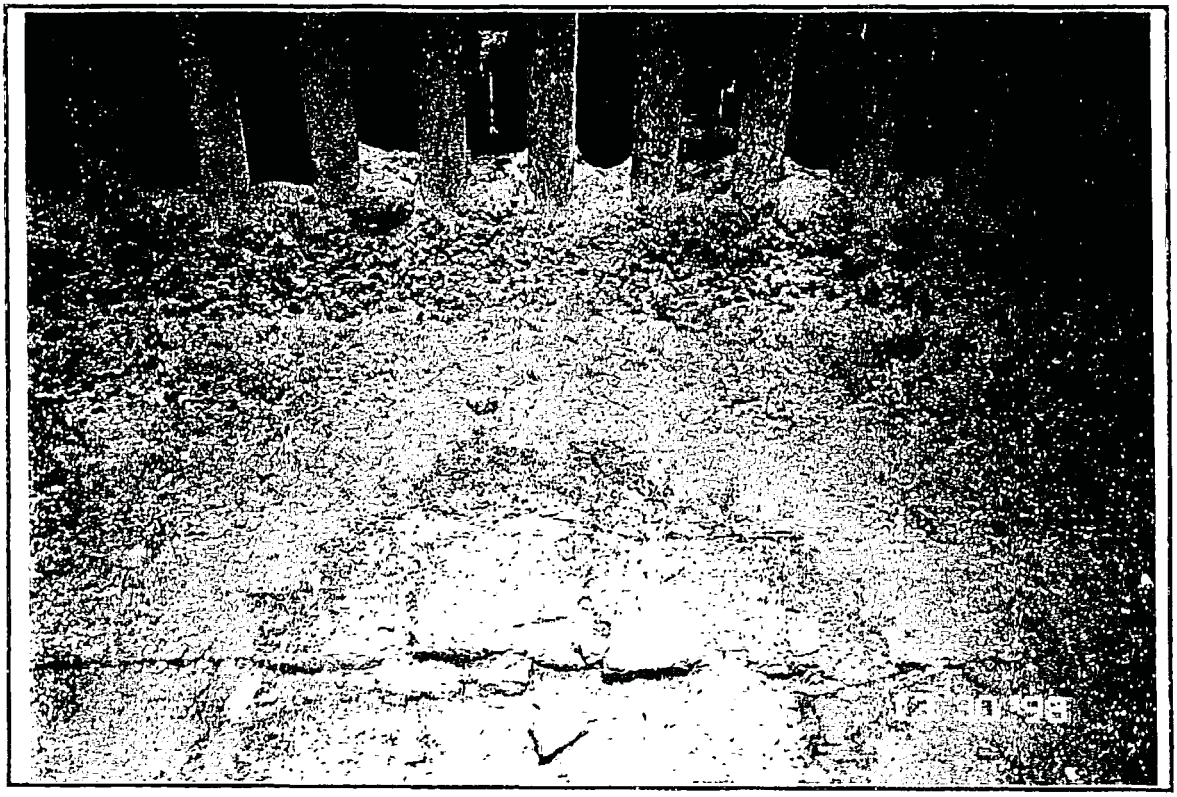


PHOTO 7 - INTERIOR VIEW OF BOILER 17 FLOOR AT SIDE WALL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

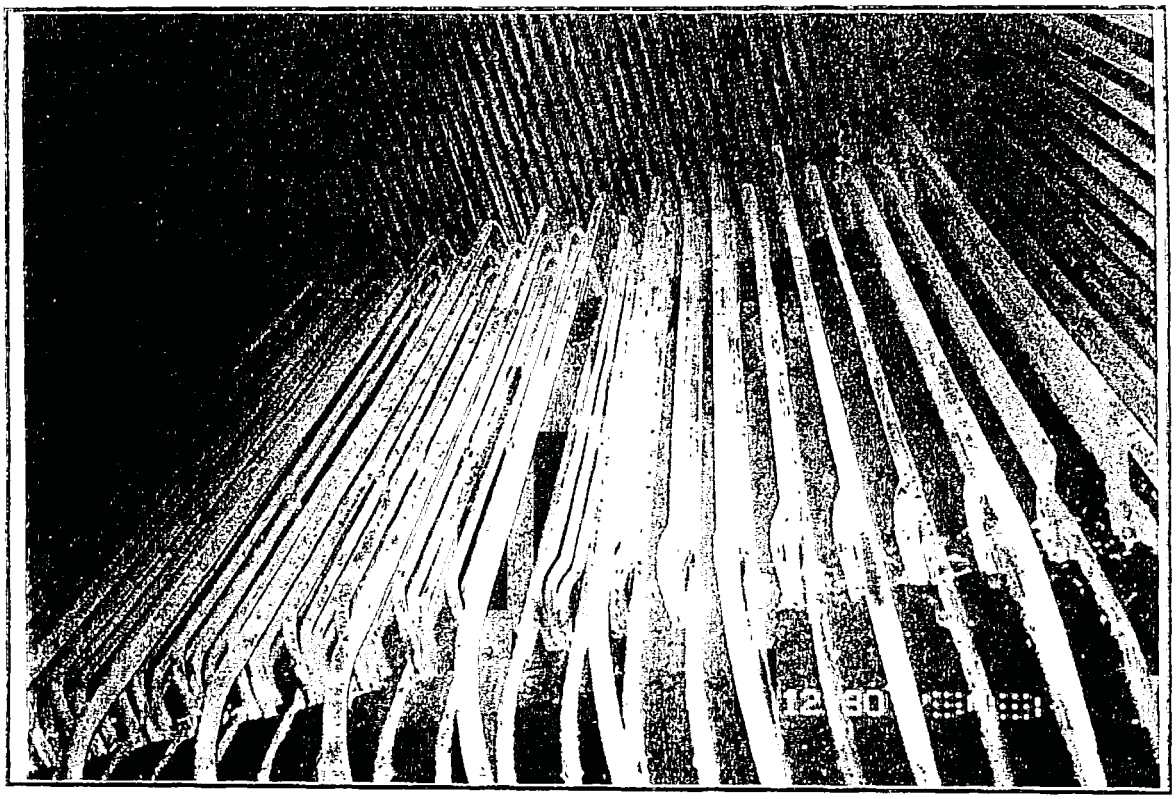


PHOTO 8 - INTERIOR VIEW OF BOILER 17 UPPER WALL.

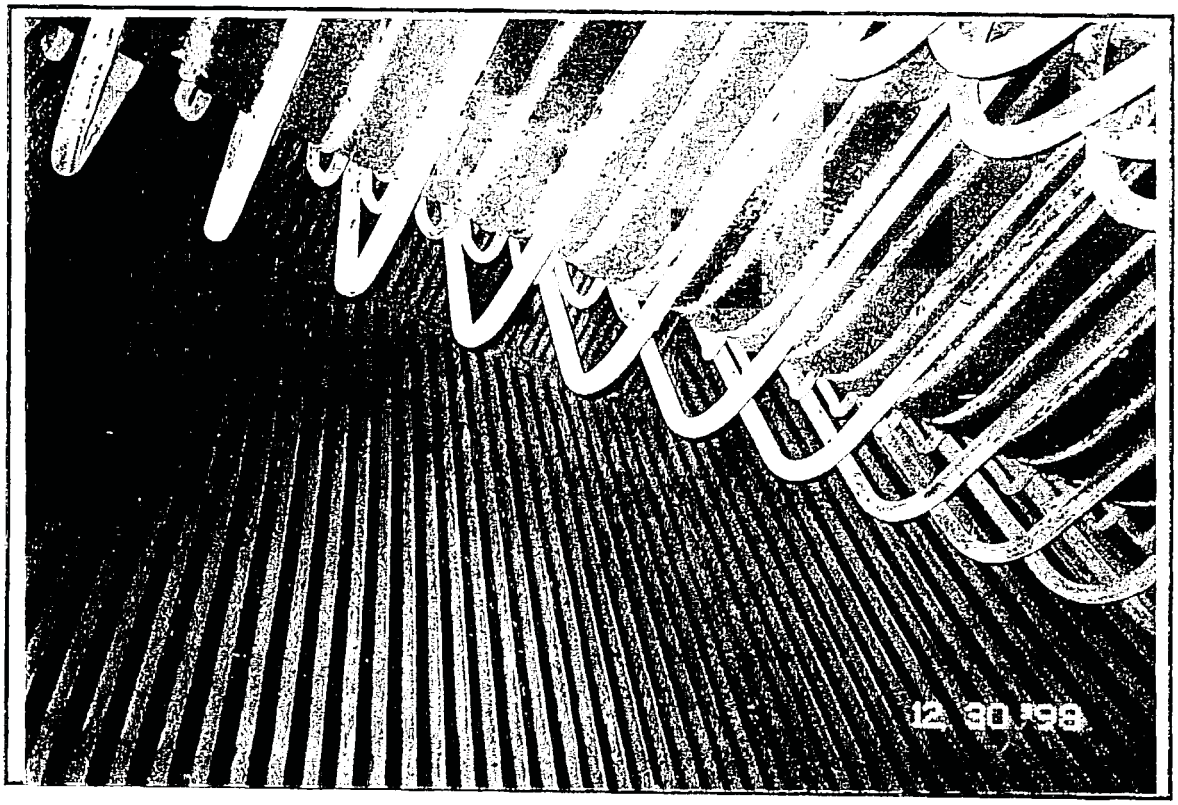


PHOTO 9 - INTERIOR VIEW OF BOILER 17 WALL AT CEILING.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

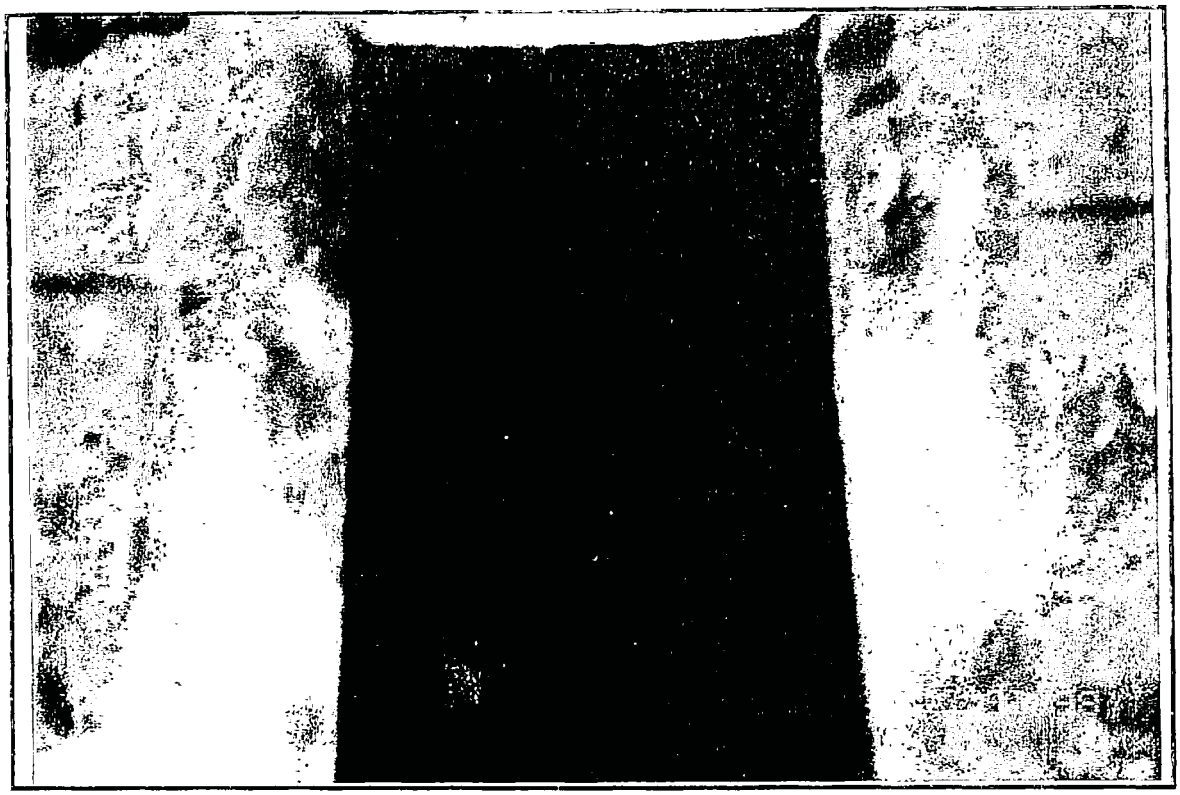


PHOTO 10 - INTERIOR VIEW OF BOILER 17 PLENUM BENEATH BRICK FLOOR.

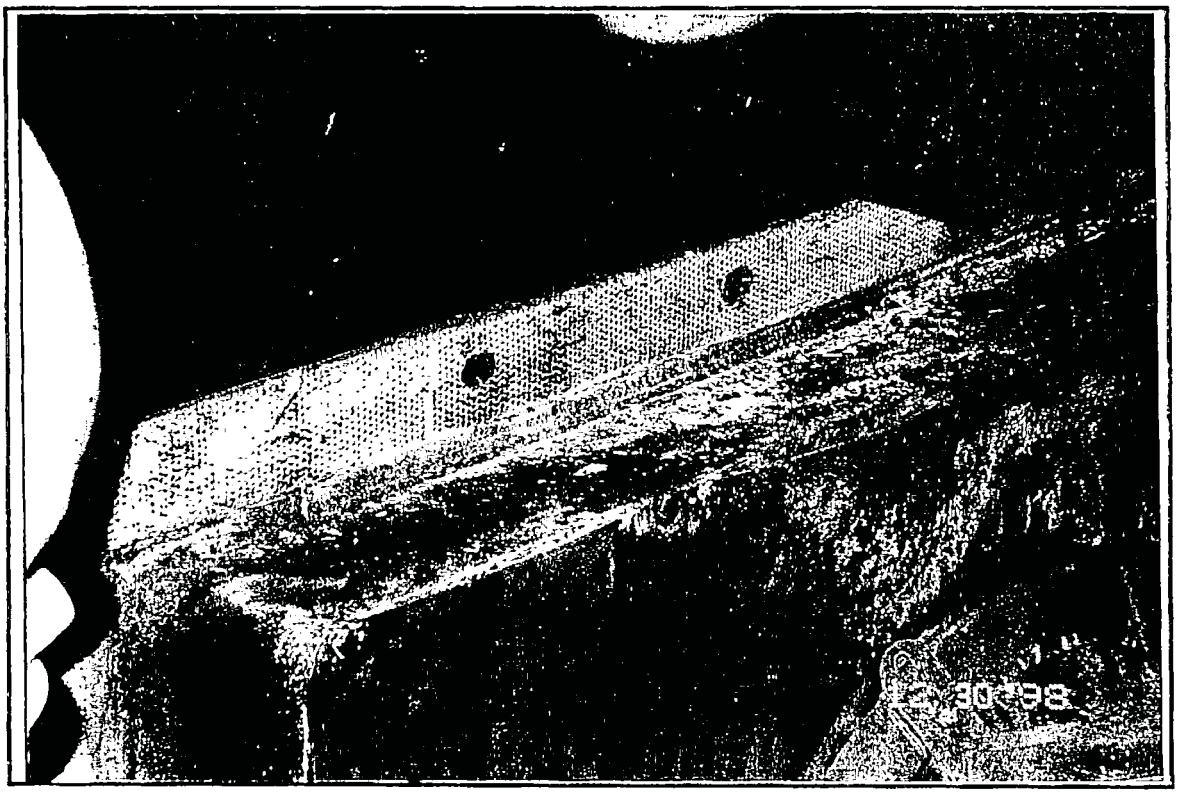


PHOTO 11 - BOILER 16 BURNER DOOR GASKET (SAMPLE NO. 98199.39).

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

PHOTO 12 - CLOTH PIPE WRAP NORTH OF BOILER 14 (SAMPLE NO. 98199.33).

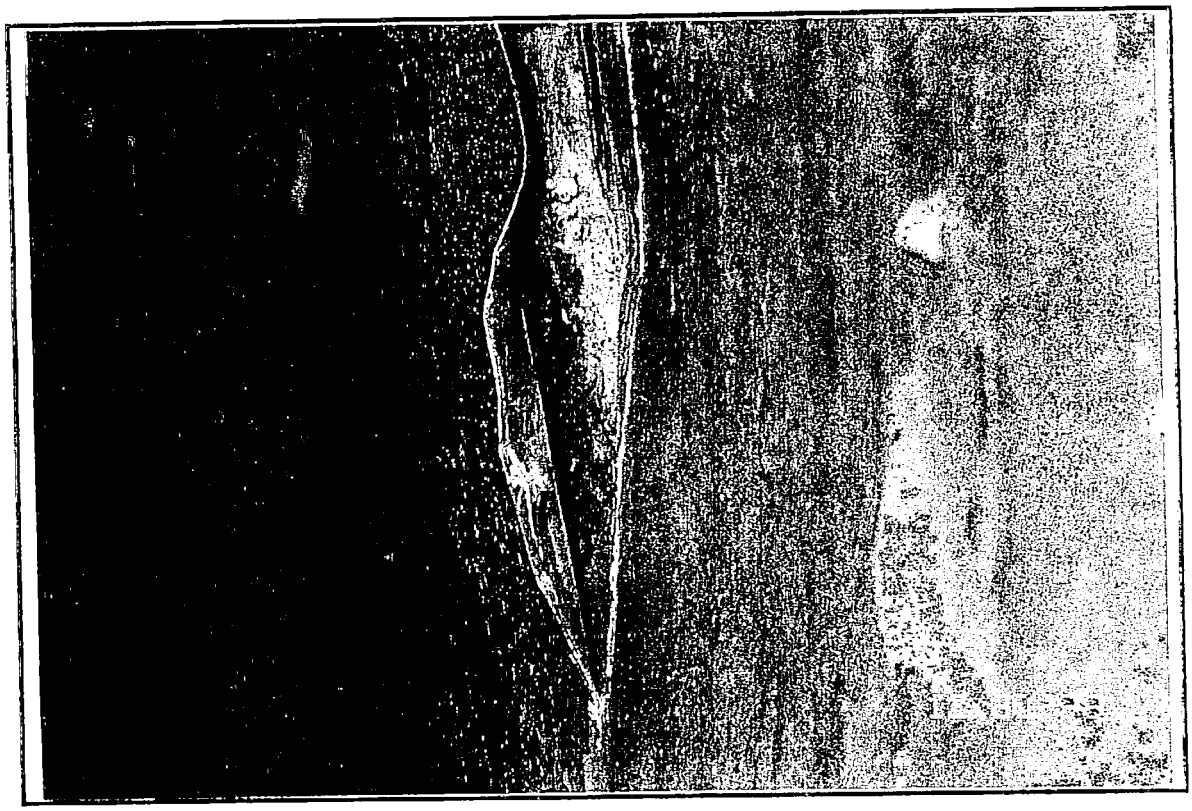


PHOTO 13 - NORTH AIR SHAFT BOILER 14 (NON-ACM) (SAMPLE NO. 98199.37).

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

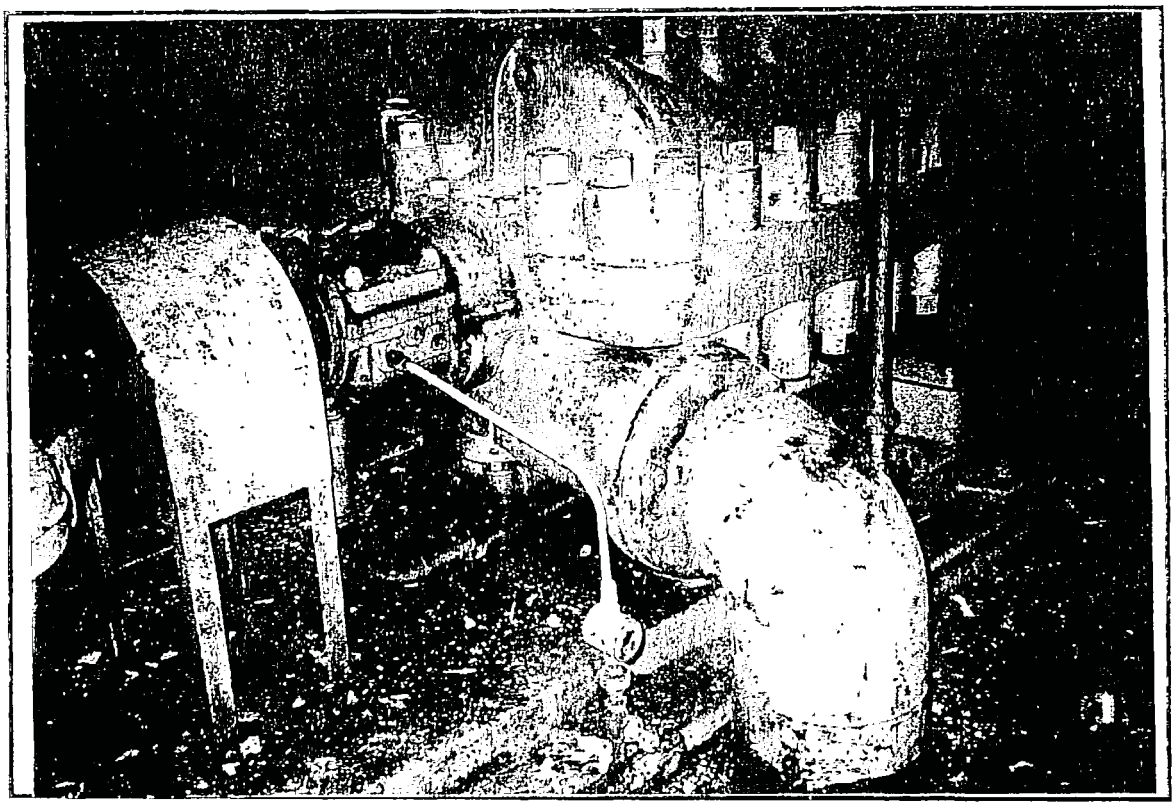


PHOTO 14 -PUMP BETWEEN BOILERS 14 & 16 (SAMPLE NO. 98199.38).

PHOTO 15 - ACM DEBRIS BENEATH BOILER 15.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

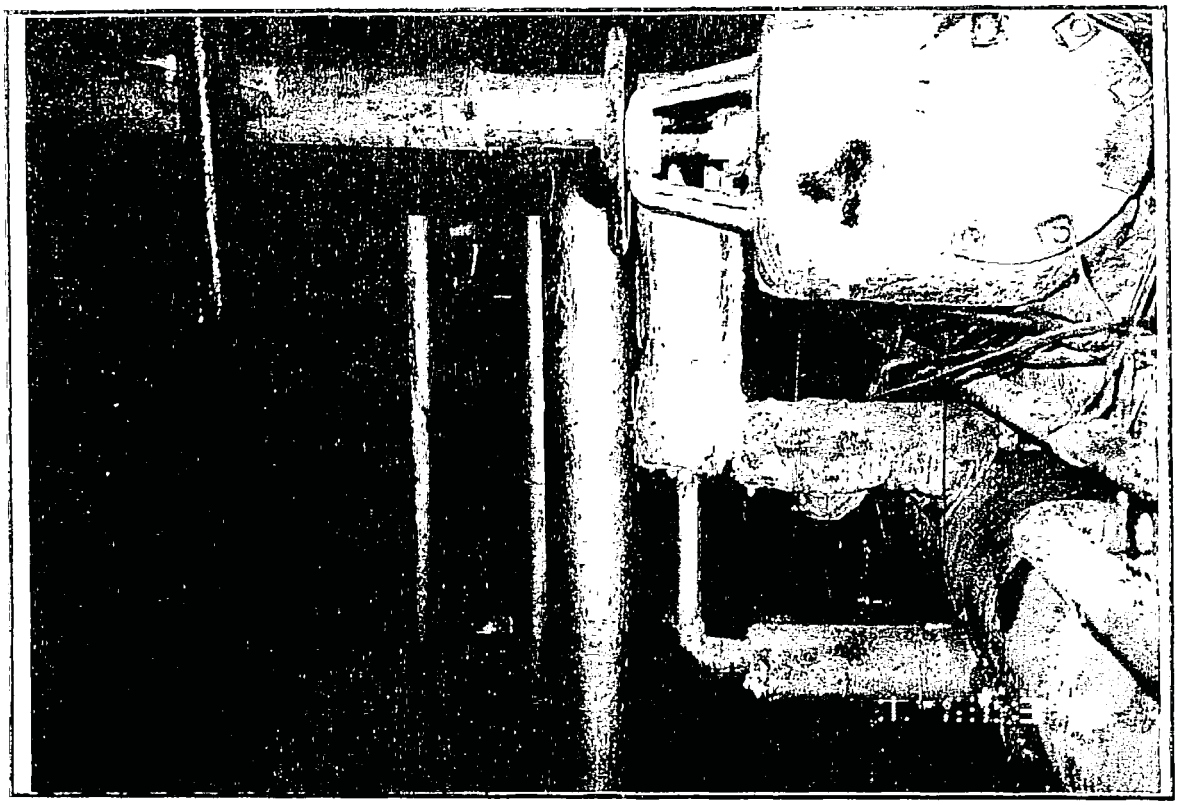


PHOTO 16 -TYPICAL GATE VALVE AND PIPE INSULATION (DAMAGED) IN THE BOILER ROOM.

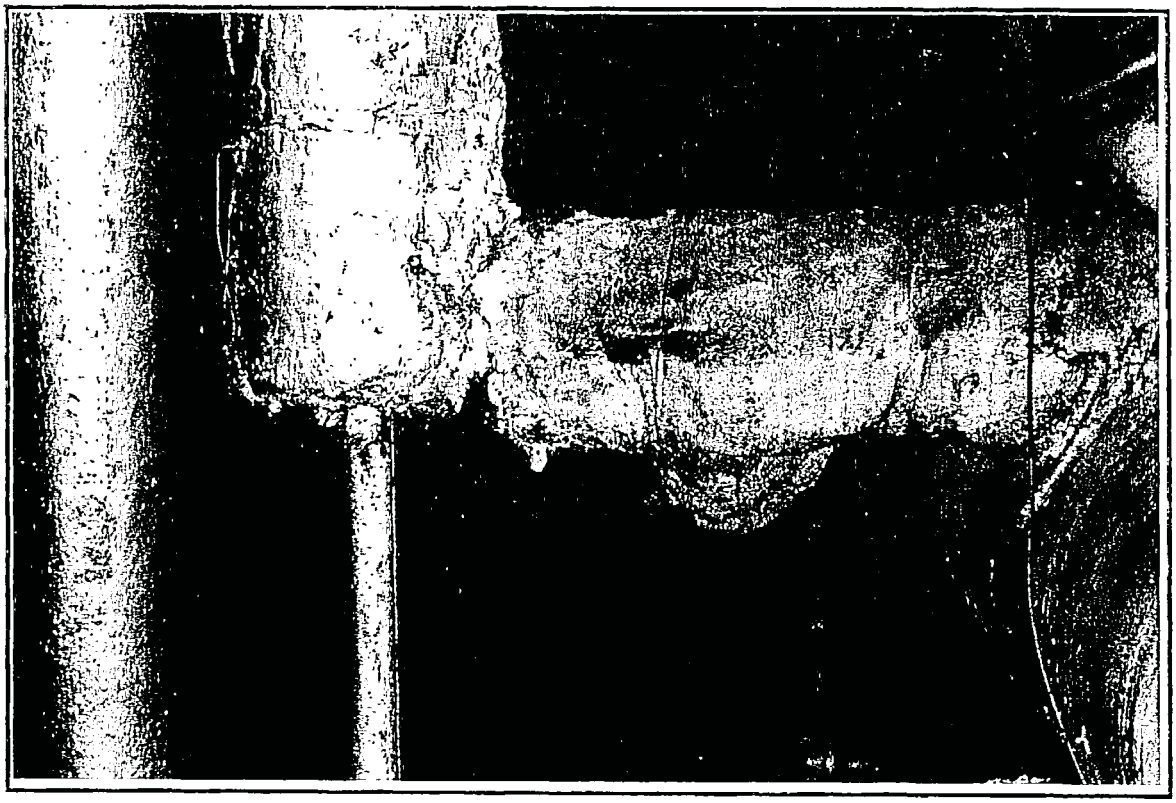


PHOTO 17 - DAMAGED INSULATION MATERIALS.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

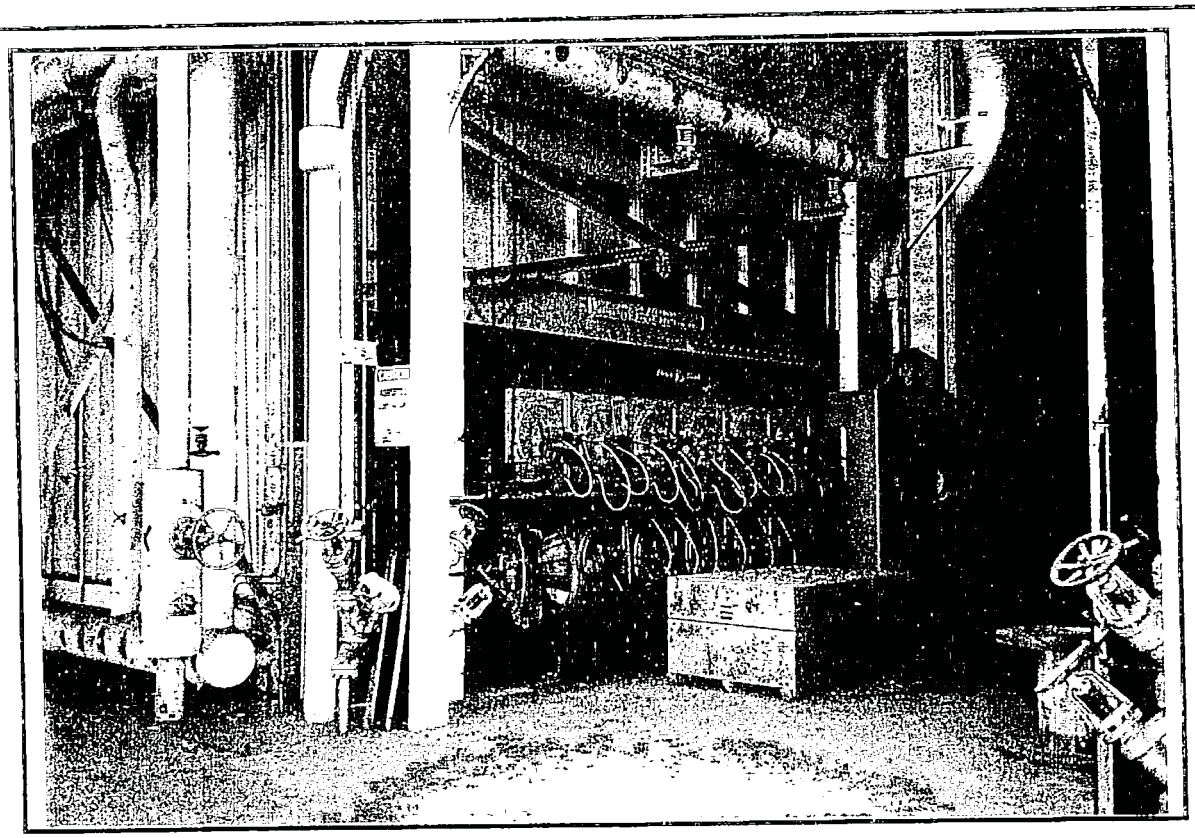


PHOTO 18 - EXTERIOR VIEW OF BURNER DOORS-BOILER 15.

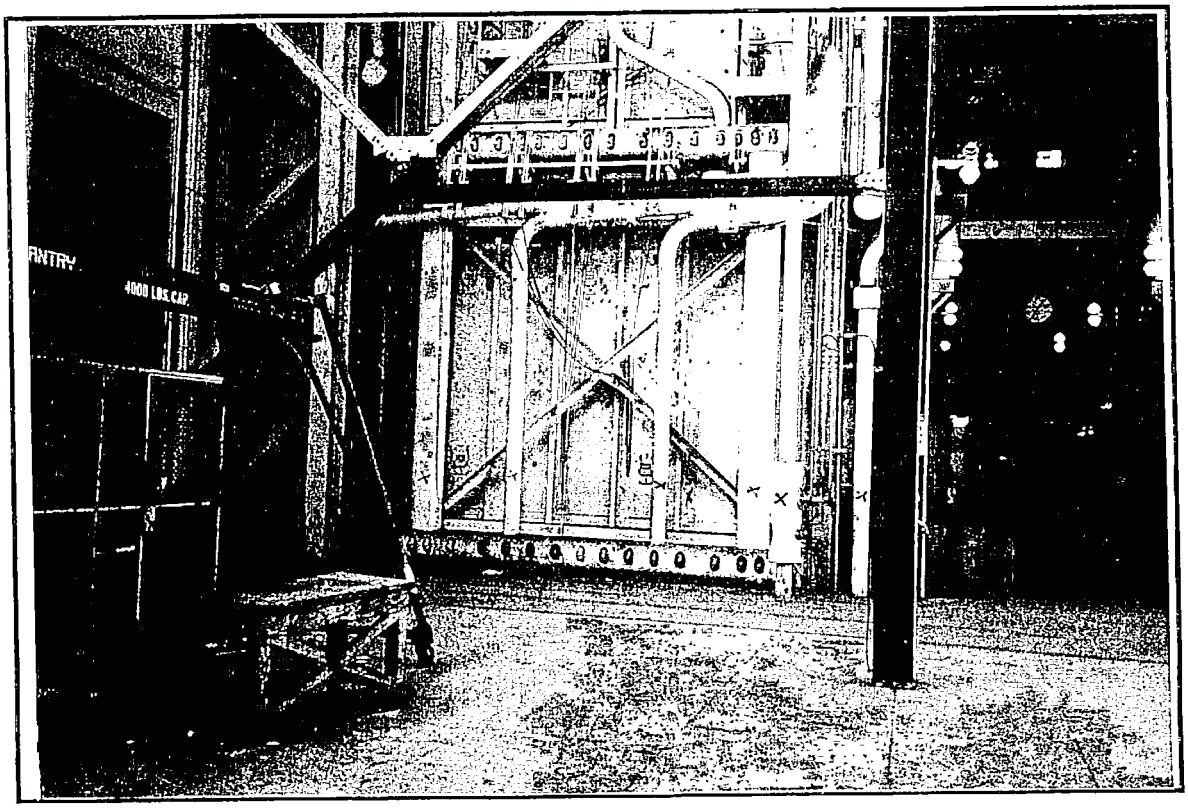


PHOTO 19 - EAST SIDE OF BOILER 15 AT GROUND LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

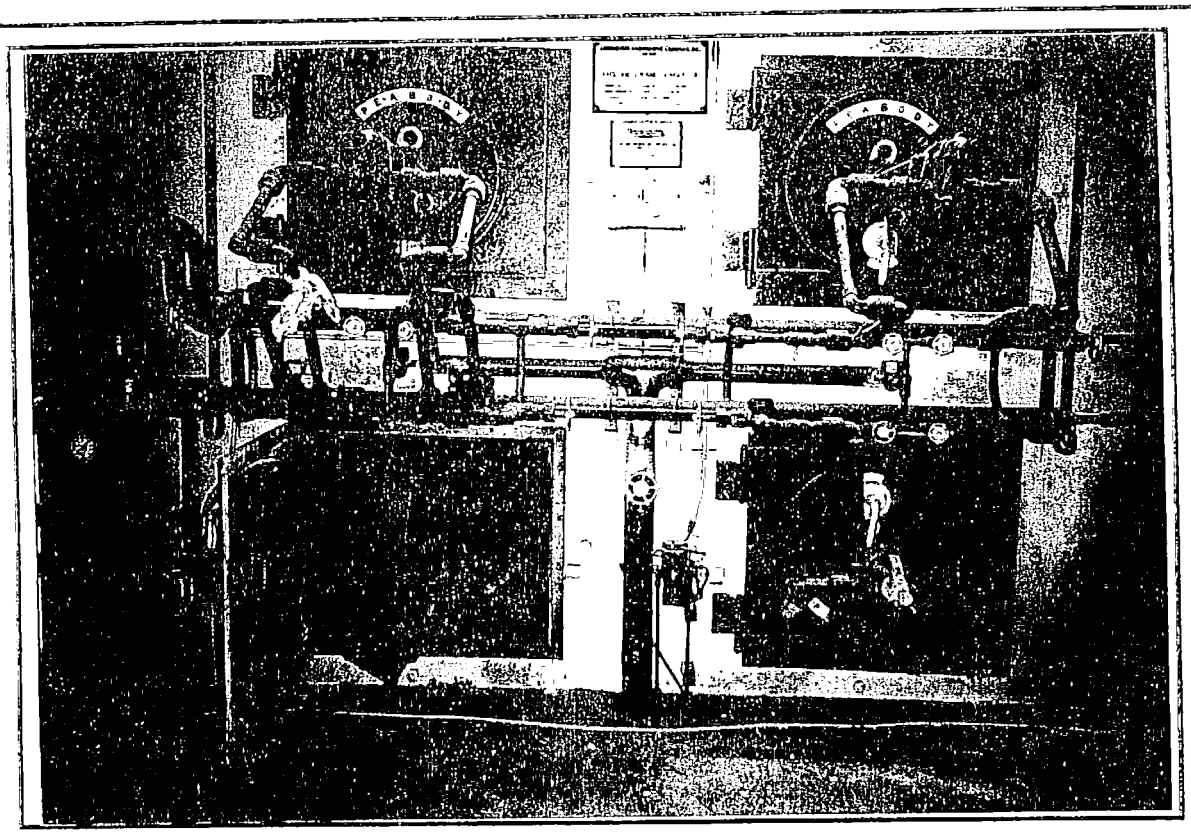


PHOTO 20 - EXTERIOR VIEW OF BURNER DOORS-BOILER 16.

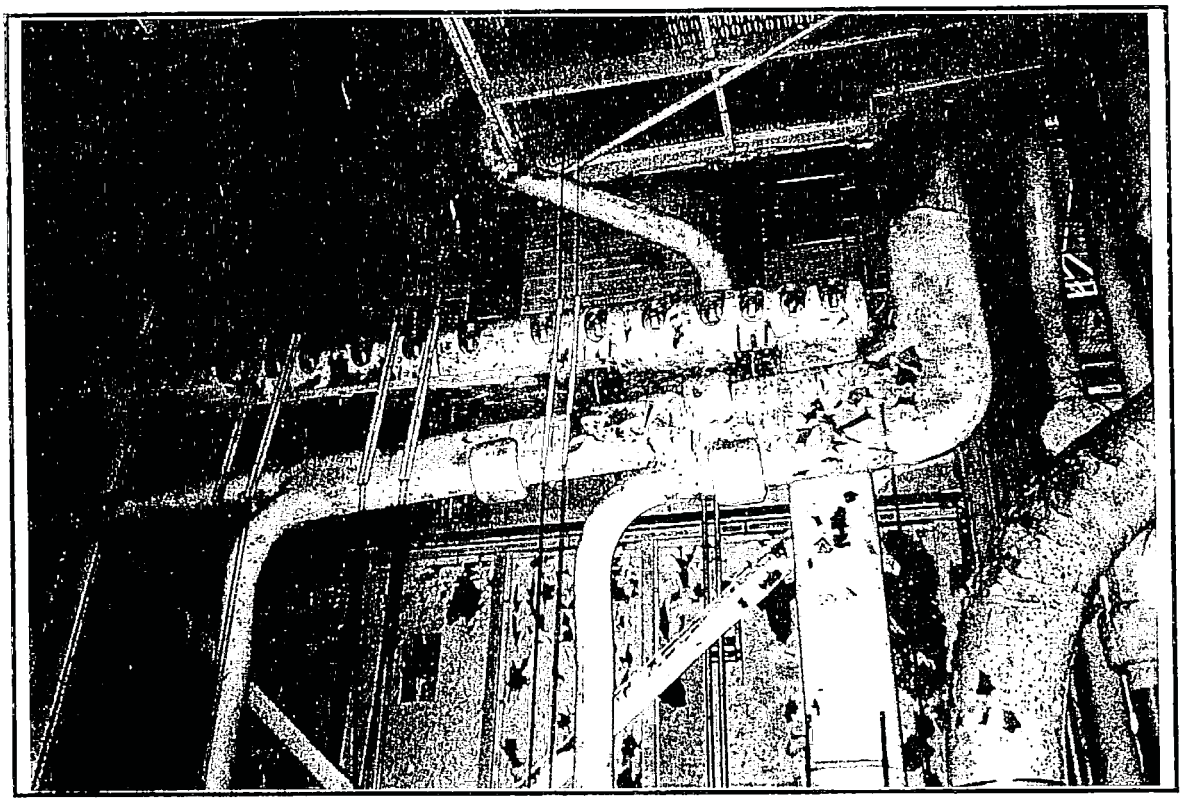


PHOTO 21 - WEST SIDE OF BOILER 14 -MID LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

PHOTO 22 - EAST AND WEST SIDES OF BOILER 15 TO SUPER HEATER LEVEL.

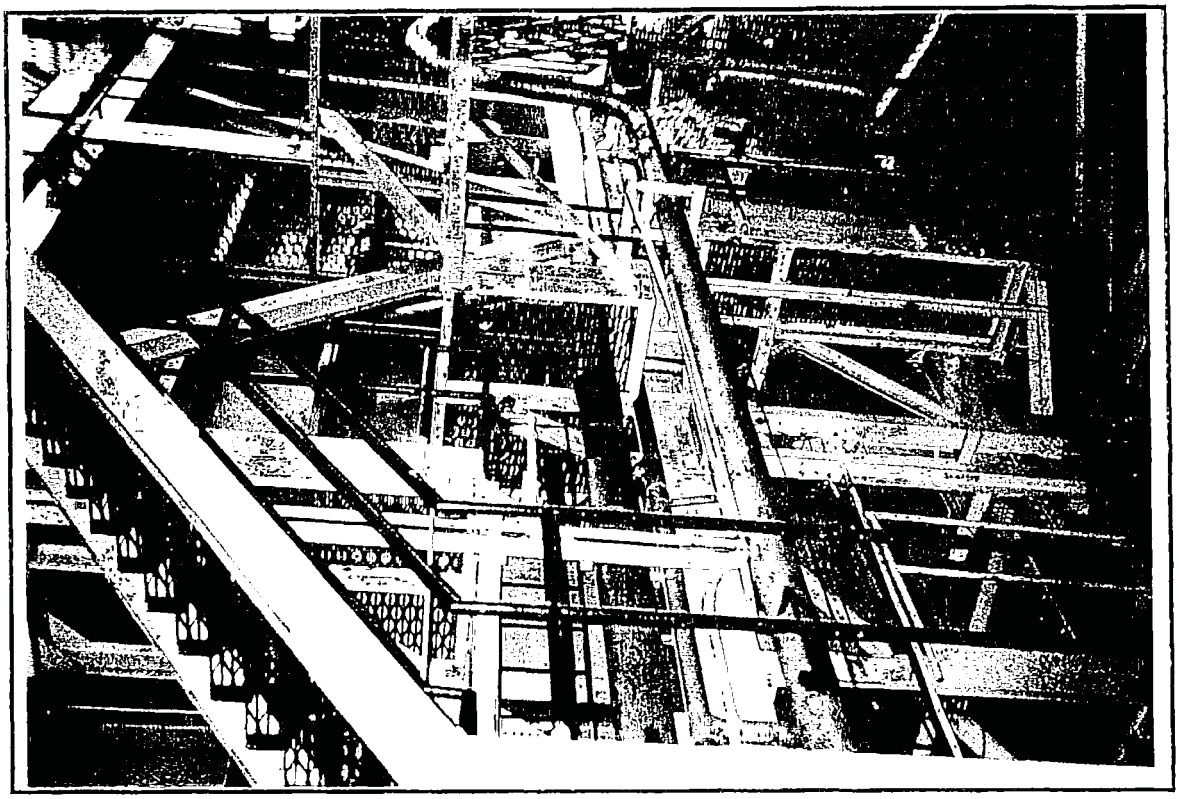


PHOTO 23 - CATWALK SYSTEM SURROUNDING THE BOILERS.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

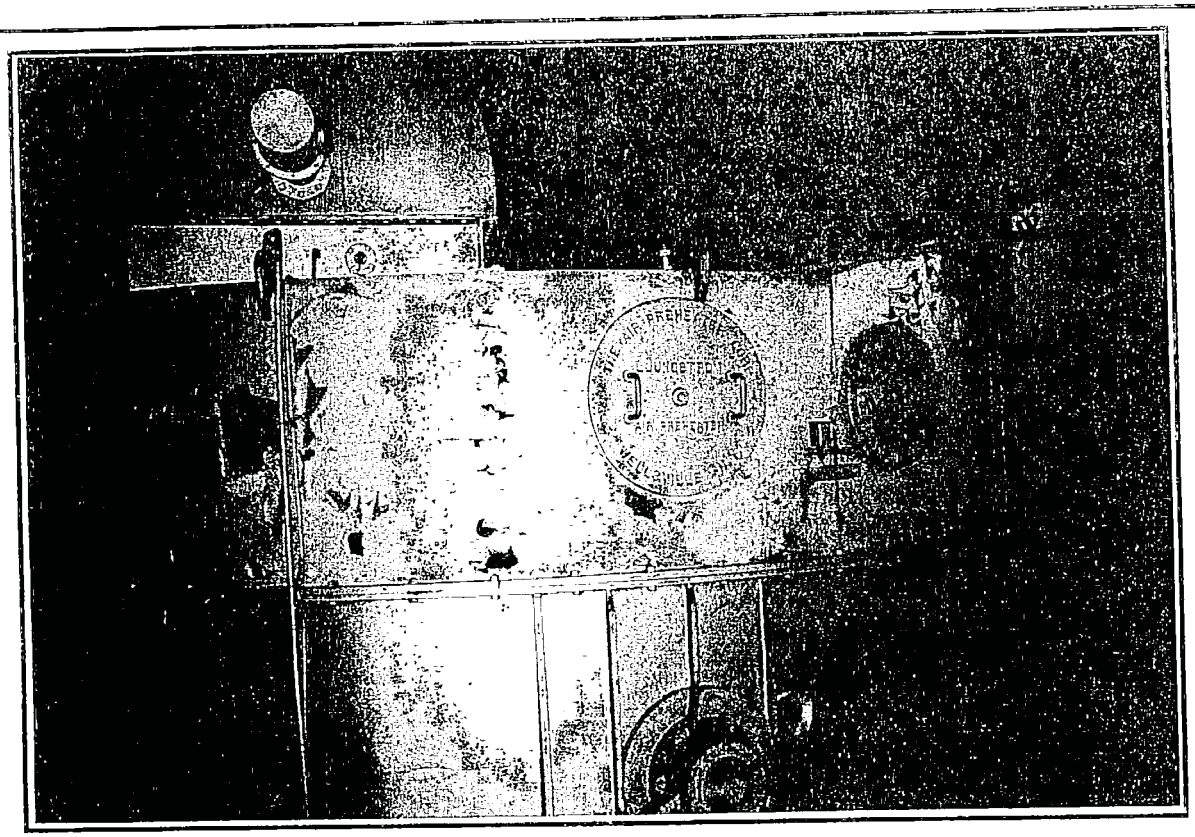


PHOTO 24 - PRE-HEATER FOR BOILER 14 AT UPPER LEVEL.

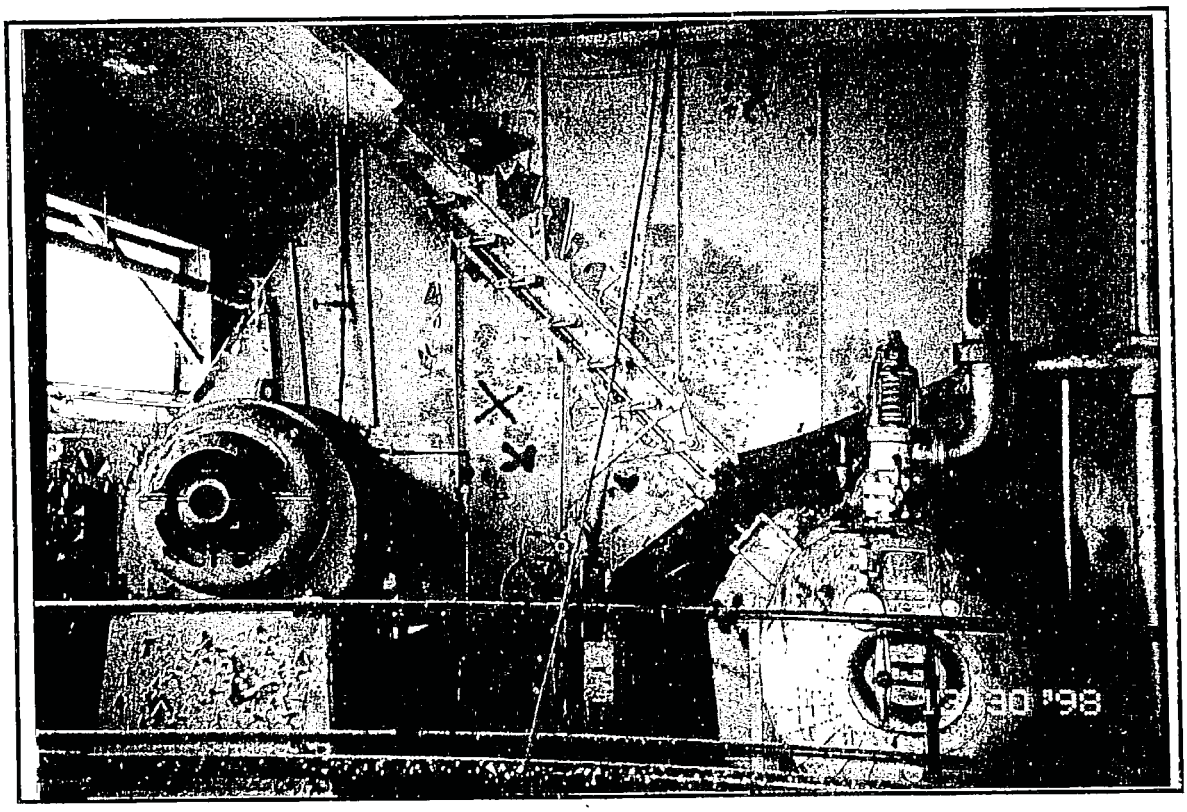


PHOTO 25 - PRE-HEATER FOR BOILER 17 AT UPPER LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

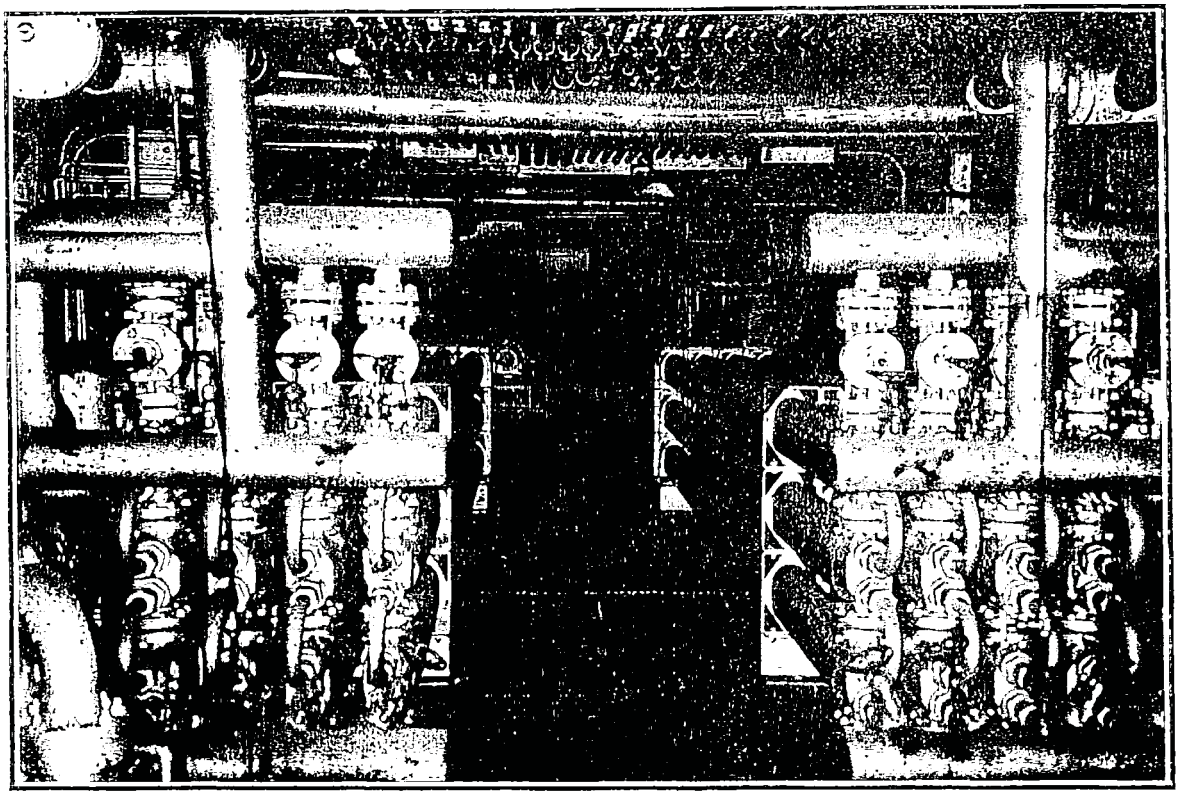


PHOTO 26 - FUEL OIL HEATERS FOR BOILERS 16 & 17 AT LOWER LEVEL.

PHOTO 27 - BOILER INSULATION BOILER 14 AT LOWER LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

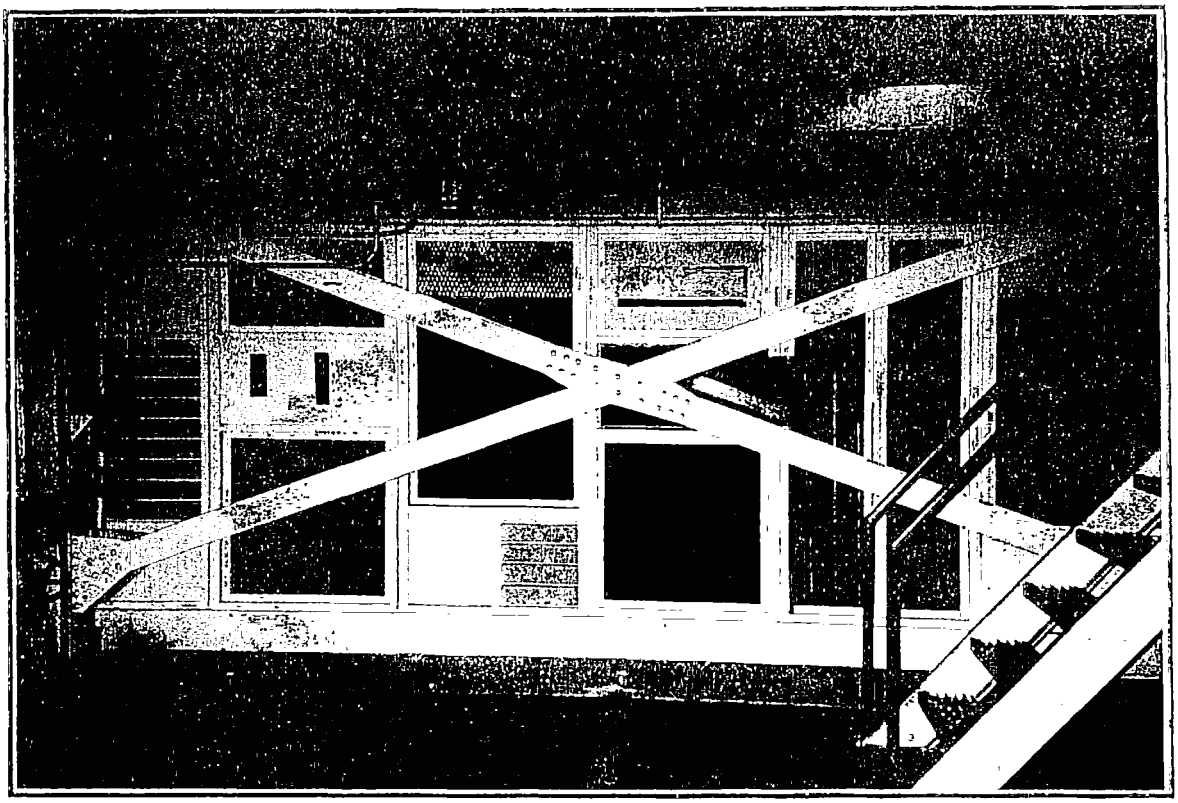


PHOTO 28 - BOILER 15 FOUNDATION AT LOWER LEVEL.

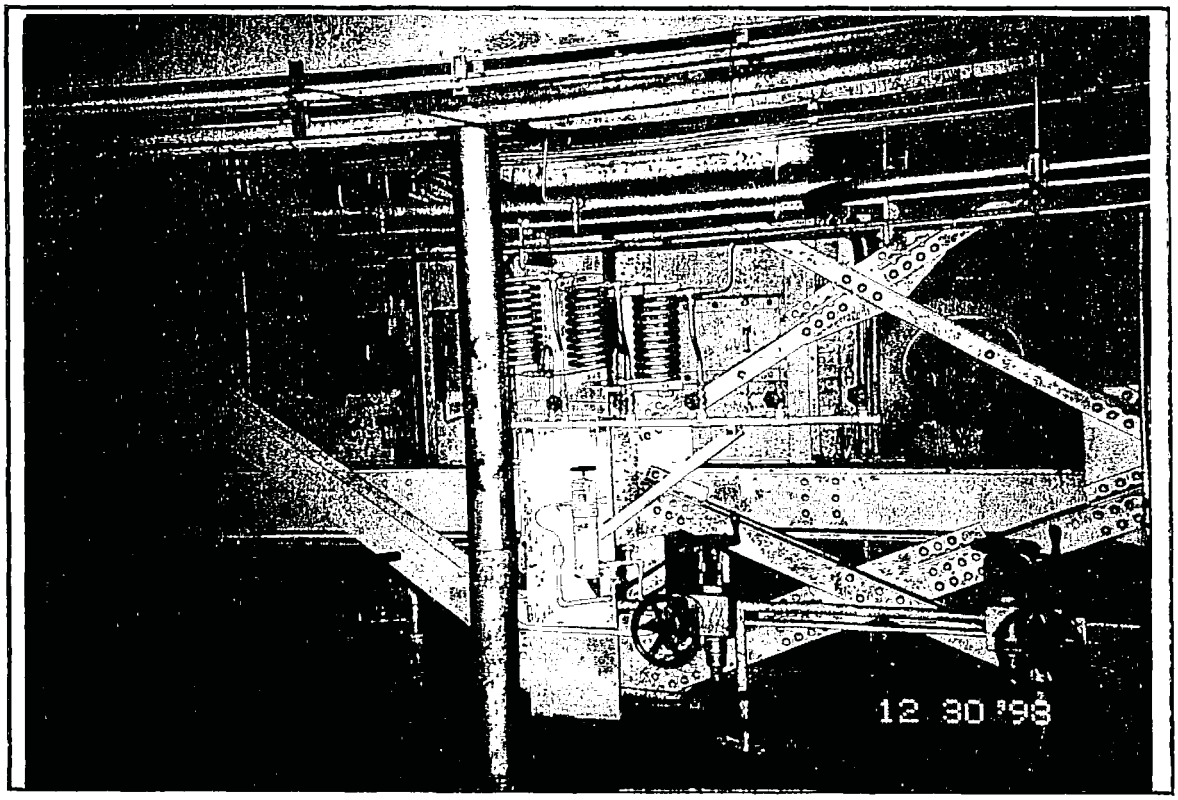


PHOTO 29 - BOILER 17 FOUNDATION AT LOWER LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

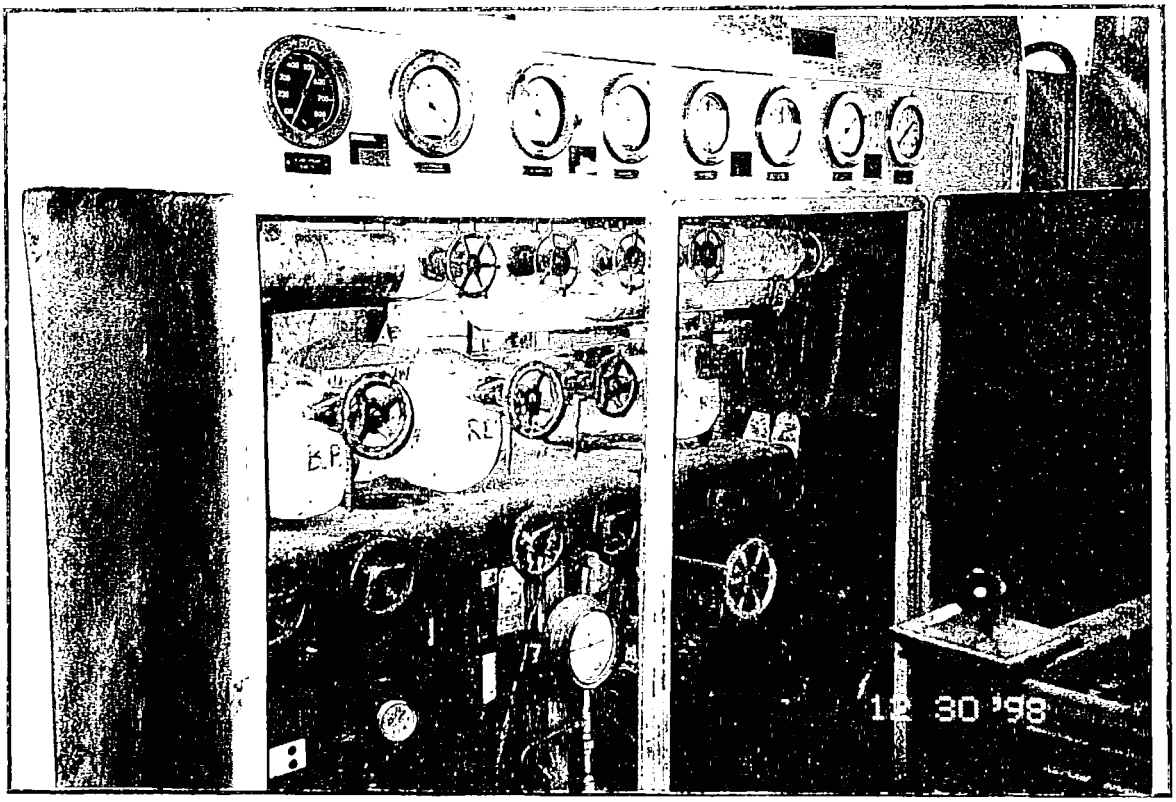


PHOTO 30 - INSIDE OF GENERATOR NO. 9 (EAST ACCESS PANEL).

PHOTO 31 - "BURRITO WRAPPED" TRANSITE PANELS BEING STORED NORTH OF GENERATORS.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

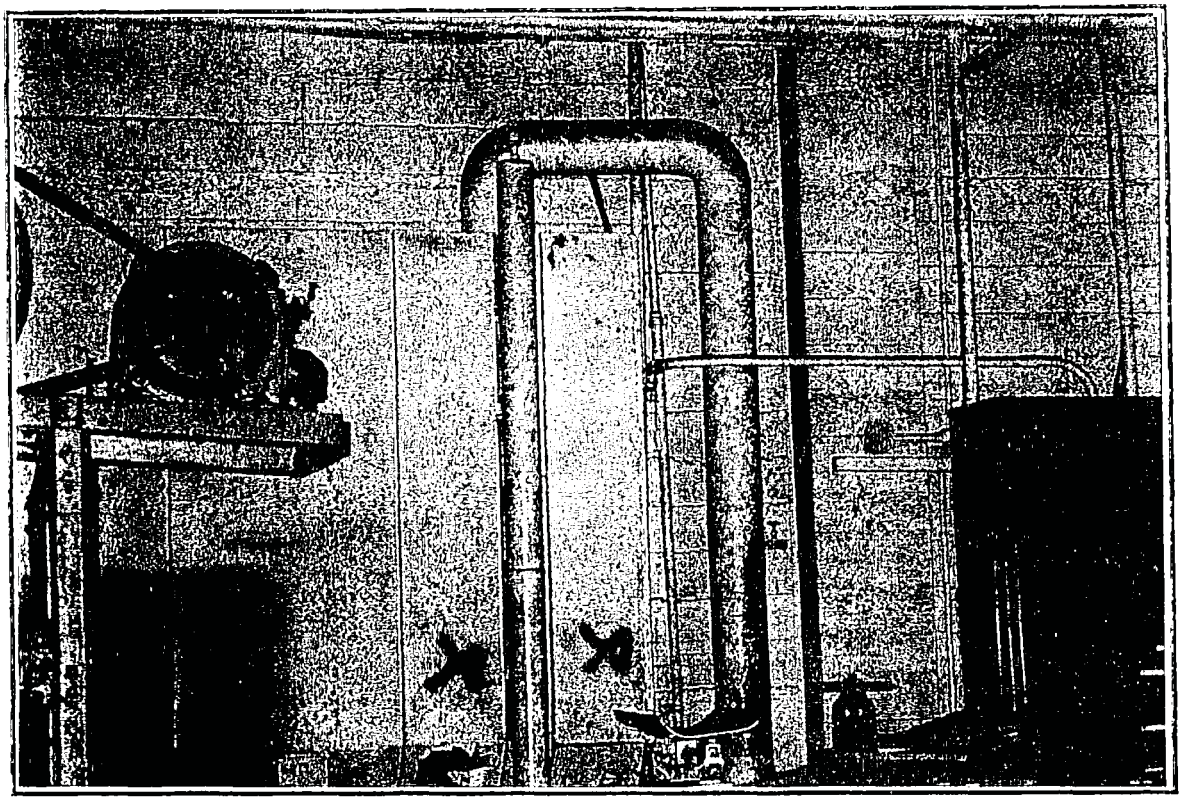


PHOTO 32 - PIPE INSULATION AT SOUTH WALL OF MACHINE SHOP.

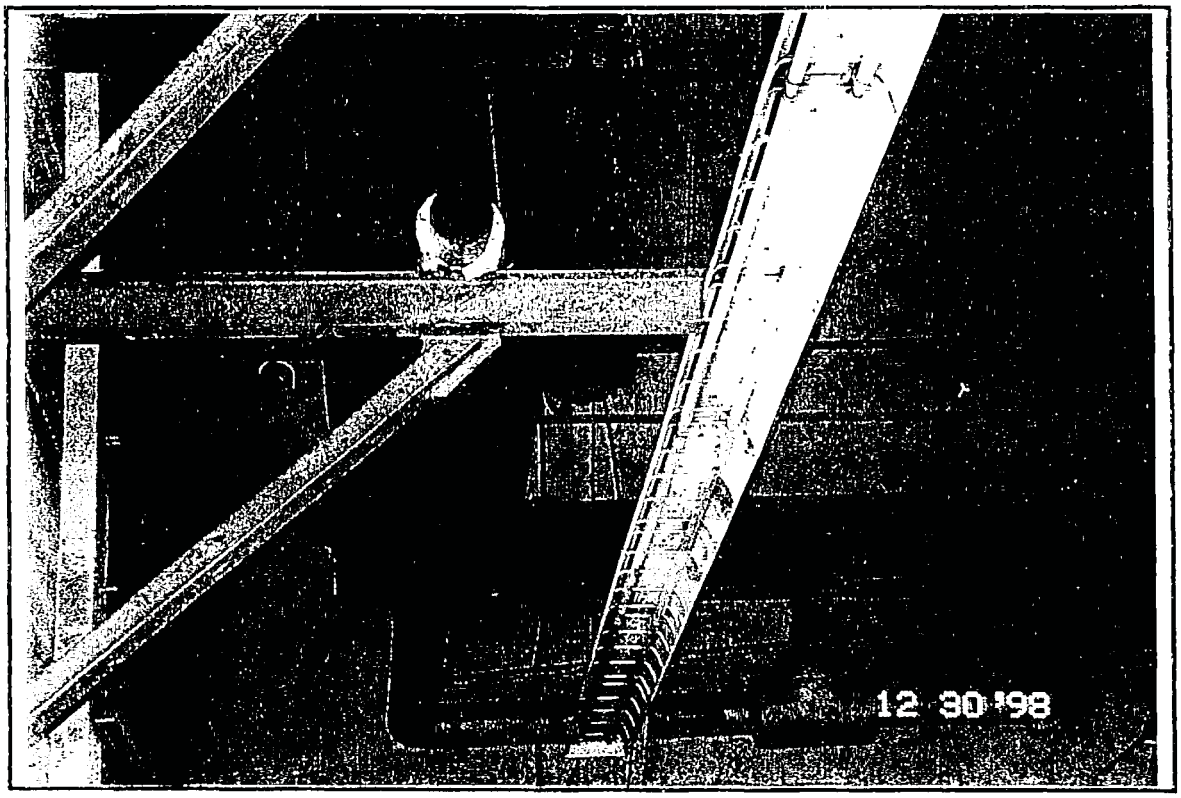


PHOTO 33 - OVERHEAD SUSPENDED ABANDONED PIPE NORTHEAST MACHINE SHOP.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 99199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

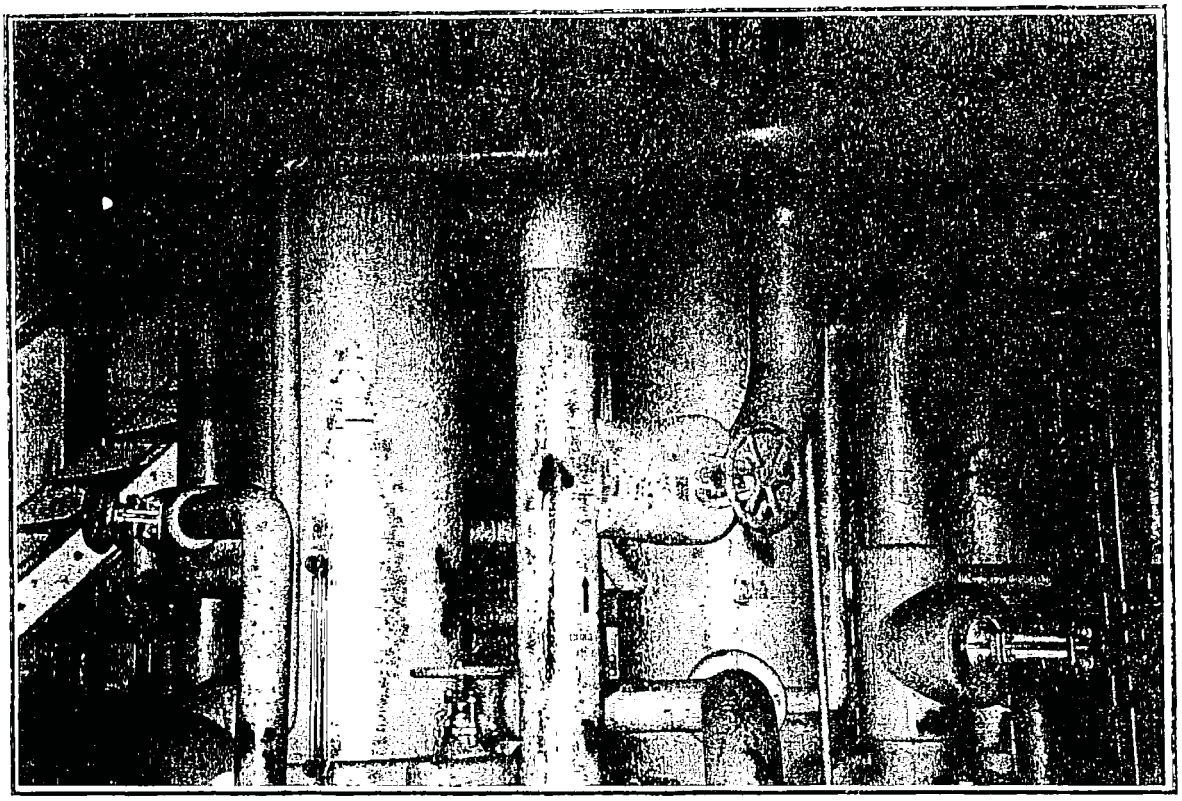


PHOTO 34 - HEATERS IN LOWER LEVEL OF MAIN ROOM (WEST END).

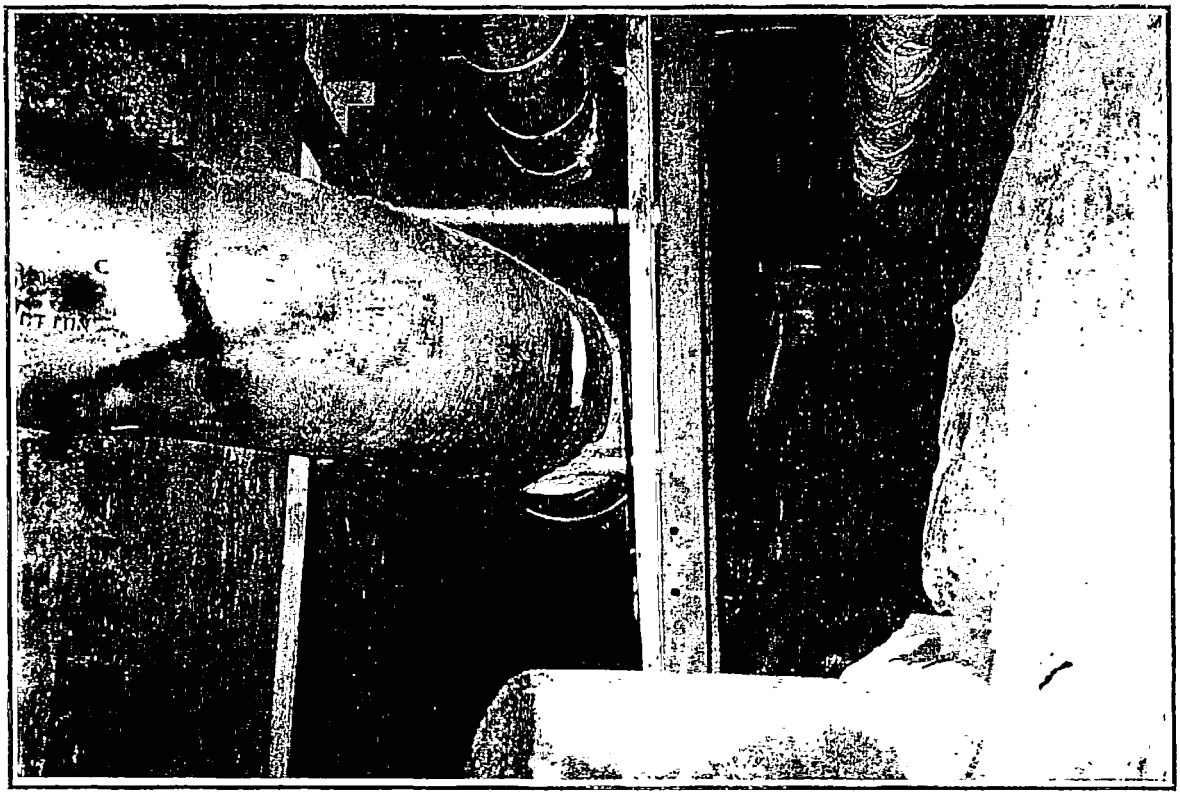


PHOTO 35 - PIPE TUNNEL, NORTH END MAIN ROOM LOWER LEVEL (RUNS EAST-WEST).

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

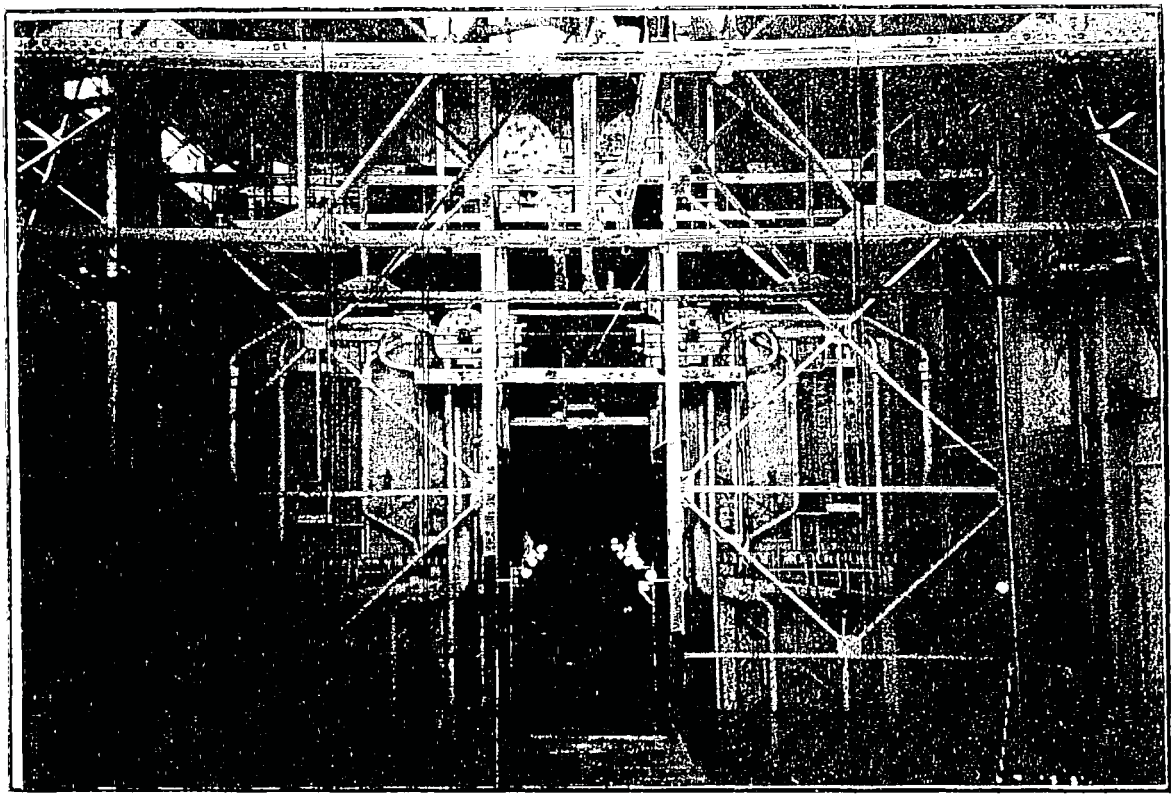


PHOTO 36 - WESTERN VIEW OF BOILER ROOM.

PHOTO 37 - EASTERN VIEW OF MACHINE SHOP.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

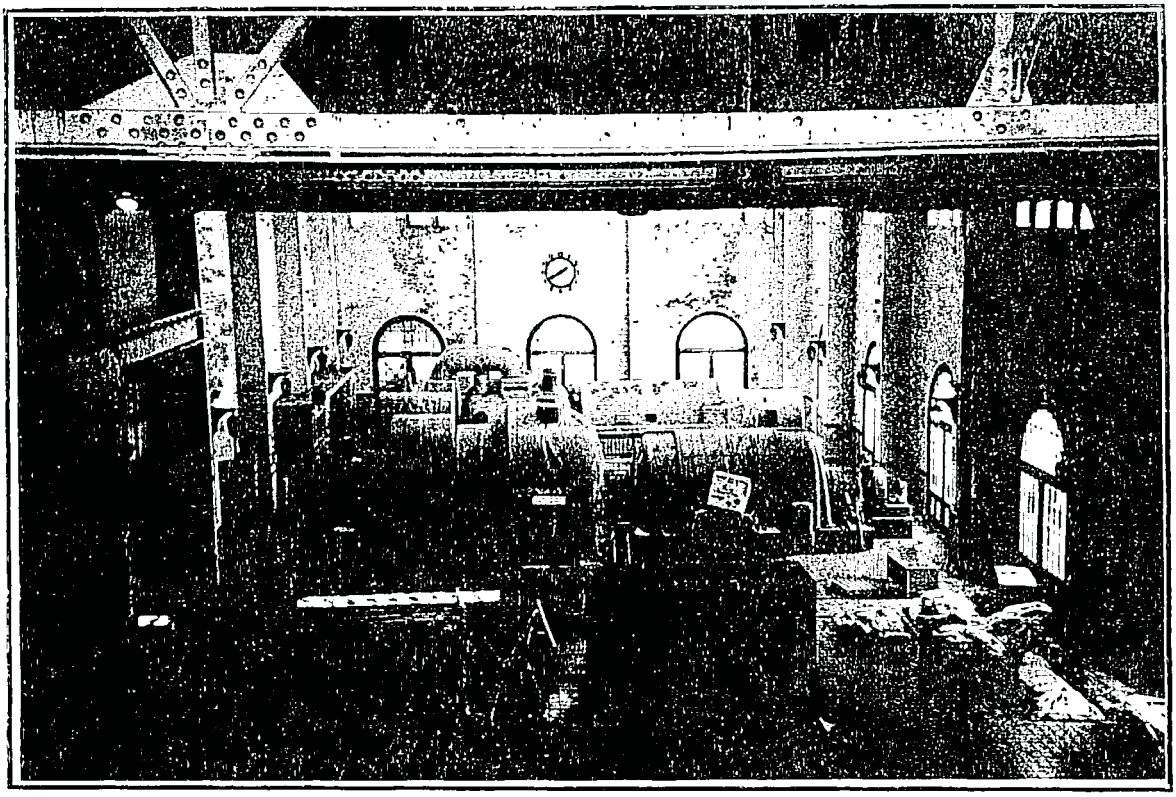


PHOTO 38 - WESTERN VIEW OF TURBINE ROOM.

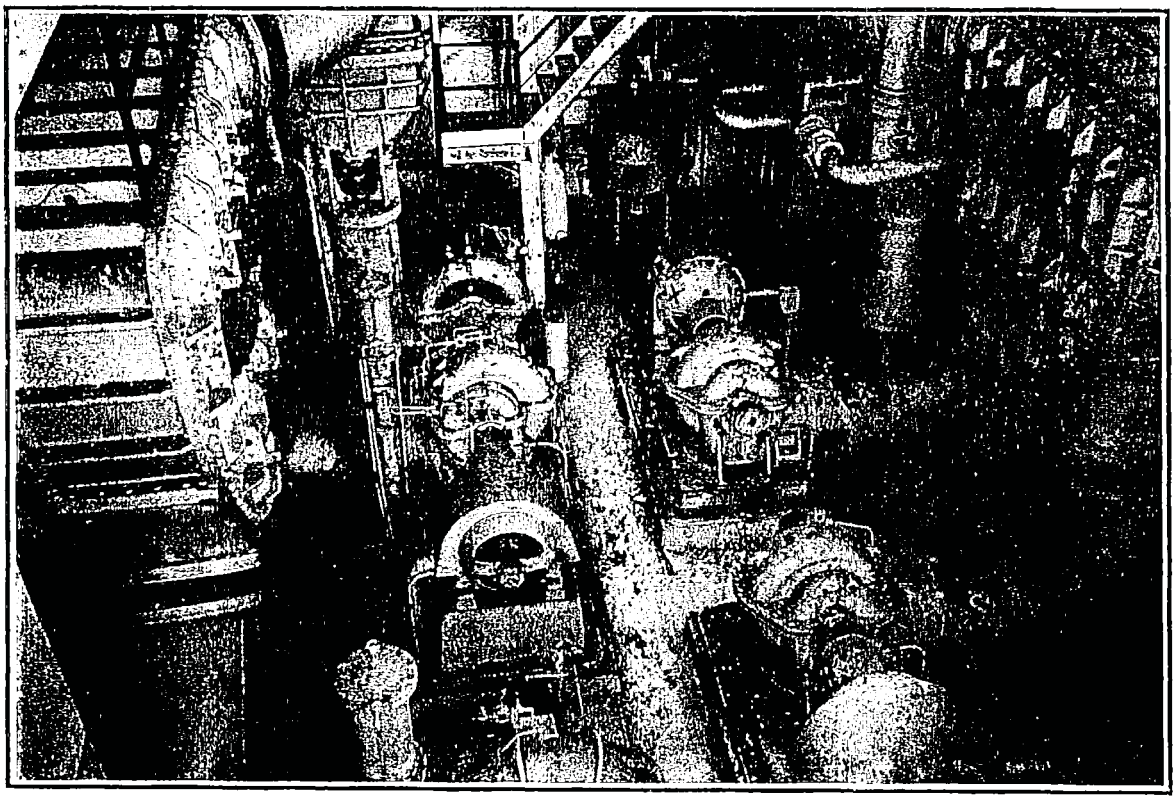


PHOTO 39 - STEAM TURBINES AT BASEMENT LEVEL.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

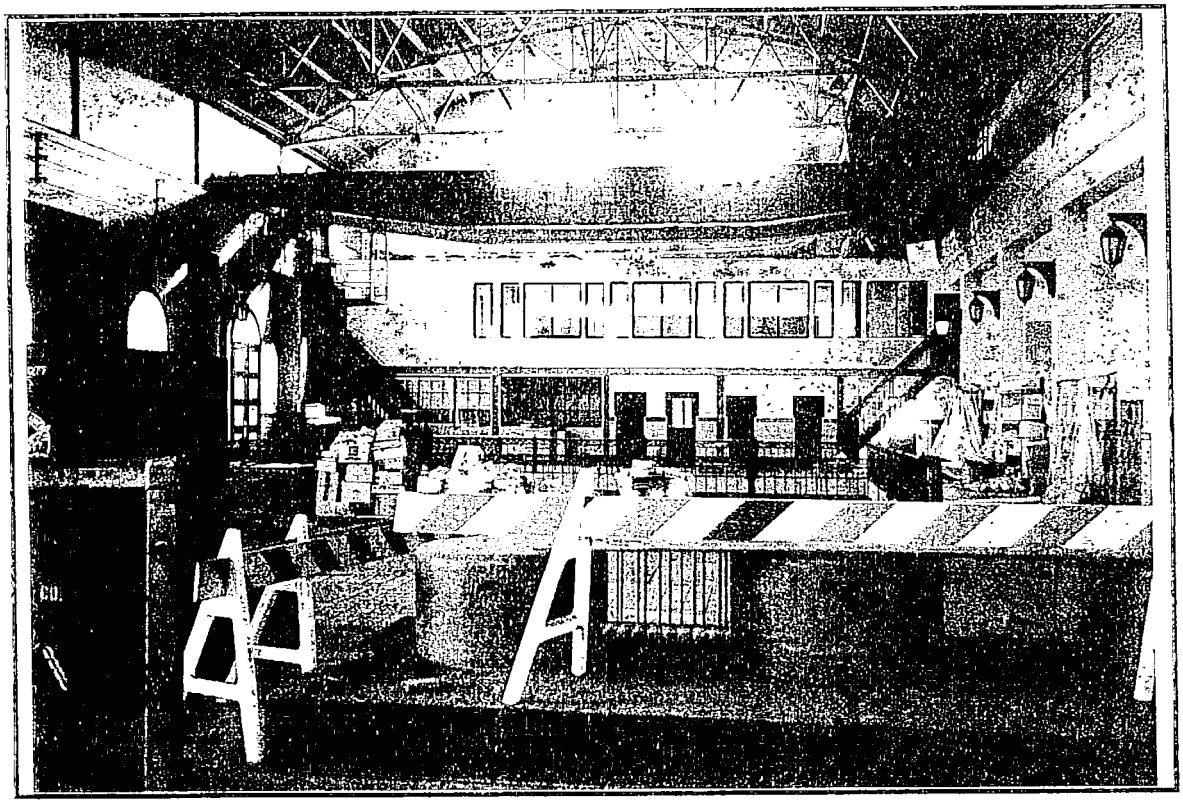


PHOTO 40 - EASTERN VIEW OF MAIN ROOM.

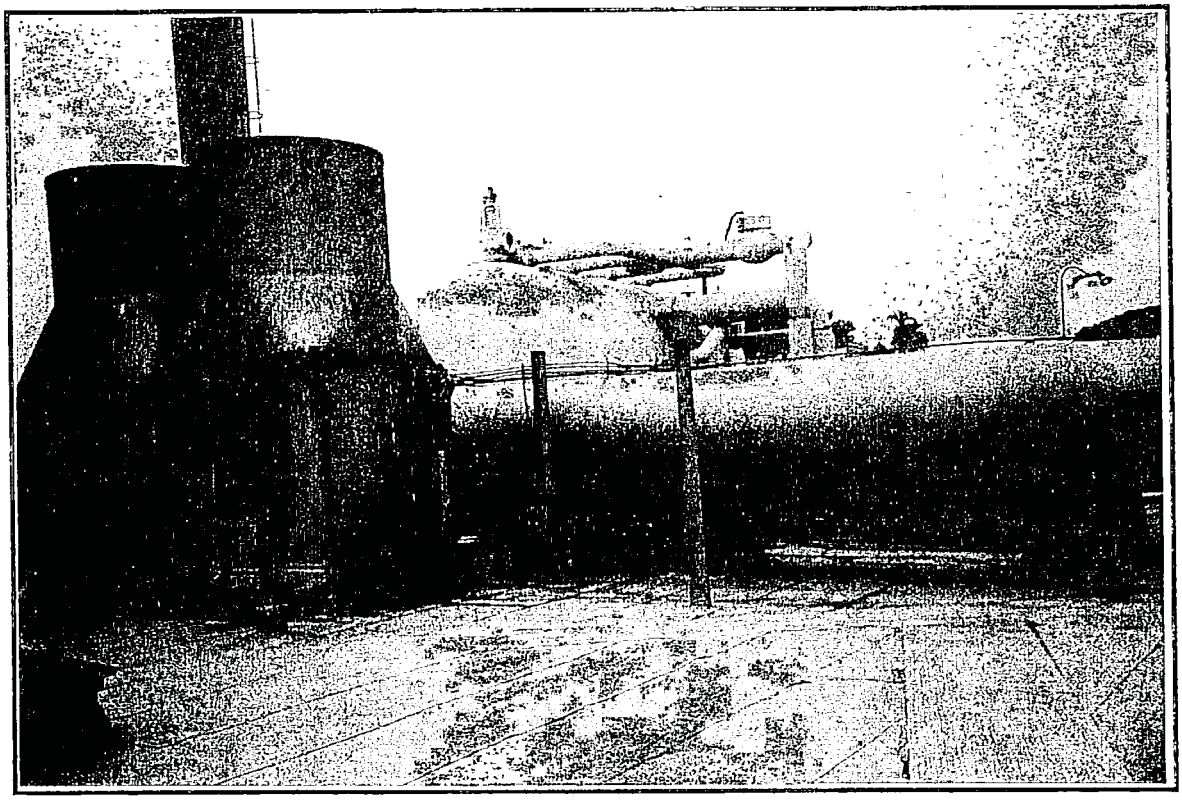


PHOTO 41 - BOILER ROOM ROOF.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

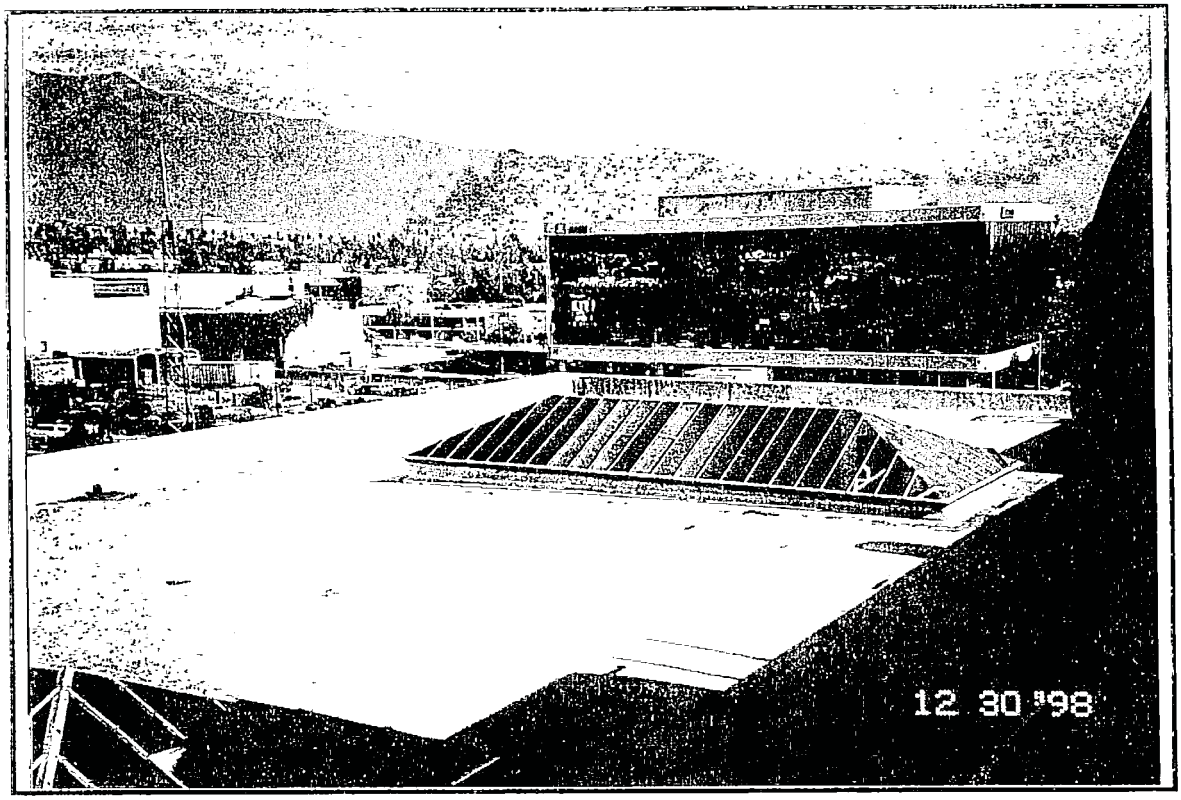


PHOTO 42 - TURBINE ROOM ROOF.

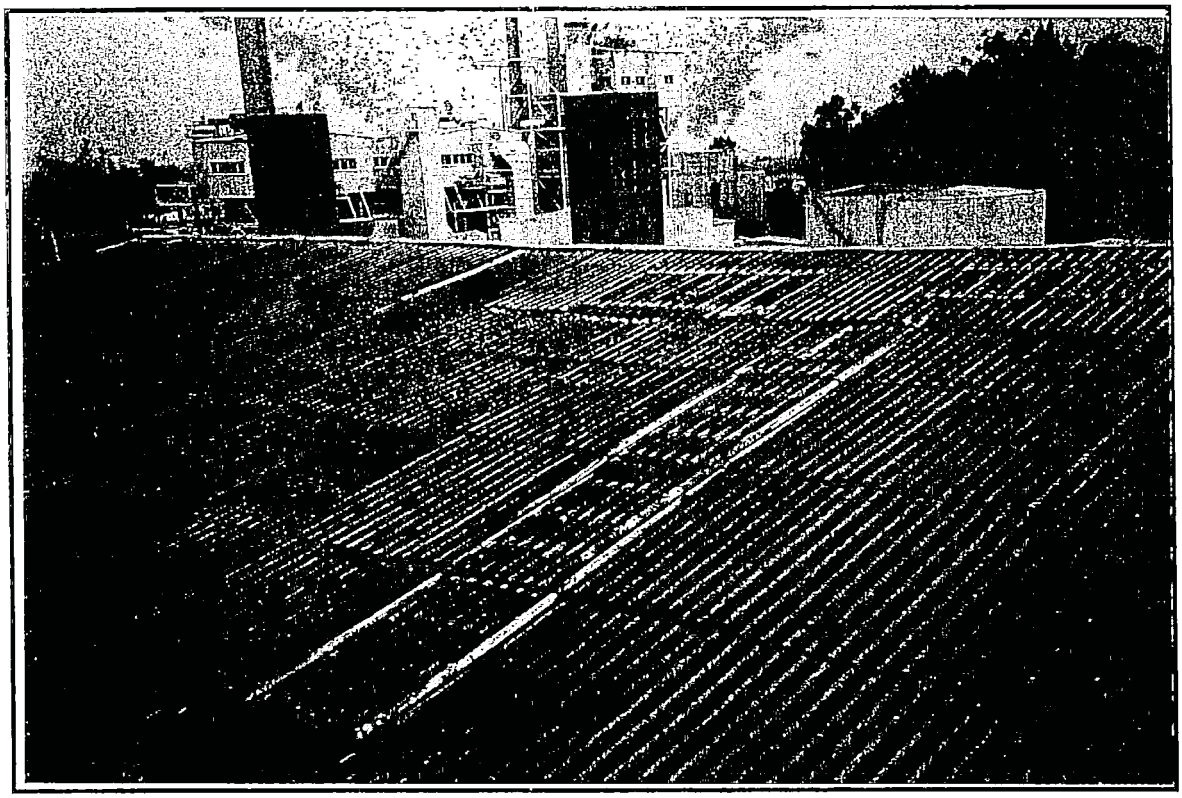


PHOTO 43 - MACHINE SHOP (HIGH BAY) ROOF.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

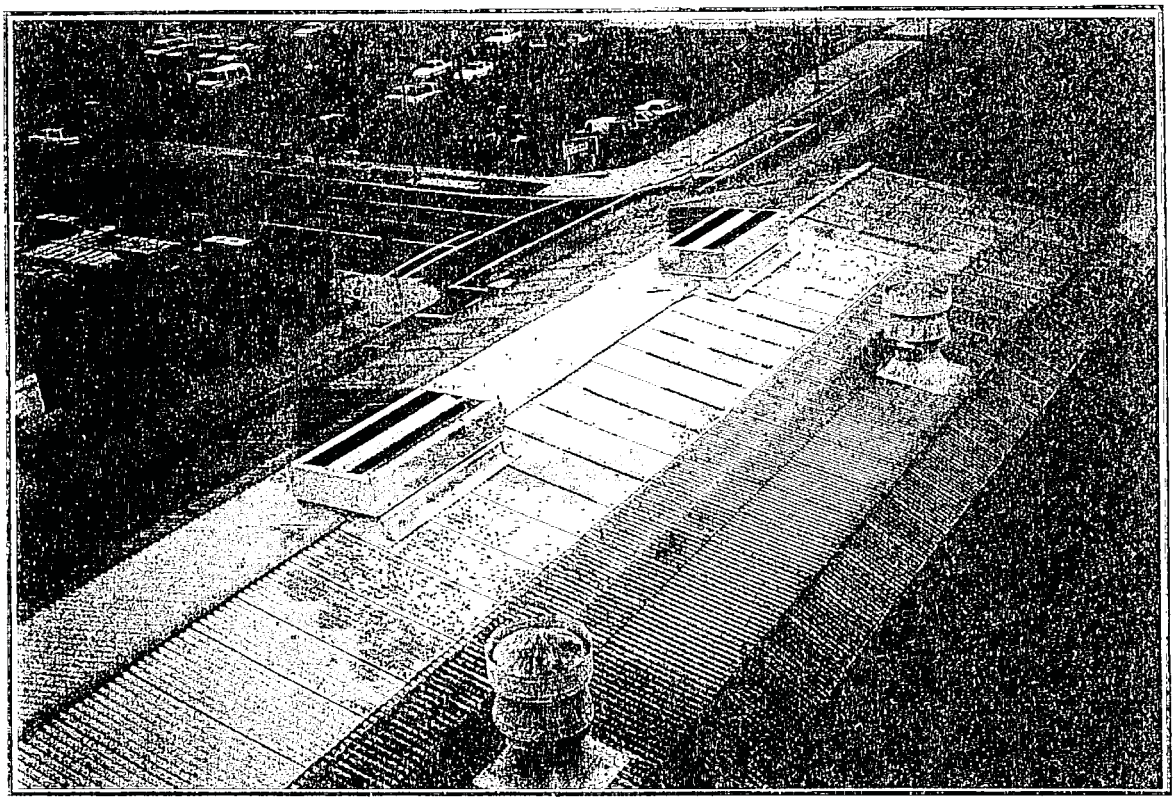


PHOTO 44 - MAIN ROOM ROOF.

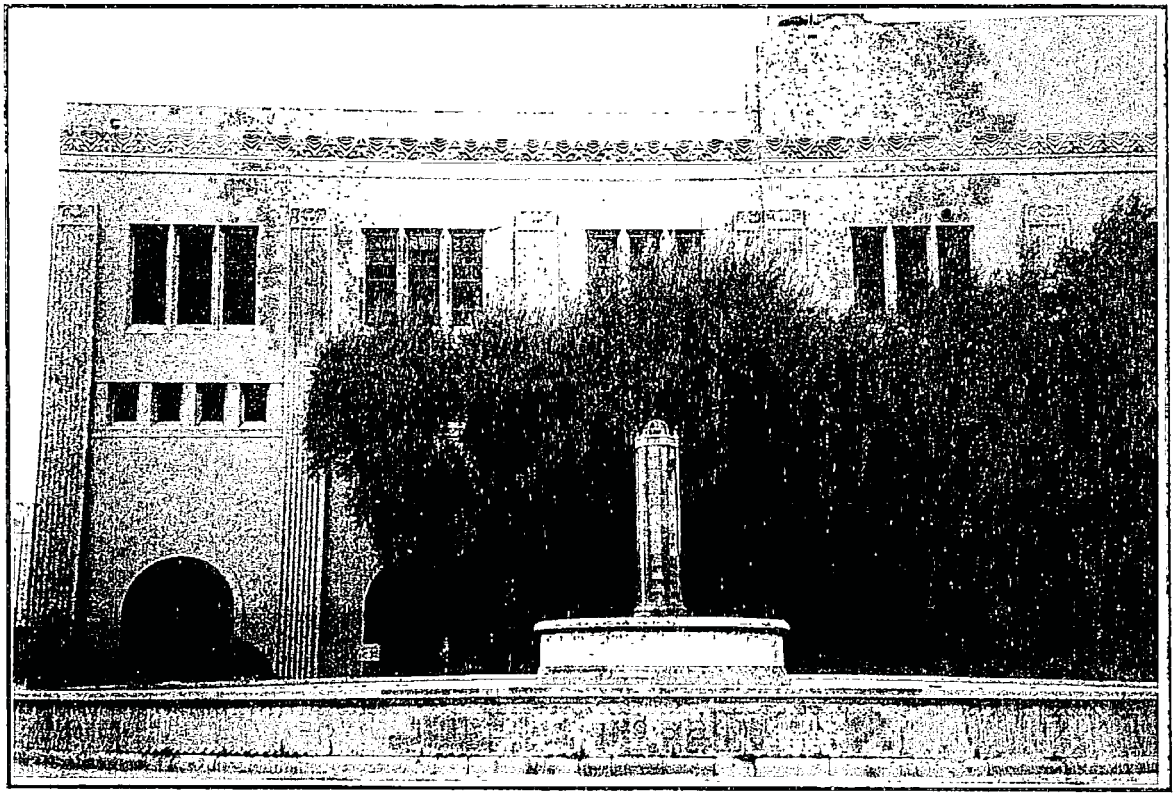


PHOTO 45 - WEST ELEVATION.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

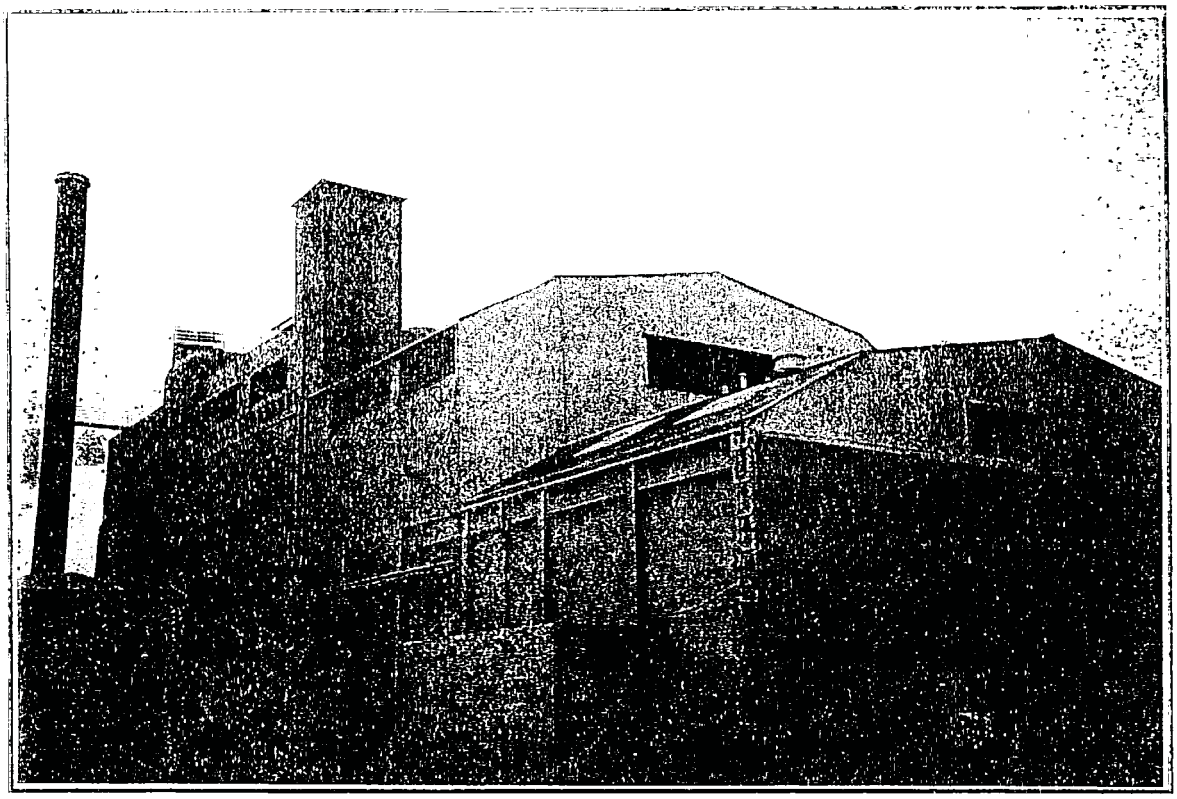


PHOTO 46 - SOUTH AND EAST ELEVATION.

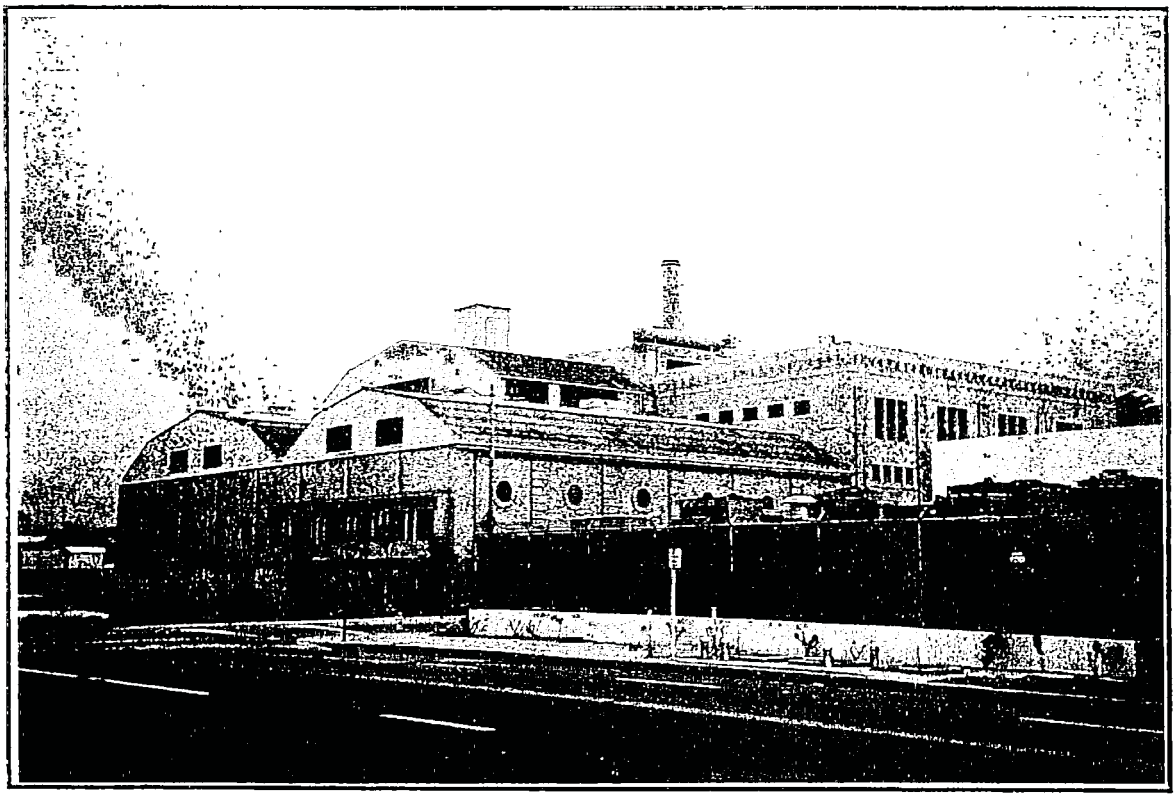


PHOTO 47 - NORTH AND EAST ELEVATION.

PACIFIC ENVIRONMENTAL COMPANY	SITE PHOTOGRAPHS GLENARM POWER PLANT 72 EAST GLENARM STREET, PASADENA, CA	JOB NO: 98199 CLIENT: CITY OF PASADENA DATE: FEBRUARY 1999 PROJ. MGR: MICHAEL LYSSY

APPENDIX C

Asbestos Bulk Sample Summary Reports

- Bulk Sample Summary Report
- ACM Sample Summary Report
- Non-ACM Sample Summary Report

Bulk Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.01	Boiler 15 Interior-east wall	Pipe Insulation	none detected	yes	
98199.02	Boiler 15 Interior-south wall	Pipe Insulation	none detected	yes	
98199.03	Boiler 15 Interior-floor	Floor Insulation-top layer	none detected	yes	
98199.04	Boiler 15 Interior-floor	Floor Insulation-2nd layer	none detected	yes	
98199.05	Boiler 15 Interior-floor	Floor Insulation-3rd layer	none detected	yes	
98199.06	Boiler 15-Mid-level interior	Mortar	none detected	no	
98199.07	Boiler 15-Mid-level interior	Mortar	none detected	no	
98199.08	Boiler 15-Burner Wall	Mortar	none detected	no	
98199.09	Boiler 15-East Interior Wall	Insulation Material	none detected	yes	
98199.10	Boiler 15-South Interior Wall	Insulation Material	none detected	yes	
98199.11	Boiler 15-South Interior Wall	Insulation Material	none detected	yes	
98199.12	Boiler 14-Burner Door	Insulation Material	15% Amosite	yes	powdery-@ shutoff valve
98199.13	Boiler 14-Burner Door	Insulation Material	15% Amosite	yes	behind burner door
98199.14	Boiler 14-Burner Door	Gasket	60% Chrysotile	no	
98199.15	Boiler 15-Burner Door	Gasket	60% Chrysotile	no	
98199.16	Boiler 17 Interior-floor	Floor Insulation-2 layers	none detected	yes	
98199.17	Boiler 17 Interior-floor	Floor Insulation-2 layers	none detected	yes	
98199.18	Boiler 17 Interior-floor	Floor Insulation-2 layers	none detected	yes	
98199.19	Boiler 17 Interior-floor	Top Layer Brick	none detected	no	
98199.20	Boiler 17 Interior-floor	Second Layer Brick	none detected	no	
98199.21	Boiler 17 Interior-east wall	Wall Insulation	none detected	yes	under 1st layer of brick
98199.22	Boiler 17 Interior-south wall	Wall Insulation	none detected	yes	under 1st layer of brick
98199.23	Boiler 17-west wall	Brick	none detected	no	
98199.24	Boiler 17-Burner wall	Brick	none detected	no	
98199.25	Boiler 17-Peep hole	Mortar	none detected	no	
98199.26	Boiler 17 Exterior-east wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level
98199.27	Boiler 17 Exterior-west wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level
98199.28	Boiler 16 Exterior-east wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level

Bulk Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.29	Boiler 15-south wall	Boiler Insulation	10% Chrysotile 10% Amosite	yes	behind steel plate
98199.30	Boiler 14-north wall	Boiler Insulation	10% Chrysotile 10% Amosite	yes	behind steel plate
98199.31	Boiler 15 Gound Level-west	Manifold Insulation	10% Chrysotile	yes	
98199.32	Boiler 15-Riser from Manifold	Pipe Insulation	20% Chrysotile	yes	8" pipe off manifold
98199.33	1" Pipe by Boilers	Cloth Wrap	80% Chrysotile	no	limited quantities
98199.34	20" Riser-Boiler 15 at ground level	Pipe Insulation	20% Chrysotile	yes	
98199.35	15" Gate Valve-Boiler 15 northeast	Valve Insulation	20% Chrysotile	yes	
98199.36	16" double pipe riser-NE corner B15	Pipe Insulation	10% Chrysotile	yes	2 pipes wraped together
98199.37	North Air Shaft Boiler 14	Insulation	none detected	yes	
98199.38	12" pipe-Pump by Boilers 14 & 15	Pipe Insulation	10% Chrysotile 10% Amosite	yes	
98199.39	Boiler 16 Burner Door	Door Gasket	50% Chrysotile	no	
98199.40	Boiler 16 Burner Door	Door Insulation	2% Chrysotile	yes	
98199.41	Boiler 16-south wall-Black 10" pipe	Flange Insulation	10% Chrysotile 10% Amosite	yes	
98199.42	Boiler 16-south wall-Black 6" pipe	Pipe Insulation	10% Chrysotile 20% Amosite		
98199.43	Boiler Control Room	12" Vinyl Floor Tile	2% Chrysotile	no	
		Floor Tile Mastic	5% Chrysotile	no	
98199.44	Boiler 15-South Duct	Air Duct Insulation	none detected	yes	
98199.45	South Wall by Boilers	Wall Plaster	none detected	no	
98199.46	Boiler 15-West at 20'	Gate Valve Insulation	5% Chrysotile 15% Amosite	yes	
98199.47	Boiler 15-West at 20'	Red Brick	none detected	no	
98199.48	Boiler 15-West at 20'	Mortar	none detected	no	
98199.49	Boiler 14-West at 20'	Red Brick	none detected	no	
98199.50	Boiler 14-West at 20'	Mortar	none detected	no	

Bulk Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.51	Boiler 17-Southeast at 20'	Reclever Tank Insulation	20% Chrysotile	yes	
98199.52	Boiler 17-Southeast at 20'	Tee Insulation	40% Chrysotile	yes	
			2% Amosite		
98199.53	Boiler 15-West port hole at 25'	Door Insulation	20% Chrysotile	yes	
98199.54	Boiler 15-Top of Superheater west	Tank Insulation	15% Chrysotile	yes	
			2% Amosite		
98199.55	Boiler 15-Superheater level-8" pipe	Pipe Insulation	20% Chrysotile	yes	pipe from boiler to tank
			2% Amosite		
98199.56	Boiler 17-Superheater level-Air Shaft no	Air Shaft Insulation	15% Chrysotile	yes	
98199.57	Boiler 16-Superheater level-Air Shaft so	Air Shaft Insulation	30% Chrysotile	yes	
98199.58	Boiler 17-West side	Boiler Insulation	20% Chrysotile	yes	
98199.59	4" Riser	Pipe Insulation	20% Chrysotile	yes	
98199.60	Boiler 16-West side at 40'	Brick	none detected	no	
98199.61	Boiler 14 Pre-heater	Insulation	20% Chrysotile	yes	
98199.62	Boiler 14-Blower Motor Wires	Wire Insulation	none detected	no	
98199.63	Boiler 16 Pre-heater	Insulation	20% Chrysotile	yes	
98199.64	Boiler Roof-NW corner	Vent Insulation	2% Chrysotile	yes	
			20% Amosite		
98199.65	Boiler Roof Central-Tank	Tank Insulation	none detected	yes	
98199.66	Boiler Roof	Roof Core Sample	10-60% Chrysotil	no	4 layers, all ACMs
98199.67A	Boiler Roof Parapet Wall	Stucco	none detected	no	
98199.67B	Boiler Roof Parapet Wall	Texture Coat	5% Chrysotile	no	
98199.68	Turbine Roof	Roof Core Sample	20-40% Chrysotil	no	2 layer, both ACMs
98199.69	Window at Roof	Window Putty	none detected	no	
98199.70	Machine Room Roof	Corrugated Roof Panel	40% Chrysotile	no	
98199.71	Machine Room Roof	Gray Mastic	10% Chrysotile	no	
98199.72	Boiler roof-East Parapet	Stucco	none detected	no	
98199.73	Boiler roof	Gray Mastic	5-10% Chrysotile	no	
98199.74	Boiler Roof-Blower Vent	Black Mastic	10% Chrysotile	no	

Bulk Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.75	West Boiler room window	Window Putty	none detected	no	
98199.76	Machine Shop Wall-South	Insulation	none detected	yes	behind sheet metal
98199.77	2nd Floor office-north	Drywall/Joint Compound	none detected	no	
98199.78	2nd Floor office-south	Drywall/Joint Compound	none detected	no	
98199.79	Office Area	2'x4' Ceiling Tile	none detected	yes	
98199.80	Turbine Room-South wall	Wall Plaster	none detected	no	
98199.81	Above Office Area	Wall Plaster	none detected	no	
98199.82	Above Office Area	Wire Insulation	none detected	no	
98199.83	Turbine Housing	Elbow Insulation	5% Chrysotile 10% Amosite	yes	
98199.84	Turnine Steam Exchange	Pipe Insulation	5% Chrysotile 10% Amosite	yes	
98199.85	Turbine Housing	Insulation	none detected	yes	misc. insulation debris
98199.86	Fuel Oil Heater Boiler 17	Heater Insulation	30% Chrysotile	yes	
98199.87	Boiler 17 Plenum Port Door	Door Insulation	20% Chrysotile	yes	
98199.88	Boiler 15 Foundation	Foundation Insulation	40% Chrysotile	yes	
98199.89	Boiler 14 Foundation	Foundation Insulation	10% Chrysotile	yes	
98199.90	Pump Room-4" Pipe	Pipe Insulation	5% Chrysotile 25% Amosite	yes	
98199.91	Main Steam Header	Pipe Insulation	30% Chrysotile	yes	
98199.92	Low Pressure Water Heater	Insulation	30% Chrysotile	yes	
98199.93	Boiler Feed Pump	Insulation	20% Chrysotile 5% Amosite	yes	
98199.94	Flash Tank	Insulation	20% Chrysotile 5% Amosite	yes	
98199.95	4" Pipe under Turbine	Pipe Insulation	20% Chrysotile 10% Amosite	yes	
98199.96	Abandoned Pipe Tunnel-10" Pipe	Pipe Insulation	20% Chrysotile	yes	
98199.97	Open Pit at Tunnel	Plaster	none detected	no	

Bulk Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.98	Under Concrete Formed Floor	Floor Felt	none detected	no	
98199.99	Abandoned Pipe Tunnel	Cloth Pipe Wrap	75% Chrysotile	no	
98199100	Northwest Wall	Plaster	none detected	no	
98199101	Exterior Wall-So. of Crane Pit	Exterior Stucco	2% Chrysotile	no	
98199102	Exterior Wall-No. of Crane Pit	Exterior Stucco	2% Chrysotile	no	
98199103	Exterior Wall-Northwest	Exterior Stucco	2% Chrysotile	no	
98199104	Exterior Wall-South by Stack	Exterior Stucco	none detected	no	
98199105	Main Water Feed Pipe	Mastic on Water Pipe	none detected	no	
98199106	Locker Room	Plaster	none detected	no	
98199107	Boiler Room Roof-Tank	Tank Insulation	none detected	yes	
98199108	Boiler Room Roof-Tank	Tank Insulation	none detected	yes	
98199109A	Elev. Room Roof Access Exterior Wall	Texture Coat	none detected	no	
98199109B	Elev. Room Roof Access Exterior Wall	Mastic/Felt	40% chrysotile	no	under the paint layer
98199110	East Turbine Roof High Wall	Exterior Stucco	2% chrysotile	no	
98199111	North Boiler Room High Wall	Exterior Stucco	none detected	no	
98199112	Air Shaft No. of Boiler 14	Air Shaft Insulation	none detected	yes	
98199113	Air Shaft So. of Boiler 15	Air Shaft Insulation	none detected	yes	
98199114	South Exterior Wall	Paint and Texture Coat	none detected	no	
98199115	North Exterior Wall	Stucco	2% chrysotile	no	

ACM Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.12	Boiler 14-Burner Door	Insulation Material	15% Amosite	yes	powdery-@ shutoff valve
98199.13	Boiler 14-Burner Door	Insulation Material	15% Amosite	yes	behind burner door (see photo)
98199.14	Boiler 14-Burner Door	Gasket	60% Chrysotile	no	
98199.15	Boiler 15-Burner Door	Gasket	60% Chrysotile	no	
98199.26	Boiler 17 Exterior-east wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level
98199.27	Boiler 17 Exterior-west wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level
98199.28	Boiler 16 Exterior-east wall	Boiler Insulation	30% Chrysotile	yes	sampled at ground level
98199.29	Boiler 15-south wall	Boiler Insulation	10% Chrysotile	yes	behind steel plate
			10% Amosite		
98199.30	Boiler 14-north wall	Boiler Insulation	10% Chrysotile	yes	behind steel plate
			10% Amosite		
98199.31	Boiler 15 Gound Level-west	Manifold Insulation	10% Chrysotile	yes	
98199.32	Boiler 15-Riser from Manifold	Pipe Insulation	20% Chrysotile	yes	8" pipe off manifold
98199.33	1" Pipe by Boilers	Cloth Wrap	80% Chrysotile	no	limited quantities
98199.34	20" Riser-Boiler 15 at ground level	Pipe Insulation	20% Chrysotile	yes	
98199.35	15" Gate Valve-Boiler 15 northeast	Valve Insulation	20% Chrysotile	yes	
98199.36	16" double pipe riser-NE corner B15	Pipe Insulation	10% Chrysotile	yes	2 pipes wraped together
98199.38	12" pipe-Pump by Boilers 14 & 15	Pipe Insulation	10% Chrysotile	yes	
			10% Amosite		
98199.39	Boiler 16 Burner Door	Door Gasket	50% Chrysotile	no	
98199.40	Boiler 16 Burner Door	Door Insulation	2% Chrysotile	yes	
98199.41	Boiler 16-south wall-Black 10" pipe	Flange Insulation	10% Chrysotile	yes	
			10% Amosite		
98199.42	Boiler 16-south wall-Black 6" pipe	Pipe Insulation	10% Chrysotile		
			20% Amosite		
98199.43	Boiler Control Room	12" Vinyl Floor Tile	2% Chrysotile	no	
		Floor Tile Mastic	5% Chrysotile	no	

ACM Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.46	Boiler 15-West at 20'	Gate Valve Insulation	5% Chrysotile 15% Amosite	yes	
98199.51	Boiler 17-Southeast at 20'	Reciever Tank Insulation	20% Chrysotile	yes	
98199.52	Boiler 17-Southeast at 20'	Tee Insulation	40% Chrysotile 2% Amosite	yes	
98199.53	Boiler 15-West port hole at 25'	Door insulation	20% Chrysotile	yes	
98199.54	Boiler 15-Top of Superheater west	Tank Insulation	15% Chrysotile 2% Amosite	yes	
98199.55	Boiler 15-Superheater level-8" pipe	Pipe Insulation	20% Chrysotile 2% Amosite	yes	pipe from boiler to tank
98199.56	Boiler 17-Superheater level-Air Shaft no.	Air Shaft Insulation	15% Chrysotile	yes	
98199.57	Boiler 16-Superheater level-Air Shaft so.	Air Shaft Insulation	30% Chrysotile	yes	
98199.58	Boiler 17-West side	Boiler Insulation	20% Chrysotile	yes	
98199.59	4" Riser	Pipe Insulation	20% Chrysotile	yes	
98199.61	Boiler 14 Pre-heater	Insulation	20% Chrysotile	yes	
98199.63	Boiler 16 Pre-heater	Insulation	20% Chrysotile	yes	
98199.64	Boiler Roof-NW corner	Vent Insulation	2% Chrysotile 20% Amosite	yes	
98199.66	Boiler Roof	Roof Core Sample	10-60% Chrysotil	no	4 layers, all ACMs
98199.67B	Boiler Roof Parapet Wall	Texture Coat	5% Chrysotile	no	
98199.68	Turbine Roof	Roof Core Sample	20-40% Chrysotil	no	2 layer, both ACMs
98199.70	Machine Room Roof	Corrugated Roof Panel	40% Chrysotile	no	
98199.71	Machine Room Roof	Gray Mastic	10% Chrysotile	no	
98199.73	Boiler roof	Gray Mastic	5-10% Chrysotile	no	
98199.74	Boiler Roof-Blower Vent	Black Mastic	10% Chrysotile	no	
98199.83	Turbine Housing	Elbow Insulation	5% Chrysotile 10% Amosite	yes	
98199.84	Turnine Steam Exchange	Pipe Insulation	5% Chrysotile 10% Amosite	yes	

ACM Sample Summary

Project No. 98199

Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Location	Sample Description	Asbestos %	Friable	Comments
98199.86	Fuel Oil Heater Boiler 17	Heater Insulation	30% Chrysotile	yes	
98199.87	Boiler 17 Plenum Port Door	Door Insulation	20% Chrysotile	yes	
98199.88	Boiler 15 Foundation	Foundation Insulation	40% Chrysotile	yes	
98199.89	Boiler 14 Foundation	Foundation Insulation	10% Chrysotile	yes	
98199.90	Pump Room-4" Pipe	Pipe Insulation	5% Chrysotile	yes	
			25% Amosite		
98199.91	Main Steam Header	Pipe Insulation	30% Chrysotile	yes	
98199.92	Low Pressure Water Heater	Insulation	30% Chrysotile	yes	
98199.93	Boiler Feed Pump	Insulation	20% Chrysotile	yes	
			5% Amosite		
98199.94	Flash Tank	Insulation	20% Chrysotile	yes	
			5% Amosite		
98199.95	4" Pipe under Turbine	Pipe Insulation	20% Chrysotile	yes	
			10% Amosite		
98199.96	Abandoned Pipe Tunnel-10" Pipe	Pipe Insulation	20% Chrysotile	yes	
98199.99	Abandoned Pipe Tunnel	Cloth Pipe Wrap	75% Chrysotile	no	
98199101	Exterior Wall-So. of Crane Pit	Exterior Stucco	2% Chrysotile	no	
98199102	Exterior Wall-No. of Crane Pit	Exterior Stucco	2% Chrysotile	no	
98199103	Exterior Wall-Northwest	Exterior Stucco	2% Chrysotile	no	
98199109B	Elev. Room Roof Access Exterior Wall	Mastic/Felt	40% chrysotile	no	under the paint layer
98199110	East Turbine Roof High Wall	Exterior Stucco	2% chrysotile	no	
98199115	North Exterior Wall	Stucco	2% chrysotile	no	

Non-ACM Sample Summary
Project 98199
Glenarm Power Plant, 72 East Glenarm Street, Pasadena, California

Sample No.	Sample Description	Sample Location
98199.01	Pipe Insulation	Boiler 15 Interior-east wall
98199.02	Pipe Insulation	Boiler 15 Interior-south wall
98199.03	Floor Insulation-top layer	Boiler 15 Interior-floor
98199.04	Floor Insulation-2nd layer	Boiler 15 Interior-floor
98199.05	Floor Insulation-3rd layer	Boiler 15 Interior-floor
98199.06	Mortar	Boiler 15-Mid-level interior
98199.07	Mortar	Boiler 15-Mid-level interior
98199.08	Mortar	Boiler 15-Burner Wall
98199.09	Insulation Material	Boiler 15-East Interior Wall
98199.10	Insulation Material	Boiler 15-South Interior Wall
98199.11	Insulation Material	Boiler 15-South Interior Wall
98199.16	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.17	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.18	Floor Insulation-2 layers	Boiler 17 Interior-floor
98199.19	Top Layer Brick	Boiler 17 Interior-floor
98199.20	Second Layer Brick	Boiler 17 Interior-floor
98199.21	Wall Insulation-under 1st layer of brick	Boiler 17 Interior-east wall
98199.22	Wall Insulation-under 1st layer of brick	Boiler 17 Interior-south wall
98199.23	Brick	Boiler 17-west wall
98199.24	Brick	Boiler 17-Burner wall
98199.25	Mortar	Boiler 17-Peep hole
98199.37	Insulation	North Air Shaft Boiler 14
98199.44	Air Duct Insulation	Boiler 15-South Duct
98199.45	Wall Plaster	South Wall by Boilers
98199.47	Red Brick	Boiler 15-West at 20'
98199.48	Mortar	Boiler 15-West at 20'
98199.49	Red Brick	Boiler 14-West at 20'
98199.50	Mortar	Boiler 14-West at 20'
98199.60	Brick	Boiler 16-West side at 40'
98199.62	Wire Insulation	Boiler 14-Blower Motor Wires
98199.65	Tank Insulation	Boiler Roof Central-Tank
98199.67A	Stucco	Boiler Roof Parapet Wall
98199.69	Window Putty	Window at Roof
98199.72	Stucco	Boiler roof-East Parapet
98199.75	Window Putty	West Boiler room window
98199.76	Insulation	Machine Shop Wall-South
98199.77	Drywall/Joint Compound	2nd Floor office-north
98199.78	Drywall/Joint Compound	2nd Floor office-south
98199.79	2'x4' Ceiling Tile	Office Area
98199.80	Wall Plaster	Turbine Room-South wall
98199.81	Wall Plaster	Above Office Area
98199.82	Wire Insulation	Above Office Area
98199.85	Insulation	Turbine Housing
98199.97	Plaster	Open Pit at Tunnel
98199.98	Floor Felt	Under Concrete Formed Floor
98199.100	Plaster	Northwest Wall
98199.104	Exterior Stucco	Exterior Wall-South by Stack
98199.105	Mastic on Water Pipe	Main Water Feed Pipe
98199.106	Plaster	Locker Room
98199.107	Tank Insulation	Tank-Boiler Room Roof
98199.108	Tank Insulation	Tank-Boiler Room Roof
98199.109A	Texture Coat	Elevator Room Access Exterior Wall
98199.111	Exterior Stucco	North Boiler Room High Wall
98199.112	Air Shaft Insulation	Air Shaft North of Boiler 14
98199.113	Air Shaft Insulation	Air Shaft South of Boiler 15
98199.114	Paint and Texture Coat	South Exterior Wall

APPENDIX D

Asbestos Sample Analysis Reports and Chain of Custody

CONTINENTAL ENVIROTECH, INC.

ADHS #AZ0916
AIHA PAT #18106
CA ELAP #2204
Mass. #AA 000 155
NVLAP: 200080-0
TX DOH: 30-0208

BULK ASBESTOS ANALYSIS SUMMARY REPORT

CLIENT NAME: Pacific Environmental Company **Attention:** Client
30101 Town Center Dr. #107
Laguna Niguel, CA. 92677

CEI LABORATORY #: 99-A005 **PROJECT:** Glenarm Power Plant

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS		OTHER MATERIALS
			Pos. / Neg.	% & Type	
A005-1	98199.01	Pipe insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-2	98199.02	Pipe insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-3	98199.03	Flooring insulation	Negative	----------	100% Non-Fibrous
A005-4	98199.04	Second layer flooring	Negative	----------	100% Non-Fibrous
A005-5	98199.05	Third layer flooring	Negative	----------	100% Non-Fibrous
A005-6	98199.06	Mortar	Negative	----------	100% Non-Fibrous
A005-7	98199.07	Mortar	Negative	----------	100% Non-Fibrous
A005-8	98199.08	Mortar	Negative	----------	100% Non-Fibrous
A005-9	98199.09	Insulation material	Negative	----------	100% Non-Fibrous
A005-10	98199.10	Insulation material	Negative	----------	100% Non-Fibrous
A005-11	98199.11	Insulation material	Negative	----------	100% Non-Fibrous
A005-12	*98199.12*	*Insulation*	*Positive*	*15% Amosite*	*85% Non-Fibrous*
A005-13	*98199.13*	*Insulation*	*Positive*	*15% Amosite*	*85% Non-Fibrous*
A005-14	*98199.14*	*Gasket*	*Positive*	*60% Chrysotile*	*30% Cellulose, 10% Non-Fibrous*
A005-15	*98199.15*	*Gasket*	*Positive*	*60% Chrysotile*	*30% Cellulose, 10% Non-Fibrous*
A005-16A	98199.16 A	Floor insulation layer 1	Negative	----------	100% Non-Fibrous
A005-16B	98199.16 B	Floor insulation layer 2	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-17A	98199.17 A	Floor insulation layer 1	Negative	----------	100% Non-Fibrous
A005-17B	98199.17 B	Floor insulation layer 2	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-18A	98199.18 A	Floor insulation layer 1	Negative	----------	100% Non-Fibrous
A005-18B	98199.18 B	Floor insulation layer 2	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-19	98199.19	Top layer brick	Negative	----------	100% Non-Fibrous
A005-20	98199.20	Second layer brick	Negative	----------	100% Non-Fibrous
A005-21	98199.21	Wall insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-22	98199.22	Wall insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-23	98199.23	Brick	Negative	----------	100% Non-Fibrous
A005-24	98199.24	Brick	Negative	----------	100% Non-Fibrous
A005-25	98199.25	Mortar	Negative	----------	100% Non-Fibrous

646 West Broadway Road, Suite 401, Mesa, Arizona 85210-1212
(602) 844-1710 • Fax (602) 844-1752 • Toll Free (800) 985-3804 • e-mail

Laboratory Number: 99-A005
Client: Pacific Environmental
Page: 2

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS		OTHER MATERIALS
			Pos. / Neg.	% & Type	
A005-26	*98199.26*	*Boiler insulation*	*Positive*	*30% Chrysotile*	*10% Cellulose, 50% Fiberglass, 10% Non-Fibrous*
A005-27	*98199.27*	*Boiler insulation*	*Positive*	*30% Chrysotile*	*10% Cellulose, 50% Fiberglass, 10% Non-Fibrous*
A005-28	*98199.28*	*Boiler insulation*	*Positive*	*30% Chrysotile*	*10% Cellulose, 50% Fiberglass, 10% Non-Fibrous*
A005-29	*98199.29*	*Boiler insulation*	*Positive*	*10% Chrysotile, 10% Amosite*	*80% Non-Fibrous*
A005-30	*98199.30*	*Boiler insulation*	*Positive*	*10% Chrysotile, 10% Amosite*	*80% Non-Fibrous*
A005-31	*98199.31*	*Manifold insulation*	*Positive*	*10% Chrysotile*	*40% Fiberglass, 50% Non-Fibrous*
A005-32	*98199.32*	*Pipe insulation*	*Positive*	*20% Chrysotile*	*80% Non-Fibrous*
A005-33	*98199.33*	*Cloth wrap*	*Positive*	*80% Chrysotile*	*10% Fiberglass, 10% Non-Fibrous*
A005-34	*98199.34*	*Pipe insulation*	*Positive*	*20% Chrysotile*	*80% Non-Fibrous*
A005-35	*98199.35*	*Pipe insulation*	*Positive*	*20% Chrysotile*	*80% Non-Fibrous*
A005-36	*98199.36*	*Pipe insulation*	*Positive*	*10% Chrysotile*	*25% Cellulose, 65% Non-Fibrous*
A005-37	98199.37	Insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-38	*98199.38*	*Pipe insulation*	*Positive*	*10% Chrysotile, 10% Amosite*	*2% Fiberglass, 78% Non-Fibrous*
A005-39	*98199.39*	*Door Gasket*	*Positive*	*50% Chrysotile*	*10% Cellulose, 40% Non-Fibrous*
A005-40	*98199.40*	*Door insulation*	*Positive*	*2% Chrysotile*	*85% Fiberglass, 13% Non-Fibrous*
A005-41	*98199.41*	*Flange insulation*	*Positive*	*10% Chrysotile, 10% Amosite*	*80% Non-Fibrous*
A005-42	*98199.42*	*Pipe insulation*	*Positive*	*10% Chrysotile, 20% Amosite*	*70% Non-Fibrous*
A005-43A	*98199.43 A*	*12" VFT*	*Positive*	*2% Chrysotile*	*98% Non-Fibrous*
A005-43B	*98199.43 B*	*12" VFT Mastic*	*Positive*	*5% Chrysotile*	*95% Non-Fibrous*
A005-44	98199.44	Air duct insulation	Negative	----------	5% Cellulose, 90% Fiberglass, 5% Non-Fibrous
A005-45	98199.45	Wall plaster	Negative	----------	100% Non-Fibrous
A005-46	*98199.46*	*Gate valve insulation*	*Positive*	*5% Chrysotile, 15% Amosite*	*80% Non-Fibrous*
A005-47A	98199.47 A	Red brick	Negative	----------	100% Non-Fibrous
A005-47B	98199.47 B	Red brick/paint	Negative	----------	100% Non-Fibrous

Laboratory Number: 99-A005
Client: Pacific Environmental
Page: 3

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS Pos. / Neg.	% & Type	OTHER MATERIALS
A005-48	98199.48	Mortar	Negative	----------	100% Non-Fibrous
A005-49	98199.49	Red Brick	Negative	----------	100% Non-Fibrous
A005-50	98199.50	Mortar	Negative	----------	100% Non-Fibrous
A005-51	*98199.51*	*Receiver tank insulation*	*Positive*	*20% Chrysotile*	*20% Fiberglass, 60% Non-Fibrous*
A005-52	*98199.52*	*Tee insulation*	*Positive*	*40% Chrysotile, 2% Amosite*	*58% Non-Fibrous*
A005-53	*98199.53*	*Door insulation*	*Positive*	*20% Chrysotile*	*30% Fiberglass, 50% Non-Fibrous*
A005-54	*98199.54*	*Tank insulation*	*Positive*	*15% Chrysotile, 2% Amosite*	*83% Non-Fibrous*
A005-55	*98199.55*	*Pipe insulation*	*Positive*	*20% Chrysotile, 2% Amosite*	*20% Fiberglass, 58% Non-Fibrous*
A005-56	*98199.56*	*Air shaft insulation*	*Positive*	*15% Chrysotile*	*25% Cellulose, 60% Non-Fibrous*
A005-57	*98199.57*	*Air shaft insulation*	*Positive*	*30% Chrysotile*	*20% Cellulose, 50% Non-Fibrous*
A005-58	*98199.58*	*Boiler insulation*	*Positive*	*20% Chrysotile*	*20% Cellulose, 60% Non-Fibrous*
A005-59	*98199.59*	*Pipe insulation*	*Positive*	*20% Chrysotile*	*10% Cellulose, 70% Non-Fibrous*
A005-60	98199.60	Brick	Negative	----------	100% Non-Fibrous
A005-61	*98199.61*	*Insulation*	*Positive*	*20% Chrysotile*	*80% Non-Fibrous*
A005-62	98199.62	Wire insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-63	*98199.63*	*Insulation*	*Positive*	*20% Chrysotile, <1% Amosite*	*20% Fiberglass, 60% Non-Fibrous*
A005-64	*98199.64*	*Vent insulation*	*Positive*	*2% Chrysotile, 20% Amosite*	*78% Non-Fibrous*
A005-65	98199.65	Tank insulation	Negative	----------	10% Cellulose, 60% Fiberglass, 30% Non-Fibrous
A005-66A	*98199.66 A*	*Core sample/coat*	*Positive*	*10% Chrysotile*	*5% Cellulose, 85% Non-Fibrous*
A005-66B	*98199.66 B*	*Core sample/felt*	*Positive*	*60% Chrysotile*	*40% Non-Fibrous*
A005-66C	*98199.66 C*	*Core sample/felt*	*Positive*	*50% Chrysotile*	*50% Non-Fibrous*
A005-66D	*98199.66 D*	*Core sample/felt*	*Positive*	*50% Chrysotile*	*50% Non-Fibrous*
A005-67A	98199.67 A	Stucco	Negative	----------	5% Wollastonite, 95% Non-Fibrous
A005-67B	*98199.67 B*	*Texture*	*Positive*	*5% Chrysotile*	*95% Non-Fibrous*
A005-68A	*98199.68 A*	*Roof core sample/coat*	*Positive*	*20% Chrysotile*	*10% Cellulose, 70% Non-Fibrous*
A005-68B	*98199.68 B*	*Roof core sample/felt*	*Positive*	*40% Chrysotile*	*10% Cellulose, 50% Non-Fibrous*

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS		OTHER MATERIALS
			Pos. / Neg.	% & Type	
A005-69	98199.69	Window putty	Negative	----------	100% Non-Fibrous
A005-70	*98199.70*	*Roof panel*	*Positive*	*40% Chrysotile*	*20% Cellulose, 40% Non-Fibrous*
A005-71	*98199.71*	*Gray mastic*	*Positive*	*10% Chrysotile*	*90% Non-Fibrous*
A005-72A	98199.72 A	Paint	Negative	----------	100% Non-Fibrous
A005-72B	98199.72 B	Stucco	Negative	----------	100% Non-Fibrous
A005-73A	*98199.73 A*	*Gray Mastic/silver coat*	*Positive*	*5% Chrysotile*	*95% Non-Fibrous*
A005-73B	*98199.73 B*	*Gray Mastic/black felt*	*Positive*	*10% Chrysotile*	*90% Non-Fibrous*
A005-74	*98199.74*	*Black mastic*	*Positive*	*10% Chrysotile*	*90% Non-Fibrous*
A005-75	98199.75	Interior window putty	Negative	----------	100% Non-Fibrous
A005-76	98199.76	Insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-77	98199.77	Joint compound	Negative	----------	100% Non-Fibrous
A005-78	98199.78	Joint compound	Negative	----------	100% Non-Fibrous
A005-79	98199.79	2x4 ceiling tile	Negative	----------	40% Cellulose, 45% Fiberglass, 15% Non-Fibrous
A005-80	98199.80	Wall plaster	Negative	----------	100% Non-Fibrous
A005-81A	98199.81 A	Wall plaster/paint	Negative	----------	100% Non-Fibrous
A005-81B	98199.81 B	Wall plaster	Negative	----------	100% Non-Fibrous
A005-82	98199.82	Wire insulation	Negative	----------	75% Cellulose, 25% Non-Fibrous
A005-83	*98199.83*	*Elbow insulation*	*Positive*	*5% Chrysotile, 10% Amosite*	*25% Fiberglass, 60% Non-Fibrous*
A005-84	*98199.84*	*Pipe insulation*	*Positive*	*20% Chrysotile, 2% Amosite*	*20% Cellulose, 58% Non-Fibrous*
A005-85	98199.85	Pipe insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A005-86A	*98199.86 A*	*Heater insulation*	*Positive*	*30% Chrysotile*	*10% Fiberglass, 60% Non-Fibrous*
A005-86B	*98199.86 B*	*Heater insulation coating*	*Positive*	*10% Chrysotile*	*90% Non-Fibrous*
A005-87	*98199.87*	*Door insulation*	*Positive*	*20% Chrysotile*	*30% Cellulose, 50% Non-Fibrous*
A005-88	*98199.88*	*Insulation*	*Positive*	*40% Chrysotile*	*10% Fiberglass, 50% Non-Fibrous*
A005-89	*98199.89*	*Insulation*	*Positive*	*10% Chrysotile*	*90% Non-Fibrous*
A005-90	*98199.90*	*Insulation*	*Positive*	*5% Chrysotile, 25% Amosite*	*70% Non-Fibrous*
A005-91A	*98199.91 A*	*Pipe insulation*	*Positive*	*30% Chrysotile*	*10% Fiberglass, 60% Non-Fibrous*
A005-91B	*98199.91 B*	*Pipe insulation/coating*	*Positive*	*20% Chrysotile*	*10% Fiberglass, 70% Non-Fibrous*

Laboratory Number: 99-A005
Client: Pacific Environmental
Page: 5

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS Pos. / Neg.	TEST RESULTS % & Type	OTHER MATERIALS
A005-92A	*98199.92 A*	*Insulation*	*Positive*	*30% Chrysotile*	*30% Fiberglass, 40% Non-Fibrous*
A005-92B	*98199.92 B*	*Insulation/coating*	*Positive*	*30% Chrysotile*	*70% Non-Fibrous*
A005-93	*98199.93*	*Insulation*	*Positive*	*20% Chrysotile, 5% Amosite*	*75% Non-Fibrous*
A005-94A	*98199.94 A*	*Insulation*	*Positive*	*20% Chrysotile, 2% Amosite*	*10% Fiberglass, 68% Non-Fibrous*
A005-94B	98199.94 B	Insulation/wrap	Negative	----------	95% Cellulose, 5% Non-Fibrous
A005-95A	*98199.95 A*	*Pipe insulation*	*Positive*	*20% Chrysotile, 10% Amosite*	*70% Non-Fibrous*
A005-95B	98199.95 B	Pipe insulation/wrap	Negative	----------	95% Cellulose, 5% Non-Fibrous
A005-96	*98199.96*	*20" pipe insulation*	*Positive*	*20% Chrysotile*	*20% Fiberglass, 60% Non-Fibrous*
A005-97	98199.97	Plaster	Negative	----------	100% Non-Fibrous
A005-98	98199.98	Floor felt	Negative	----------	60% Cellulose, 40% Non-Fibrous
A005-99	*98199.99*	*Cloth pipe wrap*	*Positive*	*75% Chrysotile*	*2% Synthetic, 23% Non-Fibrous*
A005-100A	98199.100 A	Plaster/paint	Negative	----------	100% Non-Fibrous
A005-100B	98199.100 B	Plaster/stucco	Negative	----------	100% Non-Fibrous
A005-101A	*98199.101 A*	*Exterior stucco/texture*	*Positive*	*2% Chrysotile*	*5% Wollastonite, 93% Non-Fibrous*
A005-101B	98199.101 B	Exterior stucco	Trace	<1% Chrysotile	100% Non-Fibrous
A005-102A	98199.102 A	Exterior stucco	Negative	----------	100% Non-Fibrous
A005-102B	*98199.102 B*	*Exterior stucco/texture*	*Positive*	*2% Chrysotile*	*98% Non-Fibrous*
A005-103A	*98199.103 A*	*Exterior stucco/paint*	*Positive*	*2% Chrysotile*	*5% Wollastonite, 93% Non-Fibrous*
A005-103B	98199.103 B	Exterior stucco	Negative	----------	100% Non-Fibrous
A005-104A	98199.104 A	Exterior stucco/paint	Negative	----------	5% Wollastonite, 95% Non-Fibrous
A005-104B	98199.104 B	Exterior stucco	Trace	<1% Chrysotile	100% Non-Fibrous
A005-105	98199.105	Mastic on water pipe	Negative	----------	100% Non-Fibrous
A005-106A	98199.106 A	Plaster/paint	Negative	----------	100% Non-Fibrous
A005-106B	98199.106 B	Plaster	Negative	----------	100% Non-Fibrous

Laboratory Number: 99-A005
Client: Pacific Environmental
Page: 6

Method: Polarized Light Microscopy, EPA Method 600/R-93/116

The result quantitations reported are an estimation based on the methods of visual microscopic estimation which is considered only a semi-quantitative technique. Also, this report is indicative only of the sample material Continental Envirotech, Inc. received. Results do not necessarily reflect the makeup of the entire span of the material from which the samples were derived. Sampling techniques and/or sample handling may affect the integrity of the sample/s before submission to Continental Envirotech, Inc. and hence the outcome of the laboratory results. Samples not destroyed by testing are retained a minimum of thirty days.

Continental Envirotech, recommends re-analysis by point count or Transmission Electron Microscopy (TEM) for materials that are found to contain less than ten percent (<10%) asbestos by PLM.

Analyst: Natalie Johnson — Date Analyzed: January 6, 1999

Analyst: Steve Hutton — Date Analyzed: January 6, 1999

Analyst: Mark Moseley — Date Analyzed: January 6, 1999

CONTINENTAL ENVIROTECH, INC.

ADHS #AZ(9 5
AIHA PAT #161 6
CA ELAP #5 2
Mass. #AA 000
NVLAP 200
TX DOH: 30-

BULK ASBESTOS ANALYSIS SUMMARY REPORT

CLIENT NAME: Pacific Environmental Company **Attention:** M. Lyssy
30101 Town Center Dr
Suite 107
Laguna Niguel, CA. 92677

CEI LABORATORY #: 99-A395 98199 **PROJECT:** Glenarm Power Plant

CEI LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION	TEST RESULTS Pos. / Neg.	TEST RESULTS % & Type	OTHER MATERIALS
A395-1	98199.107	Tank insulation	Negative	----------	40% Fiberglass, 60% Non-Fibrous
A395-2	98199.108	Tank insulation	Negative	----------	40% Fiberglass, 60% Non-Fibrous
A395-3A	98199.109	Textured paint	Negative	----------	5% Wollastonite, 95% Non-Fibrous
A395-3B	*98199.109*	*Mastic/felt*	*Positive*	*40% Chrysotile*	*10% Cellulose, 50% Non-Fibrous*
A395-4	*98199.110*	*Exterior stucco*	*Positive*	*2% Chrysotile*	*5% Wollastonite, 93% Non-Fibrous*
A395-5	98199.111	Exterior stucco	Negative	----------	5% Wollastonite, 95% Non-Fibrous
A395-6	98199.112	Air shaft insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A395-7	98199.113	Air shaft insulation	Negative	----------	95% Fiberglass, 5% Non-Fibrous
A395-8	98199.114	Paint	Negative	----------	5% Wollastonite, 95% Non-Fibrous
A395-9	*98199.115*	*Exterior stucco*	*Positive*	*2% Chrysotile*	*5% Wollastonite, 93% Non-Fibrous*

Method: Polarized Light Microscopy, EPA Method 600/R-93/116

The result quantitations reported are an estimation based on the methods of visual microscopic estimation which is considered only a semi-quantitative technique. Also, this report is indicative only of the sample material Continental Envirotech, Inc. received. Results do not necessarily reflect the makeup of the entire span of the material from which the samples were derived. Sampling techniques and/or sample handling may affect the integrity of the sample/s before submission to Continental Envirotech, Inc. and hence the outcome of the laboratory results. Samples not destroyed by testing are retained a minimum of thirty days.

Continental Envirotech, recommends re-analysis by point count or Transmission Electron Microscopy (TEM) for materials that are found to contain less than ten percent (<10%) asbestos by PLM.

Analyst: Natalie Johnson Date Analyzed: February 23, 1999

Natalie Johnson

646 West Broadway Road, Suite 401, Mesa, Arizona 85210-1212
(60?) 844-?710 • Fax (609) 844-1750 • Toll ... 665-...

99A005

Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 92677
Telephone (949)363-7200 • Facsimile (949)363-7110

Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / MORLEHAM

PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199.01	INT. BOILER 15 - EAST	PIPE INSULATION	
.02	" " " - SO.	" " "	
.03	BOILER 15 - INTERIOR	FLOORING INSULATION	
.04	" " "	SECOND LAYER FLOORING	
.05	" " "	THIRD LAYER FLOORING	
.06	MID LEVEL BOILER 15 INT	MORTAR	
.07	" " " "	" "	
.08	BOILER BURNER WALL	" "	
.09	BOILER 15 EAST. INT WALL	INSULATION MATERIAL	
.10	" SO. INT. WALL	" " " "	
.11	" " " " "	"	
.12	BOILER 14 BURNER DOOR	INSULATION	
.13	" " " "	" "	
.14	BOILER 14 BURNER DOOR	GASKET	
.15	BOILER 15 " "	"	
.16	BOILER 17 INTERIOR	FLOOR INSULATION	
.17	" " "	" "	
.18	" " "	" "	
.19	BOILER 17 FLOOR	TOP LAYER BRICK	
.20	" " "	SECOND LAYER BRICK	

Analytical Method: POLARIZED LIGHT MICROSCOPY

Turn Around Time Requested: ~~48~~ 24 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
M. Lyssy	M Lyssy	12-31-98 10AM
T. Morlehem	Tina Morlehem	1/4/98
		1-6-99 / 3:45

Comments: _____

PLEASE FAX A COPY THE SAMPLE RESULTS TO (949)363-7110 ASAP

99-A005

Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 92677
Telephone (949)363-7200 • Facsimile (949)363-7110

Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / [illegible]

PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199.21	INT. BOILER 17	WALL INSULATION	
.22	" " "	" " "	
.23	WEST WALL BOILER 17	BRICK	
.24	BURNER WALL BOILER 17	"	
.25	PEEP HOLE #17	MORTAR	
.26	BOILER 17 EAST - EXT WALL	BOILER INSULATION	
.27	" 17 WEST - " "	" "	
.28	" 16 EAST - " "	" "	
.29	BOILER 15 SOUTH BREECHING DUCT	" "	
.30	BOILER 14 NO. " "	" "	
.31	BOILER 15 WEST LANCE	MANIFOLD INSULATION	
.32	8" RISER OFF MANIFOLD	PIPE INSULATION	
.33	1" PIPE	CLOTH WRAP	
.34	20" RISER WEST B15	PIPE INSULATION	
.35	15" GATE VALVE B15	" "	
.36	16" DOUBLE PIPE RISER B15	" "	
.37	NO AIR SLIDE B 14	INSULATION	
.38	PUMP B/T B14/B15 12" PIPE	PIPE INSULATION	
.39	BOILER 16 BURNER	DOOR GASKET	
.40	" "	DOOR INSULATION	

Analytical Method: POLARIZED LIGHT MICROSCOPY

Turn Around Time Requested: ~~24~~ 48 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
[illegible]	[illegible]	12-31-98 10AM
[illegible]	[illegible]	1/4/98
[illegible]	[illegible]	1-6-99

Comments: _____

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99-A0005

Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 92677
Telephone (949)363-7200 • Facsimile (949)363-7110

Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / MARK

PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199 .41	BOILER 16 - BLACK 10"	FLANGE INSULATION	
.42	" - BLACK 6"	PIPE INSULATION	
.43	CONTROL ROOM	12" VFT AND MASTIC	
.44	BOILER 15 SOUTH	AIR DUCT INSULATION	
.45	SO. WALL BY BOILERS	WALL PLASTER	
.46	B15 WEST @ 20'	GATE VALVE INSULATION	
.47	B15 WEST @ 20'	RED BRICK	
.48	" " "	MORTAR	
.49	B14 WEST @ 20'	RED BRICK	
.50	" " "	MORTAR	
.51	B17 SE	DEGASSER TANK INSULATION	
.52	" "	TEE INSULATION	
.53	WEST B 15 PORT HOLE	DOOR INSULATION	
.54	B15 W TOP OF SUPERHEATER	TANK INSULATION	
.55	8" PIPE BOILER TO TANK	PIPE INSULATION	
.56	B17 SO.	AIR SHEET INSULATION	
.57	D16 SO.	" " " "	
.58	B17 WEST	BOILER INSULATION	
.59	4" FUSER	PIPE INSULATION	
.60	B16 W @ 40'	BRICK	

Analytical Method: POLARIZED LIGHT MICROSCOPY

Turn Around Time Requested: ~~24~~ 48 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
M. Lyssy	MLy	12-31-98 10AM
T. Carmichael	Tina Vann	1/4/99
AA		1-6-99

Comments: _____

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99#005

Pacific Environmental Company
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Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / ANDREA
PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199.61	B14 PREHEATER	INSULATION	
.62	B14 BLOWER MOTOR	WIRE INSULATION	
.63	B16 PREHEATER	INSULATION	
.64	BOILER ROOF NW CORNER	VENT INSULATION	
.65	BOILER ROOF CENTER	TANK INSULATION	
.66	BOILER ROOF	CORE SAMPLE	
.67	BOILER ROOF PARAPET	STUCCO / TEXTURE	
.68	TURBINE ROOF	ROOF CORE SAMPLE	
.69	WINDOW ON ROOF	WINDOW PUTTY	
.70	MACHINE RM ROOF	ROOF PANEL	
.71	" " "	GRAY MASTIC	
.72	E. BOILER ROOF PARAPET	STUCCO	
.73	BOILER ROOF	GRAY MASTIC	
.74	BLOWER VENT	BLACK MASTIC	
.75	WEST BOILER RM	INT. WINDOW PUTTY	
.76	MACHINE SHOP WALL	INSULATION	
.77	2ND FLOOR OFFICE - NO.	DRYWALL JOINT COMPOUND	
.78	" " " SO.	" " " "	
.79	OFFICES	2x4 CEILING TILE	
.80	TURBINE RM - SO. WALL	WALL PLASTER	

Analytical Method: POLARIZED LIGHT MICROSCOPY Turn Around Time Requested: ~~48~~ 24 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
M LYSSY		1-31-98 10AM
T. MACEK		1-4-99
		1/6/99 10AM

Comments: _____

PLEASE FAX A COPY THE SAMPLE RESULTS TO (949)363-7110 ASAP

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Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 92677
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Laboratory Analysis Request Form

PROJECT SITE: GLENDALE POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / MANN

PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199.81	ABOVE OFFICE	WALL PLASTER	
.82	" "	WIRE INSULATION	
.83	TURBINE HOUSING	ELBOW INSULATION	
.84	" STEAM EXCHANGE	PIPE INSULATION	
.85	TURBINE HOUSING	" " "	
.86	FUEL OIL HEATER B17	HEATER INSULATION	
.87	B17 PLENUM DUCT DOOR	DOOR INSULATION	
.98	B15 FOUNDATION	INSULATION	
.89	B14 "	" "	
.90	PUMP ROOM 4" PIPE	" "	
.91	MAIN STEAM HEATER	PIPE INSULATION	
.92	LOW PRES. WATER HEATER	INSULATION	
.93	BOILER FEED PUMP	INSULATION	
.94	FLASH TANK	" "	
.95	4" PIPE UNDER TURB.	PIPE INSULATION	
.96	ABAND. PIPE TUNNEL	20" PIPE INSULATION	
.97	OPEN PIT @ TUNNEL	PLASTER	
.98	UNDER CONC. FORMER	FLUE FELT	
.99	PIPE TUNNEL	CLOTH PIPE WRAP	
.100	NW WALL	PLASTER	

Analytical Method: POLARIZED LIGHT MICROSCOPY Turn Around Time Requested: ~~48~~ Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
M. LYSSY		12-31-98 10AM
T. VANMOORLEHEM		1-4-99
Natalie Johnson		1/6/99 10AM

Comments: _____

PLEASE FAX A COPY THE SAMPLE RESULTS TO (949)363-7110 ASAP

98A005

Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 92677
Telephone (949)363-7200 • Facsimile (949)363-7110

Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY / [illegible]

PROJECT NUMBER: 98199
DATE SAMPLED: 12-30-98

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
98199.101	SOUTH OF CRANE PIT	EXT. STUCCO	
.102	NORTH OF CRANE PIT	" "	
.103	NW	" "	
.104	SW BY STACK	" "	
.105	MAIN FIELD	MASTIC ON WATER PIPE	
.106	LOCKER ROOM	PLASTER	
	END		

Analytical Method: POLARIZED LIGHT MICROSCOPY

Turn Around Time Requested: ~~48~~ 24 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
M. Lyssy	[signature]	12-31-98 10AM
T. VanMoorleghem	[signature]	1-4-99
Natalie Johnson	[signature]	1/6/99 10AM

Comments: _____

PLEASE FAX A COPY THE SAMPLE RESULTS TO (949)363-7110 ASAP

99-A395

Pacific Environmental Company
30101 Town Center Drive, Suite 107, Laguna Niguel, California 926
Telephone (949)363-7200 • Facsimile (949)363-7110

Laboratory Analysis Request Form

PROJECT SITE: GLENARM POWER PLANT
CLIENT: CITY OF PASADENA
SAMPLED BY: LYSSY

PROJECT NUMBER: 98199
DATE SAMPLED: 2-18-99

	SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	COMMENTS
1	98199.107	BOILER ROOF TANK	TANK INSULATION	
2	.108	" " "	" " "	
3	.109	ELEVATOR SIDING	TEXTURED PAINT AND MASTIC	
4	.110	EAST TURBINE ROOF	EXTERIOR STUCCO	
5	.111	NO. BOILER ROOF	" " "	
6	.112	NO. OF BOILER 14	AIR SHAFT INSULATION	
7	.113	SO. OF BOILER 15	" " "	
8	.114	SO. EAST WALL	PAINT	
9	.115	NO. EAST WALL	EXTERIOR STUCCO	

Analytical Method: POLARIZED LIGHT MICROSCOPY Turn Around Time Requested: 24 Hours

CHAIN OF CUSTODY:

Name	Signature	Date/Time
LYSSY		2/18/99 430p
T. Mackenzie		2/19/99 10:00AM
[illegible]	2/23/99	345PM

Comments:

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APPENDIX E

XRF Assessment Summary Reports

- Interior Lead Containing Component Report
- Exterior Lead Containing Component Report
- Summary of Interior Report
- Summary of Exterior Report
- Positive and Inconclusive Field Data Report

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1295	E	Concrete Column	BASEMENT LEVEL MAIN ROOM	1.7	POSITIVE	DAMAGED	N.E. column
1414	W	Concrete Foundation	BASEMENT LEVEL TURBINE 8	1.3	POSITIVE	DAMAGED	
1416	W			1.2	POSITIVE	DAMAGED	
1439	E		BASEMENT LEVEL TURBINE 9	9.3	POSITIVE	DAMAGED	
1442	E			2.9	POSITIVE	DAMAGED	
206	S	Concrete Stripe	MAIN FLOOR MACHINE SHOP	1.8	POSITIVE	DAMAGED	Yellow
208	S			1.7	POSITIVE	DAMAGED	Yellow
1678	N	Concrete Wall	PERIMETER COMPRESSOR ROOM	3.9	POSITIVE	DAMAGED	
69		Metal Beam	MAIN FLOOR MAIN ROOM	15.7	POSITIVE	Intact	Roof support-runs N-S
70				8.3	POSITIVE	Intact	Roof support-runs N-S
73				2.9	POSITIVE	DAMAGED	Roof support-runs E-W
219			MAIN FLOOR MACHINE SHOP	2.7	POSITIVE	DAMAGED	N-S
220				2.4	POSITIVE	DAMAGED	E-W
221				2.3	POSITIVE	DAMAGED	E-W
253			MAIN FLOOR HIGH BAY AREA	13.0	POSITIVE	Intact	Roof support
254				4.2	POSITIVE	Intact	Roof support
273	N		MAIN FLOOR BOILER ROOM	14.0	POSITIVE	Intact	Inside closet
279	N			20.0	POSITIVE	Intact	Inside closet
444	S		LOWER LEVEL TUNNEL 3	8.2	POSITIVE	Intact	Red primer
646	N		BOILER # 14 LEVEL 1	12.0	POSITIVE	Intact	Silver-diagonal
647	N			16.0	POSITIVE	Intact	Silver-Diagonal
655	E			17.0	POSITIVE	Intact	Silver-diagonal

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
656	E	Metal Beam	BOILER # 14 LEVEL 1	19.0	POSITIVE	Intact	Silver-diagonal
671	S			10.0	POSITIVE	Intact	Silver-diagonal
672	S			15.0	POSITIVE	Intact	Silver-horizontal
678	W			6.7	POSITIVE	DAMAGED	
679	W			9.2	POSITIVE	DAMAGED	
772	N		BOILER # 15 LOWER LEVEL	4.6	POSITIVE	DAMAGED	Diagonal
796	N		BOILER # 15 LEVEL 1	12.0	POSITIVE	Intact	Silver-horizontal
797	N			7.1	POSITIVE	Intact	Silver-diagonal
809	E			12.0	POSITIVE	Intact	Silver-diagonal
810	E			9.1	POSITIVE	Intact	Silver-diagonal
815	S			18.0	POSITIVE	Intact	Silver-diagonal
816	S			12.0	POSITIVE	Intact	Silver-diagonal
825	W			[illegible]	POSITIVE	DAMAGED	Bottom of boiler
826	W				POSITIVE	DAMAGED	Bottom of boiler
884	E		BOILER # 15 LEVEL 3	12.0	POSITIVE	Intact	Top of boiler
891	N			12.0	POSITIVE	Intact	
1153	N		BOILER 17 LEVEL 1	17	POSITIVE	Intact	
1328	E		BASEMENT LEVEL TURBINE FOUNDATION ROOM	[illegible]	POSITIVE	DAMAGED	Pulley support
1457	W		BASEMENT LEVEL TURBINE [illegible]		POSITIVE	Intact	Above motor
1462			BASEMENT LEVEL CABLE SUB-BASEMENT ROOM	15.0	POSITIVE	Intact	
1472				22.0	POSITIVE	Intact	
1473				19.0	POSITIVE	Intact	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
428		Metal Catwalk	LOWER LEVEL TUNNEL 2	8.3	POSITIVE	DAMAGED	
632	W		BOILER # 14 LOWER LEVEL	7.4	POSITIVE	DAMAGED	
958	S		BOILER # 16 LOWER LEVEL	3.0	POSITIVE	DAMAGED	
1018	E		BOILER #16 LEVEL 1.5	4.1	POSITIVE	DAMAGED	
1024	W			16.0	POSITIVE	DAMAGED	
1035	E		BOILER #16 LEVEL 2	2.8	POSITIVE	DAMAGED	
1047	W			1.2	POSITIVE	Intact	
1057	E		BOILER #16 LEVEL 3	6.4	POSITIVE	DAMAGED	
1068	W			6.3	POSITIVE	DAMAGED	
1100	E		BOILER # 16 LEVEL 4	6.2	POSITIVE	DAMAGED	
1106	N		BOILER 17 LOWER LEVEL	1.3	POSITIVE	Intact	
1204	E		BOILER 17 LEVEL 1.5	6.9	POSITIVE	DAMAGED	
1218	W			8.1	POSITIVE	DAMAGED	
1221	E		BOILER 17 LEVEL 2	6.0	POSITIVE	DAMAGED	
1236	W			3.7	POSITIVE	DAMAGED	
1241	N			10.0	POSITIVE	DAMAGED	
1246	E		BOILER 17 LEVEL 3	10.0	POSITIVE	DAMAGED	
1259	W			10.0	POSITIVE	DAMAGED	
1682		Metal Ceiling	PERIMETER COMPRESSOR ROOM	1.6	POSITIVE	DAMAGED	
274	N1	Metal Closet Door	MAIN FLOOR BOILER ROOM	2.1.0	POSITIVE	Intact	
277	N3			16.0	POSITIVE	Intact	
275	N1	Metal Closet Door Frame		18.0	POSITIVE	Intact	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
278	N1	Metal Closet Door Frame	MAIN FLOOR BOILER ROOM	11.0	POSITIVE	Intact	
19	E1	Metal Column	MAIN FLOOR MAIN ROOM	6.0	POSITIVE	Intact	
245	S		MAIN FLOOR HIGH BAY AREA	6.5	POSITIVE	Intact	For elevator
248	S				POSITIVE	DAMAGED	For elevator
445	S		LOWER LEVEL TUNNEL 3	19.0	POSITIVE	Intact	Red primer
621	W		BOILER # 14 LOWER LEVEL	13.0	POSITIVE	Intact	
638	E			16.0	POSITIVE	Intact	
642	E			9	POSITIVE	DAMAGED	
645	N		BOILER # 14 LEVEL 1	18.0	POSITIVE	Intact	
652	N			11	POSITIVE	DAMAGED	Wall corner
657	E			9.7	POSITIVE	Intact	
677	W			13.0	POSITIVE	Intact	Silver
685	W			18.0	POSITIVE	Intact	
697	W		BOILER # 14 LEVEL 2	19.0	POSITIVE	Intact	
698	W			16.0	POSITIVE	Intact	
699	W			18.0	POSITIVE	Intact	
709	N			16.0	POSITIVE	Intact	
715	W		BOILER # 14 LEVEL 3	13.0	POSITIVE	Intact	
725	S			14.0	POSITIVE	Intact	
766	W		BOILER # 15 LOWER LEVEL	12.0	POSITIVE	Intact	
767	W			15.0	POSITIVE	Intact	
783	N			6.7	POSITIVE	Intact	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
786	N	Metal Column	BOILER # 15 LOWER LEVEL	11.0	POSITIVE	Intact	
800	N		BOILER # 15 LEVEL 1	14.0	POSITIVE	Intact	Silver
811	E			20.0	POSITIVE	Intact	Silver-S.E. corner
822	S			16.0	POSITIVE	Intact	Silver-S.W. corner
831	W			14.0	POSITIVE	Intact	Silver-N.W. corner
841	W		BOILER # 15 LEVEL 2	16.0	POSITIVE	DAMAGED	Silver
842	W			20.0	POSITIVE	DAMAGED	
843	W			22.0	POSITIVE	DAMAGED	
853	W			12.0	POSITIVE	DAMAGED	S.W. corner
858	W		BOILER# 15 LEVEL 3	14.0	POSITIVE	Intact	Silver
866	E			18.0	POSITIVE	Intact	Silver
874	E			18.0	POSITIVE	Intact	
875	E			16.0	POSITIVE	Intact	
1463			BASEMENT LEVEL CABLE SUB BASEMENT ROOM	14.0	POSITIVE	Intact	
1464				16.0	POSITIVE	Intact	
1465				20.0	POSITIVE	Intact	
1466				13.0	POSITIVE	Intact	
1467				21.0	POSITIVE	Intact	
1468				16.0	POSITIVE	Intact	
1469				22.0	POSITIVE	Intact	
1470				16.0	POSITIVE	Intact	
1471				14.0	POSITIVE	Intact	

All Lead readings are expressed in mg/cm^2

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm^2

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
14		Metal Crane	MAIN FLOOR MAIN ROOM	1.9	POSITIVE	DAMAGED	50 ton
204	S1	Metal Door	MAIN FLOOR MACHINE SHOP 1	3.7	POSITIVE	DAMAGED	To exterior
292	S2		MAIN FLOOR BOILER ROOM	5.2	POSITIVE	DAMAGED	
448	N		LOWER LEVEL VAULT ACCESS ROOM	3.9	POSITIVE	DAMAGED	To vault 8
486	S		LOWER LEVEL VAULT 8	4.5	POSITIVE	Intact	
525	N		LOWER LEVEL 480 VOLT SWITCHGEAR ROOM	2.1	POSITIVE	DAMAGED	
532	E			1.6	POSITIVE	DAMAGED	
594	W1		LOWER LEVEL BOILER FOUNDATION ROOM	1.3	POSITIVE	DAMAGED	High voltage
1686	E		PERIMETER COMPRESSOR ROOM	1.3	POSITIVE	DAMAGED	On floor
117	N3	Metal Door Frame	MAIN FLOOR TURBINE ROOM	3.7	POSITIVE	DAMAGED	
251	S		MAIN FLOOR HIGH BAY AREA	6.7	POSITIVE	DAMAGED	To elevator
256	N3		MAIN FLOOR BOILER ROOM	3.8	POSITIVE	DAMAGED	
293	S2			8.1	POSITIVE	DAMAGED	
323	W1			1.3	POSITIVE	DAMAGED	
526	N		LOWER LEVEL 480 VOLT SWITCHGEAR ROOM	3.7	POSITIVE	DAMAGED	
544	N		LOWER LEVEL 24 KV VAULT	1.5	POSITIVE	DAMAGED	
215		Metal Drill Press	MAIN FLOOR MACHINE SHOP	1.4	POSITIVE	DAMAGED	Smaller
216				2.3	POSITIVE	DAMAGED	Radial arm
460	S	Metal Electrical Panel	LOWER LEVEL VAULT ACCESS ROOM	9.3	POSITIVE	DAMAGED	High voltage
246	S	Metal Fence	MAIN FLOOR HIGH BAY AREA	1.2	POSITIVE	DAMAGED	Around elevator motor
1415	W	Metal Foundation	BASEMENT LEVEL TURBINE 8	1.7	POSITIVE	DAMAGED	
1417	W			1.5	POSITIVE	DAMAGED	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1440	E	Metal Foundation	BASEMENT LEVEL TURBINE 9		POSITIVE	DAMAGED	
1441	E				POSITIVE	DAMAGED	
247	S	Metal Gate	MAIN FLOOR HIGH BAY AREA		POSITIVE	DAMAGED	Around elevator motor
159		Metal Handrail	MAIN FLOOR TURBINE ROOM	9.2	POSITIVE	Intact	
314	W		MAIN FLOOR BOILER ROOM	2.1	POSITIVE	DAMAGED	
410	N		LOWER LEVEL TUNNEL 1	30.0	POSITIVE	DAMAGED	
436			LOWER LEVEL TUNNEL 3	16.0	POSITIVE	DAMAGED	
513	E		LOWER LEVEL 2400 VOLT SWITCHGEAR ROOM	21.0	POSITIVE	DAMAGED	
603	W		LOWER LEVEL BOILER FOUNDATION ROOM	8.1	POSITIVE	Intact	
997	W		BOILER # 16 LEVEL 1	6.9	POSITIVE	DAMAGED	Orange primer
1016	E		BOILER # 16 LEVEL 1.5	6.7	POSITIVE	DAMAGED	
1025	W			8.7	POSITIVE	DAMAGED	
1033	E		BOILER # 16 LEVEL 2	6.1	POSITIVE	DAMAGED	
1059	E		BOILER # 16 LEVEL 3	9.3	POSITIVE	DAMAGED	
1066	W			6.9	POSITIVE	DAMAGED	
1206	E		BOILER 17 LEVEL 1.5	4.27	POSITIVE	DAMAGED	
1223	E		BOILER 17 LEVEL 2	4.1	POSITIVE	DAMAGED	
1247	E		BOILER 17 LEVEL 3	12.0	POSITIVE	DAMAGED	
1344	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	12.0	POSITIVE	DAMAGED	
1421			BASEMENT LEVEL TURBINE 8	15.0	POSITIVE	DAMAGED	To sub-basement
1477	E		BASEMENT LEVEL CABLE SUB-BASEMENT ROOM	6.9	POSITIVE	DAMAGED	
1530	S		BASEMENT LEVEL CRANE PIT ACCESS ROOM	16.0	POSITIVE	DAMAGED	

All Lead readings are expressed In mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
631	W	Metal Ladder	BOILER # 14 LOWER LEVEL		POSITIVE	DAMAGED	
1011	E		BOILER # 16 LEVEL 1.5		POSITIVE	DAMAGED	
1015	E				POSITIVE	DAMAGED	
1021	W			10.0	POSITIVE	Intact	
1200	E		BOILER 17 LEVEL 1.5	20.0	POSITIVE	DAMAGED	
1216	W			6.1	POSITIVE	DAMAGED	
1354	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	5.0	POSITIVE	DAMAGED	
1360	W			2.5	POSITIVE	DAMAGED	
214		Metal Lathe	MAIN FLOOR MACHINE SHOP	3.3	POSITIVE	DAMAGED	
9	N	Metal Light Fixture	MAIN FLOOR MAIN ROOM	1.9	POSITIVE	Intact	
56	S2			1.6	POSITIVE	Intact	
115	N		MAIN FLOOR TURBINE ROOM	1.7	POSITIVE	Intact	
466	E	Metal Motor	LOWER LEVEL VAULT ACCESS ROOM		POSITIVE	DAMAGED	Suction
1380	E		BASEMENT LEVEL TURBINE 8	1.7	POSITIVE	Intact	Pump
1381	E			1.5	POSITIVE	Intact	
1386	E			1.3	POSITIVE	DAMAGED	
1410	W			1.9	POSITIVE	DAMAGED	Large-Grey
1411	W			1.3	POSITIVE	DAMAGED	Large-Grey
1412	W			1.5	POSITIVE	DAMAGED	Large-Grey
1413	W			1.5	POSITIVE	DAMAGED	Large-Grey
1435	E		BASEMENT LEVEL TURBINE 9	2.2	POSITIVE	DAMAGED	Large-Green
1443	E			2.8	POSITIVE	DAMAGED	Large-Green

All Lead readings are expressed in mg/cm^2

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm^2

INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1444	E	Metal Motor	BASEMENT LEVEL TURBINE 9	1.1	POSITIVE	DAMAGED	Large Green
1454	W			2.5	POSITIVE	Intact	Ingsoll-Rand
147		Metal Pipe	MAIN FLOOR TURBINE ROOM	1.1	POSITIVE	Intact	
148				1.0	POSITIVE	Intact	
429			LOWER LEVEL TUNNEL 2	3.2	POSITIVE	DAMAGED	
564	N		LOWER LEVEL BOILER FOUNDATION ROOM	6.3	POSITIVE	DAMAGED	Overhead-behind boiler
596	W			1.3	POSITIVE	DAMAGED	Red primer-horizontal
597	W			2.7	POSITIVE	DAMAGED	Horizontal
598	W			13.0	POSITIVE	DAMAGED	Horizontal
1339	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	1.0	POSITIVE	DAMAGED	
1340	S			2.1	POSITIVE	DAMAGED	
1419	S		BASEMENT LEVEL TURBINE 8	6.1	POSITIVE	DAMAGED	Side of motor
1433	E		BASEMENT LEVEL TURBINE 9	11.0	POSITIVE	DAMAGED	Large-Green
1438	E			5.6	POSITIVE	Intact	Center of turbine
1449	E				POSITIVE	DAMAGED	Large green overhead
1455	W			4.6	POSITIVE	Intact	
630	W	Metal Railing	BOILER # 14 LOWER LEVEL	11.0	POSITIVE	DAMAGED	Near ladder
957	S		BOILER # 16 LOWER LEVEL	1.3	POSITIVE	DAMAGED	
996	W		BOILER # 16 LEVEL 1	7.2	POSITIVE	DAMAGED	To lower level
1017	E		BOILER # 16 LEVEL 1.5	3.2	POSITIVE	DAMAGED	
1026	W			6.3	POSITIVE	DAMAGED	
1034	E		BOILER # 16 LEVEL 2	4.7	POSITIVE	DAMAGED	

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1046	W	Metal Railing	BOILER # 16 LEVEL 2	2.67	POSITIVE	Intact	
1058	E		BOILER # 16 LEVEL 3	5.7	POSITIVE	DAMAGED	
1067	W			3.6	POSITIVE	DAMAGED	
1099	E		BOILER # 16 LEVEL 4	8.3	POSITIVE	DAMAGED	
1107	N		BOILER 17 LOWER LEVEL	3.7	POSITIVE	Intact	
1205	E		BOILER 17 LEVEL 1.5	8.3	POSITIVE	DAMAGED	
1217	W			7.4	POSITIVE	DAMAGED	
1222	E		BOILER 17 LEVEL 2	12.7	POSITIVE	DAMAGED	
1235	W			8.6	POSITIVE	DAMAGED	
1240	N			14.0	POSITIVE	DAMAGED	
1245	E		BOILER 17 LEVEL 3	6.3	POSITIVE	DAMAGED	
1258	W			12.0	POSITIVE	DAMAGED	
1420			BASEMENT LEVEL TURBINE 8	12.0	POSITIVE	DAMAGED	To sub-basement
217		Metal Shaper	MAIN FLOOR MACHINE SHOP	2.1	POSITIVE	DAMAGED	
158		Metal Stringer	MAIN FLOOR TURBINE ROOM	5.4	POSITIVE	DAMAGED	
313	W		MAIN FLOOR BOILER ROOM	20.0	POSITIVE	DAMAGED	
409	N		LOWER LEVEL TUNNEL 1	2.7	POSITIVE	DAMAGED	
437			LOWER LEVEL TUNNEL 3	10.0	POSITIVE	DAMAGED	
456	W		LOWER LEVEL VAULT ACCESS ROOM	8.6	POSITIVE	DAMAGED	
514	E		LOWER LEVEL 2400 VOLT SWITCHGEAR ROOM	19.0	POSITIVE	DAMAGED	
1311	W		BASEMENT LEVEL MAIN ROOM	12.0	POSITIVE	DAMAGED	
1343	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	10.0	POSITIVE	DAMAGED	

All Lead readings are expressed In mg/cm ^{2}

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

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ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1393	S	Metal Stringer	BASEMENT LEVEL TURBINE 8	7.1	POSITIVE	DAMAGED	To side of turbine
1476	E		BASEMENT LEVEL CABLE SUB-BASEMENT ROOM	9.2	POSITIVE	DAMAGED	
1528	S		BASEMENT LEVEL CRANE PIT ACCESS ROOM	10.0	POSITIVE	DAMAGED	
1061	E	Metal Tank	BOILER # 16 LEVEL 3	6.2	POSITIVE	DAMAGED	
1065	W			4.3	POSITIVE	DAMAGED	Burner
1248	E		BOILER 17 LEVEL 3	4.8	POSITIVE	DAMAGED	Burner
1257	W			3.9	POSITIVE	DAMAGED	Burner
1269	W		BOILER 17 LEVEL 4	6.1	POSITIVE	DAMAGED	Burner
1280	E			6.4	POSITIVE	DAMAGED	Burner
1337	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	6.0	POSITIVE	DAMAGED	# 9 Emergency dump
1459	W		BASEMENT LEVEL TURBINE 9	6.3	POSITIVE	Intact	Mixer-Under turbine
1513	E		BASEMENT LEVEL CRANE PIT ACCESS ROOM		POSITIVE	DAMAGED	Mixer
1695			PERIMETER COMPRESSOR ROOM	7.9	POSITIVE	Intact	10806-48 N.W. corner
1696				9.5	POSITIVE	Intact	12177-49
157		Metal Tread	MAIN FLOOR TURBINE ROOM	9.5	POSITIVE	DAMAGED	
312	W		MAIN FLOOR BOILER ROOM	8.7	POSITIVE	DAMAGED	
438			LOWER LEVEL TUNNEL 3	4.7	POSITIVE	DAMAGED	
502	E		LOWER LEVEL NO. 9 LEAD VAULT	1.2	POSITIVE	DAMAGED	
515	E		LOWER LEVEL 2400 VOLT SWITCHGEAR ROOM	1.6	POSITIVE	DAMAGED	
604	W		LOWER LEVEL BOILER FOUNDATION ROOM	2.3	POSITIVE	Intact	
1345	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM		POSITIVE	DAMAGED	Orange paint
1422			BASEMENT LEVEL TURBINE 8		POSITIVE	DAMAGED	Floor Painted

All Lead readings are expressed in mg/cm^2

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

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SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1478	E	Metal Tread	BASEMENT LEVEL CABLE SUB-BASEMENT ROOM	6.7	POSITIVE	DAMAGED	
1529	S		BASEMENT LEVEL CRANE PIT ACCESS ROOM	15.0	POSITIVE	DAMAGED	
140		Metal Turbine # 8	MAIN FLOOR TURBINE ROOM	1.4	POSITIVE	Intact	Cast iron
142				2.6	POSITIVE	Intact	Cast iron
143				1.7	POSITIVE	Intact	Cast iron
144				1.4	POSITIVE	Intact	Cast iron
146				2.1	POSITIVE	Intact	Cast iron
60	S	Metal Valve	MAIN FLOOR MAIN ROOM	5.2	POSITIVE	Intact	In floor
61	S			2.6	POSITIVE	Intact	In floor
433	E		LOWER LEVEL TUNNEL 2	2.3	POSITIVE	DAMAGED	
1341	S		BASEMENT LEVEL TURBINE FOUNDATION ROOM	1.2	POSITIVE	DAMAGED	
1387	E		BASEMENT LEVEL TURBINE 8	3.0	POSITIVE	DAMAGED	
1434	E		BASEMENT LEVEL TURBINE 9	8.3	POSITIVE	DAMAGED	Large Green
1458	W			2.3	POSITIVE	Intact	Under turbine
1078	W	Metal Vent	BOILER # 16 LEVEL 4	3.3	POSITIVE	DAMAGED	Blower-grey primer
1079	W			3.8	POSITIVE	DAMAGED	Blower-grey primer
1087	W			3.7	POSITIVE	DAMAGED	Grey primer
1090	E			3.5	POSITIVE	DAMAGED	Grey primer
1091	E			3.7	POSITIVE	DAMAGED	Grey primer
1268	W		BOILER 17 LEVEL 4	4.8	POSITIVE	DAMAGED	Damper
1273	S			6.4	POSITIVE	DAMAGED	Damper
1275	S			4.2	POSITIVE	DAMAGED	Damper

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

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ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1279	E	Metal Vent	BOILER 17 LEVEL 4	5.1	POSITIVE	DAMAGED	Damper
1281	E			7.6	POSITIVE	DAMAGED	Damper
106	N	Metal Wall	MAIN FLOOR TURBINE ROOM	5.1	POSITIVE	Intact	Next to N1 door
663	S		BOILER # 14 LEVEL 1	6.7	POSITIVE	Intact	Silver
708	N		BOILER # 14 LEVEL 2	5.7	POSITIVE	Intact	Large metal plate
724	S		BOILER # 14 LEVEL 3	6.7	POSITIVE	Intact	
795	N		BOILER # 15 LEVEL 1	15.0	POSITIVE	Intact	Silver
854	S		BOILER # 15 LEVEL 2	7.6	POSITIVE	Intact	Large metal plates
855	S			9.3	POSITIVE	Intact	
885	N		BOILER # 15 LEVEL 3	15.0	POSITIVE	Intact	Large metal plates
886	N			18.0	POSITIVE	Intact	
1679	S		PERIMETER COMPRESSOR ROOM	2.7	POSITIVE	DAMAGED	
1680	E			13.1	POSITIVE	DAMAGED	
1681	W			14.2	POSITIVE	DAMAGED	
7	N	Tile Baseboard	MAIN FLOOR MAIN ROOM	29.0	POSITIVE	Intact	Black
29	E			18.0	POSITIVE	Intact	
68	S			30.0	POSITIVE	Intact	
111	N		MAIN FLOOR TURBINE ROOM	16.0	POSITIVE	Intact	Black
120	S			25.0	POSITIVE	Intact	
135	W			26.0	POSITIVE	Intact	
2	N	Tile Wall	MAIN FLOOR MAIN ROOM	35.0	POSITIVE	Intact	
17	E			30.0	POSITIVE	Intact	

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

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ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
28	E	Tile Wall	MAIN FLOOR MAIN ROOM	22.0	POSITIVE	Intact	
49	S			32.0	POSITIVE	Intact	
105	N		MAIN FLOOR TURBINE ROOM	32.0	POSITIVE	Intact	
119	S			39.0	POSITIVE	Intact	
134	W			34.0	POSITIVE	Intact	
1668	N		PERIMETER BATHROOM	16.0	POSITIVE	Intact	Sink area
1669	N			19.0	POSITIVE	Intact	Shower area
72		Wood Beam	MAIN FLOOR MAIN ROOM	6.3	POSITIVE	DAMAGED	Roof support runs E-W
295	S	Wood Cabinet Door	MAIN FLOOR BOILER ROOM	1.8	POSITIVE	DAMAGED	Bulletin board
296	S	Wood Cabinet Frame		1.9	POSITIVE	DAMAGED	
352	E		MAIN FLOOR CONTROL ROOM	2.8	POSITIVE	DAMAGED	Old phone booth
3	N	Wood Door	MAIN FLOOR MAIN ROOM	5.0	POSITIVE	Intact	
34	E5			5.3	POSITIVE	Intact	Lower-phone room-5 pan
36	E4			2.3	POSITIVE	Intact	Lower-office-5 panel
41	E6			9.1	POSITIVE	DAMAGED	To exterior
64	S3			1.6	POSITIVE	DAMAGED	
107	N1		MAIN FLOOR TURBINE ROOM	5.7	POSITIVE	DAMAGED	
109	N2			2.5	POSITIVE	DAMAGED	
113	N3			9.2	POSITIVE	Intact	
116	S1			2.8	POSITIVE	DAMAGED	Overhead
131	S2			6.1	POSITIVE	DAMAGED	
136	W1			9.2	POSITIVE	DAMAGED	

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

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SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
138	W3	Wood Door	MAIN FLOOR TURBINE ROOM	2.3	POSITIVE	DAMAGED	
250	S		MAIN FLOOR HIGH BAY AREA	3.9	POSITIVE	DAMAGED	To elevator
257	N3		MAIN FLOOR BOILER ROOM	3.1	POSITIVE	DAMAGED	Overhead
262	N2			2.4	POSITIVE	DAMAGED	
270	N1			4.1	POSITIVE	DAMAGED	
322	W1			4.5	POSITIVE	DAMAGED	
384	W1		MAIN FLOOR OFFICE 3	[illegible]	POSITIVE	Intact	
394	W		MAIN FLOOR OFFICE 4	[illegible]	POSITIVE	Intact	
4	N	Wood Door Frame	MAIN FLOOR MAIN ROOM	[illegible]	POSITIVE	Intact	
16	E			[illegible]	POSITIVE	Intact	
26	E2			[illegible]	POSITIVE	Intact	Upstairs
35	E5			[illegible]	POSITIVE	Intact	
37	E4			[illegible]	POSITIVE	Intact	Lower-office-5 panel
42	E6			[illegible]	POSITIVE	DAMAGED	To office
50	S1			[illegible]	POSITIVE	Intact	No door
59	S2			[illegible]	POSITIVE	DAMAGED	No door
65	S3			[illegible]	POSITIVE	DAMAGED	
108	N1		MAIN FLOOR TURBINE ROOM	[illegible]	POSITIVE	DAMAGED	
110	N2			[illegible]	POSITIVE	DAMAGED	
114	N3			[illegible]	POSITIVE	Intact	
132	S2			[illegible]	POSITIVE	[illegible]	
197	W1			[illegible]	POSITIVE	[illegible]	

All Lead readings are expressed in mg/cm ^{2}

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
139	W3	Wood Door Frame	MAIN FLOOR TURBINE ROOM	1.0	POSITIVE	DAMAGED	
183	N		MAIN FLOOR MACHINE SHOP	4.2	POSITIVE	DAMAGED	No door
184	N2			4.3	POSITIVE	DAMAGED	No door
263	N2		MAIN FLOOR BOILER ROOM	1.9	POSITIVE	DAMAGED	
271	N1			4.3	POSITIVE	DAMAGED	
360	N		MAIN FLOOR OFFICE 1		POSITIVE	Intact	
371	W		MAIN FLOOR OFFICE 2		POSITIVE	Intact	
385	W1		MAIN FLOOR OFFICE 3	1.6	POSITIVE	Intact	
387	W2			1.9	POSITIVE	Intact	
395	W		MAIN FLOOR OFFICE 4	4.2	POSITIVE	Intact	
6	N1	Wood Window Frame	MAIN FLOOR MAIN ROOM	4.6	POSITIVE	Intact	Fixed
84	E1		MAIN FLOOR UPPER OFFICE		POSITIVE	DAMAGED	Fixed
89	E6			4.3	POSITIVE	Intact	Casement
90	W13			4.8	POSITIVE	Intact	Fixed
91	W10			4.3	POSITIVE	Intact	Fixed
95	W5			5.2	POSITIVE	Intact	Fixed
98	E14			3.7	POSITIVE	DAMAGED	Fixed
369	E		MAIN FLOOR OFFICE 1	3.7	POSITIVE	Intact	Fixed
5	N1	Wood Window Sash	MAIN FLOOR MAIN ROOM	1.6	POSITIVE	Intact	Fixed
82	E1		MAIN FLOOR UPPER OFFICE		POSITIVE	DAMAGED	Fixed
87	E6			2.6	POSITIVE	Intact	Casement
97	E14				POSITIVE	DAMAGED	

All Lead readings are expressed in mg/cm ^{2}

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INTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
83	E1	Wood Window Sill	MAIN FLOOR UPPER OFFICE	2	POSITIVE	DAMAGED	Fixed
88	E6			11	POSITIVE	Intact	Casement
96	E14			82	POSITIVE	DAMAGED	Fixed

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EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1808	E	Concrete Foundation	SURROUNDING STRUCTURES SOUTH PERIMETER	[illegible]	POSITIVE	DAMAGED	North quonset hut
1818	E			[illegible]	POSITIVE	DAMAGED	
1824	E			[illegible]	POSITIVE	DAMAGED	South quonset hut
1620	S	Concrete Wall	PERIMETER SOUTH SIDE	2.8	POSITIVE	Intact	Older section-W. of trim
1625	S			2.6	POSITIVE	DAMAGED	West of roll-up door
1636	S			[illegible]	POSITIVE	DAMAGED	[illegible]
1652	W		PERIMETER WEST SIDE	1.6	POSITIVE	Intact	
1653	W			2.4	POSITIVE	Intact	
1654	W			3.6	POSITIVE	Intact	
1706	N		PERIMETER CRANE PIT	1.8	POSITIVE	DAMAGED	
1707	S			3.2	POSITIVE	DAMAGED	
1708	E			13.0	POSITIVE	DAMAGED	
1709	W			1.6	POSITIVE	DAMAGED	
1800	N		SURROUNDING STRUCTURES SOUTH PERIMETER	28.0	POSITIVE	DAMAGED	Yellow on corner
1807	E			25.0	POSITIVE	DAMAGED	North quonset hut
1740	E	Fiberglass Wall	ROOF PERIMETER	1.6	POSITIVE	Intact	Elevator area
1613	S	Metal Access Panel	PERIMETER SOUTH SIDE	2.4	POSITIVE	DAMAGED	Yellow on OD
1641	S	Metal Beam		14.0	POSITIVE	Intact	Diagonal
1642	S			10.0	POSITIVE	Intact	
1710	E		PERIMETER CRANE PIT	25.0	POSITIVE	DAMAGED	Between garage doors
1719	E			29.0	POSITIVE	DAMAGED	Above door
1720	E			31.0	POSITIVE	DAMAGED	Above door

All Lead readings are expressed in mg/cm ^{2}

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EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1727		Metal Beam	PERIMETER CRANE PIT	20.0	POSITIVE	DAMAGED	Crane
1728				18.0	POSITIVE	DAMAGED	Crane
1768			ROOF PERIMETER	4.3	POSITIVE	DAMAGED	Near skylight
1852	E		SURROUNDING STRUCTURES WEST PERIMETER	1.7	POSITIVE	DAMAGED	
1853	E	Metal Bollard		1.6	POSITIVE	Intact	Yellow
1854	E			2.0	POSITIVE	Intact	
1855	E			1.5	POSITIVE	Intact	
1750	S	Metal Catwalk	ROOF PERIMETER	25.0	POSITIVE	Intact	To stack
1639	S	Metal Column	PERIMETER SOUTH SIDE	12.0	POSITIVE	Intact	To vent/stack
1640	S			16.0	POSITIVE	Intact	
1725			PERIMETER CRANE PIT	1.0	POSITIVE	DAMAGED	Crane
1726				1.0	POSITIVE	DAMAGED	Crane
1849	E		SURROUNDING STRUCTURES WEST PERIMETER	2.4	POSITIVE	Intact	
1850	E			3.1	POSITIVE	Intact	
1851	E			2.3	POSITIVE	Intact	
1714		Metal Deck	PERIMETER CRANE PIT	1.0	POSITIVE	DAMAGED	Crane
1598	S1	Metal Door	PERIMETER SOUTH SIDE	1.6	POSITIVE	Intact	
1622	S			3.4	POSITIVE	DAMAGED	Roll-up door
1626	S			9.5	POSITIVE	DAMAGED	To compressor room
1637	S			14.0	POSITIVE	DAMAGED	Near control room
1711	E		PERIMETER CRANE PIT	6.2	POSITIVE	DAMAGED	To crane pit access room
1741	E		ROOF PERIMETER	4.0	POSITIVE	DAMAGED	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1797	N	Metal Door	SURROUNDING STRUCTURES SOUTH PERIMETER	1.0	POSITIVE	DAMAGED	Locker
1822	N			16.0	POSITIVE	Intact	South quonset hut
1826	S			26.0	POSITIVE	DAMAGED	South quonset hut
1623	S	Metal Door Frame	PERIMETER SOUTH SIDE	12.0	POSITIVE	DAMAGED	Roll-up door
1627	S			7.9	POSITIVE	DAMAGED	To compressor room
1638	S			13.0	POSITIVE	DAMAGED	Near control room
1658	W		PERIMETER WEST SIDE	19.0	POSITIVE	DAMAGED	Crane pit area
1712	E		PERIMETER CRANE PIT	5.1	POSITIVE	DAMAGED	
1742	E		ROOF PERIMETER	2.3	POSITIVE	Intact	
1610	S	Metal Downspout	PERIMETER SOUTH SIDE	5.6	POSITIVE	Intact	Bathroom area
1713	N	Metal Electrical Panel	PERIMETER CRANE PIT	1.0	POSITIVE	DAMAGED	
1757		Metal Foundation	ROOF PERIMETER	6.7	POSITIVE	Intact	For vent
1759				7.8	POSITIVE	Intact	For vent
1761				5.7	POSITIVE	Intact	For tank
1764				16.0	POSITIVE	Intact	Silver-for tank
1715	N	Metal Garage Door	PERIMETER CRANE PIT	9.3	POSITIVE	DAMAGED	
1717	S			15.0	POSITIVE	DAMAGED	
1716	N	Metal Garage Door Frame		6.7	POSITIVE	DAMAGED	
1718	S			9.1	POSITIVE	DAMAGED	
1561	N	Metal Handrail	PERIMETER NORTH SIDE	11.0	POSITIVE	DAMAGED	
1647	S	Metal Ladder	PERIMETER SOUTH SIDE	1.0	POSITIVE	Intact	On stack
1732	N		ROOF PERIMETER	16.0	POSITIVE	Intact	To north roof

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1736	N	Metal Ladder	ROOF PERIMETER	12.0	POSITIVE	Intact	Above tank
1745	S			8.2	POSITIVE	Intact	
1842			SURROUNDING STRUCTURES SOUTH PERIMETER	19.0	POSITIVE	Intact	
1568	N	Metal Pipe	PERIMETER NORTH SIDE	17	POSITIVE	Intact	Yellow-phone
1721	N		PERIMETER CRANE PIT		POSITIVE	DAMAGED	Above EPA
1734	N		ROOF PERIMETER	22.0	POSITIVE	Intact	Large
1737	N			8.6	POSITIVE	Intact	Under tank
1843			SURROUNDING STRUCTURES SOUTH PERIMETER	20.0	POSITIVE	Intact	
1846				32.0	POSITIVE	Intact	
1562	N	Metal Railing	PERIMETER NORTH SIDE	16.0	POSITIVE	DAMAGED	
1723	S		PERIMETER CRANE PIT	16.0	POSITIVE	DAMAGED	
1724	W			16.0	POSITIVE	DAMAGED	
1743	S		ROOF PERIMETER	8.0	POSITIVE	Intact	
1749	S				POSITIVE	DAMAGED	To stack
1840			SURROUNDING STRUCTURES SOUTH PERIMETER	14.0	POSITIVE	Intact	Yellow-next to small tank
1563	N	Metal Stringer	PERIMETER NORTH SIDE		POSITIVE	DAMAGED	
1729	N	Metal Tank	ROOF PERIMETER	14.0	POSITIVE	Intact	N.W. side-bearing cooler
1735	N			16.0	POSITIVE	Intact	N.E. side-bearing cooler
1841			SURROUNDING STRUCTURES SOUTH PERIMETER	27.0	POSITIVE	Intact	Large-accross from boiler
1844				13.0	POSITIVE	Intact	
1845				20.0	POSITIVE	Intact	
1619	S	Metal Trim	PERIMETER SOUTH SIDE	4.9	POSITIVE	Intact	Vertical next to roll-up

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1634	S	Metal Vent	PERIMETER SOUTH SIDE	3.5	POSITIVE	Intact	Large-to stack-grey
1722	S		PERIMETER CRANE PIT	1.0	POSITIVE	DAMAGED	
1628	S	Metal Wall	PERIMETER SOUTH SIDE	8.7	POSITIVE	Intact	Compressor room
1748	S		ROOF PERIMETER	1.7	POSITIVE	Intact	Parapet
1762				8.9	POSITIVE	Intact	Louvered/Ventilation
1798	N		SURROUNDING STRUCTURES SOUTH PERIMETER		POSITIVE	DAMAGED	To small room
1813	W			29.0	POSITIVE	Intact	
1817	E			26.0	POSITIVE	Intact	
1820	S			27.0	POSITIVE	Intact	
1821	W			16.0	POSITIVE	Intact	
1823	N			29.0	POSITIVE	Intact	South quonset hut
1825	E			25.0	POSITIVE	DAMAGED	South quonset hut
1827	S			41.0	POSITIVE	DAMAGED	South quonset hut
1828	W			42.0	POSITIVE	DAMAGED	South quonset hut
1608	S	Metal Window Frame	PERIMETER SOUTH SIDE	8.6	POSITIVE	Intact	Casement-To bathrooms
1630	S			1.8	POSITIVE	DAMAGED	Casement-compressor ro
1633	S			2.8	POSITIVE	DAMAGED	Casement-compressor ro
1656	W		PERIMETER WEST SIDE	8.7	POSITIVE	DAMAGED	Fixed
1607	S	Metal Window Sash	PERIMETER SOUTH SIDE		POSITIVE	Intact	Casement-to bathrooms
1629	S				POSITIVE	DAMAGED	Casement-compressor ro
1632	S			1.5	POSITIVE	Intact	Casement-compressor ro
1655	W		PERIMETER WEST SIDE		POSITIVE	DAMAGED	Fixed

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1799	N	Metal Window Sash	SURROUNDING STRUCTURES SOUTH PERIMETER	0	POSITIVE	DAMAGED	Fixed
1550	N	Stucco Wall	PERIMETER NORTH SIDE	3.2	POSITIVE	Intact	Older section
1557	N			6.1	POSITIVE	Intact	
1560	N			5.4	POSITIVE	Intact	
1738	N		ROOF PERIMETER	4.6	POSITIVE	Intact	Parapet
1744	S			1.8	POSITIVE	Intact	Parapet
1862		Tile Fountain	SURROUNDING STRUCTURES WEST PERIMETER	16.0	POSITIVE	Intact	
1863				19.0	POSITIVE	Intact	
1864				12.0	POSITIVE	Intact	
1538	N1	Wood Door	PERIMETER NORTH SIDE	13.0	POSITIVE	Intact	
1542	N3			12.0	POSITIVE	Intact	
1551	N4			14.0	POSITIVE	Intact	
1558	N5			11.0	POSITIVE	DAMAGED	Main entry
1585	N			2.6	POSITIVE	DAMAGED	To tunnel
1583	E2		PERIMETER EAST SIDE	6	POSITIVE	DAMAGED	To mezzanine
1657	W		PERIMETER WEST SIDE	9	POSITIVE	DAMAGED	Crane pit area
1660	W			15.0	POSITIVE	Intact	By turbines
1662	W			16.0	POSITIVE	DAMAGED	
1803	N		SURROUNDING STRUCTURES SOUTH PERIMETER	1.2	POSITIVE	DAMAGED	North quonset hut
1810	S			2.2	POSITIVE	DAMAGED	
1539	N1	Wood Door Frame	PERIMETER NORTH SIDE	9.2	POSITIVE	Intact	
1543	N3			10.0	POSITIVE	Intact	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1552	N4	Wood Door Frame	PERIMETER NORTH SIDE	8.4	POSITIVE	Intact	
1559	N5			16.0	POSITIVE	Intact	
1566	N			1.9	POSITIVE	DAMAGED	
1573	E1		PERIMETER EAST SIDE	5.3	POSITIVE	DAMAGED	
1584	E2			4.9	POSITIVE	DAMAGED	
1661	W		PERIMETER WEST SIDE	12.0	POSITIVE	Intact	
1663	W			12.0	POSITIVE	DAMAGED	
1804	N		SURROUNDING STRUCTURES SOUTH PERIMETER	1.3	POSITIVE	DAMAGED	North quonset hut
1811	S			2.5	POSITIVE	DAMAGED	
1814	N			2.6	POSITIVE	DAMAGED	Middle quonset hut
1547	N	Wood Window Frame	PERIMETER NORTH SIDE	12.0	POSITIVE	Intact	Fixed
1555	W			12.0	POSITIVE	Intact	
1592	E		PERIMETER EAST SIDE	2.1	POSITIVE	DAMAGED	Casement-upper office
1594	E			2.1	POSITIVE	DAMAGED	Fixed-upper office
1548	N	Wood Window Sash	PERIMETER NORTH SIDE	1.0	POSITIVE	Intact	Fixed
1556	W			12.0	POSITIVE	Intact	
1591	E		PERIMETER EAST SIDE	4.0	POSITIVE	DAMAGED	Casement-upper office
1593	E			6.3	POSITIVE	DAMAGED	Fixed-upper office
1805	N		SURROUNDING STRUCTURES SOUTH PERIMETER	4.7	POSITIVE	DAMAGED	Casement-N. quonset hut
1812	S			4.1	POSITIVE	DAMAGED	Casement
1818	N			4.7	POSITIVE	DAMAGED	Casement
1546	N	Wood Window Well	PERIMETER NORTH SIDE	1.0	POSITIVE	Intact	Fixed

All Lead readings are expressed in mg/cm^2

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm^2

EXTERIOR LEAD CONTAINING COMPONENTS LIST

PROJECT NAME: Glenarm Power Plant

PROJECT ID: 98-199

ADDRESS: 72 East Glenarm

SAMPLE	SIDE	TESTING COMBINATION	ROOM EQUIVALENT	LEAD	RESULTS	CONDITION	COMMENTS
1554	W	Wood Window Well	PERIMETER NORTH SIDE	16.0	POSITIVE	Intact	

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

SUMMARY OF INTERIOR

PROJECT NAME: *Glenarm Power Plant* PROJECT NUMBER: *98-199*

ADRRESS: *72 East Glenarm*
Pasadena, CA

Component	Number Tested	Number Positive	Percent Positive	Number Inconclusive	Percent Inconclusive	Number Negative	Percent Negative
Acoustic Ceiling	4					4	100.0%
Brick Wall	15					15	100.0%
Cloth Wrap Pipe	102					102	100.0%
Cloth Wrap Tank	18					18	100.0%
Cloth Wrap Valve	1					1	100.0%
Cloth Wrap Vent	1					1	100.0%
Cloth Wrap Wall	34					34	100.0%
Concrete Beam	3					3	100.0%
Concrete Ceiling	15					15	100.0%
Concrete Column	6	1	16.7%			5	83.3%
Concrete Floor	4					4	100.0%
Concrete Foundation	26	4	15.4%			22	84.6%
Concrete Stripe	2	2	100.0%				
Concrete Wall	97	1	1.0%			96	99.0%
Concrete Window Sill	4					4	100.0%
Gypsum Beam	1					1	100.0%
Gypsum Ceiling	1					1	100.0%
Gypsum Column	1					1	100.0%
Gypsum Wall	5					5	100.0%
Metal Band Saw	1					1	100.0%
Metal Beam	102	36	35.3%			66	64.7%
Metal Cabinet Door	1					1	100.0%
Metal Cabinet Frame	1					1	100.0%
Metal Catwalk	31	18	58.1%			13	41.9%
Metal Ceiling	2	1	50.0%			1	50.0%
Metal Closet Door	3	2	66.7%			1	33.3%
Metal Closet Door Frame	3	2	66.7%			1	33.3%
Metal Column	164	43	26.2%			121	73.8%
Metal Crane	2	1	50.0%			1	50.0%
Metal Deck	2					2	100.0%
Metal Door	51	8	15.7%			43	84.3%
Metal Door Frame	34	7	20.6%			27	79.4%
Metal Drill Press	2	2	100.0%				
Metal Electrical Panel	74	1	1.4%			73	98.6%
Metal Fence	1	1	100.0%				
Metal Floor	6					6	100.0%
Metal Foundation	4	4	100.0%				
Metal Gate	1	1	100.0%				
Metal Handrail	39	19	48.7%			20	51.3%
Metal Heater	8					8	100.0%
Metal Ladder	22	8	36.4%			14	63.6%
Metal Lathe	1	1	100.0%				

XRF testing done in compliance with the Performance Characteristics Sheet (PCS) for this instrument

SUMMARY OF INTERIOR

PROJECT NAME: *Glenarm Power Plant* PROJECT NUMBER: *98-199*

ADRRESS: *72 East Glenarm*
Pasadena, CA

Component	Number Tested	Number Positive	Percent Positive	Number Inconclusive	Percent Inconclusive	Number Negative	Percent Negative
Metal Light Fixture	12	3	25.0%			9	75.0%
Metal Locker	3					3	100.0%
Metal Motor	63	12	19.0%			51	81.0%
Metal Newel Post	8					8	100.0%
Metal Pipe	165	14	8.5%			151	91.5%
Metal Pulley	2					2	100.0%
Metal Pump # 11	4					4	100.0%
Metal Pump # 12	4					4	100.0%
Metal Railing	47	19	40.4%			28	59.6%
Metal Shaper	1	1	100.0%				
Metal Stringer	21	11	52.4%			10	47.6%
Metal Tank	27	11	40.7%			16	59.3%
Metal Tread	22	10	45.5%			12	54.5%
Metal Turbine # 8	7	5	71.4%			2	28.6%
Metal Turbine # 9	13					13	100.0%
Metal Valve	52	7	13.5%			45	86.5%
Metal Vent	34	10	29.4%			24	70.6%
Metal Wall	50	12	24.0%			38	76.0%
Metal Window Frame	8					8	100.0%
Metal Window Sash	8					8	100.0%
Metal Window Sill	1					1	100.0%
Tile Baseboard	6	6	100.0%				
Tile Floor	4					4	100.0%
Tile Wall	9	9	100.0%				
Transite Ceiling	3					3	100.0%
Wood Beam	1	1	100.0%				
Wood Cabinet Door	3	1	33.3%			2	66.7%
Wood Cabinet Frame	5	2	40.0%			3	60.0%
Wood Door	31	19	61.3%			12	38.7%
Wood Door Frame	30	24	80.0%			6	20.0%
Wood Wall	20					20	100.0%
Wood Window Frame	9	8	88.9%			1	11.1%
Wood Window Sash	4	4	100.0%				
Wood Window Sill	6	3	50.0%			3	50.0%
TOTALS:	1578	355				1223	

XRF testing done in compliance with the Performance Characteristics Sheet (PCS) for this instrument

SUMMARY OF EXTERIOR

PROJECT NAME: *Glenarm Power Plant* PROJECT NUMBER: *98-199*

ADRRESS: *72 East Glenarm*
Pasadena, CA

Component	Number Tested	Number Positive	Percent Positive	Number Inconclusive	Percent Inconclusive	Number Negative	Percent Negative
Cloth Wrap Pipe	1					1	100.0%
Cloth Wrap Tank	1					1	100.0%
Concrete Ceiling	1					1	100.0%
Concrete Floor	1					1	100.0%
Concrete Foundation	3	3	100.0%				
Concrete Wall	20	12	60.0%			8	40.0%
Fiberglass Wall	2	1	50.0%			1	50.0%
Metal Access Panel	1	1	100.0%				
Metal Beam	13	9	69.2%			4	30.8%
Metal Bollard	7	3	42.9%			4	57.1%
Metal Catwalk	1	1	100.0%				
Metal Column	7	7	100.0%				
Metal Deck	1	1	100.0%				
Metal Door	23	9	39.1%			14	60.9%
Metal Door Frame	10	6	60.0%			4	40.0%
Metal Downspout	7	1	14.3%			6	85.7%
Metal Electrical Panel	5	1	20.0%			4	80.0%
Metal Foundation	4	4	100.0%				
Metal Garage Door	2	2	100.0%				
Metal Garage Door Frame	2	2	100.0%				
Metal Handrail	1	1	100.0%				
Metal Ladder	6	5	83.3%			1	16.7%
Metal Light Fixture	1					1	100.0%
Metal Pipe	24	6	25.0%			18	75.0%
Metal Railing	11	6	54.5%			5	45.5%
Metal Stack	4					4	100.0%
Metal Stringer	1	1	100.0%				
Metal Tank	14	5	35.7%			9	64.3%
Metal Threshhold	3					3	100.0%
Metal Tread	1					1	100.0%
Metal Trim	1	1	100.0%				
Metal Valve	5					5	100.0%
Metal Vent	8	2	25.0%			6	75.0%
Metal Wall	24	12	50.0%			12	50.0%
Metal Window Frame	6	4	66.7%			2	33.3%
Metal Window Sash	5	5	100.0%				
Stucco Wall	13	5	38.5%			8	61.5%
Tile Fountain	3	3	100.0%				
Wood Beam	1					1	100.0%
Wood Column	1					1	100.0%
Wood Door	12	11	91.7%			1	8.3%
Wood Door Frame	13	12	92.3%			1	7.7%

XRF testing done in compliance with the Performance Characteristics Sheet (PCS) for this instrument

SUMMARY OF EXTERIOR

PROJECT NAME: *Glenarm Power Plant* PROJECT NUMBER: *98-199*

ADRRESS: *72 East Glenarm*
Pasadena, CA

Component	Number Tested	Number Positive	Percent Positive	Number Inconclusive	Percent Inconclusive	Number Negative	Percent Negative
Wood Wall	5					5	100.0%
Wood Window Frame	5	4	80.0%			1	20.0%
Wood Window Sash	7	7	100.0%				
Wood Window Well	2	2	100.0%				
TOTALS:	289	155				134	

XRF testing done in compliance with the Performance Characteristics Sheet (PCS) for this instrument

READING AND UNDERSTANDING THE INSPECTION DATA

The following information has been provided as a guide to interpreting the report format that follows. All field names in the attached report are included from left to right and top to bottom.

1. Project Name: Name of the project for this inspection.

2. Project Number: Identifying Project Number. This number should be included regarding any inquiries about this project.

3. Address: Address of the property tested.

4. Instrument: Name of the XRF manufacturer.

5. Sample: Sample number.

6. Unit ID/Location: Name or identifying information about the Unit / Location inspected.

7. Area: This field is used to differentiate interior, exterior or common area components. Other area's include garage, basement, and shed.

8. Room Equivalent: An identifiable part of a residence, such as a room, a house exterior side, or an exterior area.

9. Side: Side of the room where tested component is located. All sides may be found on the accompanying floor plan for this unit. If a floor plan was not provided, the "A" side is usually the entry or street side of the unit in question. In an Interior room / area, the "B", "C", and "D" sides are directly to the right or clockwise from the "A" side. A number to the right of the side (A2) indicates that a replicate component on the same side of the room. For interior components, replications are counted from LEFT TO RIGHT. (Clockwise)

   In a exterior room / area, the "B", "C", and "D" sides are directly to the left or clockwise from the "A" side. A number to the right of the side (A2) indicates that a replicate component on the same side of the room. For exterior components, replications are counted from RIGHT TO LEFT. (Clockwise)

10. Component: Name of architectural component tested.

11. Substrate: The type of substrate that the paint is applied to.

12. Condition: The condition of the paint. A painted surface is determined to be damaged if more than 10% of the surfaces area is chipped, peeling, flaking, or otherwise damaged.

13. Lead: The amount of lead on the painted surface. All readings are in mg / cm^2.

14. Result: A reading is considered to POSITIVE if it is equal to or above the federal action level. A reading is considered NEGATIVE if it is below the federal action level. Readings that are positive have been highlighted and readings with positive damaged surfaces have been highlighted across the entire record.

    Some readings may be classified as CAUTIONARY. These surfaces contains lead and should be treated as a positive surface for work related activities.

15. Comments: Specific comments about the tested surface that were pertinent to the inspection.

POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
2	Main Floor	Interior	Main Room	N	Wall	Tile	Intact	35.0	POSITIVE	
3				N	Door	Wood	Intact	5.9	POSITIVE	
4				N	Door Frame	Wood	Intact	1.7	POSITIVE	
5				N1	Window Sash	Wood	Intact	1.4	POSITIVE	Fixed
6				N1	Window Frame	Wood	Intact	4.5	POSITIVE	Fixed
7				N	Baseboard	Tile	Intact	29.0	POSITIVE	Black
9				N	Light Fixture	Metal	Intact	2.9	POSITIVE	
14					Crane	Metal	DAMAGED	6.5	POSITIVE	50 ton
16				E	Door Frame	Wood	Intact	6.2	POSITIVE	
17				E	Wall	Tile	Intact	40.0	POSITIVE	
19				E1	Column	Metal	Intact	1.6	POSITIVE	
26				E2	Door Frame	Wood	Intact	5.1	POSITIVE	Upstairs
28				E	Wall	Tile	Intact	22.0	POSITIVE	
29				E	Baseboard	Tile	Intact	16.0	POSITIVE	
34				E5	Door	Wood	Intact	5.3	POSITIVE	Lower-phone room-5 panel
35				E5	Door Frame	Wood	Intact	5.1	POSITIVE	
36				E4	Door	Wood	Intact	2.3	POSITIVE	Lower-office-5 panel
37				E4	Door Frame	Wood	Intact	1.8	POSITIVE	Lower-office-5 panel
41				E6	Door	Wood	DAMAGED	9.1	POSITIVE	To exterior
42				E6	Door Frame	Wood	DAMAGED	4.5	POSITIVE	To exterior
49				S	Wall	Tile	Intact	32.0	POSITIVE	
50				S1	Door Frame	Wood	Intact	5.2	POSITIVE	No door
56				S2	Light Fixture	Metal	Intact	1.6	POSITIVE	
59				S2	Door Frame	Wood	DAMAGED	3.6	POSITIVE	No door
60				S	Valve	Metal	Intact	3.2	POSITIVE	In floor
61				S	Valve	Metal	Intact	2.6	POSITIVE	In floor

All Lead readings are expressed in mg/cm ^{2}

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm ^{2}

POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
64	Main Floor	Interior	Main Room	S3	Door	Wood	DAMAGED	1.6	POSITIVE	
65				S3	Door Frame	Wood	DAMAGED	1.7	POSITIVE	
68				S	Baseboard	Tile	Intact	30.0	POSITIVE	
69					Beam	Metal	Intact	5.7	POSITIVE	Roof support-runs N-S
70					Beam	Metal	Intact	6.3	POSITIVE	Roof support-runs N-S
72					Beam	Wood	DAMAGED	6.3	POSITIVE	Roof support-runs E-W
73					Beam	Metal	DAMAGED	2.9	POSITIVE	Roof support-runs E-W
82			Upper Office	E1	Window Sash	Wood	DAMAGED	4.7	POSITIVE	Fixed
83				E1	Window Sill	Wood	DAMAGED	2.1	POSITIVE	Fixed
84				E1	Window Frame	Wood	DAMAGED	3.7	POSITIVE	Fixed
87				E6	Window Sash	Wood	Intact	2.6	POSITIVE	Casement
88				E6	Window Sill	Wood	Intact	1.1	POSITIVE	Casement
89				E6	Window Frame	Wood	Intact	4.3	POSITIVE	Casement
90				W13	Window Frame	Wood	Intact	4.8	POSITIVE	Fixed
91				W10	Window Frame	Wood	Intact	4.3	POSITIVE	Fixed
95				W5	Window Frame	Wood	Intact	5.2	POSITIVE	Fixed
96				E14	Window Sill	Wood	DAMAGED	6.2	POSITIVE	Fixed
97				E14	Window Sash	Wood	DAMAGED	4.7	POSITIVE	Fixed
98				E14	Window Frame	Wood	DAMAGED	3.7	POSITIVE	Fixed
105			Turbine Room	N	Wall	Tile	Intact	32.0	POSITIVE	
106				N	Wall	Metal	Intact	5.1	POSITIVE	Next to N1 door
107				N1	Door	Wood	DAMAGED	5.7	POSITIVE	
108				N1	Door Frame	Wood	DAMAGED	1.1	POSITIVE	
109				N2	Door	Wood	DAMAGED	2.5	POSITIVE	
110				N2	Door Frame	Wood	DAMAGED	1.0	POSITIVE	
111				N	Baseboard	Tile	Intact	16.0	POSITIVE	Black

All Lead readings are expressed in mg/cm ^{2}

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
113	Main Floor	Interior	Turbine Room	N3	Door	Wood	Intact	6.2	POSITIVE	
114				N3	Door Frame	Wood	Intact	1.1	POSITIVE	
115				N	Light Fixture	Metal	Intact	1.7	POSITIVE	
116				S1	Door	Wood	DAMAGED	2.8	POSITIVE	Overhead
117				N3	Door Frame	Metal	DAMAGED	3.7	POSITIVE	
119				S	Wall	Tile	Intact	28.0	POSITIVE	
120				S	Baseboard	Tile	Intact	25.1	POSITIVE	
131				S2	Door	Wood	DAMAGED	1.1	POSITIVE	
132				S2	Door Frame	Wood	DAMAGED	1.4	POSITIVE	
134				W	Wall	Tile	Intact	34.0	POSITIVE	
135				W	Baseboard	Tile	Intact	26.0	POSITIVE	
136				W1	Door	Wood	DAMAGED	3.2	POSITIVE	
137				W1	Door Frame	Wood	DAMAGED	1.6	POSITIVE	
138				W3	Door	Wood	DAMAGED	2.3	POSITIVE	
139				W3	Door Frame	Wood	DAMAGED	1.0	POSITIVE	
140					Turbine # 8	Metal	Intact	1.4	POSITIVE	Cast iron
142					Turbine # 8	Metal	Intact	2.6	POSITIVE	Cast iron
143					Turbine # 8	Metal	Intact	1.0	POSITIVE	Cast iron
144					Turbine # 8	Metal	Intact	1.4	POSITIVE	Cast iron
146					Turbine # 8	Metal	Intact	2.1	POSITIVE	Cast iron
147					Pipe	Metal	Intact	1.1	POSITIVE	
148					Pipe	Metal	Intact	1.0	POSITIVE	
157					Tread	Metal	DAMAGED	9.8	POSITIVE	
158					Stringer	Metal	DAMAGED	3.4	POSITIVE	
159					Handrail	Metal	Intact	9.2	POSITIVE	
183			Machine Shop	N	Door Frame	Wood	DAMAGED	9.8	POSITIVE	No door

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184	Main Floor	Interior	Machine Shop	N2	Door Frame	Wood	DAMAGED	4.3	POSITIVE	No door
204				S1	Door	Metal	DAMAGED	3.7	POSITIVE	To exterior
206				S	Stripe	Concrete	DAMAGED	1.3	POSITIVE	Yellow
208				S	Stripe	Concrete	DAMAGED	1.7	POSITIVE	Yellow
214					Lathe	Metal	DAMAGED	3.3	POSITIVE	
215					Drill Press	Metal	DAMAGED	1.4	POSITIVE	Smaller
216					Drill Press	Metal	DAMAGED	2.3	POSITIVE	Radial arm
217					Shaper	Metal	DAMAGED	2.1	POSITIVE	
219					Beam	Metal	DAMAGED	2.7	POSITIVE	N-S
220					Beam	Metal	DAMAGED	4.1	POSITIVE	E-W
221					Beam	Metal	DAMAGED	2.3	POSITIVE	E-W
245			High Bay Area	S	Column	Metal	Intact	6.3	POSITIVE	For elevator
246				S	Fence	Metal	DAMAGED	1.2	POSITIVE	Around elevator motor
247				S	Gate	Metal	DAMAGED	1.5	POSITIVE	Around elevator motor
248				S	Column	Metal	DAMAGED	4.8	POSITIVE	For elevator-smaller
250				S	Door	Wood	DAMAGED	3.9	POSITIVE	To elevator
251				S	Door Frame	Metal	DAMAGED	16.7	POSITIVE	To elevator
253					Beam	Metal	Intact	3.9	POSITIVE	Roof support
254					Beam	Metal	Intact	4.2	POSITIVE	Roof support
256			Boiler Room	N3	Door Frame	Metal	DAMAGED	3.8	POSITIVE	
257				N3	Door	Wood	DAMAGED	3.1	POSITIVE	Overhead
262				N2	Door	Wood	DAMAGED	2.4	POSITIVE	
263				N2	Door Frame	Wood	DAMAGED	1.9	POSITIVE	
270				N1	Door	Wood	DAMAGED	4.1	POSITIVE	
271				N1	Door Frame	Wood	DAMAGED	4.3	POSITIVE	
273				N	Beam	Metal	Intact	14.0	POSITIVE	Inside closet

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
274	Main Floor	Interior	Boiler Room	N1	Closet Door	Metal	Intact	14.0	POSITIVE	
275				N1	Closet Door Frame	Metal	Intact	18.0	POSITIVE	
277				N3	Closet Door	Metal	Intact	16.0	POSITIVE	
278				N1	Closet Door Frame	Metal	Intact	18.0	POSITIVE	
279				N	Beam	Metal	Intact	20.0	POSITIVE	Inside closet
292				S2	Door	Metal	DAMAGED	5.2	POSITIVE	
293				S2	Door Frame	Metal	DAMAGED	8.1	POSITIVE	
295				S	Cabinet Door	Wood	DAMAGED	1.8	POSITIVE	Bulletin board
296				S	Cabinet Frame	Wood	DAMAGED	1.9	POSITIVE	
312				W	Tread	Metal	DAMAGED	3.7	POSITIVE	
313				W	Stringer	Metal	DAMAGED	2.9	POSITIVE	
314				W	Handrail	Metal	DAMAGED	2.1	POSITIVE	
322				W1	Door	Wood	DAMAGED	4.5	POSITIVE	
323				W1	Door Frame	Metal	DAMAGED	1.3	POSITIVE	
352			Control Room	E	Cabinet Frame	Wood	DAMAGED	2.8	POSITIVE	Old phone booth
360			Office 1	N	Door Frame	Wood	Intact	1.5	POSITIVE	
369				E	Window Frame	Wood	Intact	3.7	POSITIVE	Fixed
371			Office 2	W	Door Frame	Wood	Intact	2.2	POSITIVE	
384			Office 3	W1	Door	Wood	Intact	1.3	POSITIVE	
385				W1	Door Frame	Wood	Intact	1.6	POSITIVE	
387				W2	Door Frame	Wood	Intact	1.9	POSITIVE	
394			Office 4	W	Door	Wood	Intact	1.6	POSITIVE	
395				W	Door Frame	Wood	Intact	1.2	POSITIVE	
409	Lower Level		Tunnel 1	N	Stringer	Metal	DAMAGED	2.9	POSITIVE	
410				N	Handrail	Metal	DAMAGED	3.0	POSITIVE	
428			Tunnel 2		Catwalk	Metal	DAMAGED	2.3	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
429	Lower Level	Interior	Tunnel 2		Pipe	Metal	DAMAGED	3.2	POSITIVE	
433				E	Valve	Metal	DAMAGED	2.3	POSITIVE	
436			Tunnel 3		Handrail	Metal	DAMAGED	16.0	POSITIVE	
437					Stringer	Metal	DAMAGED	10.0	POSITIVE	
438					Tread	Metal	DAMAGED	4.7	POSITIVE	
444				S	Beam	Metal	Intact	8.2	POSITIVE	Red primer
445				S	Column	Metal	Intact	19.0	POSITIVE	Red primer
448			Vault Access Room	N	Door	Metal	DAMAGED	3.9	POSITIVE	To vault 8
456				W	Stringer	Metal	DAMAGED	8.6	POSITIVE	
460				S	Electrical Panel	Metal	DAMAGED	9.3	POSITIVE	High voltage
466				E	Motor	Metal	DAMAGED	4.3	POSITIVE	Suction
486			Vault 8	S	Door	Metal	Intact	4.5	POSITIVE	
502			No. 9 Lead Vault	E	Tread	Metal	DAMAGED	1.2	POSITIVE	
513			2400 Volt Switchgear Roo	E	Handrail	Metal	DAMAGED	21.0	POSITIVE	
514				E	Stringer	Metal	DAMAGED	19.0	POSITIVE	
515				E	Tread	Metal	DAMAGED	1.6	POSITIVE	
525			480 Volt Switchgear Roo	N	Door	Metal	DAMAGED	2.1	POSITIVE	
526				N	Door Frame	Metal	DAMAGED	3.7	POSITIVE	
532				E	Door	Metal	DAMAGED	1.6	POSITIVE	
544			24 KV Vault	N	Door Frame	Metal	DAMAGED	1.5	POSITIVE	
564			Boiler Foundation Room	N	Pipe	Metal	DAMAGED	6.3	POSITIVE	Overhead-behind boiler 36
594				W1	Door	Metal	DAMAGED	1.3	POSITIVE	High voltage
596				W	Pipe	Metal	DAMAGED	4.3	POSITIVE	Red primer-horizontal
597				W	Pipe	Metal	DAMAGED	2.7	POSITIVE	Horizontal
598				W	Pipe	Metal	DAMAGED	13.0	POSITIVE	Horizontal
603				W	Handrail	Metal	Intact	6.1	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
604	Lower Level	Interior	Boiler Foundation Room	W	Tread	Metal	Intact	2.3	POSITIVE	
621	Boiler # 14		Lower Level	W	Column	Metal	Intact	7.3	POSITIVE	
630				W	Railing	Metal	DAMAGED	11.0	POSITIVE	Near ladder
631				W	Ladder	Metal	DAMAGED	12.0	POSITIVE	
632				W	Catwalk	Metal	DAMAGED	7.4	POSITIVE	
638				E	Column	Metal	Intact	16.0	POSITIVE	
642				E	Column	Metal	DAMAGED	13.0	POSITIVE	
645			Level 1	N	Column	Metal	Intact	18.0	POSITIVE	
646				N	Beam	Metal	Intact	12.0	POSITIVE	Silver-diagonal
647				N	Beam	Metal	Intact	16.0	POSITIVE	Silver-Diagonal
652				N	Column	Metal	DAMAGED	19.0	POSITIVE	N.E. corner
655				E	Beam	Metal	Intact	17.0	POSITIVE	Silver-diagonal
656				E	Beam	Metal	Intact	19.0	POSITIVE	Silver-diagonal
657				E	Column	Metal	Intact	9.1	POSITIVE	
663				S	Wall	Metal	Intact	6.7	POSITIVE	Silver
671				S	Beam	Metal	Intact	10.0	POSITIVE	Silver-diagonal
672				S	Beam	Metal	Intact	15.0	POSITIVE	Silver-horizontal
677				W	Column	Metal	Intact	13.0	POSITIVE	Silver
678				W	Beam	Metal	DAMAGED	5.6	POSITIVE	
679				W	Beam	Metal	DAMAGED	9.2	POSITIVE	
685				W	Column	Metal	Intact	13.0	POSITIVE	
697			Level 2	W	Column	Metal	Intact	13.0	POSITIVE	
698				W	Column	Metal	Intact	16.0	POSITIVE	
699				W	Column	Metal	Intact	18.0	POSITIVE	
708				N	Wall	Metal	Intact	7.8	POSITIVE	Large metal plate
709				N	Column	Metal	Intact	16.0	POSITIVE	

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PROJECT NAME: *Glenarm Power Plant*
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Pasadena

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
715	Boiler # 14	Interior	Level 3	W	Column	Metal	Intact	13.0	POSITIVE	
724				S	Wall	Metal	Intact	6.7	POSITIVE	
725				S	Column	Metal	Intact	14.0	POSITIVE	
766	Boiler # 15		Lower Level	W	Column	Metal	Intact	12.0	POSITIVE	
767				W	Column	Metal	Intact	15.0	POSITIVE	
772				N	Beam	Metal	DAMAGED	4.6	POSITIVE	Diagonal
783				N	Column	Metal	Intact	6.7	POSITIVE	
786				N	Column	Metal	Intact	11.0	POSITIVE	
795			Level 1	N	Wall	Metal	Intact	1.80	POSITIVE	Silver
796				N	Beam	Metal	Intact	12.0	POSITIVE	Silver-horizontal
797				N	Beam	Metal	Intact	7.3	POSITIVE	Silver-diagonal
800				N	Column	Metal	Intact	1.40	POSITIVE	Silver
809				E	Beam	Metal	Intact	12.0	POSITIVE	Silver-diagonal
810				E	Beam	Metal	Intact	9.1	POSITIVE	Silver-diagonal
811				E	Column	Metal	Intact	20.0	POSITIVE	Silver-S.E. corner
815				S	Beam	Metal	Intact	16.0	POSITIVE	Silver-diagonal
816				S	Beam	Metal	Intact	10.0	POSITIVE	Silver-diagonal
822				S	Column	Metal	Intact	18.0	POSITIVE	Silver-S.W. corner
825				W	Beam	Metal	DAMAGED	18.0	POSITIVE	Beige-diagonal
826				W	Beam	Metal	DAMAGED	15.0	POSITIVE	Beige-diagonal
831				W	Column	Metal	Intact	14.0	POSITIVE	Silver-N.W. corner
841			Level 2	W	Column	Metal	DAMAGED	18.0	POSITIVE	Silver
842				W	Column	Metal	DAMAGED	20.0	POSITIVE	
843				W	Column	Metal	DAMAGED	22.0	POSITIVE	
853				W	Column	Metal	DAMAGED	17.0	POSITIVE	SW corner
854				S	Wall	Metal	Intact	47.8	POSITIVE	Large metal plates

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
855	Boiler # 15	Interior	Level 2	S	Wall	Metal	Intact	9.3	POSITIVE	
858			Level 3	W	Column	Metal	Intact	14.0	POSITIVE	Silver
866				E	Column	Metal	Intact	18.0	POSITIVE	Silver
874				E	Column	Metal	Intact	18.0	POSITIVE	
875				E	Column	Metal	Intact	16.0	POSITIVE	
884				E	Beam	Metal	Intact	12.0	POSITIVE	Top of boiler
885				N	Wall	Metal	Intact	16.0	POSITIVE	Large metal plates
886				N	Wall	Metal	Intact	18.0	POSITIVE	
891				N	Beam	Metal	Intact	12.0	POSITIVE	
957	Boiler # 16		Lower Level	S	Railing	Metal	DAMAGED	1.3	POSITIVE	
958				S	Catwalk	Metal	DAMAGED	3.0	POSITIVE	
996			Level 1	W	Railing	Metal	DAMAGED	7.2	POSITIVE	To lower level
997				W	Handrail	Metal	DAMAGED	5.9	POSITIVE	Orange primer
1011			Level 1.5	E	Ladder	Metal	DAMAGED	26.0	POSITIVE	
1015				E	Ladder	Metal	DAMAGED	12.0	POSITIVE	
1016				E	Handrail	Metal	DAMAGED	6.7	POSITIVE	
1017				E	Railing	Metal	DAMAGED	3.2	POSITIVE	
1018				E	Catwalk	Metal	DAMAGED	4.1	POSITIVE	
1021				W	Ladder	Metal	Intact	10.0	POSITIVE	
1024				W	Catwalk	Metal	DAMAGED	16.0	POSITIVE	
1025				W	Handrail	Metal	DAMAGED	8.7	POSITIVE	
1026				W	Railing	Metal	DAMAGED	6.3	POSITIVE	
1033			Level 2	E	Handrail	Metal	DAMAGED	6.1	POSITIVE	
1034				E	Railing	Metal	DAMAGED	4.7	POSITIVE	
1035				E	Catwalk	Metal	DAMAGED	2.8	POSITIVE	
1046				W	Railing	Metal	Intact	6.7	POSITIVE	

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1047	Boiler # 16	Interior	Level 2	W	Catwalk	Metal	Intact	12.0	POSITIVE	
1057			Level 3	E	Catwalk	Metal	DAMAGED	6.4	POSITIVE	
1058				E	Railing	Metal	DAMAGED	5.7	POSITIVE	
1059				E	Handrail	Metal	DAMAGED	9.3	POSITIVE	
1061				E	Tank	Metal	DAMAGED	6.2	POSITIVE	
1065				W	Tank	Metal	DAMAGED	4.3	POSITIVE	Burner
1066				W	Handrail	Metal	DAMAGED	5.3	POSITIVE	
1067				W	Railing	Metal	DAMAGED	5.8	POSITIVE	
1068				W	Catwalk	Metal	DAMAGED	6.9	POSITIVE	
1078			Level 4	W	Vent	Metal	DAMAGED	3.3	POSITIVE	Blower-grey primer
1079				W	Vent	Metal	DAMAGED	3.8	POSITIVE	Blower-grey primer
1087				W	Vent	Metal	DAMAGED	3.7	POSITIVE	Grey primer
1090				E	Vent	Metal	DAMAGED	3.5	POSITIVE	Grey primer
1091				E	Vent	Metal	DAMAGED	3.7	POSITIVE	Grey primer
1099				E	Railing	Metal	DAMAGED	8.3	POSITIVE	
1100				E	Catwalk	Metal	DAMAGED	6.2	POSITIVE	
1106	Boiler 17		Lower Level	N	Catwalk	Metal	Intact	3.1	POSITIVE	
1107				N	Railing	Metal	Intact	1.7	POSITIVE	
1153			Level 1	N	Beam	Metal	Intact	1.7	POSITIVE	
1200			Level 1.5	E	Ladder	Metal	DAMAGED	20.0	POSITIVE	
1204				E	Catwalk	Metal	DAMAGED	6.9	POSITIVE	
1205				E	Railing	Metal	DAMAGED	8.3	POSITIVE	
1206				E	Handrail	Metal	DAMAGED	2.7	POSITIVE	
1216				W	Ladder	Metal	DAMAGED	6.1	POSITIVE	
1217				W	Railing	Metal	DAMAGED	7.4	POSITIVE	
1218				W	Catwalk	Metal	DAMAGED	8.1	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1221	Boiler 17	Interior	Level 2	E	Catwalk	Metal	DAMAGED	6.0	POSITIVE	
1222				E	Railing	Metal	DAMAGED	2.7	POSITIVE	
1223				E	Handrail	Metal	DAMAGED	4.1	POSITIVE	
1235				W	Railing	Metal	DAMAGED	8.6	POSITIVE	
1236				W	Catwalk	Metal	DAMAGED	3.7	POSITIVE	
1240				N	Railing	Metal	DAMAGED	14.0	POSITIVE	
1241				N	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1245			Level 3	E	Railing	Metal	DAMAGED	6.3	POSITIVE	
1246				E	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1247				E	Handrail	Metal	DAMAGED	12.0	POSITIVE	
1248				E	Tank	Metal	DAMAGED	4.8	POSITIVE	Burner
1257				W	Tank	Metal	DAMAGED	3.9	POSITIVE	Burner
1258				W	Railing	Metal	DAMAGED	12.0	POSITIVE	
1259				W	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1268			Level 4	W	Vent	Metal	DAMAGED	4.8	POSITIVE	Damper
1269				W	Tank	Metal	DAMAGED	6.1	POSITIVE	Burner
1273				S	Vent	Metal	DAMAGED	6.4	POSITIVE	Damper
1275				S	Vent	Metal	DAMAGED	4.2	POSITIVE	Damper
1279				E	Vents	Metal	DAMAGED	4.3	POSITIVE	Damper
1280				E	Tank	Metal	DAMAGED	6.4	POSITIVE	Burner
1281				E	Vent	Metal	DAMAGED	6.2	POSITIVE	Damper
1295	Basement Level		Main Room	E	Column	Concrete	DAMAGED	1.7	POSITIVE	N.E. column
1311				W	Stringer	Metal	DAMAGED	12.0	POSITIVE	
1328			Turbine Foundation Roo	E	Beam	Metal	DAMAGED	6.9	POSITIVE	Pulley support
1337				S	Tank	Metal	DAMAGED	6.0	POSITIVE	#9 Emergency dump
1339				S	Pipe	Metal	DAMAGED	1.9	POSITIVE	

All Lead readings are expressed in mg/cm^2

The HUD \ EPA action level for lead-based paint is 1.0 mg/cm^2

POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1340	Basement Level	Interior	Turbine Foundation Roo	S	Pipe	Metal	DAMAGED	2.1	POSITIVE	
1341				S	Valve	Metal	DAMAGED	1.2	POSITIVE	
1343				S	Stringer	Metal	DAMAGED	10.0	POSITIVE	
1344				S	Handrail	Metal	DAMAGED	12.0	POSITIVE	
1345				S	Tread	Metal	DAMAGED	13.0	POSITIVE	Orange primer
1354				S	Ladder	Metal	DAMAGED	5.0	POSITIVE	
1360				W	Ladder	Metal	DAMAGED	2.5	POSITIVE	
1380			Turbine 8	E	Motor	Metal	Intact	1.7	POSITIVE	Pump
1381				E	Motor	Metal	Intact	1.5	POSITIVE	
1386				E	Motor	Metal	DAMAGED	1.3	POSITIVE	
1387				E	Valve	Metal	DAMAGED	3.0	POSITIVE	
1393				S	Stringer	Metal	DAMAGED	7.1	POSITIVE	To side of turbine
1410				W	Motor	Metal	DAMAGED	1.9	POSITIVE	Large-Grey
1411				W	Motor	Metal	DAMAGED	1.3	POSITIVE	Large-Grey
1412				W	Motor	Metal	DAMAGED	1.7	POSITIVE	Large-Grey
1413				W	Motor	Metal	DAMAGED	1.5	POSITIVE	Large-Grey
1414				W	Foundation	Concrete	DAMAGED	1.3	POSITIVE	
1415				W	Foundation	Metal	DAMAGED	1.7	POSITIVE	
1416				W	Foundation	Concrete	DAMAGED	1.2	POSITIVE	
1417				W	Foundation	Metal	DAMAGED	1.5	POSITIVE	
1419				S	Pipe	Metal	DAMAGED	6.1	POSITIVE	Side of motor
1420					Railing	Metal	DAMAGED	12.0	POSITIVE	To sub-basement
1421					Handrail	Metal	DAMAGED	15.0	POSITIVE	To sub-basement
1422					Tread	Metal	DAMAGED	13.0	POSITIVE	To sub-basement
1433			Turbine 9	E	Pipe	Metal	DAMAGED	11.0	POSITIVE	Large-Green
1434				E	Valve	Metal	DAMAGED	8.3	POSITIVE	Large-Green

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

PROJECT NUMBER: *98-199*

ADDRESS: *72 East Glenarm*
Pasadena

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1435	Basement Level	Interior	Turbine 9	E	Motor	Metal	DAMAGED	2.2	POSITIVE	Large Green
1438				E	Pipe	Metal	Intact	6.6	POSITIVE	Center of turbine
1439				E	Foundation	Concrete	DAMAGED	9.3	POSITIVE	
1440				E	Foundation	Metal	DAMAGED	2.2	POSITIVE	
1441				E	Foundation	Metal	DAMAGED	3.7	POSITIVE	
1442				E	Foundation	Concrete	DAMAGED	2.9	POSITIVE	
1443				E	Motor	Metal	DAMAGED	2.8	POSITIVE	Large Green
1444				E	Motor	Metal	DAMAGED	3.1	POSITIVE	Large Green
1449				E	Pipe	Metal	DAMAGED	7.4	POSITIVE	Large, green, oversized
1454				W	Motor	Metal	Intact	2.5	POSITIVE	Ingsoll-Rand
1455				W	Pipe	Metal	Intact	4.6	POSITIVE	
1457				W	Beam	Metal	Intact	2.6	POSITIVE	Above motor
1458				W	Valve	Metal	Intact	2.5	POSITIVE	Under turbine
1459				W	Tank	Metal	Intact	6.3	POSITIVE	Mixer-Under turbine
1462			Cable Sub-Basement Roo		Beam	Metal	Intact	16.0	POSITIVE	
1463					Column	Metal	Intact	14.0	POSITIVE	
1464					Column	Metal	Intact	16.0	POSITIVE	
1465					Column	Metal	Intact	20.0	POSITIVE	
1466					Column	Metal	Intact	13.0	POSITIVE	
1467					Column	Metal	Intact	21.0	POSITIVE	
1468					Column	Metal	Intact	18.0	POSITIVE	
1469					Column	Metal	Intact	22.0	POSITIVE	
1470					Column	Metal	Intact	16.0	POSITIVE	
1471					Column	Metal	Intact	14.0	POSITIVE	
1472					Beam	Metal	Intact	22.0	POSITIVE	
1473					Beam	Metal	Intact	19.0	POSITIVE	

All Lead readings are expressed in mg/cm ^{2}

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1476	Basement Level	Interior	Cable Sub-Basement Roo	E	Stringer	Metal	DAMAGED	9.2	POSITIVE	
1477				E	Handrail	Metal	DAMAGED	6.9	POSITIVE	
1478				E	Tread	Metal	DAMAGED	5.7	POSITIVE	
1513			Crane Pit Access Room	E	Tank	Metal	DAMAGED	2.3	POSITIVE	Mixer
1528				S	Stringer	Metal	DAMAGED	10.0	POSITIVE	
1529				S	Tread	Metal	DAMAGED	15.0	POSITIVE	
1530				S	Handrail	Metal	DAMAGED	16.0	POSITIVE	
1538	Perimeter	Exterior	North Side	N1	Door	Wood	Intact	13.0	POSITIVE	
1539				N1	Door Frame	Wood	Intact	9.2	POSITIVE	
1542				N3	Door	Wood	Intact	12.0	POSITIVE	
1543				N3	Door Frame	Wood	Intact	10.0	POSITIVE	
1546				N	Window Well	Wood	Intact	14.0	POSITIVE	Fixed
1547				N	Window Frame	Wood	Intact	12.0	POSITIVE	Fixed
1548				N	Window Sash	Wood	Intact	13.0	POSITIVE	Fixed
1550				N	Wall	Stucco	Intact	3.2	POSITIVE	Older section
1551				N4	Door	Wood	Intact	14.0	POSITIVE	
1552				N4	Door Frame	Wood	Intact	9.4	POSITIVE	
1554				W	Window Well	Wood	Intact	16.0	POSITIVE	
1555				W	Window Frame	Wood	Intact	12.0	POSITIVE	
1556				W	Window Sash	Wood	Intact	13.0	POSITIVE	
1557				N	Wall	Stucco	Intact	6.1	POSITIVE	
1558				N5	Door	Wood	DAMAGED	11.0	POSITIVE	Main entry
1559				N5	Door Frame	Wood	Intact	16.0	POSITIVE	
1560				N	Wall	Stucco	Intact	5.4	POSITIVE	
1561				N	Handrail	Metal	DAMAGED	11.0	POSITIVE	
1562				N	Railing	Metal	DAMAGED	16.0	POSITIVE	

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1563	Perimeter	Exterior	North Side	N	Stringer	Metal	DAMAGED	14.0	POSITIVE	
1565				N	Door	Wood	DAMAGED	2.6	POSITIVE	To tunnel
1566				N	Door Frame	Wood	DAMAGED	1.9	POSITIVE	
1568				N	Pipe	Metal	Intact	1.7	POSITIVE	Yellow-phone
1573			East Side	E1	Door Frame	Wood	DAMAGED	5.3	POSITIVE	
1583				E2	Door	Wood	DAMAGED	6.1	POSITIVE	To main room
1584				E2	Door Frame	Wood	DAMAGED	4.9	POSITIVE	
1591				E	Window Sash	Wood	DAMAGED	4.0	POSITIVE	Casement-upper office
1592				E	Window Frame	Wood	DAMAGED	2.7	POSITIVE	Casement-upper office
1593				E	Window Sash	Wood	DAMAGED	6.3	POSITIVE	Fixed-upper office
1594				E	Window Frame	Wood	DAMAGED	2.1	POSITIVE	Fixed-upper office
1598			South Side	S1	Door	Metal	Intact	1.5	POSITIVE	
1607				S	Window Sash	Metal	Intact	7.4	POSITIVE	Casement-to bathrooms
1608				S	Window Frame	Metal	Intact	6.8	POSITIVE	Casement-To bathrooms
1610				S	Downspout	Metal	Intact	5.6	POSITIVE	Bathroom area
1613				S	Access Panel	Metal	DAMAGED	4.6	POSITIVE	Yellow on ground
1619				S	Trim	Metal	Intact	4.3	POSITIVE	Vertical next to roll-up
1620				S	Wall	Concrete	Intact	2.8	POSITIVE	Older section-W. of trim
1622				S	Door	Metal	DAMAGED	3.4	POSITIVE	Roll-up door
1623				S	Door Frame	Metal	DAMAGED	12.0	POSITIVE	Roll-up door
1625				S	Wall	Concrete	DAMAGED	2.6	POSITIVE	West of roll-up door
1626				S	Door	Metal	DAMAGED	19.5	POSITIVE	To compressor room
1627				S	Door Frame	Metal	DAMAGED	7.9	POSITIVE	To compressor room
1628				S	Wall	Metal	Intact	5.7	POSITIVE	Compressor room
1629				S	Window Sash	Metal	DAMAGED	5.7	POSITIVE	Casement-compressor room
1630				S	Window Frame	Metal	DAMAGED	1.8	POSITIVE	Casement-compressor room

All Lead readings are expressed in mg/cm ^{2}

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

PROJECT NUMBER: *98-199*

ADDRESS: *72 East Glenarm*
Pasadena

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1632	Perimeter	Exterior	South Side	S	Window Sash	Metal	Intact	1.7	POSITIVE	Casement-compressor room
1633				S	Window Frame	Metal	DAMAGED	2.8	POSITIVE	Casement-compressor room
1634				S	Vent	Metal	Intact	4.6	POSITIVE	Large-to stack-grey
1636				S	Wall	Concrete	DAMAGED	4.8	POSITIVE	
1637				S	Door	Metal	DAMAGED	14.0	POSITIVE	Near control room
1638				S	Door Frame	Metal	DAMAGED	13.0	POSITIVE	Near control room
1639				S	Column	Metal	Intact	12.0	POSITIVE	To vent/stack
1640				S	Column	Metal	Intact	16.0	POSITIVE	
1641				S	Beam	Metal	Intact	14.0	POSITIVE	Diagonal
1642				S	Beam	Metal	Intact	10.0	POSITIVE	
1647				S	Ladder	Metal	Intact	15.0	POSITIVE	On stack
1652			West Side	W	Wall	Concrete	Intact	1.8	POSITIVE	
1653				W	Wall	Concrete	Intact	2.4	POSITIVE	
1654				W	Wall	Concrete	Intact	3.6	POSITIVE	
1655				W	Window Sash	Metal	DAMAGED	2.1	POSITIVE	Fixed
1656				W	Window Frame	Metal	DAMAGED	48.7	POSITIVE	Fixed
1657				W	Door	Wood	DAMAGED	2.4	POSITIVE	Crane pit area
1658				W	Door Frame	Metal	DAMAGED	19.0	POSITIVE	Crane pit area
1660				W	Door	Wood	Intact	15.0	POSITIVE	By turbines
1661				W	Door Frame	Wood	Intact	12.0	POSITIVE	
1662				W	Door	Wood	DAMAGED	16.0	POSITIVE	
1663				W	Door Frame	Wood	DAMAGED	12.0	POSITIVE	
1668		Interior	Bathroom	N	Wall	Tile	Intact	16.0	POSITIVE	Sink area
1669				N	Wall	Tile	Intact	18.0	POSITIVE	Shower area
1678			Compressor Room	N	Wall	Concrete	DAMAGED	2.9	POSITIVE	
1679				S	Wall	Metal	DAMAGED	2.7	POSITIVE	

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1680	Perimeter	Interior	Compressor Room	E	Wall	Metal	DAMAGED	3.1	POSITIVE	
1681				W	Wall	Metal	DAMAGED	2.1	POSITIVE	
1682					Ceiling	Metal	DAMAGED	1.9	POSITIVE	
1686				E	Door	Metal	DAMAGED	1.3	POSITIVE	On floor
1695					Tank	Metal	Intact	7.9	POSITIVE	10806-48 N.W. corner
1696					Tank	Metal	Intact	3.3	POSITIVE	12177-49
1706		Exterior	Crane Pit	N	Wall	Concrete	DAMAGED	1.8	POSITIVE	
1707				S	Wall	Concrete	DAMAGED	2.1	POSITIVE	
1708				E	Wall	Concrete	DAMAGED	3.0	POSITIVE	
1709				W	Wall	Concrete	DAMAGED	1.6	POSITIVE	
1710					Beam	Metal	DAMAGED	25.0	POSITIVE	Between garage doors
1711				E	Door	Metal	DAMAGED	6.2	POSITIVE	To crane pit access room
1712				E	Door Frame	Metal	DAMAGED	15.1	POSITIVE	
1713				N	Electrical Panel	Metal	DAMAGED	7.5	POSITIVE	
1714					Deck	Metal	DAMAGED	6.1	POSITIVE	
1715				N	Garage Door	Metal	DAMAGED	8.3	POSITIVE	
1716				N	Garage Door Frame	Metal	DAMAGED	6.7	POSITIVE	
1717				S	Garage Door	Metal	DAMAGED	15.0	POSITIVE	
1718				S	Garage Door Frame	Metal	DAMAGED	9.1	POSITIVE	
1719				E	Beam	Metal	DAMAGED	29.0	POSITIVE	Above door
1720				E	Beam	Metal	DAMAGED	31.0	POSITIVE	Above door
1721				N	Pipe	Metal	DAMAGED	7.4	POSITIVE	Above EP
1722				S	Vent	Metal	DAMAGED	6.8	POSITIVE	
1723				S	Railing	Metal	DAMAGED	16.0	POSITIVE	
1724				W	Railing	Metal	DAMAGED	18.0	POSITIVE	
1725					Column	Metal	DAMAGED	12.0	POSITIVE	Crane

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1726	Perimeter	Exterior	Crane Pit	E	Column	Metal	DAMAGED	11.0	POSITIVE	Crane
1727					Beam	Metal	DAMAGED	20.0	POSITIVE	Crane
1728					Beam	Metal	DAMAGED	18.0	POSITIVE	Crane
1729	Roof		Perimeter	N	Tank	Metal	Intact	14.0	POSITIVE	N.W. side-bearing cooler
1732				N	Ladder	Metal	Intact	16.0	POSITIVE	To north roof
1734				N	Pipe	Metal	Intact	22.0	POSITIVE	Large
1735				N	Tank	Metal	Intact	16.0	POSITIVE	N.E. side-bearing cooler
1736				N	Ladder	Metal	Intact	12.0	POSITIVE	Above tank
1737				N	Pipe	Metal	Intact	8.5	POSITIVE	Under tank
1738				N	Wall	Stucco	Intact	4.6	POSITIVE	Parapet
1740				E	Wall	Fiberglass	Intact	4.0	POSITIVE	Elevator area
1741				E	Door	Metal	DAMAGED	9	POSITIVE	
1742				E	Door Frame	Metal	Intact	12	POSITIVE	
1743				S	Railing	Metal	Intact	8.1	POSITIVE	
1744				S	Wall	Stucco	Intact	1.8	POSITIVE	Parapet
1745				S	Ladder	Metal	Intact	8.2	POSITIVE	
1748				S	Wall	Metal	Intact	7.7	POSITIVE	Parapet
1749				S	Railing	Metal	DAMAGED	9.0	POSITIVE	To stack
1750				S	Catwalk	Metal	Intact	25.0	POSITIVE	To stack
1757					Foundation	Metal	Intact	6.7	POSITIVE	For vent
1759					Foundation	Metal	Intact	7.8	POSITIVE	For vent
1761					Foundation	Metal	Intact	5.7	POSITIVE	For tank
1762					Wall	Metal	Intact	8.9	POSITIVE	Louvered/Ventilation
1764					Foundation	Metal	Intact	6.0	POSITIVE	Silver-for tank
1768					Beam	Metal	DAMAGED	9.0	POSITIVE	Vertical light
1797	Surrounding Structures		South Perimeter	N	Door	Metal	DAMAGED	16.0	POSITIVE	Locked

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

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INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1798	Surrounding Structures	Exterior	South Perimeter	N	Wall	Metal	DAMAGED	16.0	POSITIVE	To small room
1799				N	Window Sash	Metal	DAMAGED	8.7	POSITIVE	Fixed
1800				N	Wall	Concrete	DAMAGED	28.0	POSITIVE	Yellow on corner
1803				N	Door	Wood	DAMAGED	1.2	POSITIVE	North quonset hut
1804				N	Door Frame	Wood	DAMAGED	1.3	POSITIVE	North quonset hut
1805				N	Window Sash	Wood	DAMAGED	4.7	POSITIVE	Casement-N. quonset hut
1807				E	Wall	Concrete	DAMAGED	25.0	POSITIVE	North quonset hut
1808				E	Foundation	Concrete	DAMAGED	35.0	POSITIVE	North quonset hut
1810				S	Door	Wood	DAMAGED	2.2	POSITIVE	
1811				S	Door Frame	Wood	DAMAGED	2.5	POSITIVE	
1812				S	Window Sash	Wood	DAMAGED	4.3	POSITIVE	Casement
1813				W	Wall	Metal	Intact	29.0	POSITIVE	
1814				N	Door Frame	Wood	DAMAGED	2.6	POSITIVE	Middle quonset hut
1816				N	Window Sash	Wood	DAMAGED	1.7	POSITIVE	Casement
1817				E	Wall	Metal	Intact	26.0	POSITIVE	
1818				E	Foundation	Concrete	DAMAGED	2.7	POSITIVE	
1820				S	Wall	Metal	Intact	27.0	POSITIVE	
1821				W	Wall	Metal	Intact	16.0	POSITIVE	
1822				N	Door	Metal	Intact	16.0	POSITIVE	South quonset hut
1823				N	Wall	Metal	Intact	29.0	POSITIVE	South quonset hut
1824				E	Foundation	Concrete	DAMAGED	19.0	POSITIVE	South quonset hut
1825				E	Wall	Metal	DAMAGED	25.0	POSITIVE	South quonset hut
1826				S	Door	Metal	DAMAGED	26.0	POSITIVE	South quonset hut
1827				S	Wall	Metal	DAMAGED	41.0	POSITIVE	South quonset hut
1828				W	Wall	Metal	DAMAGED	42.0	POSITIVE	South quonset hut
1840					Railing	Metal	Intact	14.0	POSITIVE	Yellow-next to small tank

All Lead readings are expressed in mg/cm ^{2}

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POSITIVE AND INCONCLUSIVE FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

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INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	AREA	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1841	Surrounding Structures	Exterior	South Perimeter		Tank	Metal	Intact	27.0	POSITIVE	Large-accross from boiler
1842					Ladder	Metal	Intact	19.0	POSITIVE	
1843					Pipe	Metal	Intact	20.0	POSITIVE	
1844					Tank	Metal	Intact	13.0	POSITIVE	
1845					Tank	Metal	Intact	20.0	POSITIVE	
1846					Pipe	Metal	Intact	32.0	POSITIVE	
1849			West Perimeter	E	Column	Metal	Intact	2.4	POSITIVE	
1850				E	Column	Metal	Intact	3.1	POSITIVE	
1851				E	Column	Metal	Intact	2.3	POSITIVE	
1852				E	Beam	Metal	DAMAGED	1.7	POSITIVE	
1853				E	Bollard	Metal	Intact	1.6	POSITIVE	Yellow
1854				E	Bollard	Metal	Intact	2.0	POSITIVE	
1855				E	Bollard	Metal	Intact	1.4	POSITIVE	
1862					Fountain	Tile	Intact	16.0	POSITIVE	
1863					Fountain	Tile	Intact	19.0	POSITIVE	
1864					Fountain	Tile	Intact	12.0	POSITIVE	

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APPENDIX F

XRF Inspection Field Data Reports

FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1	Main Floor	Interior Main Room	N	Wall	Concrete	DAMAGED	-0.1	Negative	Upper
2			N	Wall	Tile	Intact	35.0	POSITIVE	
3			N	Door	Wood	Intact	5.9	POSITIVE	
4			N	Door Frame	Wood	Intact	1.7	POSITIVE	
5			N1	Window Sash	Wood	Intact	1.4	POSITIVE	Fixed
6			N1	Window Frame	Wood	Intact	4.5	POSITIVE	Fixed
7			N	Baseboard	Tile	Intact	29.0	POSITIVE	Black
8				Floor	Tile	Intact	0.0	Negative	Red
9			N	Light Fixture	Metal	Intact	1.9	POSITIVE	
10			N	Stringer	Metal	Intact	-0.1	Negative	
11			N	Newel Post	Metal	Intact	0.0	Negative	
12			N	Handrail	Metal	Intact	0.2	Negative	
13			N	Tread	Metal	Intact	0.2	Negative	
14				Crane	Metal	DAMAGED	[illegible]	POSITIVE	[illegible]
15			E	Door	Wood	Intact	0.0	Negative	To exterior
16			E	Door Frame	Wood	Intact	6.2	POSITIVE	
17			E	Wall	Tile	Intact	30.0	POSITIVE	
18			E	Wall	Concrete	DAMAGED	0.3	Negative	
19			E1	Column	Metal	Intact	6.0	POSITIVE	
20			E	Beam	Metal	Intact	0.2	Negative	
21			E2	Column	Metal	Intact	0.3	Negative	
22			E3	Column	Metal	Intact	0.0	Negative	
23			E5	Column	Metal	Intact	0.2	Negative	
24			E	Beam	Metal	Intact	0.2	Negative	
25			E2	Door	Wood	Intact	0.2	Negative	Upstairs-newer
26			E2	Door Frame	Wood	Intact	6.1	POSITIVE	Upstairs

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
27	Main Floor	Interior Main Room	E12	Window Frame	Wood	Intact	0.1	Negative	Fixed-upstairs
28			E	Wall	Tile	Intact	22.0	POSITIVE	
29			E	Baseboard	Tile	Intact	16.0	POSITIVE	
30			E	Window Frame	Metal	Intact	0.3	Negative	Fixed-lower
31			E	Wall	Concrete	Intact	0.2	Negative	Above offices
32			E2	Door	Wood	Intact	0.2	Negative	Lower-to office
33			E2	Door Frame	Wood	Intact	0.0	Negative	Lower-to office
34			E5	Door	Wood	Intact	5.3	POSITIVE	Lower-phone room-5 panel
35			E5	Door Frame	Wood	Intact	5.1	POSITIVE	
36			E4	Door	Wood	Intact	2.3	POSITIVE	Lower-office-5 panel
37			E4	Door Frame	Wood	Intact	1.8	POSITIVE	Lower-office-5 panel
38			E3	Door	Wood	Intact	0.0	Negative	Lower-office-Glass
39			E3	Door Frame	Wood	Intact	0.0	Negative	Lower-office-Glass
40				Floor	Metal	Intact	0.2	Negative	
41			E6	Door	Wood	DAMAGED	9.1	POSITIVE	To exterior
42			E6	Door Frame	Wood	DAMAGED	3.5	POSITIVE	To exterior
43			E	Electrical Panel	Metal	Intact	0.0	Negative	
44			E	Railing	Metal	Intact	0.3	Negative	Open pit area
45			E	Newel Post	Metal	Intact	0.3	Negative	Open pit area
46			S	Railing	Metal	Intact	0.3	Negative	To lower level
47			S	Newel Post	Metal	Intact	0.2	Negative	
48			S	Wall	Concrete	DAMAGED	0.3	Negative	
49			S	Wall	Tile	Intact	32.0	POSITIVE	
50			S1	Door Frame	Wood	Intact	5.2	POSITIVE	No door
51			S1	Column	Metal	DAMAGED	0.0	Negative	
52			S	Tread	Metal	DAMAGED	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
53	Main Floor	Interior Main Room	S	Stringer	Metal	DAMAGED	0.0	Negative	
54			S	Newel Post	Metal	DAMAGED	0.2	Negative	
55			S	Handrail	Metal	DAMAGED	0.1	Negative	
56			S2	Light-Fixture	Metal	Intact	1.6	POSITIVE	
57			S	Railing	Metal	Intact	0.2	Negative	Open pit area
58			S	Newel Post	Metal	Intact	0.3	Negative	Open pit area
59			S2	Door Frame	Wood	DAMAGED	5.6	POSITIVE	No door
60			S	Valve	Metal	Intact	5.2	POSITIVE	In floor
61			S	Valve	Metal	Intact	2.6	POSITIVE	In floor
62			S	Electrical Panel	Metal	Intact	-0.1	Negative	Boiler/Damper controls
63			S	Electrical Panel	Metal	Intact	0.0	Negative	# 7 generator
64			S3	Door	Wood	DAMAGED		POSITIVE	
65			S3	Door Frame	Wood	DAMAGED		POSITIVE	
66				Floor	Metal	DAMAGED	0.2	Negative	
67				Floor	Tile	DAMAGED	0.0	Negative	
68			S	Baseboard	Tile	Intact	30.0	POSITIVE	
69				Beam	Metal	Intact	5.7	POSITIVE	Roof support-runs N-S
70				Beam	Metal	Intact	6.3	POSITIVE	Roof support-runs N-S
71				Ceiling	Transite	DAMAGED	0.1	Negative	
72				Beam	Wood	DAMAGED	6.3	POSITIVE	Roof support-runs E-W
73				Beam	Metal	DAMAGED	7.9	POSITIVE	Roof support-runs E-W
74			S	Railing	Metal	Intact	0.1	Negative	Near crane
75			E2	Window Sill	Concrete	DAMAGED	0.1	Negative	Casement-above office
76			E2	Window Sash	Metal	DAMAGED	0.0	Negative	Casement-above office
77		Interior Upper Office	N	Wall	Gypsum	DAMAGED	0.0	Negative	
78			S	Wall	Gypsum	DAMAGED	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
79	Main Floor	Interior Upper Office	E	Wall	Gypsum	DAMAGED	0.0	Negative	
80			W	Wall	Gypsum	DAMAGED	0.1	Negative	
81				Ceiling	Gypsum	Intact	0.1	Negative	
82			E1	Window Sash	Wood	DAMAGED	4.7	POSITIVE	Fixed
83			E1	Window Sill	Wood	DAMAGED	2.1	POSITIVE	Fixed
84			E1	Window Frame	Wood	DAMAGED	3.1	POSITIVE	Fixed
85			W2	Door	Wood	Intact	0.0	Negative	
86			W2	Door Frame	Wood	Intact	0.2	Negative	
87			E6	Window Sash	Wood	Intact	2.6	POSITIVE	Casement
88			E6	Window Sill	Wood	Intact	1.1	POSITIVE	Casement
89			E6	Window Frame	Wood	Intact	4.3	POSITIVE	Casement
90			W13	Window Frame	Wood	Intact	4.8	POSITIVE	Fixed
91			W10	Window Frame	Wood	Intact	4.3	POSITIVE	Fixed
92				Column	Gypsum	Intact	0.2	Negative	Center of room
93				Beam	Gypsum	Intact	0.0	Negative	
94				Wall	Gypsum	Intact	0.1	Negative	Cubicle partition
95			W5	Window Frame	Wood	Intact	5.2	POSITIVE	Fixed
96			E14	Window Sill	Wood	DAMAGED	6.2	POSITIVE	Fixed
97			E14	Window Sash	Wood	DAMAGED	4.7	POSITIVE	Fixed
98			E14	Window Frame	Wood	DAMAGED	3.7	POSITIVE	Fixed
99			E	Wall	Concrete	DAMAGED	0.5	Negative	
100			W	Electrical Panel	Metal	Intact	0.1	Negative	
101		Interior Turbine Room	E	Deck	Metal	Intact	0.3	Negative	
102			E	Deck	Metal	Intact	0.2	Negative	
103			E	Pipe	Cloth Wrap	Intact	0.2	Negative	Grey cap
104			N	Wall	Concrete	DAMAGED	0.2	Negative	

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105	Main Floor	Interior Turbine Room	N	Wall	Tile	Intact	32.0	POSITIVE	
106			N	Wall	Metal	Intact	5.1	POSITIVE	Next to N1 door
107			N1	Door	Wood	DAMAGED	5.7	POSITIVE	
108			N1	Door Frame	Wood	DAMAGED	1.1	POSITIVE	
109			N2	Door	Wood	DAMAGED	2.5	POSITIVE	
110			N2	Door Frame	Wood	DAMAGED	1.0	POSITIVE	
111			N	Baseboard	Tile	Intact	16.0	POSITIVE	Black
112				Floor	Tile	DAMAGED	0.2	Negative	
113			N3	Door	Wood	Intact	6.2	POSITIVE	
114			N3	Door Frame	Wood	Intact	1.1	POSITIVE	
115			N	Light Fixture	Metal	Intact	1.7	POSITIVE	
116			S1	Door	Wood	DAMAGED	2.8	POSITIVE	Overhead
117			N3	Door Frame	Metal	DAMAGED	3.7	POSITIVE	
118			S	Wall	Concrete	DAMAGED	0.1	Negative	
119			S	Wall	Tile	Intact	39.0	POSITIVE	
120			S	Baseboard	Tile	Intact	25.0	POSITIVE	
121			S	Column	Metal	DAMAGED	0.3	Negative	
122			S	Valve	Metal	Intact	0.2	Negative	In floor
123			S	Electrical Panel	Metal	Intact	0.3	Negative	Cooling tower # 3
124			S	Electrical Panel	Metal	Intact	0.2	Negative	# 8 generator/turbine
125			S	Electrical Panel	Metal	Intact	0.2	Negative	Green-# 4 heater
126			S	Motor	Metal	DAMAGED	0.2	Negative	Pump- # 9 L.O. dump tank
127			S	Electrical Panel	Metal	Intact	0.1	Negative	Turbine control
128			S	Valve	Metal	Intact	0.3	Negative	In floor
129				Floor	Tile	Intact	0.0	Negative	
130				Floor	Metal	Intact	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
131	Main Floor	Interior Turbine Room	S2	Door	Wood	DAMAGED	6.1	POSITIVE	
132			S2	Door Frame	Wood	DAMAGED	4.1	POSITIVE	
133			W	Wall	Concrete	Intact	0.2	Negative	
134			W	Wall	Tile	Intact	34.0	POSITIVE	
135			W	Baseboard	Tile	Intact	26.0	POSITIVE	
136			W1	Door	Wood	DAMAGED	3.2	POSITIVE	
137			W1	Door Frame	Wood	DAMAGED	1.6	POSITIVE	
138			W3	Door	Wood	DAMAGED	2.3	POSITIVE	
139			W3	Door Frame	Wood	DAMAGED	1.0	POSITIVE	
140				Turbine # 8	Metal	Intact	1.4	POSITIVE	Cast iron
141				Turbine # 8	Metal	Intact	0.3	Negative	Sheet metal
142				Turbine # 8	Metal	Intact	2.6	POSITIVE	Cast iron
143				Turbine # 8	Metal	Intact	1.7	POSITIVE	Cast iron
144				Turbine # 8	Metal	Intact	1.4	POSITIVE	Cast iron
145				Turbine # 8	Metal	Intact	0.3	Negative	Sheet metal
146				Turbine # 8	Metal	Intact	2.1	POSITIVE	Cast iron
147				Pipe	Metal	Intact	1.1	POSITIVE	
148				Pipe	Metal	Intact	1.0	POSITIVE	
149				Railing	Metal	DAMAGED	0.1	Negative	Around open pit
150				Railing	Metal	DAMAGED	0.0	Negative	Around open pit
151				Railing	Metal	DAMAGED	0.2	Negative	Around open pit
152				Newel Post	Metal	Intact	0.3	Negative	Around open pit
153				Newel Post	Metal	Intact	0.2	Negative	Around open pit
154				Newel Post	Metal	Intact	0.1	Negative	Around open pit
155				Valve	Metal	Intact	0.3	Negative	Around open pit
156				Electrical Panel	Metal	Intact	0.2	Negative	Around open pit

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
157	Main Floor	Interior Turbine Room	E	Tread	Metal	DAMAGED	0.5	POSITIVE	
158			E	Stringer	Metal	DAMAGED	0.6	POSITIVE	
159			E	Handrail	Metal	Intact	0.2	POSITIVE	
160				Turbine # 9	Metal	Intact	0.0	Negative	Cast iron
161				Turbine # 9	Metal	Intact	0.0	Negative	Sheet metal
162				Turbine # 9	Metal	Intact	0.3	Negative	Sheet metal
163				Turbine # 9	Metal	Intact	0.1	Negative	Sheet metal
164				Turbine # 9	Metal	Intact	0.0	Negative	Sheet metal
165				Turbine # 9	Metal	Intact	0.5	Negative	Sheet metal
166				Turbine # 9	Metal	Intact	0.2	Negative	Sheet metal
167				Turbine # 9	Metal	Intact	0.5	Negative	Cast iron
168				Turbine # 9	Metal	Intact	0.3	Negative	Cast iron
169				Turbine # 9	Metal	Intact	0.5	Negative	Cast iron
170				Turbine # 9	Metal	Intact	0.0	Negative	Cast iron
171				Turbine # 9	Metal	Intact	0.3	Negative	Cast iron
172				Turbine # 9	Metal	Intact	0.1	Negative	Panel on south side
173				Crane	Metal	Intact	0.4	Negative	100 ton
174				Railing	Metal	Intact	0.2	Negative	
175				Ladder	Metal	Intact	0.2	Negative	
176			S	Wall	Concrete	DAMAGED	0.2	Negative	
177			S	Column	Concrete	Intact	0.1	Negative	
178				Beam	Metal	Intact	0.2	Negative	
179				Beam	Metal	Intact	0.3	Negative	
180				Ceiling	Concrete	Intact	0.1	Negative	
181				Ceiling	Concrete	Intact	0.1	Negative	
182		Interior Machine Shop	W	Wall	Concrete	Intact	0.0	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
183	Main Floor	Interior Machine Shop	N	Door Frame	Wood	DAMAGED	4.2	POSITIVE	No door
184			N2	Door Frame	Wood	DAMAGED	4.3	POSITIVE	No door
185			N	Wall	Wood	Intact	0.0	Negative	Office area
186			N	Door	Wood	Intact	0.0	Negative	Office area
187			N	Cabinet Frame	Wood	Intact	0.0	Negative	Office area
188			N	Pipe	Metal	Intact	0.0	Negative	
189			N	Electrical Panel	Metal	Intact	0.3	Negative	
190				Floor	Concrete	DAMAGED	0.2	Negative	
191			E	Wall	Concrete	Intact	0.3	Negative	
192			E	Wall	Concrete	Intact	0.2	Negative	
193			E	Tread	Metal	DAMAGED	0.3	Negative	
194			E	Stringer	Metal	DAMAGED	0.5	Negative	
195			E	Handrail	Metal	DAMAGED	0.7	Negative	
196			E	Electrical Panel	Metal	DAMAGED	0.0	Negative	
197			E	Pipe	Metal	Intact	0.0	Negative	Conduit
198			E	Door	Metal	DAMAGED	0.1	Negative	
199			E	Door Frame	Metal	DAMAGED	0.3	Negative	
200			E	Cabinet Frame	Wood	DAMAGED	0.0	Negative	Brown
201			E	Cabinet Door	Wood	DAMAGED	0.2	Negative	
202			E	Electrical Panel	Metal	Intact	0.0	Negative	
203			S	Pipe	Metal	DAMAGED	0.2	Negative	
204			S1	Door	Metal	DAMAGED	1.0	POSITIVE	To exterior
205			S1	Door Frame	Metal	DAMAGED	0.5	Negative	To exterior
206			S	Stripe	Concrete	DAMAGED	1.1	POSITIVE	Yellow
207			S	Wall	Concrete	Intact	0.1	Negative	
208			S	Stripe	Concrete	DAMAGED	1.0	POSITIVE	Yellow

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209	Main Floor	Interior Machine Shop	S	Wall	Metal	DAMAGED	0.1	Negative	
210			S	Column	Metal	Intact	0.2	Negative	Under metal wall
211			S	Pipe	Metal	Intact	0.2	Negative	
212			S	Electrical Panel	Metal	Intact	0.3	Negative	
213				Band Saw	Metal	DAMAGED	0.1	Negative	
214				Lathe	Metal	DAMAGED	2.3	POSITIVE	
215				Drill Press	Metal	DAMAGED	1.4	POSITIVE	Smaller
216				Drill Press	Metal	DAMAGED	2.3	POSITIVE	Radial arm
217				Shaper	Metal	DAMAGED	2.1	POSITIVE	
218				Catwalk	Metal	DAMAGED	0.3	Negative	
219				Beam	Metal	DAMAGED	2.4	POSITIVE	N-S
220				Beam	Metal	DAMAGED	2.0	POSITIVE	E-W
221				Beam	Metal	DAMAGED	2.2	POSITIVE	E-W
222				Railing	Metal	Intact	0.1	Negative	
223				Ladder	Metal	Intact	0.2	Negative	
224				Wall	Brick	DAMAGED	0.7	Negative	
225				Ceiling	Transite	DAMAGED	0.3	Negative	
226			E1	Window Sill	Concrete	DAMAGED	0.3	Negative	Casement
227			E1	Window Sash	Metal	DAMAGED	0.5	Negative	Casement
228		Interior High Bay Area	N	Wall	Concrete	DAMAGED	0.2	Negative	
229			N1	Door	Wood	DAMAGED	0.4	Negative	
230			N1	Door Frame	Wood	DAMAGED	0.5	Negative	
231			N	Pulley	Metal	DAMAGED	0.2	Negative	
232			W1	Column	Metal	Intact	0.1	Negative	
233			W2	Column	Metal	Intact	0.1	Negative	
234			W3	Column	Metal	Intact	0.3	Negative	

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235	Main Floor	Interior High Bay Area	W4	Column	Metal	Intact	0.3	Negative	
236			S1	Door	Metal	DAMAGED	0.3	Negative	
237			S1	Door Frame	Metal	DAMAGED	0.3	Negative	
238			S	Window Frame	Metal	DAMAGED	0.2	Negative	
239			S	Wall	Wood	Intact	0.0	Negative	
240			S2	Door	Wood	Intact	0.0	Negative	Locked
241			S2	Door Frame	Wood	Intact	0.2	Negative	
242			S	Wall	Concrete	Intact	0.0	Negative	
243			S	Electrical Panel	Metal	DAMAGED	0.3	Negative	
244			S	Electrical Panel	Metal	DAMAGED	0.1	Negative	
245			S	Column	Metal	Intact	6.3	POSITIVE	For elevator
246			S	Fence	Metal	DAMAGED	1.2	POSITIVE	Around elevator motor
247			S	Gate	Metal	DAMAGED	1.5	POSITIVE	Around elevator motor
248			S	Column	Metal	DAMAGED	4.8	POSITIVE	For elevator-smaller
249			S	Wall	Wood	Intact	0.1	Negative	Stained-inside elevator
250			S	Door	Wood	DAMAGED	3.9	POSITIVE	To elevator
251			S	Door Frame	Metal	DAMAGED	6.7	POSITIVE	To elevator
252				Ceiling	Transite	DAMAGED	0.5	Negative	
253				Beam	Metal	Intact	3.9	POSITIVE	Roof support
254				Beam	Metal	Intact	4.2	POSITIVE	Roof support
255		Interior Boiler Room	N	Wall	Concrete	DAMAGED	0.3	Negative	
256			N3	Door Frame	Metal	DAMAGED	3.8	POSITIVE	
257			N3	Door	Wood	DAMAGED	9.7	POSITIVE	Overhead
258			N	Wall	Metal	DAMAGED	0.3	Negative	
259			N	Column	Metal	DAMAGED	0.0	Negative	
260			N	Pipe	Metal	DAMAGED	0.5	Negative	Grey-large

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261	Main Floor	Interior Boiler Room	N	Electrical Panel	Metal	DAMAGED	-0.1	Negative	
262			N2	Door	Wood	DAMAGED	4.1	POSITIVE	
263			N2	Door Frame	Wood	DAMAGED	4.3	POSITIVE	
264			N	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	Grey-bleeder # 2
265			N	Beam	Metal	DAMAGED	0.1	Negative	
266			N	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	Suction
267			N	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	O.A. Tank
268			N	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	Bypass
269			N	Pipe	Cloth Wrap	DAMAGED	-0.1	Negative	
270			N1	Door	Wood	DAMAGED	4.1	POSITIVE	
271			N1	Door Frame	Wood	DAMAGED	4.3	POSITIVE	
272			N	Pipe	Metal	DAMAGED	0.2	Negative	Drain
273			N	Beam	Metal	Intact	14.0	POSITIVE	Inside closet
274			N1	Closet Door	Metal	Intact	14.0	POSITIVE	
275			N1	Closet Door Frame	Metal	Intact	18.0	POSITIVE	
276			N	Wall	Concrete	Intact	0.0	Negative	Inside closet
277			N3	Closet Door	Metal	Intact	16.0	POSITIVE	
278			N1	Closet Door Frame	Metal	Intact	18.0	POSITIVE	
279			N	Beam	Metal	Intact	20.0	POSITIVE	Inside closet
280			N	Tank	Metal	DAMAGED	0.3	Negative	Between boilers 14 and 16
281			N	Window Frame	Metal	DAMAGED	0.5	Negative	Casement-level 4
282			N	Beam	Metal	DAMAGED	0.5	Negative	Diagonal-level 4
283			S1	Door	Metal	DAMAGED	0.2	Negative	
284			S1	Door Frame	Metal	DAMAGED	0.1	Negative	
285			S	Pipe	Metal	DAMAGED	0.2	Negative	
286			S	Pipe	Metal	DAMAGED	0.0	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
287	Main Floor	Interior Boiler Room	S	Pipe	Metal	DAMAGED	0.1	Negative	
288			S	Beam	Metal	DAMAGED	0.3	Negative	
289			S	Wall	Concrete	DAMAGED	0.1	Negative	
290			S	Wall	Metal	DAMAGED	0.4	Negative	
291			S	Electrical Panel	Metal	DAMAGED	0.2	Negative	120 Volt
292			S2	Door	Metal	DAMAGED		POSITIVE	
293			S2	Door Frame	Metal	DAMAGED		POSITIVE	
294			S	Electrical Panel	Metal	DAMAGED	0.3	Negative	240 Volt
295			S	Cabinet Door	Wood	DAMAGED		POSITIVE	Gill
296			S	Cabinet Frame	Wood	DAMAGED	4.0	POSITIVE	
297			S	Column	Metal	DAMAGED	0.2	Negative	
298			S	Beam	Metal	DAMAGED	0.3	Negative	Diagonal
299			S	Beam	Metal	DAMAGED	0.1	Negative	
300			S	Pipe	Metal	DAMAGED	0.3	Negative	Drain
301			S	Window Frame	Metal	DAMAGED	0.5	Negative	Casement-level 4
302			S	Beam	Metal	DAMAGED	0.3	Negative	Diagonal-level 4
303			W	Wall	Concrete	DAMAGED	0.2	Negative	
304			W	Pipe	Metal	DAMAGED	0.0	Negative	Conduit
305			W	Pipe	Metal	DAMAGED	0.2	Negative	Conduit
306			W	Pipe	Metal	DAMAGED	0.1	Negative	Conduit
307			W	Pipe	Metal	DAMAGED	0.3	Negative	Conduit
308			W	Pipe	Metal	DAMAGED	0.2	Negative	Conduit
309			W	Pipe	Metal	DAMAGED	0.1	Negative	Conduit
310			W	Column	Metal	Intact	0.0	Negative	
311			W	Beam	Metal	Intact	0.1	Negative	Diagonal
312			W	Treid	Metal	DAMAGED		POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
313	Main Floor	Interior Boiler Room	W	Stringer	Metal	DAMAGED	2.9	POSITIVE	
314			W	Handrail	Metal	DAMAGED	2.1	POSITIVE	
315			W1	Window Sash	Metal	DAMAGED	0.3	Negative	Casement
316			W1	Window Sill	Concrete	DAMAGED	0.2	Negative	Casement
317			W	Cabinet Door	Wood	DAMAGED	0.1	Negative	
318			W	Cabinet Frame	Wood	DAMAGED	0.3	Negative	
319			W	Pipe	Metal	DAMAGED	0.5	Negative	
320			W	Pipe	Metal	DAMAGED	0.3	Negative	
321			W	Pulley	Metal	DAMAGED	0.3	Negative	To door 1
322			W1	Door	Wood	DAMAGED	4.5	POSITIVE	
323			W1	Door Frame	Metal	DAMAGED	1.3	POSITIVE	
324			W	Beam	Metal	DAMAGED	0.2	Negative	Diagonal
325			W	Wall	Concrete	DAMAGED	-0.1	Negative	
326			W2	Window Sash	Metal	DAMAGED	-0.3	Negative	Casement
327			W2	Window Sill	Concrete	DAMAGED	0.5	Negative	Casement
328			W	Column	Metal	DAMAGED	0.4	Negative	
329			W	Window Frame	Metal	DAMAGED	0.3	Negative	Casement
330			W	Window Frame	Metal	DAMAGED	0.0	Negative	Casement
331				Ceiling	Concrete	DAMAGED	-0.2	Negative	
332				Ceiling	Concrete	DAMAGED	-0.3	Negative	
333				Ceiling	Concrete	DAMAGED	0.3	Negative	
334				Beam	Concrete	DAMAGED	0.0	Negative	
335				Beam	Concrete	DAMAGED	0.1	Negative	
336				Beam	Concrete	DAMAGED	-0.2	Negative	
337		Interior Control Room	N	Electrical Panel	Metal	DAMAGED	-0.1	Negative	Interior side
338			E	Wall	Metal	DAMAGED	-0.3	Negative	Interior side

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
339	Main Floor	Interior Control Room	S	Electrical Panel	Metal	DAMAGED	0.0	Negative	Interior side
340			W	Wall	Metal	Intact	-0.2	Negative	Interior side
341			E	Door	Metal	DAMAGED	0.2	Negative	Interior side
342			E	Door Frame	Metal	DAMAGED	0.0	Negative	Interior side
343			W	Door	Metal	DAMAGED	0.2	Negative	Interior side
344			W	Door Frame	Metal	DAMAGED	-0.2	Negative	Interior side
345				Ceiling	Metal	DAMAGED	0.2	Negative	Interior side
346			N	Closet Door	Metal	Intact	0.3	Negative	
347			N	Closet Door Frame	Metal	Intact	0.0	Negative	
348			N	Wall	Metal	Intact	0.2	Negative	
349			E	Wall	Metal	Intact	0.3	Negative	
350			E	Door	Metal	DAMAGED	0.0	Negative	
351			E	Door Frame	Metal	DAMAGED	0.2	Negative	
352			E	Cabinet Frame	Wood	DAMAGED	2.8	POSITIVE	Old phone booth
353			S	Wall	Metal	DAMAGED	0.3	Negative	
354			S	Cabinet Door	Metal	DAMAGED	0.3	Negative	
355			S	Cabinet Frame	Metal	DAMAGED	0.3	Negative	
356			W	Door	Metal	DAMAGED	0.0	Negative	
357			W	Door Frame	Metal	DAMAGED	0.0	Negative	
358			W	Wall	Metal	DAMAGED	0.1	Negative	
359		Interior Office 1	N	Door	Wood	Intact	0.2	Negative	
360			N	Door Frame	Wood	Intact	1.5	POSITIVE	
361			N	Wall	Wood	Intact	0.0	Negative	
362			S	Wall	Wood	Intact	0.1	Negative	
363			E	Wall	Wood	Intact	0.2	Negative	
364			W	Wall	Wood	Intact	0.1	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
365	Main Floor	Interior Office 1		Ceiling	Acoustic	Intact	0.0	Negative	
366			N	Window Frame	Metal	Intact	0.3	Negative	Fixed
367			N	Window Sash	Metal	Intact	0.5	Negative	Fixed
368			E	Window Sill	Wood	Intact	0.0	Negative	Stained-fixed
369			E	Window Frame	Wood	Intact	3.7	POSITIVE	Fixed
370		Interior Office 2	W	Door	Wood	Intact	0.0	Negative	
371			W	Door Frame	Wood	Intact	2.2	POSITIVE	
372			W	Window Frame	Metal	Intact	0.2	Negative	
373			W	Window Sill	Metal	Intact	0.3	Negative	Stained
374			N	Wall	Wood	Intact	0.0	Negative	
375			S	Wall	Wood	Intact	0.3	Negative	
376			E	Wall	Wood	Intact	0.0	Negative	
377			W	Wall	Wood	Intact	0.0	Negative	
378				Ceiling	Acoustic	Intact	0.0	Negative	
379		Interior Office 3	N	Wall	Wood	Intact	0.0	Negative	
380			S	Wall	Wood	Intact	0.3	Negative	
381			E	Wall	Wood	Intact	0.1	Negative	
382			W	Wall	Wood	Intact	0.2	Negative	
383				Ceiling	Acoustic	Intact	0.2	Negative	
384			W1	Door	Wood	Intact	1.3	POSITIVE	
385			W1	Door Frame	Wood	Intact	1.6	POSITIVE	
386			W2	Door	Wood	Intact	0.2	Negative	Glass panel door
387			W2	Door Frame	Wood	Intact	1.0	POSITIVE	
388			E	Window Sill	Wood	Intact	0.0	Negative	
389		Interior Office 4	N	Wall	Wood	Intact	0.0	Negative	
390			S	Wall	Wood	Intact	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
391	Main Floor	Interior Office 4	E	Wall	Wood	Intact	0.1	Negative	
392			W	Wall	Wood	Intact	0.3	Negative	
393				Ceiling	Acoustic	Intact	0.2	Negative	
394			W	Door	Wood	Intact	1.6	POSITIVE	
395			W	Door Frame	Wood	Intact	4.2	POSITIVE	
396			E	Window Sill	Wood	Intact	0.0	Negative	
397	Lower Level	Interior Tunnel 1	N	Wall	Concrete	DAMAGED	0.3	Negative	
398			N	Wall	Concrete	DAMAGED	0.2	Negative	
399			S	Wall	Concrete	DAMAGED	0.1	Negative	
400			S	Wall	Concrete	DAMAGED	0.0	Negative	
401				Ceiling	Concrete	Intact	0.3	Negative	
402			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
403			S	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
404			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
405			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
406			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
407			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
408			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
409			N	Stringer	Metal	DAMAGED	2.7	POSITIVE	
410			N	Handrail	Metal	DAMAGED	30.0	POSITIVE	
411				Light Fixture	Metal	Intact	0.2	Negative	
412				Light Fixture	Metal	Intact	0.1	Negative	
413				Motor	Metal	DAMAGED	0.2	Negative	
414				Motor	Metal	DAMAGED	0.0	Negative	
415				Electrical Panel	Metal	DAMAGED	0.3	Negative	
416				Motor	Metal	Intact	0.5	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
417	Lower Level	Interior Tunnel 1		Valve	Metal	DAMAGED	0.3	Negative	
418				Valve	Metal	DAMAGED	0.2	Negative	
419				Valve	Metal	DAMAGED	0.3	Negative	
420				Valve	Metal	DAMAGED	0.7	Negative	
421				Pipe	Metal	DAMAGED	0.3	Negative	
422				Pipe	Cloth Wrap	DAMAGED	0.5	Negative	
423				Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
424				Foundation	Concrete	DAMAGED	0.2	Negative	
425				Motor	Metal	DAMAGED	0.3	Negative	
426			E	Ladder	Metal	Intact	0.2	Negative	
427		Interior Tunnel 2		Ceiling	Concrete	DAMAGED	0.2	Negative	
428				Catwalk	Metal	DAMAGED	8.3	POSITIVE	
429				Pipe	Metal	DAMAGED	3.2	POSITIVE	
430				Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
431				Valve	Metal	DAMAGED	0.3	Negative	
432				Valve	Metal	DAMAGED	0.1	Negative	
433			E	Valve	Metal	DAMAGED		POSITIVE	
434				Light Fixture	Metal	DAMAGED	0.1	Negative	
435		Interior Tunnel 3	N	Wall	Concrete	DAMAGED	0.2	Negative	
436				Handrail	Metal	DAMAGED	16.0	POSITIVE	
437				Stringer	Metal	DAMAGED	10.0	POSITIVE	
438				Tread	Metal	DAMAGED			
439			E	Wall	Concrete	DAMAGED	0.2	Negative	
440			S	Wall	Concrete	DAMAGED	0.2	Negative	
441				Ceiling	Concrete	DAMAGED	0.1	Negative	
442			W	Door	Metal	DAMAGED	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
443	Lower Level	Interior Tunnel 3	W	Door Frame	Metal	DAMAGED	0.3	Negative	
444			S	Beam	Metal	Intact	8.2	POSITIVE	Red primer
445			S	Column	Metal	Intact	19.0	POSITIVE	Red primer
446		Interior Vault Access Room	N	Wall	Concrete	Intact	0.6	Negative	
447			N	Column	Metal	Intact	0.4	Negative	
448			N	Door	Metal	DAMAGED	5.6	POSITIVE	Toluene
449			N	Door Frame	Metal	DAMAGED	0.3	Negative	
450			W	Railing	Metal	DAMAGED	0.5	Negative	
451			W	Catwalk	Metal	DAMAGED	0.1	Negative	
452			W	Wall	Concrete	DAMAGED	0.2	Negative	
453			W	Column	Metal	DAMAGED	0.3	Negative	
454				Floor	Concrete	DAMAGED	0.2	Negative	
455			W	Handrail	Metal	DAMAGED	0.3	Negative	
456			W	Stringer	Metal	DAMAGED	8.6	POSITIVE	
457			W	Tread	Metal	DAMAGED	0.1	Negative	
458			S	Wall	Concrete	DAMAGED	0.2	Negative	
459				Ceiling	Concrete	DAMAGED	0.0	Negative	
460			S	Electrical Panel	Metal	DAMAGED	9.0	POSITIVE	High voltage
461			S	Handrail	Metal	DAMAGED	0.0	Negative	
462			S	Stringer	Metal	DAMAGED	0.2	Negative	Yellow
463			S	Tread	Metal	DAMAGED	0.6	Negative	
464			E	Wall	Concrete	DAMAGED	0.3	Negative	
465			E	Light Fixture	Metal	DAMAGED	0.2	Negative	
466			E	Motor, FF	Metal	DAMAGED	4.3	POSITIVE	Suction
467			E	Motor	Metal	DAMAGED	0.0	Negative	
468			E	Foundation	Concrete	DAMAGED	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
469	Lower Level	Interior Vault Access Room	E	Electrical Panel	Metal	Intact	0.0	Negative	Black
470			E	Pipe	Metal	DAMAGED	0.2	Negative	
471				Column	Metal	DAMAGED	0.0	Negative	Center of room
472				Electrical Panel	Metal	DAMAGED	0.5	Negative	Black-switching
473				Tank	Cloth Wrap	DAMAGED	0.0	Negative	# 2 heater
474				Tank	Cloth Wrap	DAMAGED	0.0	Negative	
475				Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
476				Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
477				Pipe	Metal	DAMAGED	0.1	Negative	
478		Interior Vault 8	N	Electrical Panel	Metal	Intact	0.3	Negative	
479			N	Electrical Panel	Metal	Intact	0.0	Negative	
480			N	Wall	Concrete	Intact	0.1	Negative	
481			N	Pipe	Metal	Intact	0.0	Negative	Conduit
482			N	Pipe	Metal	Intact	0.1	Negative	
483			N	Pipe	Metal	Intact	0.0	Negative	
484			N	Column	Metal	Intact	0.5	Negative	
485			E	Wall	Concrete	Intact	0.3	Negative	
486			S E	Door	Metal	Intact	4.5	POSITIVE	
487			S	Door Frame	Metal	Intact	0.4	Negative	
488			S	Wall	Concrete	Intact	0.3	Negative	
489			S	Column	Metal	Intact	0.3	Negative	
490			W	Wall	Concrete	Intact	0.3	Negative	
491			W	Railing	Metal	Intact	0.4	Negative	
492		Interior No. 9 Lead Vault	N	Wall	Concrete	Intact	0.3	Negative	
493			S	Wall	Concrete	Intact	0.0	Negative	
494			E	Wall	Concrete	Intact	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
495	Lower Level	Interior No. 9 Lead Vault	W	Wall	Concrete	Intact	0.5	Negative	
496				Ceiling	Concrete	Intact	0.5	Negative	
497			N	Electrical Panel	Metal	Intact	0.1	Negative	
498			S	Door	Metal	DAMAGED	0.0	Negative	
499			E	Electrical Panel	Metal	Intact	0.2	Negative	
500			E	Handrail	Metal	DAMAGED	0.3	Negative	
501			E	Stringer	Metal	DAMAGED	0.5	Negative	
502			E	Tread	Metal	DAMAGED	4.0	POSITIVE	
503			E	Door	Metal	DAMAGED	0.2	Negative	
504			E	Door Frame	Metal	DAMAGED	0.0	Negative	
505		Interior 2400 Volt Switchgear Room	N	Wall	Concrete	Intact	0.4	Negative	
506			S	Wall	Concrete	Intact	0.2	Negative	
507			E	Wall	Concrete	Intact	0.0	Negative	
508			W	Wall	Concrete	Intact	0.3	Negative	
509				Electrical Panel	Metal	Intact	0.3	Negative	Center of room
510				Ceiling	Concrete	Intact	0.2	Negative	
511			N	Door	Metal	Intact	0.2	Negative	
512			N	Door Frame	Metal	Intact	0.5	Negative	
513			E	Handrail	Metal	DAMAGED	21.0	POSITIVE	
514			E	Stringer	Metal	DAMAGED	19.0	POSITIVE	
515			E	Tread	Metal	DAMAGED	1.6	POSITIVE	
516			S	Door	Metal	Intact	0.7	Negative	
517			S	Door Frame	Metal	Intact	0.7	Negative	
518			W	Electrical Panel	Metal	Intact	0.3	Negative	
519			E	Motor	Metal	DAMAGED	0.8	Negative	
520			E	Motor	Metal	DAMAGED	0.6	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
521	Lower Level	Interior 480 Volt Switchgear Room	N	Wall	Concrete	DAMAGED	0.2	Negative	
522			S	Wall	Concrete	DAMAGED	0.0	Negative	
523			E	Wall	Concrete	DAMAGED	0.1	Negative	
524			W	Wall	Concrete	DAMAGED	0.2	Negative	
525			N	Door	Metal	DAMAGED	2.1	POSITIVE	
526			N	Door Frame	Metal	DAMAGED	3.7	POSITIVE	
527			N	Electrical Panel	Metal	Intact	0.1	Negative	
528			W	Pipe	Metal	Intact	0.3	Negative	Conduit
529				Ceiling	Concrete	Intact	0.0	Negative	
530			S	Door	Metal	Intact	0.6	Negative	
531			S	Door Frame	Metal	Intact	0.4	Negative	
532			E	Door	Metal	DAMAGED	1.6	POSITIVE	
533			E	Door Frame	Metal	DAMAGED	0.4	Negative	
534				Electrical Panel	Metal	Intact	0.0	Negative	Center of room
535		Interior 480 Volt Trans. Vault	N	Wall	Concrete	Intact	0.3	Negative	
536			S	Wall	Concrete	Intact	0.0	Negative	
537			E	Wall	Concrete	Intact	0.2	Negative	
538			W	Wall	Concrete	Intact	0.3	Negative	
539				Ceiling	Concrete	Intact	0.4	Negative	
540			N	Door	Metal	Intact	0.3	Negative	
541			N	Door Frame	Metal	Intact	0.3	Negative	
542			E	Pipe	Metal	Intact	0.0	Negative	
543		Interior 24 KV Vault	N	Door	Metal	DAMAGED	0.2	Negative	
544			N	Door Frame	Metal	DAMAGED	1.5	POSITIVE	
545			N	Wall	Concrete	Intact	0.3	Negative	
546			N	Pipe	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
547	Lower Level	Interior 24 KV Vault	N	Pipe	Metal	DAMAGED	0.2	Negative	
548				Ceiling	Concrete	DAMAGED	0.3	Negative	
549			E	Wall	Concrete	Intact	0.2	Negative	
550			E	Electrical Panel	Metal	Intact	0.1	Negative	
551			S	Wall	Concrete	Intact	0.0	Negative	
552			S	Electrical Panel	Metal	Intact	0.1	Negative	
553			S	Column	Metal	DAMAGED	0.0	Negative	
554			S	Railing	Metal	Intact	0.3	Negative	
555			W	Wall	Concrete	DAMAGED	0.2	Negative	
556			W	Wall	Concrete	DAMAGED	0.1	Negative	
557			W	Pipe	Metal	DAMAGED	0.2	Negative	Gas to 12 and 13
558		Interior Boiler Foundation Room	N	Wall	Concrete	DAMAGED	0.1	Negative	
559			N	Handrail	Metal	DAMAGED	0.3	Negative	
560			N	Tread	Metal	DAMAGED	0.0	Negative	
561			N	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
562			N	Valve	Metal	DAMAGED	0.2	Negative	
563			N	Railing	Metal	DAMAGED	0.3	Negative	
564			N	Pipe	Metal	DAMAGED	2.1	POSITIVE	overhead behind boiler 6
565			N	Column	Metal	Intact	0.3	Negative	
566			N	Catwalk	Metal	DAMAGED	0.4	Negative	
567			E	Wall	Concrete	Intact	0.3	Negative	
568			E	Pipe	Metal	DAMAGED	0.0	Negative	
569			E	Pipe	Metal	DAMAGED	0.7	Negative	
570			E	Pipe	Metal	DAMAGED	0.7	Negative	
571			S	Wall	Concrete	DAMAGED	0.0	Negative	
572			S	Wall	Concrete	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
573	Lower Level	Interior Boiler Foundation Room	S	Electrical Panel	Metal	DAMAGED	0.1	Negative	
574			S	Door	Metal	DAMAGED	0.5	Negative	
575			S	Door Frame	Metal	DAMAGED	0.4	Negative	
576			S	Pipe	Metal	DAMAGED	0.3	Negative	Gas main
577			S	Tank	Metal	DAMAGED	0.1	Negative	Mixer
578			S	Valve	Metal	DAMAGED	0.3	Negative	
579			S	Electrical Panel	Metal	DAMAGED	0.2	Negative	Black
580			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
581			S	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
582			S	Catwalk	Metal	DAMAGED	0.3	Negative	
583			S	Railing	Metal	DAMAGED	0.5	Negative	
584			S	Handrail	Metal	DAMAGED	0.7	Negative	
585			W	Railing	Metal	DAMAGED	0.3	Negative	
586			W	Handrail	Metal	DAMAGED	0.0	Negative	
587			W	Catwalk	Metal	DAMAGED	0.2	Negative	
588			W	Wall	Concrete	DAMAGED	0.3	Negative	
589			W	Wall	Concrete	DAMAGED	0.2	Negative	
590			W	Electrical Panel	Metal	Intact	0.2	Negative	
591			W	Electrical Panel	Metal	Intact	0.0	Negative	
592			W	Electrical Panel	Metal	Intact	0.1	Negative	
593			W	Wall	Concrete	Intact	0.3	Negative	
594			W1	Door	Metal	DAMAGED	1.3	POSITIVE	High voltage
595			W1	Door Frame	Metal	DAMAGED	0.1	Negative	
596			W	Pipe	Metal	DAMAGED	4.3	POSITIVE	Red primer-horizontal
597			W	Pipe	Metal	DAMAGED	2.7	POSITIVE	Horizontal
598			W	Pipe	Metal	DAMAGED	18.0	POSITIVE	Horizontal

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

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Pasadena

PROJECT NUMBER: *98-199*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
599	Lower Level	Interior Boiler Foundation Room	W	Ceiling	Concrete	Intact	0.2	Negative	
600			W	Pipe	Metal	Intact	0.2	Negative	Vertical
601			W	Pipe	Metal	Intact	0.0	Negative	Vertical
602			W	Pipe	Metal	Intact	0.1	Negative	Vertical
603			W	Handrail	Metal	Intact	6.1	POSITIVE	
604			W	Tread	Metal	Intact	2.3	POSITIVE	
605			W2	Door	Metal	Intact	0.3	Negative	High voltage
606			W2	Door Frame	Metal	Intact	0.2	Negative	
607	Boiler # 14	Interior Lower Level	S	Column	Metal	Intact	0.0	Negative	
608			S	Electrical Panel	Metal	Intact	0.7	Negative	
609			S	Electrical Panel	Metal	Intact	0.8	Negative	
610			S	Beam	Metal	Intact	0.0	Negative	
611			S	Pipe	Metal	DAMAGED	0.3	Negative	
612			S	Wall	Metal	Intact	0.2	Negative	
613			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
614			S	Motor	Metal	DAMAGED	0.2	Negative	
615			S	Foundation	Concrete	DAMAGED	0.0	Negative	
616			S	Electrical Panel	Metal	DAMAGED	0.3	Negative	
617			S	Motor	Metal	DAMAGED	0.3	Negative	
618			S	Motor	Metal	DAMAGED	0.0	Negative	Pump
619				Column	Metal	Intact	0.3	Negative	
620				Beam	Metal	Intact	0.2	Negative	Diagonal
621			W	Column	Metal	Intact	7.3	POSITIVE	
622			W	Tank	Metal	DAMAGED	0.2	Negative	
623			W	Pipe	Metal	DAMAGED	0.0	Negative	
624			W	Pipe	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
625	Boiler # 14	Interior Lower Level	W	Pipe	Metal	DAMAGED	0.1	Negative	
626			W	Pipe	Metal	DAMAGED	0.3	Negative	
627			W	Beam	Metal	DAMAGED	0.2	Negative	Diagonal
628			W	Valve	Cloth Wrap	DAMAGED	0.2	Negative	
629			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
630			W	Railing	Metal	DAMAGED	11.0	POSITIVE	Near ladder
631			W	Ladder	Metal	DAMAGED	12.0	POSITIVE	
632			W	Catwalk	Metal	DAMAGED	7.4	POSITIVE	
633			N	Beam	Metal	Intact	0.2	Negative	
634			N	Pipe	Metal	Intact	0.0	Negative	
635			N	Beam	Metal	Intact	0.1	Negative	
636			N	Pipe	Cloth Wrap	Intact	0.2	Negative	
637			E	Column	Metal	Intact	0.2	Negative	
638			E	Column	Metal	Intact	16.0	POSITIVE	
639			E	Beam	Metal	Intact	0.0	Negative	Diagonal
640			E	Wall	Cloth Wrap	DAMAGED	0.0	Negative	
641			E	Valve	Metal	DAMAGED	0.7	Negative	
642			E	Column	Metal	DAMAGED	9.0	POSITIVE	
643			E	Pipe	Metal	DAMAGED	0.2	Negative	
644		Interior Level 1	N	Valve	Metal	Intact	0.7	Negative	In floor
645			N	Column	Metal	Intact	18.0	POSITIVE	
646			N	Beam	Metal	Intact	12.0	POSITIVE	Silver-diagonal
647			N	Beam	Metal	Intact	16.0	POSITIVE	Silver-Diagonal
648			N	Pipe	Metal	DAMAGED	0.2	Negative	
649			N	Pipe	Metal	DAMAGED	0.0	Negative	
650			N	Pipe	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
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PROJECT NUMBER: *98-199*
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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
651	Boiler # 14	Interior Level 1	N	Pipe	Metal	DAMAGED	0.1	Negative	
652			N	Column	Metal	DAMAGED	19.0	POSITIVE	N E corner
653			E	Wall	Metal	DAMAGED	0.2	Negative	
654			E	Wall	Metal	DAMAGED	0.3	Negative	
655			E	Beam	Metal	Intact	17.0	POSITIVE	Silver-diagonal
656			E	Beam	Metal	Intact	19.0	POSITIVE	Silver-diagonal
657			E	Column	Metal	Intact	9.7	POSITIVE	
658			E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
659			E	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
660			E	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
661			E	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
662			S	Wall	Metal	Intact	0.2	Negative	Black
663			S	Wall	Metal	Intact	6.7	POSITIVE	Silver
664			S	Door	Metal	Intact	0.2	Negative	Silver
665			S	Door	Metal	Intact	0.0	Negative	Silver
666			S	Door	Metal	Intact	0.3	Negative	Silver
667			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
668			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
669			S	Pipe	Metal	Intact	0.5	Negative	
670			S	Pipe	Metal	Intact	0.7	Negative	
671			S	Beam	Metal	Intact	10.0	POSITIVE	Silver-diagonal
672			S	Beam	Metal	Intact	15.0	POSITIVE	Silver-horizontal
673			S	Electrical Panel	Metal	Intact	0.2	Negative	Green
674			S	Electrical Panel	Metal	Intact	0.7	Negative	Black
675			W	Wall	Metal	DAMAGED	0.3	Negative	
676			W	Wall	Metal	DAMAGED	0.2	Negative	

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PROJECT NAME: *Glenarm Power Plant*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
677	Boiler # 14	Interior Level 1	W	Column	Metal	Intact	13.0	POSITIVE	Silver
678			W	Beam	Metal	DAMAGED	6.7	POSITIVE	
679			W	Beam	Metal	DAMAGED	9.2	POSITIVE	
680			W	Pipe	Metal	DAMAGED	0.3	Negative	
681			W	Pipe	Metal	DAMAGED	0.0	Negative	
682			W	Pipe	Metal	DAMAGED	0.2	Negative	
683			W	Pipe	Metal	DAMAGED	0.3	Negative	
684			W	Valve	Metal	Intact	0.3	Negative	
685			W	Column	Metal	Intact	18.0	POSITIVE	
686			W	Pump # 12	Metal	DAMAGED	0.3	Negative	
687			W	Pump # 12	Metal	DAMAGED	0.7	Negative	
688			W	Pump # 12	Metal	DAMAGED	0.5	Negative	
689			W	Pump # 12	Metal	DAMAGED	0.7	Negative	
690			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
691			W	Pump # 11	Metal	DAMAGED	0.3	Negative	
692			W	Pump # 11	Metal	DAMAGED	0.2	Negative	
693			W	Pump # 11	Metal	DAMAGED	0.7	Negative	
694			W	Pump # 11	Metal	DAMAGED	0.5	Negative	
695			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
696		Interior Level 2	W	Wall	Brick	DAMAGED	0.3	Negative	
697			W	Column	Metal	Intact	13.0	POSITIVE	
698			W	Column	Metal	Intact	16.0	POSITIVE	
699			W	Column	Metal	Intact	18.0	POSITIVE	
700			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
701			W	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
702			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
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Pasadena

PROJECT NUMBER: *98-199*
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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
703	Boiler # 14	Interior Level 2	W	Valve	Metal	DAMAGED	0.3	Negative	
704			W	Railing	Metal	DAMAGED	0.7	Negative	
705			W	Catwalk	Metal	DAMAGED	0.3	Negative	
706			W	Handrail	Metal	DAMAGED	0.2	Negative	
707			W	Pipe	Metal	Intact	0.2	Negative	
708			N	Wall	Metal	Intact	7.8	POSITIVE	Large metal plate
709			N	Column	Metal	Intact	16.0	POSITIVE	
710			N	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
711		Interior Level 3	W	Wall	Brick	DAMAGED	0.2	Negative	
712			W	Wall	Brick	DAMAGED	0.4	Negative	
713			W	Door	Metal	DAMAGED	0.5	Negative	
714			W	Door Frame	Metal	DAMAGED	0.3	Negative	
715			W	Column	Metal	Intact	13.0	POSITIVE	
716			W	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
717			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
718			W	Pipe	Cloth Wrap	DAMAGED	-0.1	Negative	
719			W	Tank	Metal	DAMAGED	0.3	Negative	
720			W	Tank	Cloth Wrap	DAMAGED	0.1	Negative	
721			W	Railing	Metal	DAMAGED	0.3	Negative	
722			W	Handrail	Metal	DAMAGED	0.0	Negative	
723			W	Catwalk	Metal	DAMAGED	0.1	Negative	
724			S	Wall	Metal	Intact	6.7	POSITIVE	
725			S	Column	Metal	Intact	14.0	POSITIVE	
726			E	Tank	Metal	DAMAGED	0.3	Negative	
727			E	Tank	Cloth Wrap	DAMAGED	0.3	Negative	
728			E	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
729	Boiler # 14	Interior Level 3	E	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
730			E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
731			E	Catwalk	Metal	DAMAGED	0.3	Negative	
732			E	Railing	Metal	DAMAGED	0.2	Negative	
733			E	Handrail	Metal	DAMAGED	0.3	Negative	
734			E	Door	Metal	DAMAGED	0.4	Negative	
735			E	Door Frame	Metal	DAMAGED	0.3	Negative	
736			E	Vent	Metal	DAMAGED	0.2	Negative	Damper
737			E	Ladder	Metal	DAMAGED	0.3	Negative	
738		Interior Level 4	W	Foundation	Concrete	DAMAGED	0.3	Negative	
739			W	Motor	Metal	Intact	0.0	Negative	
740			W	Foundation	Concrete	DAMAGED	0.2	Negative	
741			W	Motor	Metal	DAMAGED	0.2	Negative	
742			W	Vent	Metal	DAMAGED	0.3	Negative	
743			W	Vent	Metal	DAMAGED	0.1	Negative	
744			W	Vent	Metal	DAMAGED	0.2	Negative	
745			W	Vent	Metal	DAMAGED	0.1	Negative	
746			E	Foundation	Concrete	DAMAGED	0.2	Negative	
747			E	Motor	Metal	DAMAGED	0.3	Negative	
748			E	Vent	Metal	DAMAGED	0.1	Negative	
749			E	Vent	Metal	DAMAGED	0.3	Negative	
750			E	Vent	Metal	DAMAGED	0.5	Negative	
751			E	Vent	Metal	DAMAGED	0.2	Negative	
752			E	Handrail	Metal	DAMAGED	0.2	Negative	
753			E	Railing	Metal	DAMAGED	0.3	Negative	
754			E	Catwalk	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

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Pasadena

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
755	Boiler # 14	Interior Level 4	E	Electrical Panel	Metal	DAMAGED	0.3	Negative	
756	Boiler # 15	Interior Lower Level	S	Vent	Metal	DAMAGED	0.3	Negative	
757			S	Column	Metal	DAMAGED	0.3	Negative	
758			S	Beam	Metal	DAMAGED	0.6	Negative	
759			S	Pipe	Metal	DAMAGED	0.2	Negative	
760			S	Pipe	Metal	DAMAGED	0.5	Negative	
761			S	Column	Metal	DAMAGED	0.2	Negative	
762			W	Wall	Metal	Intact	0.1	Negative	
763			W	Beam	Metal	Intact	0.2	Negative	Diagonal
764			W	Vent	Metal	DAMAGED	0.3	Negative	
765			W	Column	Metal	Intact	0.1	Negative	
766			W	Column	Metal	Intact	12.0	POSITIVE	
767			W	Column	Metal	Intact	15.0	POSITIVE	
768			W	Column	Metal	Intact	0.3	Negative	
769			W	Wall	Wood	Intact	0.2	Negative	
770			W	Pipe	Metal	DAMAGED	0.3	Negative	
771			W	Valve	Metal	DAMAGED	0.2	Negative	
772			N	Beam	Metal	DAMAGED	1.2	POSITIVE	Diagonal
773			N	Column	Metal	Intact	0.2	Negative	
774			N	Electrical Panel	Metal	Intact	0.2	Negative	
775			N	Beam	Metal	Intact	0.0	Negative	Horizontal
776			N	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
777			N	Wall	Metal	DAMAGED	0.2	Negative	
778			N	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
779			N	Motor	Metal	Intact	0.8	Negative	
780			N	Foundation	Concrete	Intact	0.3	Negative	

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FIELD DATA REPORT

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Pasadena

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
781	Boiler # 15	Interior Lower Level	N	Electrical Panel	Metal	Intact	0.7	Negative	
782			N	Electrical Panel	Metal	Intact	0.6	Negative	
783			N	Column	Metal	Intact	6.7	POSITIVE	
784			N	Beam	Metal	Intact	0.3	Negative	
785			N	Pipe	Metal	DAMAGED	0.2	Negative	
786			N	Column	Metal	Intact	11.0	POSITIVE	
787			N	Column	Metal	Intact	0.2	Negative	
788		Interior Level 1	N	Electrical Panel	Metal	DAMAGED	0.3	Negative	Green
789			N	Electrical Panel	Metal	Intact	0.5	Negative	Black
790			N	Column	Metal	Intact	0.2	Negative	Beige
791			N	Column	Metal	Intact	0.3	Negative	White
792			N	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
793			N	Valve	Metal	Intact	0.3	Negative	Red
794			N	Wall	Metal	DAMAGED	0.3	Negative	Black
795			N	Wall	Metal	Intact	15.0	POSITIVE	Silver
796			N	Beam	Metal	Intact	12.0	POSITIVE	Silver-horizontal
797			N	Beam	Metal	Intact	7.3	POSITIVE	Silver-diagonal
798			N	Valve	Metal	Intact	0.0	Negative	Green
799			N	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
800			N	Column	Metal	Intact	14.0	POSITIVE	Silver
801			N	Door	Metal	Intact	0.0	Negative	Silver
802			N	Door	Metal	Intact	0.0	Negative	Silver
803			N	Door	Metal	Intact	0.1	Negative	Silver
804			E	Wall	Metal	DAMAGED	0.2	Negative	
805			E	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
806			E	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
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Pasadena

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
807	Boiler # 15	Interior Level 1	E	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
808			E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
809			E	Beam	Metal	Intact	12.0	POSITIVE	Silver-diagonal
810			E	Beam	Metal	Intact	9.1	POSITIVE	Silver-diagonal
811			E	Column	Metal	Intact	20.0	POSITIVE	Silver-S.E. corner
812			E	Wall	Metal	DAMAGED	0.2	Negative	
813			S	Wall	Metal	DAMAGED	0.3	Negative	
814			S	Wall	Metal	DAMAGED	0.1	Negative	
815			S	Beam	Metal	Intact	16.0	POSITIVE	Silver-diagonal
816			S	Beam	Metal	Intact	12.0	POSITIVE	Silver-diagonal
817			S	Pipe	Metal	DAMAGED	0.2	Negative	
818			S	Pipe	Metal	DAMAGED	0.0	Negative	
819			S	Pipe	Metal	DAMAGED	0.3	Negative	
820			S	Pipe	Metal	DAMAGED	0.1	Negative	
821			S	Pipe	Metal	DAMAGED	0.2	Negative	
822			S	Column	Metal	Intact	8.0	POSITIVE	Silver-S.W. corner
823			W	Wall	Metal	DAMAGED	0.3	Negative	
824			W	Wall	Metal	DAMAGED	0.2	Negative	
825			W	Beam	Metal	DAMAGED	18.0	POSITIVE	Beige-diagonal
826			W	Beam	Metal	DAMAGED	15.0	POSITIVE	Beige-diagonal
827			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
828			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
829			W	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
830			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
831			W	Column	Metal	Intact	14.0	POSITIVE	Silver-N.W. corner
832			W	Stringer	Metal	DAMAGED	0.3	Negative	To upper levels

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*

Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
833	Boiler # 15	Interior Level 1	W	Handrail	Metal	DAMAGED	0.0	Negative	
834			W	Column	Metal	DAMAGED	0.2	Negative	
835			W	Railing	Metal	DAMAGED	0.5	Negative	To lower levels
836			W	Stringer	Metal	DAMAGED	0.6	Negative	
837			W	Handrail	Metal	DAMAGED	0.5	Negative	
838			W	Tread	Metal	DAMAGED	0.5	Negative	
839		Interior Level 2	W	Wall	Brick	DAMAGED	0.2	Negative	
840			W	Wall	Brick	DAMAGED	0.1	Negative	
841			W	Column	Metal	DAMAGED	18.0	POSITIVE	Silver
842			W	Column	Metal	DAMAGED	20.0	POSITIVE	
843			W	Column	Metal	DAMAGED	22.0	POSITIVE	
844			W	Pipe	Metal	DAMAGED	-0.1	Negative	
845			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
846			W	Pipe	Cloth Wrap	DAMAGED	-0.3	Negative	
847			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
848			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
849			W	Valve	Metal	DAMAGED	0.2	Negative	
850			W	Catwalk	Metal	DAMAGED	0.3	Negative	
851			W	Handrail	Metal	DAMAGED	0.2	Negative	
852			W	Railing	Metal	DAMAGED	0.5	Negative	
853			W	Column	Metal	DAMAGED	12.0	POSITIVE	S.W. corner
854			S	Wall	Metal	Intact	7.8	POSITIVE	Large metal plates
855			S	Wall	Metal	Intact	9.3	POSITIVE	
856		Interior Level 3	W	Wall	Brick	DAMAGED	0.2	Negative	
857			W	Wall	Brick	DAMAGED	0.1	Negative	
858			W	Column	Metal	Intact	7.0	POSITIVE	Silver

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
859	Boiler # 15	Interior Level 3	W	Pipe	Metal	Intact	0.2	Negative	
860			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
861			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
862			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
863			W	Door	Metal	Intact	0.3	Negative	
864			W	Catwalk	Metal	DAMAGED	0.3	Negative	
865			W	Railing	Metal	DAMAGED	0.2	Negative	
866			E	Column	Metal	Intact	18.0	POSITIVE	Silver
867			E	Pipe	Metal	Intact	0.3	Negative	
868			E	Wall	Brick	DAMAGED	0.2	Negative	
869			E	Door	Metal	DAMAGED	0.3	Negative	
870			E	Door Frame	Metal	DAMAGED	0.2	Negative	
871			E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
872			E	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
873			E	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
874			E	Column	Metal	Intact	18.0	POSITIVE	
875			E	Column	Metal	Intact	16.0	POSITIVE	
876			E	Ladder	Metal	DAMAGED	0.2	Negative	
877			E	Door	Metal	Intact	0.2	Negative	
878			E	Door Frame	Metal	Intact	0.1	Negative	
879			E	Tank	Metal	DAMAGED	0.3	Negative	
880			E	Tank	Cloth Wrap	DAMAGED	0.2	Negative	
881			E	Catwalk	Metal	DAMAGED	0.5	Negative	
882			E	Railing	Metal	DAMAGED	0.2	Negative	
883			E	Vent	Metal	DAMAGED	0.3	Negative	Damper
884			E	Beam	Metal	Intact	12.0	POSITIVE	Top of boiler

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
885	Boiler # 15	Interior Level 3	N	Wall	Metal	Intact	16.0	POSITIVE	Large metal plates
886			N	Wall	Metal	Intact	18.0	POSITIVE	
887			N	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
888			N	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
889			N	Pipe	Metal	Intact	0.3	Negative	
890			N	Pipe	Metal	Intact	0.1	Negative	
891			N	Beam	Metal	Intact	12.0	POSITIVE	
892		Interior Level 4	W	Column	Metal	Intact	0.1	Negative	
893			W	Column	Metal	Intact	0.0	Negative	
894			W	Motor	Metal	DAMAGED	0.3	Negative	Blower-green
895			W	Motor	Metal	DAMAGED	0.2	Negative	
896			W	Vent	Metal	DAMAGED	0.3	Negative	Top of boilers
897			W	Vent	Metal	DAMAGED	0.2	Negative	
898			W	Vent	Metal	DAMAGED	0.3	Negative	
899			W	Vent	Metal	DAMAGED	0.4	Negative	
900			W	Vent	Metal	DAMAGED	0.2	Negative	
901			W	Catwalk	Metal	DAMAGED	0.3	Negative	
902			W	Railing	Metal	DAMAGED	0.3	Negative	
903			W	Foundation	Concrete	Intact	0.0	Negative	Motor
904			E	Electrical Panel	Metal	Intact	0.1	Negative	Black
905			E	Vent	Metal	DAMAGED	0.2	Negative	
906			E	Vent	Metal	DAMAGED	0.0	Negative	
907			E	Vent	Metal	DAMAGED	0.3	Negative	
908			E	Vent	Metal	DAMAGED	0.1	Negative	
909			E	Motor	Metal	DAMAGED	0.3	Negative	
910			E	Motor	Metal	DAMAGED	0.0	Negative	

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Pasadena

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
911	Boiler # 15	Interior Level 4	E	Foundation	Concrete	DAMAGED	0.2	Negative	For motor
912	Boiler # 16	Interior Lower Level	W	Column	Metal	Intact	0.2	Negative	
913			W	Beam	Metal	Intact	0.3	Negative	Diagonal
914			W	Tank	Cloth Wrap	DAMAGED	0.3	Negative	Burner
915			W	Wall	Brick	DAMAGED	0.3	Negative	
916			W	Valve	Metal	DAMAGED	0.1	Negative	
917			W	Column	Metal	Intact	0.1	Negative	
918			W	Door	Metal	DAMAGED	0.3	Negative	Silver
919			W	Door	Metal	DAMAGED	0.1	Negative	Silver
920			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
921			N	Wall	Brick	DAMAGED	0.2	Negative	
922			N	Column	Metal	Intact	0.5	Negative	
923			N	Column	Metal	Intact	0.3	Negative	
924			N	Column	Metal	Intact	0.2	Negative	
925			N	Door	Metal	Intact	0.3	Negative	
926			N	Column	Metal	Intact	0.1	Negative	
927	Boiler 16		N	Pipe	Metal	DAMAGED	0.3	Negative	
928	Boiler # 16		N	Pipe	Metal	DAMAGED	0.2	Negative	
929			N	Beam	Metal	Intact	0.1	Negative	
930			N	Door	Metal	DAMAGED	0.1	Negative	
931			N	Beam	Metal	DAMAGED	0.6	Negative	Diagonal
932			N	Valve	Metal	Intact	0.3	Negative	
933			E	Wall	Brick	DAMAGED	0.2	Negative	
934			E	Door	Metal	Intact	0.3	Negative	
935			E	Beam	Metal	Intact	0.5	Negative	Horizontal
936			E	Beam	Metal	Intact	0.4	Negative	Diagonal

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
937	Boiler # 16	Interior Lower Level	E	Motor	Metal	Intact	0.8	Negative	
938			E	Motor	Metal	Intact	0.7	Negative	
939			E	Valve	Metal	DAMAGED	0.3	Negative	
940			E	Pipe	Metal	Intact	0.5	Negative	
941			E	Electrical Panel	Metal	Intact	0.2	Negative	
942			E	Column	Metal	Intact	0.3	Negative	
943			E	Pipe	Cloth Wrap	DAMAGED	0.4	Negative	
944			E	Tank	Cloth Wrap	DAMAGED	0.2	Negative	Burner
945			E	Valve	Metal	Intact	0.3	Negative	Black
946			S	Heater	Metal	DAMAGED	0.3	Negative	
947			S	Heater	Metal	DAMAGED	0.0	Negative	
948			S	Heater	Metal	DAMAGED	0.3	Negative	
949			S	Heater	Metal	DAMAGED	0.4	Negative	
950			S	Valve	Metal	DAMAGED	0.8	Negative	
951			S	Column	Metal	DAMAGED	0.5	Negative	
952			S	Beam	Metal	DAMAGED	0.3	Negative	
953			S	Column	Metal	DAMAGED	0.3	Negative	
954			S	Motor	Metal	DAMAGED	0.5	Negative	
955			S	Motor	Metal	DAMAGED	0.6	Negative	Pump
956			S	Tank	Cloth Wrap	DAMAGED	0.3	Negative	Low pressure receiver
957			S	Railing	Metal	DAMAGED	1.3	POSITIVE	
958			S	Catwalk	Metal	DAMAGED	3.0	POSITIVE	
959			S	Light Fixture	Metal	DAMAGED	-0.4	Negative	
960			S	Light Fixture	Metal	Intact	-0.2	Negative	
961		Interior Level 1	E	Column	Metal	DAMAGED	0.2	Negative	
962			E	Wall	Cloth Wrap	Intact	0.2	Negative	

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PROJECT NAME: *Glenarm Power Plant*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
963	Boiler # 16	Interior Level 1	E	Wall	Cloth Wrap	Intact	0.0	Negative	
964			E	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
965			E	Beam	Metal	DAMAGED	0.3	Negative	
966			E	Beam	Metal	DAMAGED	0.2	Negative	
967			E	Door	Metal	DAMAGED	0.2	Negative	
968			E	Door Frame	Metal	DAMAGED	0.3	Negative	
969			E	Electrical Panel	Metal	DAMAGED	0.2	Negative	
970			E	Pipe	Metal	Intact	0.3	Negative	
971			E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
972			E	Column	Metal	Intact	0.4	Negative	
973			S	Electrical Panel	Metal	Intact	0.2	Negative	Green
974			S	Electrical Panel	Metal	Intact	0.6	Negative	Black
975			S	Wall	Metal	Intact	0.3	Negative	
976			S	Wall	Metal	Intact	0.0	Negative	
977			S	Door	Metal	Intact	0.2	Negative	
978			S	Door	Metal	Intact	0.3	Negative	
979			S	Pipe	Metal	DAMAGED	0.5	Negative	
980			S	Pipe	Metal	DAMAGED	0.6	Negative	
981			S	Column	Metal	DAMAGED	0.2	Negative	
982			S	Column	Metal	DAMAGED	0.2	Negative	
983			S	Beam	Metal	Intact	0.2	Negative	
984			W	Beam	Metal	DAMAGED	0.3	Negative	Diagonal
985			W	Beam	Metal	DAMAGED	0.2	Negative	Diagonal
986			W	Wall	Cloth Wrap	DAMAGED	0.5	Negative	
987			W	Wall	Cloth Wrap	DAMAGED	0.3	Negative	
988			W	Column	Metal	DAMAGED	0.7	Negative	

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PROJECT NAME: *Glenarm Power Plant*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
989	Boiler # 16	Interior Level 1	W	Column	Metal	DAMAGED	0.2	Negative	
990			W	Pipe	Metal	DAMAGED	0.3	Negative	
991			W	Pipe	Metal	DAMAGED	0.2	Negative	
992			W	Pipe	Cloth Wrap	DAMAGED	0.5	Negative	
993			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
994			W	Column	Metal	Intact	0.2	Negative	
995			W	Stringer	Metal	DAMAGED	0.3	Negative	
996			W	Railing	Metal	DAMAGED	7.2	POSITIVE	10 lower level
997			W	Handrail	Metal	DAMAGED	1.9	POSITIVE	Orange paint
998			W	Tread	Metal	DAMAGED	0.5	Negative	
999			N	Column	Metal	Intact	0.3	Negative	
1000			N	Column	Metal	Intact	0.3	Negative	
1001			N	Column	Metal	Intact	0.4	Negative	
1002			N	Column	Metal	Intact	0.1	Negative	
1003			N	Wall	Cloth Wrap	DAMAGED	0.3	Negative	
1004			N	Wall	Cloth Wrap	Intact	0.5	Negative	
1005			N	Wall	Cloth Wrap	Intact	0.1	Negative	
1006			N	Column	Metal	Intact	0.2	Negative	
1007		Interior Level 1.5	E	Tank	Cloth Wrap	DAMAGED	0.3	Negative	Burner
1008			E	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1009			E	Beam	Metal	DAMAGED	0.3	Negative	
1010			E	Column	Metal	Intact	0.1	Negative	
1011			E	Ladder	Metal	DAMAGED	4.60	POSITIVE	
1012			E	Column	Metal	Intact	0.2	Negative	
1013			E	Pipe	Metal	Intact	0.2	Negative	
1014			E	Pipe	Metal	Intact	0.1	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1015	Boiler # 16	Interior Level 1.5	E	Ladder	Metal	DAMAGED	12.0	POSITIVE	
1016			E	Handrail	Metal	DAMAGED	6.7	POSITIVE	
1017			E	Railing	Metal	DAMAGED	3.2	POSITIVE	
1018			E	Catwalk	Metal	DAMAGED	4.1	POSITIVE	
1019			W	Tank	Cloth Wrap	DAMAGED	0.2	Negative	
1020			W	Tank	Metal	DAMAGED	0.3	Negative	
1021			W	Ladder	Metal	Intact	1.0	POSITIVE	
1022			W	Wall	Cloth Wrap	DAMAGED	0.1	Negative	
1023			W	Beam	Metal	Intact	0.0	Negative	Diagonal
1024			W	Catwalk	Metal	DAMAGED	16.0	POSITIVE	
1025			W	Handrail	Metal	DAMAGED	8.7	POSITIVE	
1026			W	Railing	Metal	DAMAGED	6.3	POSITIVE	
1027			W	Pipe	Metal	Intact	0.3	Negative	
1028			W	Pipe	Metal	DAMAGED	0.2	Negative	
1029			W	Pipe	Metal	DAMAGED	0.0	Negative	
1030		Interior Level 2	E	Column	Metal	Intact	0.2	Negative	
1031			E	Column	Metal	Intact	0.6	Negative	
1032			E	Wall	Metal	DAMAGED	0.1	Negative	
1033			E	Handrail	Metal	DAMAGED	6.1	POSITIVE	
1034			E	Railing	Metal	DAMAGED	14.7	POSITIVE	
1035			E	Catwalk	Metal	DAMAGED	2.1	POSITIVE	
1036			E	Beam	Metal	DAMAGED	0.3	Negative	Diagonal
1037			A	Wall	Cloth Wrap	DAMAGED	0.1	Negative	
1038			A	Wall	Cloth Wrap	DAMAGED	0.0	Negative	
1039			A	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1040			A	Column	Metal	DAMAGED	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1041	Boiler # 16	Interior Level 2	W	Column	Metal	Intact	0.2	Negative	
1042			W	Beam	Metal	DAMAGED	0.3	Negative	Diagonal
1043			W	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1044			W	Wall	Cloth Wrap	DAMAGED	0.0	Negative	
1045			W	Beam	Metal	Intact	0.1	Negative	Horizontal
1046			W	Railing	Metal	Intact	6.7	POSITIVE	
1047			W	Catwalk	Metal	Intact	12.0	POSITIVE	
1048			W	Pipe	Metal	DAMAGED	0.1	Negative	
1049			W	Pipe	Metal	DAMAGED	0.0	Negative	
1050			W	Pipe	Metal	DAMAGED	0.3	Negative	
1051		Interior Level 3	E	Column	Metal	Intact	0.2	Negative	
1052			E	Beam	Metal	Intact	0.1	Negative	Diagonal
1053			E	Column	Metal	DAMAGED	0.3	Negative	
1054			E	Pipe	Cloth Wrap	Intact	0.1	Negative	
1055			E	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
1056			E	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1057			E	Catwalk	Metal	DAMAGED	6.7	POSITIVE	
1058			E	Railing	Metal	DAMAGED	3.3	POSITIVE	
1059			E	Handrail	Metal	DAMAGED	0.3	POSITIVE	
1060			E	Valve	Metal	DAMAGED	-0.3	Negative	
1061			E	Tank	Metal	DAMAGED	6.2	POSITIVE	
1062			E	Beam	Metal	DAMAGED	0.3	Negative	
1063			E	Column	Metal	DAMAGED	0.3	Negative	
1064			E	Beam	Metal	DAMAGED	0.1	Negative	
1065			W	Tank	Metal	DAMAGED	4.3	POSITIVE	Burner
1066			W	Handrail	Metal	DAMAGED	5.3	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1067	Boiler # 16	Interior - Level 3	W	Railing	Metal	DAMAGED	3.5	POSITIVE	
1068			W	Catwalk	Metal	DAMAGED	0.5	POSITIVE	
1069			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1070			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1071			W	Wall	Cloth Wrap	DAMAGED	0.3	Negative	
1072			W	Pipe	Metal	DAMAGED	0.2	Negative	
1073			W	Pipe	Metal	DAMAGED	0.0	Negative	
1074			W	Beam	Metal	DAMAGED	0.1	Negative	
1075			W	Column	Metal	DAMAGED	0.3	Negative	
1076			W	Column	Metal	DAMAGED	0.0	Negative	
1077	Boiler 16		W	Column	Metal	DAMAGED	0.2	Negative	
1078	Boiler # 16	Interior - Level 4	W	Vent	Metal	DAMAGED	3.3	POSITIVE	Blower-grey primer
1079			W	Vent	Metal	DAMAGED	3.8	POSITIVE	Blower-grey primer
1080			W	Motor	Metal	DAMAGED	0.0	Negative	
1081			W	Foundation	Concrete	DAMAGED	0.1	Negative	
1082			W	Column	Metal	Intact	0.2	Negative	
1083			W	Tank	Metal	DAMAGED	0.1	Negative	
1084			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1085			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1086			W	Ladder	Metal	Intact	0.3	Negative	
1087			W	Vent	Metal	DAMAGED	3.7	POSITIVE	Grey primer
1088			W	Vent	Cloth Wrap	Intact	0.4	Negative	
1089			W	Motor	Metal	DAMAGED	0.3	Negative	
1090			E	Vent	Metal	DAMAGED	3.5	POSITIVE	Grey primer
1091			E	Vent	Metal	DAMAGED	4.7	POSITIVE	Grey primer
1092			E	Column	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1093	Boiler # 16	Interior Level 4	E	Motor	Metal	DAMAGED	0.2	Negative	
1094			E	Foundation	Concrete	DAMAGED	0.1	Negative	
1095			E	Tank	Metal	DAMAGED	0.3	Negative	
1096			E	Pipe	Metal	Intact	0.3	Negative	
1097			E	Pipe	Metal	Intact	0.2	Negative	
1098			E	Ladder	Metal	DAMAGED	0.2	Negative	
1099			E	Railing	Metal	DAMAGED	1.3	POSITIVE	
1100			E	Catwalk	Metal	DAMAGED	3.2	POSITIVE	
1101	Boiler 17	Interior Lower Level	N	Column	Metal	Intact	0.0	Negative	
1102			N	Pipe	Metal	Intact	0.1	Negative	
1103			N	Pipe	Metal	Intact	-0.2	Negative	
1104			N	Beam	Metal	Intact	0.0	Negative	
1105			N	Beam	Metal	Intact	0.3	Negative	
1106			N	Catwalk	Metal	Intact	3.1	POSITIVE	
1107			N	Railing	Metal	Intact	1.7	POSITIVE	
1108			N	Motor	Metal	DAMAGED	0.7	Negative	Pump
1109			N	Motor	Metal	DAMAGED	0.5	Negative	
1110			N	Valve	Metal	DAMAGED	0.3	Negative	
1111			N	Heater	Metal	DAMAGED	0.6	Negative	
1112			N	Heater	Metal	DAMAGED	0.1	Negative	
1113			N	Heater	Metal	DAMAGED	0.3	Negative	
1114			N	Heater	Metal	DAMAGED	0.5	Negative	
1115			N	Tank	Cloth Wrap	Intact	0.1	Negative	Burner
1116			N	Beam	Metal	Intact	0.1	Negative	Overhead
1117			N	Column	Metal	Intact	0.2	Negative	
1118			E	Column	Metal	Intact	0.0	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1119	Boiler 17	Interior Lower Level	E	Beam	Metal	Intact	0.3	Negative	Diagonal
1120			E	Beam	Metal	Intact	0.1	Negative	Horizontal
1121			E	Tank	Cloth Wrap	DAMAGED	0.3	Negative	Burner
1122			E	Pipe	Metal	DAMAGED	0.1	Negative	
1123			E	Pipe	Metal	DAMAGED	0.3	Negative	
1124			E	Pipe	Metal	Intact	0.1	Negative	
1125			E	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1126			E	Wall	Brick	Intact	0.1	Negative	
1127			S	Column	Metal	Intact	0.3	Negative	
1128			S	Column	Metal	Intact	0.4	Negative	
1129			S	Wall	Brick	Intact	0.2	Negative	
1130			S	Wall	Brick	Intact	0.0	Negative	
1131			S	Beam	Metal	Intact	0.3	Negative	Horizontal
1132			S	Door	Metal	Intact	0.1	Negative	
1133			W	Column	Metal	DAMAGED	0.0	Negative	
1134			W	Wall	Metal	DAMAGED	0.3	Negative	
1135			W	Door	Metal	DAMAGED	0.2	Negative	
1136			W	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1137			W	Column	Metal	DAMAGED	0.1	Negative	
1138			W	Column	Metal	DAMAGED	0.3	Negative	
1139			W	Pipe	Metal	DAMAGED	0.2	Negative	
1140			W	Pipe	Metal	DAMAGED	0.0	Negative	
1141			W	Light Fixture	Metal	DAMAGED	0.3	Negative	
1142			W	Beam	Metal	Intact	0.0	Negative	
1143		Interior Level 1	N	Wall	Metal	Intact	0.2	Negative	
1144			N	Pipe	Metal	Intact	0.0	Negative	

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PROJECT NAME: *Glenarm Power Plant*

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PROJECT NUMBER: *98-199*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1145	Boiler 17	Interior Level 1	N	Pipe	Metal	Intact	0.3	Negative	
1146			N	Pipe	Metal	Intact	0.1	Negative	
1147			N	Door	Metal	Intact	0.3	Negative	
1148			N	Door	Metal	Intact	0.3	Negative	
1149			N	Column	Metal	Intact	0.2	Negative	
1150			N	Column	Metal	Intact	0.0	Negative	
1151			N	Column	Metal	Intact	0.3	Negative	
1152			N	Column	Metal	Intact	0.3	Negative	
1153			N	Beam	Metal	Intact	1.7	POSITIVE	
1154			N	Electrical Panel	Metal	Intact	0.2	Negative	Green
1155			N	Electrical Panel	Metal	Intact	0.1	Negative	Black
1156			E	Wall	Metal	Intact	0.2	Negative	
1157			E	Wall	Cloth Wrap	Intact	0.0	Negative	
1158			E	Wall	Cloth Wrap	Intact	0.3	Negative	
1159			E	Wall	Metal	Intact	0.1	Negative	
1160			E	Pipe	Cloth Wrap	Intact	0.2	Negative	
1161			E	Pipe	Cloth Wrap	Intact	0.0	Negative	
1162			E	Pipe	Cloth Wrap	Intact	0.3	Negative	
1163			E	Column	Metal	Intact	0.2	Negative	
1164			E	Column	Metal	Intact	0.0	Negative	
1165			E	Column	Metal	Intact	0.3	Negative	
1166			E	Beam	Metal	Intact	0.1	Negative	
1167			E	Beam	Metal	Intact	0.2	Negative	
1168			E	Beam	Metal	Intact	0.1	Negative	
1169			E	Beam	Metal	Intact	0.3	Negative	
1170			E	Door	Metal	DAMAGED	0.5	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1171	Boiler 17	Interior Level 1	E	Door Frame	Metal	DAMAGED	0.7	Negative	
1172			E	Electrical Panel	Metal	Intact	0.2	Negative	
1173			S	Wall	Cloth Wrap	Intact	0.3	Negative	
1174			S	Wall	Cloth Wrap	Intact	0.0	Negative	
1175			S	Wall	Cloth Wrap	Intact	0.2	Negative	
1176			S	Column	Metal	Intact	0.2	Negative	Silver
1177			S	Column	Metal	Intact	0.0	Negative	Silver
1178			S	Column	Metal	Intact	0.0	Negative	Silver
1179			S	Column	Metal	Intact	0.1	Negative	Silver
1180			S	Column	Metal	Intact	0.3	Negative	Yellow
1181			S	Column	Metal	Intact	0.2	Negative	Yellow
1182			W	Wall	Cloth Wrap	Intact	0.3	Negative	
1183			W	Wall	Cloth Wrap	Intact	0.0	Negative	
1184			W	Wall	Cloth Wrap	Intact	0.1	Negative	
1185			W	Beam	Metal	Intact	0.2	Negative	
1186			W	Beam	Metal	Intact	0.0	Negative	
1187			W	Beam	Metal	Intact	0.0	Negative	
1188			W	Beam	Metal	Intact	0.1	Negative	
1189			W	Column	Metal	Intact	0.2	Negative	
1190			W	Column	Metal	Intact	0.0	Negative	
1191			W	Column	Metal	Intact	0.1	Negative	
1192			W	Column	Metal	Intact	0.3	Negative	
1193			W	Pipe	Cloth Wrap	Intact	0.2	Negative	
1194			W	Pipe	Cloth Wrap	Intact	0.0	Negative	
1195			W	Pipe	Cloth Wrap	Intact	0.3	Negative	
1196			W	Pipe	Cloth Wrap	Intact	0.1	Negative	

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FIELD DATA REPORT

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Pasadena

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1197	Boiler 17	Interior Level 1	W	Railing	Metal	Intact	0.2	Negative	
1198		Interior Level 1.5	E	Tank	Cloth Wrap	Intact	0.1	Negative	
1199			E	Tank	Metal	DAMAGED	0.2	Negative	
1200			E	Ladder	Metal	DAMAGED	20.0	POSITIVE	
1201			E	Column	Metal	DAMAGED	0.3	Negative	
1202			E	Column	Metal	DAMAGED	0.0	Negative	
1203			E	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1204			E	Catwalk	Metal	DAMAGED	6.9	POSITIVE	
1205			E	Railing	Metal	DAMAGED	8.3	POSITIVE	
1206			E	Handrail	Metal	DAMAGED	2.7	POSITIVE	
1207			E	Pipe	Metal	DAMAGED	0.0	Negative	
1208			E	Pipe	Metal	DAMAGED	0.3	Negative	
1209			E	Pipe	Metal	DAMAGED	0.1	Negative	
1210			E	Pipe	Metal	DAMAGED	0.2	Negative	
1211			W	Tank	Cloth Wrap	DAMAGED	0.2	Negative	
1212			W	Tank	Metal	DAMAGED	0.3	Negative	
1213			W	Beam	Metal	DAMAGED	0.3	Negative	
1214			W	Column	Metal	DAMAGED	0.1	Negative	
1215			W	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1216			W	Ladder	Metal	DAMAGED	6.1	POSITIVE	
1217			W	Railing	Metal	DAMAGED	2.4	POSITIVE	
1218			W	Catwalk	Metal	DAMAGED	1.1	POSITIVE	
1219		Interior Level 2	E	Wall	Cloth Wrap	Intact	0.1	Negative	
1220			E	Beam	Metal	Intact	0.1	Negative	
1221			E	Catwalk	Metal	DAMAGED	2.0	POSITIVE	
1222			E	Railing	Metal	DAMAGED			

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Pasadena

PROJECT NUMBER: *98-199*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1223A	Boiler 17	Interior Level 2	E	Handrail	Metal	DAMAGED	4.1	POSITIVE	
1224			E	Pipe	Metal	DAMAGED	0.2	Negative	
1225			E	Pipe	Metal	DAMAGED	0.0	Negative	
1226			E	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
1227			W	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1228			W	Column	Metal	DAMAGED	0.3	Negative	
1229			W	Column	Metal	DAMAGED	0.0	Negative	
1230			W	Column	Metal	DAMAGED	0.2	Negative	
1231			W	Beam	Metal	Intact	0.3	Negative	Diagonal
1232			W	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1233			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
1234			W	Pipe	Cloth Wrap	DAMAGED	0.0	Negative	
1235			W	Railing	Metal	DAMAGED	8.6	POSITIVE	
1236			W	Catwalk	Metal	DAMAGED	3.7	POSITIVE	
1237			N	Column	Metal	Intact	0.3	Negative	
1238			N	Beam	Metal	Intact	0.5	Negative	
1239			N	Wall	Cloth Wrap	Intact	0.1	Negative	
1240			N	Railing	Metal	DAMAGED	14.0	POSITIVE	
1241			N	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1242			N	Pipe	Metal	DAMAGED	0.2	Negative	Conduit
1243		Interior Level 3	E	Beam	Metal	DAMAGED	0.3	Negative	
1244			E	Column	Metal	DAMAGED	0.2	Negative	
1245			E	Railing	Metal	DAMAGED	6.3	POSITIVE	
1246			E	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1247			E	Handrail	Metal	DAMAGED	12.0	POSITIVE	
1248			E	Tank	Metal	DAMAGED	14.3	POSITIVE	Burner

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1249	Boiler 17	Interior Level 3	E	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1250			E	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
1251			E	Valve	Metal	DAMAGED	0.3	Negative	
1252			E	Wall	Cloth Wrap	DAMAGED	0.1	Negative	
1253			N	Wall	Cloth Wrap	DAMAGED	0.2	Negative	
1254			N	Pipe	Metal	DAMAGED	0.1	Negative	
1255			W	Vent	Metal	DAMAGED	0.5	Negative	
1256			W	Vent	Metal	DAMAGED	0.7	Negative	
1257			W	Tank	Metal	DAMAGED	3.9	POSITIVE	Burner
1258			W	Railing	Metal	DAMAGED	12.0	POSITIVE	
1259			W	Catwalk	Metal	DAMAGED	10.0	POSITIVE	
1260			W	Valve	Metal	DAMAGED	0.3	Negative	
1261			W	Column	Metal	DAMAGED	0.1	Negative	
1262			W	Column	Metal	DAMAGED	0.3	Negative	
1263			W	Pipe	Metal	DAMAGED	0.3	Negative	
1264			W	Pipe	Metal	DAMAGED	0.1	Negative	
1265			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1266		Interior Level 4	W	Motor	Metal	DAMAGED	0.3	Negative	
1267			W	Foundation	Concrete	DAMAGED	0.0	Negative	
1268			W	Vent	Metal	DAMAGED	4.8	POSITIVE	Damper
1269			W	Tank	Metal	DAMAGED	6.1	POSITIVE	Burner
1270			W	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1271			W	Pipe	Metal	DAMAGED	0.2	Negative	
1272			W	Column	Metal	Intact	0.2	Negative	
1273			S	Vent	Metal	DAMAGED	5.1	POSITIVE	Damper
1274			S	Column	Metal	DAMAGED	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1275	Boiler 17	Interior Level 4	S	Vent	Metal	DAMAGED	4.2	POSITIVE	Damper
1276			E	Motor	Metal	DAMAGED	0.3	Negative	
1277			E	Foundation	Concrete	DAMAGED	0.1	Negative	
1278			E	Column	Metal	DAMAGED	0.2	Negative	
1279			E	Vent	Metal	DAMAGED	4.3	POSITIVE	Damper
1280			E	Tank	Metal	DAMAGED	6.4	POSITIVE	Burner
1281			E	Vent	Metal	DAMAGED	6.2	POSITIVE	Damper
1282			E	Valve	Metal	DAMAGED	0.3	Negative	
1283			E	Ladder	Metal	DAMAGED	0.7	Negative	
1284			E	Motor	Metal	DAMAGED	0.3	Negative	Load center 9-1
1285	Basement Level	Interior Main Room	N	Wall	Concrete	DAMAGED	0.1	Negative	
1286			N	Wall	Concrete	DAMAGED	0.2	Negative	
1287			N	Column	Metal	DAMAGED	0.1	Negative	
1288			N	Beam	Metal	DAMAGED	0.3	Negative	
1289			N	Pipe	Metal	DAMAGED	0.1	Negative	To nerve center
1290			N	Pipe	Metal	DAMAGED	0.3	Negative	From nerve center
1291			N	Ladder	Metal	DAMAGED	0.1	Negative	
1292			N	Tank	Metal	DAMAGED	0.2	Negative	Lube oil 8 and 9
1293			N	Ladder	Metal	DAMAGED	0.3	Negative	
1294			N	Tank	Metal	DAMAGED	0.3	Negative	
1295			E	Column	Concrete	DAMAGED	1.7	POSITIVE	N.E.column
1296			E	Column	Concrete	DAMAGED	0.5	Negative	S.E.column
1297			E	Wall	Concrete	DAMAGED	0.2	Negative	
1298			E	Ladder	Metal	DAMAGED	0.2	Negative	
1299			E	Railing	Metal	DAMAGED	0.3	Negative	
1300			S	Wall	Concrete	DAMAGED	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1301	Basement Level	Interior Main Room	S	Electrical Panel	Metal	DAMAGED	0.1	Negative	
1302			S	Electrical Panel	Metal	DAMAGED	0.4	Negative	
1303			S	Ladder	Metal	DAMAGED	0.5	Negative	
1304			S	Railing	Metal	DAMAGED	0.5	Negative	
1305			S	Column	Metal	DAMAGED	0.6	Negative	
1306				Floor	Metal	DAMAGED	0.1	Negative	Under ladder
1307			W	Motor	Metal	DAMAGED	0.2	Negative	
1308			W	Wall	Concrete	DAMAGED	0.3	Negative	
1309			W	Pipe	Metal	DAMAGED	0.5	Negative	
1310			W	Pipe	Metal	DAMAGED	0.3	Negative	
1311			W	Stringer	Metal	DAMAGED	12.0	POSITIVE	
1312			W	Handrail	Metal	DAMAGED	0.2	Negative	
1313			W	Tread	Metal	DAMAGED	0.1	Negative	
1314			W	Railing	Metal	DAMAGED	0.5	Negative	
1315			W	Beam	Metal	DAMAGED	0.7	Negative	
1316			W	Column	Metal	DAMAGED	0.3	Negative	
1317			W	Column	Concrete	DAMAGED	0.5	Negative	S.W. column
1318			W	Column	Concrete	DAMAGED	0.3	Negative	N.W. column
1319		Interior Turbine Foundation Room	N	Tank	Metal	DAMAGED	0.2	Negative	
1320			N	Wall	Concrete	DAMAGED	0.1	Negative	
1321			N	Pipe	Metal	DAMAGED	0.1	Negative	
1322			N	Pipe	Metal	DAMAGED	0.2	Negative	
1323			N	Valve	Metal	DAMAGED	0.3	Negative	
1324			N	Valve	Metal	DAMAGED	0.1	Negative	Large
1325			N	Column	Metal	DAMAGED	0.3	Negative	
1326			N	Pipe	Metal	DAMAGED	0.2	Negative	# 8 Sump

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1327	Basement Level	Interior Turbine Foundation Room	E	Wall	Concrete	DAMAGED	0.3	Negative	
1328			E	Beam	Metal	DAMAGED	0.9	POSITIVE	Pulley support
1329			E	Pipe	Metal	DAMAGED	0.0	Negative	
1330			E	Electrical Panel	Metal	DAMAGED	0.1	Negative	37 A and B
1331			E	Stringer	Metal	DAMAGED	0.2	Negative	
1332			E	Handrail	Metal	DAMAGED	0.0	Negative	
1333			E	Tread	Metal	DAMAGED	0.3	Negative	
1334			S	Column	Metal	DAMAGED	0.3	Negative	
1335			S	Wall	Concrete	DAMAGED	0.3	Negative	
1336			S	Tank	Metal	DAMAGED	0.1	Negative	# 8 Emergency dump
1337			S	Tank	Metal	DAMAGED	1.0	POSITIVE	# 8 Emergency dump
1338			S	Column	Metal	DAMAGED	0.3	Negative	
1339			S	Pipe	Metal	DAMAGED	1.9	POSITIVE	
1340			S	Pipe	Metal	DAMAGED	2.1	POSITIVE	
1341			S	Valve	Metal	DAMAGED	1.2	POSITIVE	
1342			S	Pipe	Cloth Wrap	DAMAGED	-0.3	Negative	
1343			S	Stringer	Metal	DAMAGED	10.0	POSITIVE	
1344			S	Handrail	Metal	DAMAGED	12.0	POSITIVE	
1345			S	Tread	Metal	DAMAGED	13.0	POSITIVE	Orange primer
1346			S	Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1347			S	Tank	Cloth Wrap	DAMAGED	0.2	Negative	
1348			S	Pipe	Metal	DAMAGED	0.3	Negative	
1349			S	Column	Metal	DAMAGED	0.1	Negative	
1350			S	Pipe	Metal	DAMAGED	0.5	Negative	
1351			S	Valve	Metal	DAMAGED	0.3	Negative	
1352			S	Motor	Metal	DAMAGED	0.3	Negative	

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*
ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*
INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1353	Basement Level	Interior Turbine Foundation Room	S	Motor	Metal	DAMAGED	0.5	Negative	Pump
1354			S	Ladder	Metal	DAMAGED	5.0	POSITIVE	
1355			W	Wall	Metal	DAMAGED	0.3	Negative	
1356			W	Wall	Concrete	DAMAGED	0.2	Negative	
1357			W	Electrical Panel	Metal	DAMAGED	0.3	Negative	
1358			W	Pipe	Metal	DAMAGED	0.2	Negative	
1359			W	Pipe	Metal	DAMAGED	0.1	Negative	
1360			W	Ladder	Metal	DAMAGED	5.0	POSITIVE	
1361			W	Vent	Metal	DAMAGED	0.6	Negative	
1362			W	Motor	Metal	DAMAGED	0.5	Negative	
1363			W	Motor	Metal	DAMAGED	0.3	Negative	
1364			W	Motor	Metal	DAMAGED	0.5	Negative	
1365			W	Motor	Metal	DAMAGED	0.2	Negative	
1366			W	Pipe	Metal	DAMAGED	0.1	Negative	
1367			W	Pipe	Metal	DAMAGED	0.3	Negative	
1368			W	Pipe	Metal	DAMAGED	0.5	Negative	
1369			W	Valve	Metal	DAMAGED	0.5	Negative	
1370			W	Valve	Metal	DAMAGED	0.3	Negative	
1371			W	Valve	Metal	DAMAGED	0.2	Negative	
1372		Interior Turbine 8	N	Wall	Concrete	Intact	0.3	Negative	
1373			N	Wall	Concrete	Intact	0.0	Negative	
1374			N	Light Fixture	Metal	Intact	0.0	Negative	
1375			E	Wall	Concrete	Intact	0.2	Negative	
1376			E	Beam	Metal	Intact	0.1	Negative	
1377			E	Tank	Metal	Intact	0.0	Negative	
1378			E	Wall	Metal	Intact	0.3	Negative	Side of turbine

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Pasadena

PROJECT NUMBER: *98-199*

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1379	Basement Level	Interior Turbine 8	E	Pipe	Metal	Intact	0.3	Negative	
1380			E	Motor	Metal	Intact	1.7	POSITIVE	Pump
1381			E	Motor	Metal	Intact	1.5	POSITIVE	
1382			E	Column	Concrete	DAMAGED	0.2	Negative	
1383			E	Column	Metal	Intact	0.0	Negative	
1384			E	Electrical Panel	Metal	Intact	0.1	Negative	
1385			E	Electrical Panel	Metal	Intact	0.0	Negative	
1386			E	Motor	Metal	DAMAGED	1.3	POSITIVE	
1387			E	Valve	Metal	DAMAGED	3.0	POSITIVE	
1388			E	Pipe	Metal	DAMAGED	0.2	Negative	
1389			S	Wall	Concrete	DAMAGED	0.3	Negative	
1390			S	Motor	Metal	DAMAGED	0.7	Negative	
1391			S	Valve	Metal	DAMAGED	0.3	Negative	
1392			S	Pipe	Metal	DAMAGED	0.5	Negative	
1393			S	Stringer	Metal	DAMAGED	1.1	POSITIVE	To side of turbine
1394			S	Handrail	Metal	DAMAGED	0.6	Negative	
1395			S	Tread	Metal	DAMAGED	0.2	Negative	
1396			S	Electrical Panel	Metal	DAMAGED	0.3	Negative	
1397			S	Electrical Panel	Metal	DAMAGED	0.1	Negative	
1398			S	Pipe	Metal	DAMAGED	0.5	Negative	
1399			S	Pipe	Metal	DAMAGED	0.3	Negative	
1400			S	Valve	Metal	DAMAGED	0.5	Negative	
1401			S	Pipe	Metal	DAMAGED	0.2	Negative	
1402			S	Valve	Metal	DAMAGED	0.5	Negative	
1403			W	Wall	Concrete	DAMAGED	0.3	Negative	
1404			W	Ladder	Metal	DAMAGED	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1405	Basement Level	Interior Turbine 8	W	Pipe	Metal	DAMAGED	0.2	Negative	
1406			W	Pipe	Metal	DAMAGED	0.0	Negative	
1407			W	Pipe	Metal	DAMAGED	0.3	Negative	
1408			W	Floor	Concrete	DAMAGED	0.2	Negative	
1409			W	Floor	Metal	DAMAGED	0.3	Negative	
1410			W	Motor	Metal	DAMAGED	1.9	POSITIVE	Large Grey
1411			W	Motor	Metal	DAMAGED	1.3	POSITIVE	Large Grey
1412			W	Motor	Metal	DAMAGED	1.7	POSITIVE	Large Grey
1413			W	Motor	Metal	DAMAGED	1.5	POSITIVE	Large Grey
1414			W	Foundation	Concrete	DAMAGED	1.3	POSITIVE	
1415			W	Foundation	Metal	DAMAGED	1.7	POSITIVE	
1416			W	Foundation	Concrete	DAMAGED	1.2	POSITIVE	
1417			W	Foundation	Metal	DAMAGED	1.5	POSITIVE	
1418			W	Wall	Metal	DAMAGED	0.8	Negative	Side of turbine
1419			S	Pipe	Metal	DAMAGED	6.1	POSITIVE	Side of motor
1420				Railing	Metal	DAMAGED	12.0	POSITIVE	To sub-basement
1421				Handrail	Metal	DAMAGED	15.0	POSITIVE	To sub-basement
1422				Tread	Metal	DAMAGED	13.0	POSITIVE	To sub-basement
1423			S	Electrical Panel	Metal	DAMAGED	0.3	Negative	
1424		Interior Turbine 9	N	Wall	Concrete	Intact	0.2	Negative	
1425			N	Wall	Concrete	Intact	0.3	Negative	
1426			E	Wall	Concrete	DAMAGED	0.2	Negative	
1427			E	Column	Metal	DAMAGED	0.1	Negative	
1428				Floor	Metal	DAMAGED	0.0	Negative	
1429				Floor	Concrete	DAMAGED	0.3	Negative	
1430			E	Pipe	Metal	DAMAGED	0.2	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1431	Basement Level	Interior Turbine 9	E	Motor	Metal	DAMAGED	0.0	Negative	Small
1432			E	Electrical Panel	Metal	DAMAGED	0.1	Negative	
1433			E	Pipe	Metal	DAMAGED	2.0	POSITIVE	Large-Green
1434			E	Valve	Metal	DAMAGED	2.3	POSITIVE	Large-Green
1435			E	Motor	Metal	DAMAGED	2.2	POSITIVE	Large-Green
1436			E	Motor	Metal	DAMAGED	0.3	Negative	
1437			E	Electrical Panel	Metal	DAMAGED	0.2	Negative	
1438			E	Pipe	Metal	Intact	6.6	POSITIVE	Center of turbine
1439			E	Foundation	Concrete	DAMAGED	2.3	POSITIVE	
1440			E	Foundation	Metal	DAMAGED	2.2	POSITIVE	
1441			E	Foundation	Metal	DAMAGED	1.7	POSITIVE	
1442			E	Foundation	Concrete	DAMAGED	2.9	POSITIVE	
1443			E	Motor	Metal	DAMAGED	2.8	POSITIVE	Large-Green
1444			E	Motor	Metal	DAMAGED	3.1	POSITIVE	Large-Green
1445			E	Pipe	Metal	DAMAGED	0.3	Negative	
1446			E	Pipe	Metal	DAMAGED	0.1	Negative	
1447			E	Column	Metal	DAMAGED	0.1	Negative	
1448			E	Ladder	Metal	DAMAGED	0.2	Negative	
1449			E	Pipe	Metal	DAMAGED	2.7	POSITIVE	Large-Green-overhead
1450			E	Wall	Metal	DAMAGED	0.5	Negative	Side of turbine
1451			S	Wall	Concrete	DAMAGED	0.2	Negative	
1452			S	Pipe	Metal	DAMAGED	0.3	Negative	
1453			W	Wall	Concrete	Intact	0.2	Negative	
1454			W	Motor	Metal	Intact	2.5	POSITIVE	Ingsoll-Rand
1455			W	Pipe	Metal	Intact	4.6	POSITIVE	
1456			W	Wall	Metal	DAMAGED	0.3	Negative	Side of turbine

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1457	Basement Level	Interior Turbine 9	W	Beam	Metal	Intact	6.3	POSITIVE	Above motor
1458			W	Valve	Metal	Intact	2.3	POSITIVE	Under turbine
1459			W	Tank	Metal	Intact	6.3	POSITIVE	Mixer-Under turbine
1460		Interior Cable Sub-Basement Room	N	Wall	Concrete	Intact	0.2	Negative	
1461			N	Pipe	Metal	Intact	0.0	Negative	
1462				Beam	Metal	Intact	16.0	POSITIVE	
1463				Column	Metal	Intact	14.0	POSITIVE	
1464				Column	Metal	Intact	16.0	POSITIVE	
1465				Column	Metal	Intact	20.0	POSITIVE	
1466				Column	Metal	Intact	13.0	POSITIVE	
1467				Column	Metal	Intact	21.0	POSITIVE	
1468				Column	Metal	Intact	18.0	POSITIVE	
1469				Column	Metal	Intact	22.0	POSITIVE	
1470				Column	Metal	Intact	16.0	POSITIVE	
1471				Column	Metal	Intact	14.0	POSITIVE	
1472				Beam	Metal	Intact	22.0	POSITIVE	
1473				Beam	Metal	Intact	19.0	POSITIVE	
1474			E	Wall	Concrete	Intact	0.2	Negative	
1475			E	Wall	Concrete	Intact	0.2	Negative	
1476			E	Stringer	Metal	DAMAGED	9.2	POSITIVE	
1477			E	Handrail	Metal	DAMAGED	[illegible]	[illegible]	
1478			E	Tread	Metal	DAMAGED	[illegible]	[illegible]	
1479			S	Wall	Concrete	Intact	0.3	Negative	
1480			S	Wall	Concrete	Intact	0.2	Negative	
1481			S	Electrical Panel	Metal	Intact	0.2	Negative	Box X
1482			W	Wall	Metal	DAMAGED	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1483	Basement Level	Interior Cable Sub-Basement Room	W	Electrical Panel	Metal	DAMAGED	0.1	Negative	Box L
1484			W	Pipe	Metal	DAMAGED	-0.2	Negative	
1485		Interior Crane Pit Access Room	N	Wall	Concrete	DAMAGED	0.3	Negative	
1486			N	Motor	Metal	DAMAGED	0.1	Negative	N.W. corner
1487			N	Motor	Metal	DAMAGED	0.3	Negative	N.W. corner
1488			N	Motor	Metal	DAMAGED	0.2	Negative	N.W. corner
1489			N	Pipe	Metal	DAMAGED	0.0	Negative	N.W. corner
1490			N	Pipe	Metal	DAMAGED	0.3	Negative	N.W. corner
1491			N	Pipe	Metal	DAMAGED	0.5	Negative	N.W. corner
1492			N	Valve	Metal	DAMAGED	0.1	Negative	N.W. corner
1493			N	Light Fixture	Metal	DAMAGED	0.2	Negative	
1494			N	Stringer	Metal	DAMAGED	0.0	Negative	
1495			N	Tread	Metal	DAMAGED	0.3	Negative	
1496			N	Handrail	Metal	DAMAGED	0.2	Negative	
1497			N	Tank	Cloth Wrap	DAMAGED	0.3	Negative	
1498			N	Tank	Cloth Wrap	DAMAGED	0.0	Negative	
1499			N	Tank	Cloth Wrap	DAMAGED	0.2	Negative	
1500			N	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
1501			N	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1502			N	Pipe	Cloth Wrap	DAMAGED	0.4	Negative	
1503			N	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1504			N	Valve	Metal	DAMAGED	0.2	Negative	
1505			N	Valve	Metal	DAMAGED	0.6	Negative	
1506			N	Valve	Metal	DAMAGED	0.1	Negative	
1507			N	Foundation	Concrete	Intact	0.2	Negative	
1508			N	Foundation	Concrete	DAMAGED	0.0	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1509	Basement Level	Interior Crane Pit Access Room	N	Foundation	Concrete	DAMAGED	0.3	Negative	
1510			E	Wall	Concrete	DAMAGED	0.2	Negative	
1511			E	Pipe	Metal	DAMAGED	0.4	Negative	
1512			E	Pipe	Metal	DAMAGED	0.5	Negative	
1513			E	Tank	Metal	DAMAGED	2.3	POSITIVE	Mixer
1514			E	Motor	Metal	DAMAGED	0.1	Negative	
1515			S	Motor	Metal	DAMAGED	0.3	Negative	
1516			S	Motor	Metal	DAMAGED	0.0	Negative	
1517			S	Motor	Metal	DAMAGED	0.2	Negative	
1518			S	Pipe	Cloth Wrap	DAMAGED	0.3	Negative	
1519			S	Pipe	Cloth Wrap	DAMAGED	0.1	Negative	
1520			S	Pipe	Cloth Wrap	DAMAGED	0.4	Negative	
1521			S	Valve	Metal	DAMAGED	0.5	Negative	
1522			S	Valve	Metal	DAMAGED	0.7	Negative	
1523			S	Valve	Metal	DAMAGED	0.3	Negative	
1524			S	Foundation	Concrete	DAMAGED	0.2	Negative	
1525			S	Foundation	Concrete	DAMAGED	0.6	Negative	
1526			S	Foundation	Concrete	DAMAGED	0.1	Negative	
1527			S	Wall	Concrete	Intact	0.3	Negative	
1528			S	Stringer	Metal	DAMAGED	10.0	POSITIVE	
1529			S	Tread	Metal	DAMAGED	15.0	POSITIVE	
1530			S	Handrail	Metal	DAMAGED	16.0	POSITIVE	
1531			S	Wall	Concrete	DAMAGED	0.2	Negative	
1532			W	Wall	Concrete	DAMAGED	0.3	Negative	
1533			W	Door	Metal	DAMAGED	0.0	Negative	
1534			W	Door Frame	Metal	DAMAGED	0.6	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1535	Basement Level	Interior Crane Pit Access Room	W	Electrical Panel	Metal	DAMAGED	0.2	Negative	Load center # 3
1536			W	Electrical Panel	Metal	DAMAGED	0.1	Negative	240 Volt
1537	Perimeter	Exterior North Side	N	Wall	Stucco	Intact	0.3	Negative	Newer section
1538			N1	Door	Wood	Intact	13.0	POSITIVE	
1539			N1	Door Frame	Wood	Intact	9.2	POSITIVE	
1540			N1	Threshhold	Metal	DAMAGED	0.3	Negative	
1541			N	Pipe	Metal	Intact	0.2	Negative	
1542			N3	Door	Wood	Intact	12.0	POSITIVE	
1543			N3	Door Frame	Wood	Intact	10.0	POSITIVE	
1544			N3	Threshhold	Metal	DAMAGED	0.3	Negative	
1545			N	Wall	Stucco	Intact	0.2	Negative	Newer section
1546			N	Window Well	Wood	Intact	14.0	POSITIVE	Fixed
1547			N	Window Frame	Wood	Intact	12.0	POSITIVE	Fixed
1548			N	Window Sash	Wood	Intact	15.0	POSITIVE	Fixed
1549			N	Downspout	Metal	Intact	0.1	Negative	
1550			N	Wall	Stucco	Intact	3.2	POSITIVE	Older section
1551			N4	Door	Wood	Intact	14.0	POSITIVE	
1552			N4	Door Frame	Wood	Intact	8.4	POSITIVE	
1553			N4	Threshhold	Metal	DAMAGED	0.2	Negative	
1554			W	Window Well	Wood	Intact	16.0	POSITIVE	
1555			W	Window Frame	Wood	Intact	12.0	POSITIVE	
1556			W	Window Sash	Wood	Intact	13.0	POSITIVE	
1557			N	Wall	Stucco	Intact	0.1	NEGATIVE	
1558			N5	Door	Wood	DAMAGED	0.0	POSITIVE	Main entry
1559			N5	Door Frame	Wood	Intact	16.0	POSITIVE	
1560			N	Wall	Stucco	Intact	0.1	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1561	Perimeter	Exterior North Side	N	Handrail	Metal	DAMAGED	11.0	POSITIVE	
1562			N	Railing	Metal	DAMAGED	16.0	POSITIVE	
1563			N	Stringer	Metal	DAMAGED	14.0	POSITIVE	
1564			N	Tread	Metal	DAMAGED	0.0	Negative	
1565			N	Door	Wood	DAMAGED	2.6	POSITIVE	To numbe
1566			N	Door Frame	Wood	DAMAGED	1.7	POSITIVE	
1567			N	Downspout	Metal	Intact	0.2	Negative	
1568			N	Pipe	Metal	Intact	1.7	POSITIVE	Yellow-phone
1569			N	Door	Metal	DAMAGED	0.2	Negative	Tank yard
1570			N	Door Frame	Metal	DAMAGED	0.1	Negative	
1571		Exterior East Side	E	Wall	Stucco	Intact	0.2	Negative	
1572			E1	Door	Metal	Intact	0.3	Negative	
1573			E1	Door Frame	Wood	DAMAGED	2.1	POSITIVE	
1574			E	Beam	Metal	Intact	0.5	Negative	
1575			E	Beam	Metal	Intact	0.3	Negative	
1576			E	Ceiling	Concrete	Intact	0.2	Negative	
1577			E	Window Frame	Metal	DAMAGED	0.5	Negative	Fixed
1578			E	Bollard	Metal	DAMAGED	0.1	Negative	Around AC units
1579			E	Bollard	Metal	DAMAGED	0.3	Negative	
1580			E	Bollard	Metal	DAMAGED	0.4	Negative	
1581			E	Bollard	Metal	DAMAGED	0.3	Negative	
1582			E	Window Frame	Wood	Intact	0.3	Negative	Fixed
1583			E2	Door	Wood	DAMAGED	1.1	POSITIVE	To main room
1584			E2	Door Frame	Wood	DAMAGED	1.2	POSITIVE	
1585			E	Wall	Stucco	Intact	0.5	Negative	
1586			E	Downspout	Metal	Intact	0.1	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1587	Perimeter	Exterior East Side	E	Electrical Panel	Metal	Intact	0.3	Negative	Fuel oil tracer
1588			E	Electrical Panel	Metal	Intact	0.3	Negative	Outside lighting
1589			E3	Door	Metal	DAMAGED	0.3	Negative	
1590			E3	Door Frame	Metal	DAMAGED	0.1	Negative	
1591			E	Window Sash	Wood	DAMAGED	4.0	POSITIVE	Casement-upper office
1592			E	Window Frame	Wood	DAMAGED	2.7	POSITIVE	Casement-upper office
1593			E	Window Sash	Wood	DAMAGED	6.3	POSITIVE	Fixed-upper office
1594			E	Window Frame	Wood	DAMAGED	2.1	POSITIVE	Fixed-upper office
1595			E	Wall	Metal	Intact	0.4	Negative	Siding-upper
1596			E	Wall	Metal	Intact	0.5	Negative	
1597		Exterior South Side	S	Wall	Stucco	Intact	0.2	Negative	
1598			S1	Door	Metal	Intact		POSITIVE	
1599			S1	Door Frame	Metal	Intact	0.3	Negative	
1600			S	Railing	Metal	Intact	0.2	Negative	
1601			S2	Door	Wood	Intact	0.0	Negative	Stained-bathroom 5
1602			S2	Door Frame	Wood	Intact	0.3	Negative	
1603			S	Railing	Metal	DAMAGED	0.2	Negative	Near bathrooms
1604			S	Wall	Metal	Intact	0.3	Negative	S.E. corner
1605			S	Beam	Metal	Intact	0.2	Negative	Near S1 doorway
1606			S	Beam	Metal	Intact	0.3	Negative	
1607			S	Window Sash	Metal	Intact	7.3	POSITIVE	Casement-to bathrooms
1608			S	Window Frame	Metal	Intact	6.8	POSITIVE	Casement-To bathrooms
1609			S	Wall	Concrete	Intact	0.5	Negative	To bathrooms
1610			S	Downspout	Metal	Intact		POSITIVE	Bathroom area
1611			S	Wall	Fiberglass	Intact	0.0	Negative	Shed next to bathroom
1612			S	Wall	Wood	Intact	0.0	Negative	Shed next to bathroom

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FIELD DATA REPORT

PROJECT NAME: *Glenarm Power Plant*

ADDRESS: *72 East Glenarm*
Pasadena

PROJECT NUMBER: *98-199*

INSTRUMENT: *RMD*

SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1613	Perimeter	Exterior South Side	S	Access Panel	Metal	DAMAGED	4.6	POSITIVE	Yellow on ground
1614			S	Downspout	Metal	Intact	0.3	Negative	
1615			S3	Door	Metal	DAMAGED	0.1	Negative	
1616			S3	Door Frame	Metal	Intact	0.2	Negative	
1617			S	Pipe	Metal	Intact	0.3	Negative	Conduit
1618			S	Pipe	Metal	Intact	0.2	Negative	
1619			S	Trim	Metal	Intact	4.3	POSITIVE	Vertical next to roll-up
1620			S	Wall	Concrete	Intact	2.8	POSITIVE	Older section-W. of trim
1621			S	Downspout	Metal	Intact	0.3	Negative	
1622			S	Door	Metal	DAMAGED			
1623			S	Door Frame	Metal	DAMAGED			
1624			S	Wall	Concrete	Intact	0.2	Negative	East of roll-up door
1625			S	Wall	Concrete	DAMAGED	2.6	POSITIVE	West of roll-up door
1626			S	Door	Metal	DAMAGED	9.5	POSITIVE	To compressor room
1627			S	Door Frame	Metal	DAMAGED	7.9	POSITIVE	To compressor room
1628			S	Wall	Metal	Intact	5.7	POSITIVE	Compressor room
1629			S	Window Sash	Metal	DAMAGED	5.7	POSITIVE	Casement-compressor room
1630			S	Window Frame	Metal	DAMAGED	1.8	POSITIVE	Casement-compressor room
1631			S	Downspout	Metal	Intact	0.1	Negative	Compressor room
1632			S	Window Sash	Metal	Intact	1.7	POSITIVE	Casement-compressor room
1633			S	Window Frame	Metal	DAMAGED			
1634			S	Vent	Metal	DAMAGED			Large-to stack-grey
1635			S	Light Fixture	Metal	Intact	0.3	Negative	
1636			S	Wall	Concrete	DAMAGED			
1637			S	Door	Metal	DAMAGED			
1638			S	Door Frame	Metal	DAMAGED			

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1639	Perimeter	Exterior South Side	S	Column	Metal	Intact	12.0	POSITIVE	To vent/stack
1640			S	Column	Metal	Intact	16.0	POSITIVE	
1641			S	Beam	Metal	Intact	14.0	POSITIVE	Diagonal
1642			S	Beam	Metal	Intact	10.0	POSITIVE	
1643			S	Stack	Metal	Intact	0.3	Negative	
1644			S	Stack	Metal	Intact	0.2	Negative	
1645			S	Stack	Metal	Intact	0.3	Negative	
1646			S	Stack	Metal	Intact	0.4	Negative	
1647			S	Ladder	Metal	Intact	12.0	POSITIVE	On stack
1648			S	Column	Wood	DAMAGED	0.0	Negative	Hydrogen area
1649			S	Beam	Wood	DAMAGED	0.3	Negative	Hydrogen area
1650			S	Pipe	Metal	Intact	0.2	Negative	
1651			S	Wall	Metal	Intact	0.3	Negative	Siding-upper area
1652		Exterior West Side	W	Wall	Concrete	Intact	1.8	POSITIVE	
1653			W	Wall	Concrete	Intact	2.4	POSITIVE	
1654			W	Wall	Concrete	Intact	3.6	POSITIVE	
1655			W	Window Sash	Metal	DAMAGED	2.1	POSITIVE	Fixed
1656			W	Window Frame	Metal	DAMAGED	8.7	POSITIVE	Fixed
1657			W	Door	Wood	DAMAGED	9.4	POSITIVE	Crane pit area
1658			W	Door Frame	Metal	DAMAGED	19.0	POSITIVE	Crane pit area
1659			W	Vent	Metal	DAMAGED	0.7	Negative	Under ground
1660			W	Door	Wood	Intact	15.0	POSITIVE	By turbines
1661			W	Door Frame	Wood	Intact	12.0	POSITIVE	
1662			W	Door	Wood	DAMAGED	16.0	POSITIVE	
1663			W	Door Frame	Wood	DAMAGED	12.0	POSITIVE	
1664		Interior Bathroom	N	Wall	Concrete	Intact	0.3	Negative	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1665	Perimeter	Interior Bathroom	S	Wall	Concrete	Intact	0.0	Negative	
1666			E	Wall	Concrete	Intact	0.4	Negative	
1667			W	Wall	Concrete	Intact	0.3	Negative	
1668			N	Wall	Tile	Intact	16.0	POSITIVE	Sink area
1669			N	Wall	Tile	Intact	18.0	POSITIVE	Shower area
1670			E	Door	Wood	Intact	0.0	Negative	
1671			E	Door Frame	Wood	Intact	0.3	Negative	
1672			E	Window Sash	Metal	Intact	0.7	Negative	Casement
1673			S	Locker	Metal	Intact	0.3	Negative	# 4
1674			S	Locker	Metal	Intact	0.5	Negative	# 7
1675			S	Locker	Metal	Intact	0.2	Negative	# 12
1676			N	Wall	Metal	Intact	0.3	Negative	Stall divider
1677			N	Door	Metal	Intact	0.5	Negative	To stall
1678		Interior Compressor Room	N	Wall	Concrete	DAMAGED	3.9	POSITIVE	
1679			S	Wall	Metal	DAMAGED	2.7	POSITIVE	
1680			E	Wall	Metal	DAMAGED	3.1	POSITIVE	
1681			W	Wall	Metal	DAMAGED	2.1	POSITIVE	
1682				Ceiling	Metal	DAMAGED	1.9	POSITIVE	
1683			E	Pipe	Metal	DAMAGED	0.3	Negative	Large-To ceiling
1684			E	Column	Metal	DAMAGED	0.5	Negative	
1685			E	Beam	Metal	DAMAGED	0.2	Negative	
1686			E	Door	Metal	DAMAGED		POSITIVE	Cabinet
1687			E	Electrical Panel	Metal	Intact	0.3	Negative	
1688			S	Column	Metal	DAMAGED	0.3	Negative	
1689			S	Pipe	Metal	DAMAGED	0.5	Negative	
1690			S	Window Sash	Metal	DAMAGED	0.2	Negative	Casement

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1691	Perimeter	Interior Compressor Room	W	Column	Metal	DAMAGED	0.5	Negative	
1692			W	Pipe	Metal	DAMAGED	0.3	Negative	
1693			W	Window Sash	Metal	DAMAGED	0.3	Negative	Casement
1694			N	Pipe	Metal	Intact	0.2	Negative	Sullivan
1695				Tank	Metal	Intact	7.9	POSITIVE	10806-48 N.W. corner
1696				Tank	Metal	Intact	3.3	POSITIVE	12177-49
1697				Motor	Metal	DAMAGED	0.3	Negative	
1698				Motor	Metal	DAMAGED	0.2	Negative	
1699				Motor	Metal	DAMAGED	0.5	Negative	
1700				Foundation	Concrete	DAMAGED	0.3	Negative	
1701				Foundation	Concrete	DAMAGED	0.1	Negative	
1702				Foundation	Concrete	DAMAGED	0.1	Negative	
1703				Pipe	Metal	DAMAGED	0.0	Negative	
1704				Pipe	Metal	DAMAGED	0.2	Negative	
1705				Pipe	Metal	DAMAGED	0.3	Negative	
1706		Exterior Crane Pit	N	Wall	Concrete	DAMAGED	1.8	POSITIVE	
1707			S	Wall	Concrete	DAMAGED	2.1	POSITIVE	
1708			E	Wall	Concrete	DAMAGED	2.0	POSITIVE	
1709			W	Wall	Concrete	DAMAGED	1.6	POSITIVE	
1710				Beam	Metal	DAMAGED	25.0	POSITIVE	Between garage doors
1711			E	Door	Metal	DAMAGED	6.2	POSITIVE	To crane pit access room
1712			E	Door Frame	Metal	DAMAGED	5.1	POSITIVE	
1713			N	Electrical Panel	Metal	DAMAGED	7.5	POSITIVE	
1714				Deck	Metal	DAMAGED	6.1	POSITIVE	
1715			N	Garage Door	Metal	DAMAGED	8.3	POSITIVE	
1716			N	Garage Door Frame	Metal	DAMAGED	6.7	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1717	Perimeter	Exterior Crane Pit	S	Garage Door	Metal	DAMAGED	15.0	POSITIVE	
1718			S	Garage Door Frame	Metal	DAMAGED	9.1	POSITIVE	
1719			E	Beam	Metal	DAMAGED	29.0	POSITIVE	Above door
1720			E	Beam	Metal	DAMAGED	31.0	POSITIVE	Above door
1721			N	Pipe	Metal	DAMAGED	7.4	POSITIVE	Above BP
1722			S	Vent	Metal	DAMAGED	6.8	POSITIVE	
1723			S	Railing	Metal	DAMAGED	16.0	POSITIVE	
1724			W	Railing	Metal	DAMAGED	18.0	POSITIVE	
1725				Column	Metal	DAMAGED	12.0	POSITIVE	Crane
1726				Column	Metal	DAMAGED	11.0	POSITIVE	Crane
1727				Beam	Metal	DAMAGED	20.0	POSITIVE	Crane
1728				Beam	Metal	DAMAGED	18.0	POSITIVE	Crane
1729	Roof	Exterior Perimeter	N	Tank	Metal	Intact	14.0	POSITIVE	N.W. side-bearing cooler
1730			N	Ladder	Metal	Intact	0.3	Negative	Above tank
1731			N	Pipe	Metal	Intact	0.4	Negative	Under tank
1732			N	Ladder	Metal	Intact	0.6	Negative	To north roof
1733			N	Pipe	Metal	Intact	0.7	Negative	
1734			N	Pipe	Metal	Intact	22.0	POSITIVE	Large
1735			N	Tank	Metal	Intact	16.0	POSITIVE	N.E. side-bearing cooler
1736			N	Ladder	Metal	Intact	12.0	POSITIVE	Above tank
1737			N	Pipe	Metal	Intact	8.6	POSITIVE	Under tank
1738			N	Wall	Stucco	Intact	4.6	POSITIVE	Parapet
1739			E	Wall	Stucco	Intact	0.3	Negative	Parapet
1740			E	Wall	Stucco	Intact	1.2	POSITIVE	Elevator area
1741			E	Door	Metal	DAMAGED	1.3	POSITIVE	
1742			E	Door Frame	Metal	Intact	1.2	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1743	Roof	Exterior Perimeter	S	Railing	Metal	Intact	8.1	POSITIVE	
1744			S	Wall	Stucco	Intact	1.8	POSITIVE	Parapet
1745			S	Ladder	Metal	Intact	8.2	POSITIVE	
1746			S	Vent	Metal	Intact	0.3	Negative	
1747			S	Pipe	Metal	Intact	0.1	Negative	
1748			S	Wall	Metal	Intact	1.2	POSITIVE	Parapet
1749			S	Railing	Metal	DAMAGED	1.0	POSITIVE	To stack
1750			S	Catwalk	Metal	Intact	2.0	POSITIVE	To stack
1751			W	Wall	Stucco	Intact	0.7	Negative	
1752			W	Railing	Metal	DAMAGED	0.7	Negative	
1753			W	Wall	Stucco	Intact	0.7	Negative	
1754			W	Railing	Metal	DAMAGED	0.6	Negative	
1755				Pipe	Metal	Intact	0.3	Negative	Center of roof
1756				Vent	Metal	Intact	0.3	Negative	From stack
1757				Foundation	Metal	Intact	6.7	POSITIVE	For vent
1758				Vent	Metal	Intact	0.5	Negative	From stack
1759				Foundation	Metal	Intact	7.8	POSITIVE	For vent
1760				Tank	Cloth Wrap	Intact	0.1	Negative	Beige
1761				Foundation	Metal	Intact	5.7	POSITIVE	For tank
1762				Wall	Metal	Intact	8.9	POSITIVE	Louvered/Ventilation
1763				Tank	Metal	Intact	0.1	Negative	
1764				Foundation	Metal	Intact	16.0	POSITIVE	Silver-for tank
1765				Window Frame	Metal	DAMAGED	0.5	Negative	Skylight
1766				Pipe	Cloth Wrap	DAMAGED	0.2	Negative	
1767				Pipe	Metal	DAMAGED	0.3	Negative	
1768				Beam	Metal	DAMAGED	1.5	POSITIVE	Needs Paint

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1769	Roof	Exterior Perimeter		Wall	Metal	Intact	0.3	Negative	
1770				Vent	Metal	Intact	0.3	Negative	
1771				Vent	Metal	Intact	0.2	Negative	
1772	Surrounding Structures	Exterior East Perimeter	N	Wall	Metal	Intact	0.2	Negative	
1773			E	Door	Metal	Intact	0.1	Negative	Cubicle 3
1774			E	Door	Metal	Intact	-0.2	Negative	Cubicle 7
1775			E	Door	Metal	Intact	0.3	Negative	Cubicle 9
1776			S	Wall	Metal	Intact	0.2	Negative	
1777			W	Door	Metal	Intact	0.0	Negative	Cubicle 18
1778			W	Door	Metal	Intact	-0.1	Negative	Cubicle 15
1779			W	Door	Metal	Intact	0.3	Negative	Cubicle 13
1780			W	Door	Metal	Intact	0.2	Negative	Cubicle 11
1781			W	Door	Metal	Intact	-0.1	Negative	Cubicle 9
1782			N	Wall	Metal	Intact	0.2	Negative	
1783			N	Door	Metal	Intact	0.0	Negative	CGI Systems
1784			E	Wall	Metal	Intact	0.1	Negative	
1785			S	Wall	Metal	Intact	0.3	Negative	
1786			S	Door	Metal	Intact	0.1	Negative	
1787			W	Wall	Metal	Intact	0.2	Negative	
1788			W	Wall	Metal	Intact	0.2	Negative	Red-near fire extiguisher
1789			E	Electrical Panel	Metal	Intact	0.2	Negative	
1790			E	Electrical Panel	Metal	Intact	0.0	Negative	
1791			E	Pipe	Metal	Intact	0.3	Negative	
1792		Exterior South Perimeter		Tank	Metal	DAMAGED	0.2	Negative	Accross from bathroom
1793				Tank	Metal	DAMAGED	0.3	Negative	Accross from bathroom
1794				Valve	Metal	Intact	0.1	Negative	Accross from bathroom

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1795	Surrounding Structures	Exterior South Perimeter		Railing	Metal	Intact	0.3	Negative	
1796				Pipe	Metal	DAMAGED	0.5	Negative	
1797			N	Door	Metal	DAMAGED	15.0	POSITIVE	Locked
1798			N	Wall	Metal	DAMAGED	16.0	POSITIVE	To small room
1799			N	Window Sash	Metal	DAMAGED	8.7	POSITIVE	Fixed
1800			N	Wall	Concrete	DAMAGED	28.0	POSITIVE	Yellow-on corner
1801				Pipe	Metal	DAMAGED	0.5	Negative	Large
1802				Tank	Metal	DAMAGED	0.3	Negative	# 9 circulators
1803			N	Door	Wood	DAMAGED			
1804			N	Door Frame	Wood	DAMAGED			
1805			N	Window Sash	Wood	DAMAGED			
1806			N	Wall	Wood	DAMAGED	0.3	Negative	North quonset hut
1807				Wall	Concrete	DAMAGED			
1808				Foundation	Concrete	DAMAGED			
1809			S	Wall	Wood	DAMAGED	0.3	Negative	
1810			S	Door	Wood	DAMAGED	2.2	POSITIVE	
1811			S	Door Frame	Wood	DAMAGED	2.5	POSITIVE	
1812			S	Window Sash	Wood	DAMAGED	3.4	POSITIVE	Casement
1813			W	Wall	Metal	Intact	29.0	POSITIVE	
1814			N	Door Frame	Wood	DAMAGED	2.6	POSITIVE	Middle quonset hut
1815			N	Wall	Wood	DAMAGED	0.3	Negative	
1816			N	Window Sash	Wood	DAMAGED			Casement
1817			E	Wall	Metal				
1818			E	Foundation	Concrete	DAMAGED			
1819			S	Wall	Wood	DAMAGED	0.2	Negative	
1820			S	Wall	Metal	Intact	2.0	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1821	Surrounding Structures	Exterior South Perimeter	W	Wall	Metal	Intact	16.0	POSITIVE	
1822			N	Door	Metal	Intact	16.0	POSITIVE	South quonset hut
1823			N	Wall	Metal	Intact	29.0	POSITIVE	South quonset hut
1824			E	Foundation	Concrete	DAMAGED	19.0	POSITIVE	South quonset hut
1825			E	Wall	Metal	DAMAGED	25.0	POSITIVE	South quonset hut
1826			S	Door	Metal	DAMAGED	26.0	POSITIVE	South quonset hut
1827			S	Wall	Metal	DAMAGED	41.0	POSITIVE	South quonset hut
1828			W	Wall	Metal	DAMAGED	42.0	POSITIVE	South quonset hut
1829				Tank	Metal	Intact	0.3	Negative	Smaller tanks
1830				Tank	Metal	Intact	0.5	Negative	Smaller tanks
1831				Tank	Metal	Intact	0.2	Negative	Smaller tanks
1832				Tank	Metal	Intact	0.4	Negative	Smaller tanks
1833				Tank	Metal	Intact	0.0	Negative	Smaller tanks
1834				Pipe	Metal	Intact	0.0	Negative	Smaller tanks
1835				Pipe	Metal	Intact	0.1	Negative	Smaller tanks
1836				Pipe	Metal	Intact	0.7	Negative	Smaller tanks
1837				Valve	Metal	Intact	0.3	Negative	Smaller tanks
1838				Valve	Metal	Intact	0.5	Negative	Smaller tanks
1839				Valve	Metal	Intact	0.5	Negative	Smaller tanks
1840				Railing	Metal	Intact	14.0	POSITIVE	Yellow-next to small tank
1841				Tank	Metal	Intact	27.0	POSITIVE	Large-accross from boiler
1842				Ladder	Metal	Intact	19.0	POSITIVE	
1843				Pipe	Metal	Intact	20.0	POSITIVE	
1844				Tank	Metal	Intact	15.0	POSITIVE	
1845				Tank	Metal	Intact	20.0	POSITIVE	
1846				Pipe	Metal	Intact	92.0	POSITIVE	

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SAMPLE	UNIT ID / LOCATION	ROOM EQUIVALENT	SIDE	COMPONENT	SUBSTRATE	CONDITION	LEAD	RESULTS	COMMENTS
1847	Surrounding Structures	Exterior West Perimeter	S	Wall	Concrete	DAMAGED	0.2	Negative	
1848			E	Wall	Concrete	Intact	0.3	Negative	
1849			E	Column	Metal	Intact	2.4	POSITIVE	
1850			E	Column	Metal	Intact	2.1	POSITIVE	
1851			E	Column	Metal	Intact	2.3	POSITIVE	
1852			E	Beam	Metal	DAMAGED	1.0	POSITIVE	
1853			E	Bollard	Metal	Intact	1.1	POSITIVE	Yellow
1854			E	Bollard	Metal	Intact	2.0	POSITIVE	
1855			E	Bollard	Metal	Intact	1.6	POSITIVE	
1856			E	Wall	Concrete	Intact	0.1	Negative	Inside
1857			E	Pipe	Metal	Intact	0.3	Negative	
1858			E	Valve	Metal	Intact	0.5	Negative	
1859			E	Pipe	Metal	Intact	0.0	Negative	
1860			E	Pipe	Metal	Intact	0.2	Negative	
1861			N	Wall	Concrete	DAMAGED	0.3	Negative	
1862				Fountain	Tile	Intact	16.0	POSITIVE	
1863				Fountain	Tile	Intact	19.0	POSITIVE	
1864				Fountain	Tile	Intact	12.0	POSITIVE	
1865				Wall	Concrete	DAMAGED	0.3	Negative	Surrounds fountain
1866				Wall	Concrete	DAMAGED	0.0	Negative	
1867				Floor	Concrete	DAMAGED	0.2	Negative	

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APPENDIX G

Certifications and Qualifications

ACORD

DATE (MM/DD/YY)
12/08/98

PRODUCER

ENVIRONMENTAL INS BROKERS, INC.
4995 GOLDEN FOOTHILL PARKWAY
SUITE 5
EL DORADO HILLS, CA 95762

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

PACIFIC ENVIRONMENTAL COMPANY
30101 TOWN CENTER DRIVE
SUITE 202A
LAGUNA NIGUEL, CA 92677

COMPANIES AFFORDING COVERAGE

COMPANY A: GULF UNDERWRITERS INSURANCE CO.

COMPANY B:

COMPANY C:

COMPANY D:

BRANCH:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$2,000,000
X	COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	$2,000,000
	CLAIMS MADE [X] OCCUR				PERSONAL & ADV INJURY	$1,000,000
	OWNER'S & CONTRACTOR'S PROT	GU5857030	10-23-97	10-23-00	EACH OCCURRENCE	$1,000,000
X	POLLUTION				FIRE DAMAGE (Any one fire)	$ 50,000
X	PROFESSIONAL				MED EXP (Any one person)	$ 5,000
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$ INCLUDED
	ANY AUTO					
	ALL OWNED AUTOS				BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
X	HIRED AUTOS				BODILY INJURY (Per accident)	$
X	NON-OWNED AUTOS					
					PROPERTY DAMAGE	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY	
					EACH ACCIDENT	$
					AGGREGATE	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	UMBRELLA FORM				AGGREGATE	$
	OTHER THAN UMBRELLA FORM					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATUTORY LIMITS / OTHER	
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE [ ] INCL [ ] EXCL				EL EACH ACCIDENT	$
					EL DISEASE - POLICY LIMIT	$
					EL DISEASE - EA EMPLOYEE	$
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

THE CERTIFICATE HOLDER SHALL BE NAMED AS ADDITIONAL INSURED WITH RESPECT TO GENERAL LIABILITY.

CERTIFICATE HOLDER

CITY OF PASADENA
ATTN: DHIREN SHAH
100 NORTH GARFIELD AVENUE
PASADENA, CA 91109-7215

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

City Department Public Works & Trans.

City of Pasadena

CERTIFICATE OF INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy(ies) listed below. This is to certify that the following endorsement is part of the policy(ies) described below:

NAMED INSURED: (Contractor/Vendor/Permittee/Licensee)

Name: Pacific Environmental Company

Address: 30101 Town Center Dr., #202A

City: Laguna Niguel CA Zip: 92677

Insured Contact Person/Telephone: Mike Lyssy 949-363-7200

DESCRIBE PROJECT (Location, Bid, Title, Contract/Permit/Purchase Order #)

COMPANY(IES) AFFORDING COVERAGE

A Gulf Underwriters Ins. Co.

B.

C.

D.

COMPANY A,B,C,D	POLICY NUMBER	COVERAGE	REQUIRED	EXPIR DATE	MIN. COMBINED SINGLE LIMITS
A	GU5857030 (hired/non-owned)	1. Automobile Liability		10-23-00	$ 100,000
		2. General Liability			$1,000,000
		a. Premises/Oper.			
A	GU5857030	b. Products/Completed Oper.		10-23-00	
		c. Blanket Contractual			
		d. Contractor's Protective			
		e. Personal Injury			
		3. Other			
		4. Excess Liability			
		5. Workers' Compensation			Statutory

It is hereby understood and agreed that the City of Pasadena, its Council Members, Commissioners and each member thereof and every officer and employee of the City is endorsed to the policy as an additional insured with respect to claims arising out of the above listed project.

The policies are endorsed to state that the inclusion of more than one assured shall not operate to increase the limit of the company's liability; that insurer waives any right of contribution with other insurance which may be available to City of Pasadena, and in the event of cancellation or material change in the above coverage the company will give 30 days written notice of cancellation or material change to the certificate holder.

REMARKS:

Authorized Insurance Representative

ISSUED DATE 12-29-98

BY:

TITLE: Agent/Broker

AGENCY: BC Environmental Insurance Brokers, Inc.

ADDRESS 4995 Golden Foothill Prkwy, #5

El Dorado Hills, CA 95762

TELEPHONE: 916-939-1080

APPROVED BY RISK MANAGEMENT

THE CERTIFICATE HOLDER IS CITY OF PASADENA

Mail to City Department or to:

City of Pasadena
Finance Department
Liability Claims
100 N. Garfield Avenue, Rm 424
Pasadena, CA 91109-7215

STATE COMPENSATION INSURANCE FUND

P.O. BOX 420807, SAN FRANCISCO, CA 94142-0807

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

JANUARY 15, 1999

POLICY NUMBER: 1699940 - 99
CERTIFICATE EXPIRES: 1-1-00

CITY OF PASADENA --PURCHASING
ATTN MARIE
100 N GARFIELD
PASADENA CA 91109

This is to certify that we have issued a valid Workers' Compensation insurance policy in a form approved by the California Insurance Commissioner to the employer named below for the policy period indicated.

This policy is not subject to cancellation by the Fund except upon ~~ten~~ 30 days' advance written notice to the employer.

We will also give you ~~TEN~~ 30 days' advance notice should this policy be cancelled prior to its normal expiration.

This certificate of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

Thom Hansen
AUTHORIZED REPRESENTATIVE

KC Bollier
PRESIDENT

EMPLOYER'S LIABILITY LIMIT INCLUDING DEFENSE COSTS: $1,000,000 PER OCCURRENCE.

ENDORSEMENT #2065 ENTITLED CERTIFICATE HOLDERS' NOTICE EFFECTIVE 01/01/99 IS ATTACHED TO AND FORMS A PART OF THIS POLICY.

EMPLOYER

LYSSY MICHAEL JOSEPH & LYSSY STACY
DBA PACIFIC ENVIRONMENTAL COMPANY
30101 TOWN CENTER STE 202A
LAGUNA NIGUEL CA 92677

City of Pasadena

100 North Garfield Avenue, Rm 121 • P.O. Box 7115 • Pasadena, California 91109-7215
(626) 744-4166

PAYMENT RECEIPT

Name: *Pacific Environmental Company*
Address: *30101 Town Center Dr. #107*
Laguna Niguel CA 92677-2036

Mailing Address: *Pacific Environmental Company*
30101 Town Center Dr. #107
Laguna Niguel CA 92677-2036

Date: *12/08/1998*
Account No. *903360*
Business Phone: *(949) 363-7200*
Expiration Date: *05/31/1999*
Business Code: *0052*

Business License Fees:	$	72.64
Total Amount Due:		72.64
AMOUNT PAID THIS RECEIPT:		72.64
Balance Due:	$	0.00

Payment Type: *Check : 108*
Representative: *JF*

RECEIPT NOT VALID UNLESS ENDORSED BY AN AUTHORIZED CITY CASHIER

==========
CITY OF PASADENA
MUNICIPAL SERVICES
HOURS 7:30AM - 5:15PM
==========
MUNICIPAL SERVICES ARE OPEN
MONDAY THROUGH THURSDAY
7:30 - 5:15 AND FRIDAYS
7:30 - 4:15
==========
REG-RECEIPT:13-45862 C:12-07-1998
CASHIER ID:H 03:00 pm A:12-08-1998
==========
3000 RL-PAYMENT-SCAN $72.64
09033603

TOTAL DUE $72.64
RECEIVED FROM:
PACIFIC ENVIRONMENTAL CO.
CHECK $72.64

TOTAL TENDERED $72.64

CHANGE DUE $0.00
==========
==========
THANK YOU FOR YOUR BUSINESS
==========

OF CALIFORNIA — PETE WILSON, Governor

PARTMENT OF INDUSTRIAL RELATIONS
SION OF OCCUPATIONAL SAFETY AND HEALTH
SBESTOS CONSULTANT CERTIFICATION UNIT
Park Towne Circle, Suite 1
amento, CA 95825
16) 574-2993 FAX (916) 483-0572

402221311C 83 December 29, 1997

Michael Lyssy
18 Timberland
Aliso Viejo CA 92656

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. To maintain your certification, please abide by the rules printed on the back of the certification card.

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card.

Please hold and do not send copies of your required AHERA refresher renewal certificates to the Division until you apply for renewal of your certification.

Please inform the Division of any changes in your mailing address or work address within 15 days.

Sincerely,

Rick Axe

Rick Axe, CIH
Senior Industrial Hygienist

RA/dor

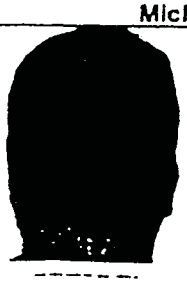
Attachment

cc: File

State of California
Division of Occupational Safety and Health

Certified Asbestos Consultant

Michael J. Lyssy
Name



Certification No. 94-1311

Expires on 3/4/99

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code

E CALIFORNIA — PETE WILSON, Governor

PARTMENT OF INDUSTRIAL RELATIONS
ION OF OCCUPATIONAL SAFETY AND HEALTH
BESTOS CONSULTANT CERTIFICATION UNIT
1 Park Towne Circle, Suite 1
ıento, CA 95825
274-2993 FAX (916) 483-0572

704242175C 140 May 4, 1998

Paul Maura
Pacific Environmental Co.
30101 Town Center Drive, Suite 202A
Laguna Niguel CA 92677

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. To maintain your certification, please abide by the rules printed on the back of the certification card.

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card.

Please hold and do not send copies of your required AHERA refresher renewal certificates to the Division until you apply for renewal of your certification.

Please inform the Division of any changes in your mailing address or work address within 15 days.

Sincerely,

Rick Axe, CIH
Senior Industrial Hygienist

RA/dor

Attachment

cc: File

State of California
Division of Occupational Safety and Health

Certified Asbestos Consultant

Paul Maura
Name

Certification No. 97-2175

Expires on 5/2/99

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

STATE OF CALIFORNIA - HEALTH AND WELFARE AGENCY

PETE WILSON, Governor

DEPARTMENT OF HEALTH SERVICES
2151 BERKELEY WAY
BERKELEY, CA 94701-1011
(510) 597-8066

July 21, 1998

Mr. Robert C. Clark
23505 Crenshaw Boulevard, #201
Torrance, California 90505

Dear Mr. Clark:

Your California Department of Health Services (DHS) lead-related construction interim certificate(s) have been renewed for a period of one year. Please note the new expiration dates.

	Certificate ID #	Expiration Date
❑ Lead Inspector/Assessor Interim Certificate	I-8	09/18/1999
❑ Lead Project Designer Interim Certificate	D-8	09/18/1999
❑ Lead Project Monitor Interim Certificate	M-8	09/18/1999

The enclosed interim certificate card/sticker serves as your proof of renewal by the Department. (If you received a sticker, please place it on the front left side of your interim certificate ID card, over your name and old certificate information. Do not cover your photo with the sticker.) Please note that alteration of any information or fraudulent use of your sticker or card may result in revocation of your interim certificate. If your card is lost or stolen, please notify DHS immediately. Do not cut up or destroy your card when your certificate expires.

Your renewal is good for 1 year. To ensure that your interim certificate is renewed before it expires next year, please submit your next renewal application to the Department at least 120 days before the expiration date(s) above. Call the *Lead-Related Construction Information Line* at 1-800-597-5323 for renewal forms and instructions. (From outside California, call (510) 869-3953.)

If you change your home or mailing address, please notify the Department within 30 days by calling 1-800-597-5323 or by writing to us at 5801 Christie Avenue, Suite 600, Box C, in Emeryville, California, 94608. If you fail to notify us of changes in your address, we will be unable to send you certification materials in the future. Thank you for your cooperation and your continued efforts in helping to prevent childhood lead poisoning.

Sincerely,

Kate Clayton, M.P.H., Acting Chief
Lead-Related Construction Unit
Childhood Lead Poisoning Prevention Branch

Enclosure

App # 8

WESTERN REGIONAL LEAD TRAINING CENTER

AT THE UNIVERSITY OF CALIFORNIA, SAN DIEGO

15090 AVENUE OF SCIENCE • SAN DIEGO, CA 92128 • 1-800/572-LEAD

This is to verify that

ROBERT CLARK

has successfully completed 24 hours of instruction in

LEAD INSPECTOR TRAINING

FALL 1992 DEC. 16 1992

Date

David Carey, Director
Western Regional Lead Training Center

EPA

Certificate No.
I 0023

Certificate of Achievement

This is to certify that
Robert Clark
of Barr & Clark

on the 22nd day of May 1994 successfully completed the factory training for

RMD's LPA-1 Lead Paint Inspection System

including, the topics of Radiation Safety, XRF,
and the Proper Use of the Instrument.

Sia Afshari, Product Manager
44 Hunt St., Watertown, Massachusetts

DEPARTMENT OF HEALTH SERVICES
2151 BERKELEY WAY
BERKELEY, CA 94701-1011
(510) 597-8066

July 22, 1998

Mr. Matthew P. Crochet
1032 Hyde Park Drive
Santa Ana, California 92705

Dear Mr. Crochet:

Your California Department of Health Services (DHS) lead-related construction interim certificate(s) have been renewed for a period of one year. Please note the new expiration dates.

	Certificate ID #	Expiration Date
☐ Lead Inspector/Assessor Interim Certificate	I-12	08/14/1999
☐ Lead Project Designer Interim Certificate	D-12	07/21/1999
☐ Lead Project Monitor Interim Certificate	M-12	07/21/1999

The enclosed interim certificate card/sticker serves as your proof of renewal by the Department. (If you received a sticker, please place it on the front left side of your interim certificate ID card, over your name and old certificate information. Do not cover your photo with the sticker.) Please note that alteration of any information or fraudulent use of your sticker or card may result in revocation of your interim certificate. If your card is lost or stolen, please notify DHS immediately. Do not cut up or destroy your card when your certificate expires.

Your renewal is good for 1 year. To ensure that your interim certificate is renewed before it expires next year, please submit your next renewal application to the Department at least 120 days before the expiration date(s) above. Call the *Lead-Related Construction Information Line* at 1-800-597-5323 for renewal forms and instructions. (From outside California, call (510) 869-3953.)

If you change your home or mailing address, please notify the Department within 30 days by calling 1-800-597-5323 or by writing to us at 5801 Christie Avenue, Suite 600, Box C, in Emeryville, California, 94608. If you fail to notify us of changes in your address, we will be unable to send you certification materials in the future. Thank you for your cooperation and your continued efforts in helping to prevent childhood lead poisoning.

Sincerely,

Kate Clayton, M.P.H., Acting Chief
Lead-Related Construction Unit
Childhood Lead Poisoning Prevention Branch

Matthew P. Crochet

Inspector/Assessor
I-12 (Exp: 8/14/99)
Project Designer
D-12 (Exp: 7/21/99)
Project Monitor
M-12 (Exp: 7/21/99)

State of California
Department of Health Services
Lead-Related Construction
Interim Certificate

App # 12

UNIVERSITY OF CALIFORNIA
UNIVERSITY EXTENSION, DAVIS
Western Regional Lead Training Center

IN RECOGNITION THAT

Matt Crochet

HAS ATTENDED THE FOLLOWING PROGRAM

EPA-Sponsored
Lead Inspectors Training
March 14 - 16, 1994

Passed final exam
Certificate Number I078

Lead Abatement Program Manager

Certificate of Achievement

This is to certify that

Matthew P. Crochet
of Barr & Clark Environmental

on the Twenty-Fifth day of July 1994 successfully completed the factory training for

RMD's LPA-1 Lead Paint Inspection System

including, but not limited to, the topics of Radiation Safety and the Proper Use of the Instrument.

Jacob Paster, Vice-President of RMD
44 Hunt St., Watertown, Massachusetts

XRF INFORMATION SHEET

Manufacturer:	Radiation Monitoring Devices Watertown, MA
Model No.	LPA-1
XRF Serial #:	1231
Source Date:	06-Jul-98
Initial Source Strength:	Co^{57} 12 m / ci
Inconclusive Range:	None[1]
Required Substrate Corrections:	None

As published in the Performance Characteristic Sheet (PCS) for this instrument. All XRF nstrument's exhibit some range of uncertainty. For this instrument, the manufacturer has indicated hat ALL readings indicate a 95% confidence level of being correct relative to the specified action evel. All readings that resulted in the "exact action level" were further tested to clarify the elative amount of lead in the specified surface.

Enclosure 9

January 30, 2014

PASADENA WATER & POWER

Glenarm Repowering Project (GT-5 Combined Cycle Installation)

Section 485956

Plant Fire Prevention & Protection

PROJECT NUMBER:
123374

PROJECT CONTACT:
GREGG HARWOOD
EMAIL:
GREGG.HARWOOD@POWERENG.COM
PHONE:
208-288-6360

POWER ENGINEERS

Section 485956
Plant Fire Prevention & Protection

PREPARED FOR: PASADENA WATER & POWER
PREPARED BY: *SAM BYDA*

REVISION HISTORY		
DATE	REVISED BY	REVISION
08/09/2013	T. Clark	A
10/14/2013	T. Clark	B
01/30/2014	S. Harris	C

SECTION 485956
PLANT FIRE PREVENTION & PROTECTION

TABLE OF CONTENTS

PART 1 - GENERAL

1.1 SUMMARY

A. The specifications in this Section cover engineering and professional services required for the evaluation, design basis preparation, and development of documents necessary for establishing fire prevention and fire protection compliance with California state and local codes and NFPA 850 recommendations for the design, construction, operation, and protection of fossil fueled steam electric generating plants and combustion turbine electric generating plants. Requirements are included for obtaining installation permits by the Pasadena Fire Department and Building Department by the BOP contractor, acceptance, procurement, supply, handling, management, installation, testing, and certification of complete and functional fire prevention and protection systems within the plant boundaries.

B. The specifications described herein are intended as the minimum requirements for supply of an integrated fire protection system designed under the direction of a qualified Fire Protection Engineer and installed by a qualified Fire Protection Contractor specializing in fire protection systems, certified and licensed by the Authority Having Jurisdiction to work on the Site and familiar with local requirements.

C. It is not the intent to specify completely herein all details and requirements of the design and construction of the complete and functional systems and equipment. However, the systems and equipment shall conform in all respects to high standards of engineering, design and workmanship and be capable of performing in continuous operation up to the guarantee performance throughout the design life, in a manner a consistent with good utility practices and acceptable to the General Manager and Authority Having Jurisdiction (AHJ).

D. The BOP Contractor shall have single source responsibility for all equipment furnished under this specification. No departure shall be made from this specification and the referenced standards and codes unless specific requirements are waived or amended in writing by the General Manager.

E. The Scope of Work under this Section includes the development of the following documents for implementation by the BOP Contractor:

1. Fire Protection Design Basis Document (DBD)

    a. Define NFPA 550 “Fire Safety Objectives”
    b. Develop NFPA 551 “Fire Risk Assessment” (FRA)
    c. Identify Stakeholders
    d. Identify requirements from reference documents identified in California and local codes and NFPA 850 including:

        1) Codes
        2) Standards
        3) Regulations
        4) Other references of best practices

e. Review and evaluate General Manager provided General Plant Design data for incorporation into the DBD including:

1) Plant Arrangement and feature definition/description
2) Life Safety
3) Construction Materials
4) Smoke and Heat Venting, Heating, Ventilating, and Air Conditioning
5) Containment and Drainage
6) Emergency Lighting
7) Lightning Protection

2. Fire Prevention and Protection Plan (FPPP)

a. Fire Risk Control Program
b. Fire Emergency Plan.
c. Fire Brigade approach
d. Reliable Water Resource Document

3. Fire Protection Systems and Equipment Design and Specification

a. Fire Protection System configuration drawings
b. Systems Equipment and Design and Specification

1) Water Based Fire Suppression Systems
2) Chemical Based Fire Suppression Systems
3) Inert Gas Systems
4) Fog Water Mist Fire Suppression Systems
5) Fire Detection, Alarm, and Annunciation Systems
6) Containment, Curbing, and Drainage

F. Verify, inspect, and certify that the Fire Prevention and Protection Systems meet Design Basis Document and Fire Prevention and Protection Plan developed by the BOP Contractor and approved by the General Manager and AHJ. This scope includes validation and certification procedure requirements

1.2 FURNISHED BY BOP CONTRACTOR

A. The BOP Contractor shall perform a formal fire hazard analysis. This analysis will be reviewed and accepted by the General Manager, General Manager's insurance agent and the AHJ. The approved fire hazard analysis will be used to finalize the project scope.

B. The BOP Contractor shall complete the evaluation, design basis preparation, and development of documents for the design, procurement, fabrication, installation, and testing of the specified equipment, including but not limited to the following:

1. Fire Protection Engineering

a. Fire Protection Design Basis Document (DBD)
b. Fire Prevention and Protection Plan

c. Interface with the PWP Fire Department for flow testing to establish basis of design. A static pressure test using a calibrated gauge along with a flow test shall be performed (using a pitot tube) to determine residual pressure. These tests will be used to define the basis of fire water system design.

2. Fire Suppression Systems and Equipment Design

   a. Water Supply
   b. Yard Mains, Hydrants, and Building Standpipes
   c. Portable Fire Extinguishers
   d. Fire Suppression Systems and Equipment
   e. Fire Detection, Alarm, and Annunciation System
   f. Fire-Signaling Systems
   g. All required signage and labeling

3. Installation of Systems and Equipment
4. Performance testing of Systems and Equipment at factory and certificates of results
5. Drawings and design data to support facility design, construction and maintenance
6. Validation, inspection Certificates and quality control documentation listed in this Section
7. Field inspection and testing

C. The BOP Contractor shall furnish the following documentation as part of the balance of plant scope and in support of the fire protection system:

1. Drawings and design data to support facility design, construction and maintenance of the new plant including:

   a. New Plant Arrangement and feature/equipment definition/description
   b. Classified hazardous area drawing
   c. Life Safety Plans
   d. Construction Materials
   e. Smoke and Heat Venting, Heating, Ventilating, and Air Conditioning data
   f. Containment and Drainage
   g. Emergency Lighting
   h. Lightning Protection

D. The BOP Contractor shall implement the execution of the following activities:

1. Fire Protection Engineering specialized design
2. Procurement of Fire Suppression Systems and Equipment
3. Installation of Fire Suppression Systems and Equipment
4. Performance testing of Fire Suppression Systems and Equipment at factory and certificates of results.
5. Inspection certificates and quality control documentation listed in this Section
6. Field inspection and testing (Hold Points determined by General Manager)

1.3 FURNISHED BY OTHERS

A. The General Manager shall furnish the following for products developed by the Seller:

1. Equipment design information for items provided under 481100 Combined Cycle Power Island Equipment to support overall plant fire protection system design.
2. Flow tests outside of the fence line will be performed by Pasadena Fire Department.
3. Existing buildings and equipment arrangement drawings
4. Available site existing firewater system drawings
5. Available site existing underground utilities drawings
6. Gas Turbine Generator enclosure and PIE Contractor supplied fire protection system within the Gas Turbine Generator enclosure.
7. Site existing fire protection documents (if available)
8. Tie-point drawing for existing site connections.

1.4 RELATED SECTIONS

A. Section 480020, Site Conditions

B. Section 481200, Combined Cycle Balance of Plant

C. Section 485100.01, Pipe Material Specifications

D. Section 485956.30, Fire Alarm System

E. Section 485996.10, Firewater Underground Piping, Valves, and Hydrants

F. Section 485996.25, Fire Water Sprinkler Systems

1.5 CODES AND STANDARDS

A. The BOP Contractor's design shall comply with the current editions, at the date of notice to proceed, of relevant internationally recognized codes, standards and regulations and applicable codes, standards, and regulations for the Site.

B. State and local law shall take precedence where conflicts exist between, codes, standards, and this Section. The General Manager shall retain approval of conflict resolution between standards. Deviations from relevant standards shall only be implemented with the written approval of the General Manager.

C. Refer to 481200, Combined Cycle Balance of Plant for general codes and standards applicable to the project. The following codes and standards apply to the specific equipment supplied under this Section.

1. CalARP – California Accidental Release Prevention Program
2. California Code of Regulations Title 24 California Occupational Health and Safety Administration (CalOSHA)

3. National Fire Protection Association (NFPA): Use where the City of Pasadena standards do not provide a higher standard. NFPA is only to be used in design if the 2010 CBC directs you to use this code. State of California and local codes take precedence over NFPA.

    a. NFPA 10 - Standard for Portable Fire Extinguishers
    b. NFPA 12 - Standard on Carbon Dioxide Extinguishing Systems
    c. NFPA 12A - Standard on Halon 1301 Fire Extinguishing Systems
    d. NFPA 13 - Standard for the Installation of Sprinkler Systems
    e. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems
    f. NFPA 15 - Standard for Water Spray Fixed Systems for Fire Protection
    g. NFPA 16 - Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
    h. NFPA 17 - Standard for Dry Chemical Extinguishing Systems
    i. NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
    j. NFPA 51B - Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
    k. NFPA 72 - National Fire Alarm and Signaling Code
    l. NFPA 550 – Guide to the Fire Safety Concepts Tree
    m. NFPA 551 - Guide for the Evaluation of Fire Risk Assessments
    n. NFPA 601 - Standard for Security Services in Fire Loss Prevention
    o. NFPA 704 - Standard System for the Identification of the Hazards of Materials for Emergency Response,
    p. NFPA 750 - Standard on Water Mist Fire Protection Systems
    q. NFPA 850 – Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations
    r. NFPA 2001 - Standard on Clean Agent Fire Extinguishing Systems

4. Pasadena, California – Code of Ordinances, Title 14 Buildings and Construction
5. Underwriters Laboratories (UL)

1.6 DEFINITIONS

A. Authority Having Jurisdiction (AHJ): Pasadena Fire Department / Fire Marshal, City of Pasadena or its agent. An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

B. Fire Marshal: A person designated to provide delivery, management, and/or administration of fire protection and life safety related codes and standards, investigation, education, and/or prevention services for local, county, state, provincial, federal, or private sector jurisdictions as adopted or determined by that entity.

C. Fire Protection Contractor: One who contracts on predetermined terms to provide labor and materials and who is responsible for performance of a construction job in accordance with construction documents or the person or company responsible for fulfilling an agreed upon contract.

D. Fire Protection Engineer: Engineer who is assigned safety system oversight and design for fire protection system(s). Professional services of an engineering nature, as defined by State law, if applicable, that is required to be performed or approved by a person licensed, registered, or certified to provide those services. All plans and specifications to be submitted to the Pasadena Fire Department for approval shall bear the seal of a registered California Professional Engineer.

E. Fire Risk Assessment (FRA): A process to characterize the risk associated with fire that addresses the fire scenario or fire scenarios of concern, their probability, and their potential consequences. Other documents may use other terms, such as fire risk analysis, fire hazard, hazard analysis, and fire hazard analysis assessment, to characterize fire risk assessment as used in NFPA 551.

F. BOP Contractor: The party employed by the City to oversee construction efforts, install Power Island Contractor's work and coordinate Contractor's and Subcontractor's work on the site specified directly or by reference in 481200, Combined Cycle Balance of Plant including the Fire Protection Contractor and Fire Protection Engineer.

G. Others: Personnel, companies, or contractors who are not specifically mentioned in this Section

H. City: The City of Pasadena, California

I. General Manager: The General Manager of the Water and Power Department, or his/her properly authorized agent, representative, or engineer, acting within the scope of the particular duties and authorities delegated to them.

A. Stakeholders: An individual, a group of individuals, or an organization that is perceived to affect or be affected by the fire hazards associated with the facility being evaluated. Stakeholders include those who have a financial, personnel safety, public safety, or regulatory interest in the fire risk, such as the public (e.g., neighbors, community groups, and first responders), employees, General Manager/investor(s), operator, insurer, regulator(s), and design team. The Stakeholders identified under this Section initially include the General Manager, A&E Engineer, Fire Protection Engineer, General Manager's Insurance Company, State of California, Los Angeles County, City of Pasadena, and AJH.

1.7 RESPONSIBILITIES

A. Authority Having Jurisdiction (AHJ):

1. Review and accept DBD.
2. Review and accept FPPP.
3. Review and approve the fire prevention and protection systems and equipment design.
4. The permits issued for work packages will include a requirement for witness testing and acceptance of the fire protection system.
5. See "Stakeholders" for additional responsibilities.

B. Fire Protection Contractor:

1. Procurement and storage of materials related to fire prevention and protection systems required to install the fire prevention and protection systems as required by the contract documents.

2. Installation, inspection, testing, and quality control of the fire protection systems as required by the contract documents.
3. Assembly of documents required for permitting, submittal review, and testing reports.
4. There may be multiple Fire Protection Contractors installing the various fire suppression and protection systems. These contractors have the same responsibilities and shall coordinate activities with the site BOP Contractor.

C. Fire Protection Engineer:

1. Develop the DBD for review and acceptance.
2. Develop the FPPP for review and acceptance.
3. Design and integrate the required fire protection systems for the project including specifications for the procurement, installation, submittals, inspection, and testing of the fire protection equipment complying with state and local codes and regulations and this Section including:

    a. Fire Suppression Systems and Equipment Design and Specification
    b. Installation of Systems and Equipment Specification
    c. Drawings and design data to support facility design, construction and maintenance

4. Review and accept submittals pertaining to the fire protection system,
5. Validation, inspection Certificates, and quality control documentation listed in this Section including:

    a. Inspecting fire protection equipment,
    b. Witness testing of the fire protection equipment

6. Review and accept construction documents for the containment of flammable and combustible liquids, drainage systems required for fire protection, materials of construction related to fire protection of buildings and equipment, and separation distances between buildings and equipment.
7. Coordinate thrust block design and sizing with the site A&E Engineer for unrestrained underground piping systems.
8. See “Stakeholders” for additional responsibilities.

D. BOP Contractor:

1. Develop overall project construction and commissioning schedule.
2. Integrate the fire prevention and protection systems and equipment with the Power Island Equipment (PIE) and Balance of Plant (BOP) equipment for the project.
3. Integrate Fire Protection Contractors site work within the overall project schedule.
4. Documentation control and distribution: Responsible for controlling and distributing current project documents to the General Manager and subcontractors under their jurisdiction.
5. Review and comment on fire protection documents prepared by the Fire Protection Engineer and Contractor.
6. Review fire protection documents and drawings for interferences, electrical and instrumentation needs, separation distances underground piping, and other required code and project needs.

E. Architectural and Engineering Engineer (BOP Contractor):

F. General Manager:

1. Supply existing documents for fire protection, underground utilities, and structures to the BOP Contractor for review by the Fire Protection Engineer,
2. Review, comment, and accept fire protection documents prepared by the Fire Protection Engineer and Contractor:

    a. DBD
    b. FPPP
    c. Fire Suppression Systems and Equipment Design and Specification
    d. Installation of Systems and Equipment Specification

3. Coordinate release of fire protection documents and drawings to the site General Contractor and the site A&E Engineer.
4. Review and accept fire prevention and protection systems and equipment.
5. Witness testing and acceptance of the fire protection system.
6. See "Stakeholders" for additional responsibilities.

G. General Manager's Insurance Agent:

1. Review, comment, and accept fire protection systems designed by the Fire Protection Engineer:

    a. DBD,
    b. FPPP,
    c. Fire Suppression Systems and Equipment Design and Specification
    d. Installation of Systems and Equipment Specification
    e. Inspect and accept fire prevention and protection systems and equipment.

2. See "Stakeholders" for additional responsibilities.

H. Stakeholders:

1. Establish goals and objectives and evaluate whether the recommendations of NFPA 850 are adequate to meet those goals and objectives. The criteria for acceptability of the level of fire protection shall consider the perspective of the various stakeholders.
2. Review and accept the DBD and FPPP.

1.8 SYSTEM DESCRIPTION

A. Design Requirements:

1. The DBD, FPPP, and the fire prevention and protection systems and equipment for the power generating station shall be site specific and designed to comply with NFPA 850, the state and local codes and standards and accepted by the General Manager, General Manager's Insurance Agent, and approved by the AHJ as applicable.
2. A list of fire suppression areas and anticipated fire suppression methods are listed in the Attachments to this Section. Alternatives or deviations must be pre-approved by the General Manager.

B. Reliability:

1. The fire prevention and protection systems for the power generating station shall be considered reliable when the systems water resource(s), materials of construction, main and ancillary equipment, installation, and testing meet the required specific NFPA standards, state and local codes and standards, and verified/witnessed and accepted by the General Manager and the AHJ.

1.9 SUBMITTALS

A. Information to be furnished with the Bid:

1. Proposal shall be prepared in accordance with Section 481200, Combined Cycle Balance of Plant. BOP Contractor shall furnish the information requested and return the following documents:

   a. Experience and education of the Fire Protection Engineer.
   b. Projects executed within the last 5 years that demonstrate the capabilities of the Fire Protection Engineer and Firm to meet the design challenges of the this project.
   c. Sample of a typical Fire Protection Design Basis Document
   d. Sample of a typical Fire Prevention and Protection Plan
   e. Sample of the water based system and equipment drawings and specifications. Include aboveground and buried systems and equipment.

B. Information required after Contract Award:

1. After the award of contract, the following data and drawings shall be submitted to the General Manager for review and acceptance:

   a. Fire Protection Design Basis Document
   b. Fire Prevention and Protection Plan
   c. Specifications for required fire prevention and protection systems and equipment
   d. Fire Prevention and Protection System drawing
   e. Fire Prevention and Protection System P&IDs

C. Drawings

1. Refer to Section 481200, Combined Cycle Balance of Plant for general drawing requirements.
2. Additionally, 3 hardcopy sets of California Professional Engineer stamped drawings need to be submitted for permitting to the City Permitting Department along with a .pdf electronic version of the drawings on one CD-ROM of the submitted files with each submission.

D. Operation and Maintenance Manuals

1. Refer to Section 481200, Combined Cycle Balance of Plant for general operation and maintenance manual requirements.

1.10 QUALITY ASSURANCE

A. Refer to Section 481200, Combined Cycle Balance of Plant for general quality assurance requirements.

B. BOP Contractor shall submit for review, comment, and acceptance to the Stakeholders the Fire Protection Design Basis Document and Master Fire Prevention & Protection Plan. Each document shall be considered a Hold Point until accepted by the stakeholders.

C. Qualifications

1. The Fire Protection Engineer shall be licensed to practice in the state where the project site is located, and is competent with the implementation of NFPA 850 recommendations for electric generating plant fire prevention and protection systems.
2. The Fire Protection Contractor shall be licensed for contract section scope.

D. Regulatory Requirements: The BOP Contractor shall comply with state and local codes and regulations. The BOP Contractor shall submit documents prepared under this Section to the AHJ for review and acceptance or approval.

1.11 PACKAGING, DELIVERY, STORAGE, AND HANDLING

A. Refer to Section 481200, Combined Cycle Balance of Plant for general delivery, storage, and handling requirements.

1.12 SITE CONDITIONS

A. Reference Section 480020, Site Conditions.

1.13 SCHEDULE

A. The BOP Contractor shall submit a Submittal Document Schedule to include review and comment times.

B. All permitting packages will be sent to the City Permitting Department then distributed to the appropriate department within the City for an estimated 8 week review process.

1. The City Building Department requires 8 weeks for permit drawing review.
2. PFD requires 4-6 weeks for permit drawing review.

1.14 WARRANTY

A. Refer to Section 481200, Combined Cycle Balance of Plant for general warranty requirements.

PART 2 - PRODUCTS

2.1 GENERAL FIRE PROTECTION ENGINEERING

A. The fire protection systems designed under this specification shall be hydraulically calculated.

B. Provide fire suppression system specifications as required by the Fire Protection Design Basis Document.

C. Review General Manager plant equipment specifications and documents identified in the Attachments for fire protection design comments. This review is to allow the Fire Protection Engineer to give supplemental design comments to reduce the fire based on the materials of construction.

D. Compressed air required for the fire protection systems operation shall be provided by the air compressor supplied by the Power Island Equipment Contractor. All required compressed air piping, valves and instrumentation needed for the interconnection to the plant fire protection systems shall be provided by the BOP Contractor. If a local receiver tank is required, this shall be supplied by the BOP Contractor.

E. Unless otherwise specified, procurement and/or installation specifications or sections furnished shall include at a minimum, the following:

1. Description and scope of supply
2. Performance requirements
3. Material and product requirements
4. Installation requirements
5. Inspection requirements and reports
6. Quality assurance requirements
7. Testing requirements and reports
8. Flushing requirements and reports
9. Acceptance criteria
10. Warranty

F. Documentation provided by the BOP Contractor and Fire Protection Engineer shall include the following submittals as required in support of the fire protection design:

1. Quality Assurance/Control Submittals
2. Operation and Maintenance Manuals
3. Design Data
4. Test Reports and Certificates for installed systems, such as contractor “A” and “U” sheets.
5. Hydraulic Calculations
6. Equipment sizing calculations
7. Fire protection drawings
8. Material/component Data Sheets
9. Manufacturer’s Instructions
10. Manufacturer’s Field Reports
11. Contract Closeout Submittals
12. Project Record Documents

2.2 FIRE PROTECTION DESIGN BASIS DOCUMENT

A. The fire protection design basis document shall document compliance with NFPA 850 and state and local regulations including the CalARP regulations and local requirements for the fire prevention and protection needs of the project. NFPA 850 is a prescribed method for fire prevention and protection for an electric generating station. This prescribed methodology requires a fire risk evaluation to determine its validity for the project.

B. Use NFPA 850 Fire Protection Design Process to evaluate, assess, and determine the fire protection and prevention needs of the project, including:

1. Use of Fire Risk Assessment in evaluating plant specific considerations regarding design, layout, and anticipated operating requirements. The evaluation is to result in a list of recommended fire prevention features to be provided based on acceptable means for separation or control of common and special hazards, the control or elimination of ignition sources, and the suppression of fires.
2. Use of Process Safety Management (PSM) techniques for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire or explosion hazards.

C. Evaluate the recommendations of NFPA 850 against the requirements of the Stakeholders to ensure they are adequate to meet those goals.

D. NFPA 551 “Guide for the Evaluation of Fire Risk Assessment (FRA)” shall be used for evaluating the different fire risks. The fire safety concepts tree in NFPA 550, Guide to the Fire Safety Concepts Tree, shall be used to provide a comprehensive overview of the concepts or systems that are to be considered in the FRA.

E. The Fire Protection Design Basis Document (DBD) shall contain, as a minimum, the following information:

1. Plant name
2. Plant location
3. Fire protection engineer
4. Table of contents
5. Stakeholders and Stakeholders requirements
6. General fire protection philosophy (e.g., passive versus active protection)
7. Assumptions
8. Site-specific information (e.g., environmental conditions)
9. Source documents (e.g., adopted codes, standards, regulations, insurance requirements)
10. Plant layout (e.g., hazard separation, fire barriers, drainage)
11. Water supply (e.g., underground mains, hydrants)
12. Hazards (e.g., transformers, turbine lube oil, fuels, storage, cooling towers)
13. Operational and administrative controls
14. Site Fire Protection Area Drawing(s)
15. Fire Hazard Assessment to include but not limited to:

    a. Equipment requiring fire suppression
    b. Buildings requiring fire suppression.
    c. Plant Site Combustibles inventory
    d. Types of fire suppression required for buildings and equipment

e. Fire ratings for buildings
f. Separation distances required between equipment and buildings
g. Fire detection, alarm and annunciation.
h. Combustion material management,
i. Containment and Drain systems
j. Life safety
k. Fire Brigades

2.3 FIRE PREVENTION & PROTECTION PLAN

A. This document is to identify, integrate, and link as required the fire prevention and protection systems and equipment required for the project based on the Fire Protection Design Basis Document. This document is to address as a minimum the following systems and documents:

1. Fire Risk Control Program
2. Fire Emergency Plan
3. Fire Brigade approach
4. Reliable Water Resource Document
5. Fire Protection Systems and Equipment

    a. Fire Prevention Systems and measures
    b. Water Based Fire Protection Systems
    c. Chemical Based Fire Suppression Systems
    d. Inert Gas Systems
    e. Fire Detection, Alarm, and Annunciation Systems
    f. Containment, Curbing, and Drainage

B. The FPPP is to enable flow of information or data, and coordination between contractors, suppliers, designers, installers, inspectors, General Manager, General Manager's Insurance Agent, and AHJ to ensure a reliable, functioning system that meets state and local codes and regulations and is acceptable to the AHJ and General Manager.

2.4 FIRE RISK CONTROL PROGRAM

A. Develop a written plant fire risk control program which includes the following:

1. Management Policy and Direction
2. Fire safety information for employees and contractors. This information shall include, as a minimum, familiarization with fire prevention procedures, plant emergency alarms and procedures, and how to report a fire. This shall be included in employee/contractor orientation.
3. Document regularly scheduled plant inspections including provisions for handling of remedial actions to correct conditions that increase fire hazards.
4. A description of the general housekeeping practices and the control of transient combustibles. Transient combustibles that are a significant risk during a fire situation, especially during outages.
5. Control of flammable and combustible liquids and gases in accordance with appropriate NFPA standards.

6. Control of ignition sources including smoking, grinding, welding, and cutting. (See NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work.)
7. Fire prevention surveillance. (See NFPA 601, Standard for Security Services in Fire Loss Prevention.)
8. Fire report, including an investigation and a statement on the corrective action to be taken. (See NFPA 850 Annex B.)
9. Fire hazards of materials located in the plant or storage areas identified in accordance with NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response, and applicable material safety data sheets (MSDS).
10. Testing, Inspection, and Maintenance.
11. Impairments
12. Management of Change.
13. Emergency Response Personnel
14. Special Fire-Fighting Conditions.

2.5 FIRE EMERGENCY PLAN

A. A written fire emergency plan shall be developed, and, as a minimum, this plan shall include the following:

1. Response to fire alarms and fire systems supervisory alarms
2. Notification of personnel identified in the plan
3. Evacuation of employees not directly involved in fire-fighting activities from the fire area
4. Coordination with security forces or other designated personnel Fire preplanning that defines fire extinguishment activities
5. Periodic drills to verify viability of the plan

2.6 FIRE BRIGADE REQUIREMENTS

A. The City of Pasadena Fire Department is the primary responder in event of a fire. The General Manager will not have a full time onsite fire brigade.

2.7 RELIABLE WATER RESOURCE DOCUMENT

A. This document shall evaluate the water required for firefighting needs and determine if the available supply is reliable and meets the state and local codes and regulations or determine if supplemental water source(s) is required. The document shall take into account:

1. Reliability of water source
2. Capacity of water source
3. Reliance on water-based fire protection systems
4. Availability of alternate and backup sources
5. Consequences of a loss, in terms of property loss and loss of generation
6. NFPA 850, Chapter 6.2 shall be used to define the 2-hr total firefighting water demand.
7. Where the water source is found deficient, this document is to recommend as part of the Fire Protection Design Basis Document, an alternative or supplemental water source meeting the site needs.

2.8 FIRE PROTECTION SYSTEMS AND EQUIPMENT DESIGN AND SPECIFICATION

A. Develop and certify site specific design, drawings, specifications and documentation for the procurement, supply, handling, management, installation, testing, and certification of complete and functional fire prevention and protection systems within the plant boundaries.

B. Include systems and equipment as defined by the Fire Protection Design Basis Document and accepted by the AHJ.

C. When completed by the BOP Contractor and Fire Protection Contractor, the fire prevention and protection systems and equipment for the power generating station shall be tested as required by the construction documents, specific NFPA standards, state and local codes and standards and verified/witnessed by the General Manager and the AHJ. The tests shall demonstrate the systems meet or exceed the design requirements.

D. Fire Protection System configuration drawings

1. Fire Area Plan Drawings shall demonstrate the plan to limit the spread of fire, protect personnel, and limit the resultant consequential damage to the plant. Fire areas shall be separated from each other by fire barriers, spatial separation, or other approved means. Determination of fire area boundaries shall be based on consideration of the following:

    a. Types, quantity, density, and locations of combustible material,
    b. Location and configuration of plant equipment,
    c. Consequence of losing plant equipment,
    d. Location of fire detection and suppression systems.

2. The Firewater Distribution System drawings shall include at a minimum:

    a. Firewater loop, risers and standpipe locations, valves: PIV or otherwise, fire hydrants, and monitors.
    b. Background site boundary, equipment, buildings, and roads.

3. Fire Protection P&ID(s) showing:

    a. Water Based Fire Suppression Systems - firewater loop, risers, standpipe locations, valves: PIV or otherwise, fire hydrants, and monitors.
    b. Chemical Based Fire Suppression Systems – Storage, Distribution, Dispensing, Monitoring
    c. Water Mist Fire Protection Systems - Storage, Distribution, Dispensing, Monitoring

E. System and equipment procurement and/or installation specifications for the following as applicable:

1. Fire Protection Systems and Equipment — General Requirements
2. Water Based Fire Suppression Systems

    a. Water Supply
    b. Yard Mains, Hydrants, and Building Standpipes
    c. Portable Fire Extinguishers
    d. Fire-Signaling Systems
    e. Sprinkler Systems

3. Chemical Based Fire Suppression Systems

    a. Storage
    b. Distribution
    c. Dispensing
    d. Monitoring and detection system
    e.

4. Water Mist Fire Protection Systems

    a. Water and compressed gas storage
    b. Distribution
    c. Dispensing
    d. Monitoring and detection system

5. Fire Detection, Alarm, and Annunciation Systems
6. Containment, Curbing, and Drainage

2.9 WATER BASED FIRE SUPPRESSION SYSTEM REQUIREMENTS

A. The following requirements are for water based fire protection or suppression systems. Documents are required for those outlined in the Fire Protection Design Basis Document and the Fire Prevention and Protection Plan.

B. The Fire Protection Contractor will be responsible for detail design of the water suppressed areas. The Fire Protection Contractor will perform flow calculations, produce installation drawings showing line sizes, supports, detail location and types of heads, and then fabricate and install this system.

C. FIREWATER PUMP AND TANK REQUIREMENTS

1. The firewater main piping connects to the City’s pressurized firewater distribution system so pumps and storage tanks are not required for this project.

D. UNDERGROUND FIREWATER MAINS AND APPURTENANCES REQUIREMENTS

1. Underground Fire Mains shall comply at a minimum with NFPA 24 (materials shall be UL listed and FM approved), state and local codes and regulations.
2. Design Requirements

a. Fire hydrant shall be Jones Fire Hydrant wet type barrel approved by the General Manager and the AHJ.
b. Underground firewater piping shall use cement lined ductile iron pipe with bell and spigot push on type joints. For detailed pipe specifications refer to Section 485100.01, Pipe Material Specifications and P&IDs provided with Section 481200, Combined Cycle Balance of Plant. No preference on type of restraining mechanism.
c. Monitors will be required where the AHJ deems areas needing fire protection would be hazardous to enter during a firefighting event or where the Fire Protection Design Basis requires it use.
d. Where thrust blocks are required, the Fire Protection Engineer shall coordinate with the BOP Contractor for sizing and spacing requirements, location, and interferences. The Fire Protection Engineer shall review and accept the final thrust block configuration.

E. FIREWATER MAINS AND STANDPIPES REQUIREMENTS

1. Fire mains and standpipes to comply with NFPA 14, NFPA 15, and as required by the state and local codes and regulation. The materials shall be UL listed and FM approved.
2. Design Requirements

a. Fire hose type and locations in stairwells, corridors, or other location required for firefighting.
b. Pressures and flows available at the stand pipes.
c. Piping systems shall be protected from the effects of an earthquake in accordance with NFPA and state and local codes and regulations.
d. Monitors will only be required if the AHJ deems the areas needing protection are in an area that would be too hazardous to enter during a fire fighting event.

F. FIREWATER SPRINKLER PIPING REQUIREMENTS

1. The sprinkler systems shall be in accordance with NFPA 13. Selection of system configuration shall be determined in the DBD (wet, dry, actuated by manual operation, thermo-bulbs, fusible links, or other preaction systems). Sprinkler piping designed under this section shall comply with NFPA 13 requirements, state and local codes and regulations.
2. Design Requirements

a. Water spray fixed systems application rates shall be sized per NFPA 15 to control burning, exposure protection, and transformer protection.
b. The system demand shall include the simultaneous hydraulic demand from sprinklers and water spray nozzles on the system.
c. Water spray fixed systems shall be protected from the effects of an earthquake per NFPA, state and local codes and regulations.

G. FOAM WATER SYSTEM PIPING REQUIREMENTS

1. Foam-water sprinkler and foam-water spray systems shall comply with NFPA 16, state and local codes and regulation.
2. Water spray fixed systems shall be protected from the effects of an earthquake per NFPA, and state and local codes and regulations.

H. WATER MIST REQUIREMENTS

1. Water mist systems shall comply with NFPA 750, state and local codes and regulation.
2. Water spray fixed systems shall be protected from the effects of an earthquake per NFPA, state and local codes and regulations.
3. Portable water mist fire extinguishers shall not be used.

2.10 CHEMICAL BASED FIRE SUPPRESSION SYSTEMS REQUIREMENTS

A. Chemical based fire suppression systems to comply with NFPA 17, NFPA 2001, state and local codes and regulation.

B. This includes both fixed nozzle type and hand hose lines for dry-chemical based systems.

C. Clean agent fire extinguishing systems shall be selected over CO2 systems for occupied areas or areas where the accumulation of CO2 presents a life safety hazard.

D. Portable fire extinguishers shall comply with NFPA 10.

E. Chemical based fire suppression systems shall be protected from the effects of an earthquake per NFPA, and state and local codes and regulations.

2.11 INERT GAS SYSTEMS REQUIREMENTS

A. Inert Gas systems shall comply with NFPA 12, NFPA 12A, state and local codes and regulation.

B. FM-200 clean agent fire extinguishing systems shall be selected over CO2 for occupied areas or areas where the accumulation of CO2 presents a life safety hazard.

C. Inert gas fixed systems shall be protected from the effects of an earthquake per NFPA, state and local codes and regulations.

2.12 FIRE DETECTION, ALARM, & ANNUNCIATOR SYSTEMS REQUIREMENTS

A. The Fire Protection Engineer shall design a fire detection, alarm, and annunciation system providing an automatic actuation signal to fixed water spray systems and shall be designed in accordance with NFPA 72, National Fire Alarm and Signaling Code, state and local code and regulations. The design shall include but not limited to the following:

1. Central Fire Alarm Panel installed in the GT-5 Control Room: The GT-5 Central Alarm Panel shall provide individual alarm point input identification with keyed override of individual point malfunction to allow system reset and silencing. The GT-5 Central Fire Alarm Panel shall be linked to the remote equipment in the fire protection system control panel and to other fire suppression equipment on site and display individual point identifications associated with the remote system inputs.
2. Link existing fire alarm systems in the B-3 Control Room to the GT-5 Central Fire Alarm Panel. See the Tie-point location plan for existing fire alarm connection points. The Fire Protection Engineer shall determine the type of connection required to connect to the existing systems.
3. Fire Detection/Sensing equipment shall be installed as required by the Fire Protection Design Basis Document and as accepted by the General Manager, General Manager's Insurance Agent, and AHJ.
4. Audible and Visual fire alarm indication shall be installed as required by the Fire Protection Design Basis Document and as accepted by the General Manager, General Manager's Insurance Agent, and AHJ.
5. A Remote Fire Alarm Panel shall be installed in the PDC that is redundant to the Central Fire Alarm Panel installed in the GT-5 Control Room and fully functional to control all fire protection and annunciation systems when the Central Fire Alarm Panel is disconnected or out of service.
6. Fire detection/sensing panel installed in the Control Room shall provide input for up to a minimum of ten alarms from the GT-5 Central Fire Alarm Panel.
7. A 120 VAC UPS power source shall be provided that is capable of 120 minutes sustainability. Additional back-up power and/or power conversion, as required by the BOP Contractor provided equipment or the Codes in effect, shall be furnished by the BOP Contractor.

B. The plant operators will call the Pasadena Fire Department for dispatch of the Fire Brigade in event of fire. The Fire Protection Engineer includes provisions to automate this process to link to the Pasadena Fire Department fire warning system.

C. BOP Contractor shall create and submit documents necessary to obtain approvals, certifications, and/or authorizations required by authorities and agencies providing oversight of fire protection systems installed in the project locations. The BOP Contractor is singularly responsible for obtaining authorizations and approvals and shall include that of the AHJ as well as the General Manager's Insurance Agent.

2.13 CONTAINMENT AND DRAINAGE REQUIREMENTS

A. Containment Design

1. Include review of construction drawings and make recommendations or comments on curbing and containment of flammable or combustible liquids and materials. Containment and curbing is to comply with state and local codes, and the Fire Protection Design Basis Document. The review is to include but not limited to size of containment for the equipment, liquid, or material, location of containment, separation between equipment and building or equipment and equipment.

2. All containment basins shall be set to be able to drain to grade via a normally closed valve and have a sump for pumping out to a truck should the water be contaminated. Note, Los Angeles County Sanitation District advised containments greater than 400 square feet draining to sanitary sewer will require rain covers.
3.

B. Drainage

1. Include review of construction drawings for fire areas of the plant for removal of liquids directly to safe areas for flammable or combustible liquids without flooding of equipment and without endangering other areas. The review to comply with state and local codes, and the Fire Protection Design Basis Document. Drainage and prevention of equipment flooding or fire spread shall be accomplished by one or more of the following:

a. Floor drains with traps
b. Floor trenches
c. Open doorways or other wall openings
d. Curbs for containing or directing drainage
e. Equipment pedestals
f. Pits, sumps, and sump pumps

2.14 MATERIAL REQUIREMENTS

A. Piping materials and fittings shall comply with NFPA standards. State and local codes and standards as applicable and as identified on the Drawings.

B. Components and hardware supplied shall be FM Global approved and/or UL listed.

C. Materials other than those specified shall require approval prior to use.

D. Supplied materials shall be new, clean, free from defect and meet the requirements of the referenced standards.

2.15 MANUFACTURERS

A. FM Global approved and/or UL Listed products.

B. Fire Hydrants – Jones Fire Hydrant (match existing site model)

2.16 SOURCE QUALITY CONTROL

A. Documents shall comply with state and local codes and regulations.

B. Coordinate, manage and incorporate requirements of the Stakeholders, Fire Protection Design Basis Document, Fire Prevention and Protection Plan, state and local codes and regulations, and the AHJ in documents for procurement, supply, handling, management, installation, testing, and certification of complete and functional fire prevention and protection systems within the plant boundaries.

C. Fire Protection Engineer shall verify and certify ~~design,~~design; drawings, specifications and documentation meet the requirements of the Stakeholders, Fire Protection Design Basis Document, Fire Prevention and Protection Plan, state and local codes and regulations, and the AHJ.

D. The AHJ shall be provided one set of design documents for review and acceptance.

E. Non-Destructive Examinations

1. NDE methods, acceptance criteria, and additional general requirements shall be in accordance with the applicable fabrication code and this specification.
2. Visual examination shall be by personnel certified to AWS QC1 requirements. Other NDE shall be by personnel qualified to Level II or Level III requirements of SNT-TC-1A of the American Society for Non Destructive Testing.
3. Visual examination shall be performed before other NDE.
4. Radiographic examinations required shall be done in accordance with the requirements of the appropriate fabrication code or this specification.

F. Testing

1. Certificates and records of shop tests shall be submitted to the General Manager for acceptance at least one week before shipment.

PART 3 - EXECUTION

3.1 QUALITY CONTROL, VALIDATION AND CERTIFICATION

A. The BOP Contractor shall submit to the General Manager a procedure to validate and certify that the final fire prevention and protection systems is designed, installed, and tested based on the BOP Contractor prepared documents. The procedure is to include:

1. List of hydraulic calculation that shall be reviewed
2. List of drawing to be reviewed
3. List of specifications or documents to be reviewed
4. Listing of Hold Point inspections
5. List of tests that will be conducted and witnessed for design verification and certification.
6. Final verification and certification report documenting the final design disposition:

    a. Noncompliance report
    b. Resolution/disposition of non-compliance.
    c. Verification and certification of design.

7. On-site support: BOP Contractor to provide on-site support for the following activities:

    a. BOP Contractor will be required to notify PFD 72 hours before any testing requiring PFD witness is performed.
    b. Fire Prevention and Protection System witness testing
    c. Fire protection system walkdown. This will include both above ground and underground installations.
    d. Support PFD certification of fire lines.

e. Door fan tests for closed fire suppression system testing such as the gas turbine enclosure and the PDC as required by the equipment manufacturer, the FPPP and AHJ.

B. The BOP Contractor shall validate document acceptance by the Stakeholders.

C. BOP Contractor's Fire Protection Engineer shall verify and certify installed Fire Prevention and Protection Systems meet the requirements of the Stakeholders, Fire Protection Design Basis Document, Fire Prevention and Protection Plan, state and local codes and regulations, and the AHJ.

D. AHJ to establish Hold Points for Execution of project.

E. The Fire Marshal will inspect all installations of underground fire loop, hydrostatic testing, flushing, and flow tests as well as all aboveground fire piping, hydrostatic testing, flushing, flow tests, gas detection, hazardous material piping, tanks with hazardous materials and controls for these tanks.

F. PFD will witness all hazardous material system testing.

END OF SECTION 485956

PART 4 - ATTACHMENTS

4.1 BOP CONTRACTOR DATA REQUIREMENTS

	Document	**Schedule**	**Action**
With Bid			
	Sample Fire Protection Design Basis Documents	With Bid	For review
	Sample Fire Prevention and Protection Plan	With Bid	For review
After award of Contract			
	Submittal Document Schedule	2 weeks	For review
	Fire Protection Design Basis Document	4 weeks	For review
	Master Fire Protection & Suppression Plan	6 weeks	For review
	Design Criteria and Specifications	Listed Below	Listed Below
	Water Based Fire Suppression Systems design and specifications	12 weeks	For review
	Chemical Based Fire Suppression Systems design and specifications	12 weeks	For review
	Inert Gas Systems design and specifications	12 weeks	For review
	Fire Detection, Alarm, and Enunciation Systems design and specifications	12 weeks	For review
	Containment, Curbing, and Drainage design and specifications	8 weeks	For review
	Equipment Specification Review	To be coordinated with General Manager	For Review
	Validation and Certification Procedure	8 weeks	For Review
	Validation and Certification Report	2 weeks after final test completion	For Information
	Firewater System drawing	8 weeks	For Review
	Firewater P&ID	8 weeks	For Review

4.2 FIRE SUPPRESSION AREAS

BUILDING	AREA DESCRIPTION	FIRE SUPPRESSION TYPE
Gas Turbine Package	Gas Turbine and Generator compartment	On-board self contained CO2 system
	Mineral lube oil skid	Deluge system with air pilot line
	Auxiliary skid enclosure	Water mist system
Steam Turbine Enclosure	Acoustic enclosure	Pre-action water spray system with 180˚F high temp fusible link heads at ceiling
	Steam turbine, generator and bearings	Pre-action water spray system with temperature rate of rise detection and fusible link heads
	Lube oil skid	Deluge system with air pilot line
Heat Recovery Boiler (OTSG)	Outdoor installation	None required
Fuel Gas Compression and metering areas	Four side acoustic wall, no roof	None required if not contained within a building
Power Distribution Center	Prefabricated electrical building on concrete piers	Smoke detection and pre-action water mist (dry pipe) system
	Switchgear and battery storage	Smoke detection and pre-action water mist (dry pipe) system
	Area underneath building with cable trays and building penetrations	Dry pipe water sprinkler system with smoke detection and fusible link heads
Cooling Tower	Fiberglass structure with <25 flame spread rating	Wet sprinkler system
Generator Step-Up Transformer	No FR3 fluid	Fire separation walls as required. No active fire suppression system.
Auxiliary Transformers	No FR3 fluid	Fire separation walls as required. No active fire suppression system.
Control Building	Administrative Office Space	Wet pipe sprinkler system, CO2 handheld extinguishers as required by code
	GT-5 Control Room	Smoke detection and pre-action water mist (dry pipe) system
	Under floor cabling (computer floor in control room and DCS/Server Room)	Wet pipe sprinkler system
	DCS and Server Room	Smoke detection and pre-action water mist (dry pipe) system
	DCS and Server Room under floor cabling	Wet pipe sprinkler system
CEMS Enclosure	Air emissions analyzer equipment	Smoke detection only
Water Sampling Enclosure	Water and steam analyzer equipment	Smoke detection only

4.3 GENERAL MANAGER FURNISHED DRAWINGS AND DOCUMENTS

Document No	Company	Document Title/Description	Rev	Notes
Existing buildings and equipment arrangement drawings				
20001-M-001		Overall Site Plan Gas Turbine Generator Units 3 and 4		Need complete document Title Block
FP1 of	Tyco Fire & Security Simplex Grinnell	Glenarm Plant Fire Protection Drawing		Need complete document Title Block
As-Built Survey Information	Coory Engineering	Storm Drain Line and Electrical Conduit Trench		
		Site existing underground utilities		Later
		Tie-point drawing for existing site connections.		Later
		Containment and Drainage		Later
		Emergency Lighting		Later
		Lightning Protection		Later
Plans				
		Life Safety Plans		Later
Documents				
		Construction Materials		Later
		Smoke and Heat Venting, Heating, Ventilating, and Air Conditioning data		Later
		Site existing fire protection documents (if available)		Later
New Plant Arrangement and feature/equipment definition/description				
M1-1-1	Power Engineers	General Arrangement, Gas Turbine – Axial exhaust (GT-5 CC)		
M6-1-1	Power Engineers	LM6000 Configuration Elevation		
A2-1	Power Engineers	Control Building, Main Floor Plan		
A3-1	Power Engineers	Control Building, Exterior Elevations		
A4-1	Power Engineers	Control Building, Building Elevations		
E1-2	Power Engineers	PDC Building Layout		
Documents				
	Power Engineers	Equipment Definition and Descriptions		

Enclosure 10

Attachment 4

Scheduled Major Component RTS and Delivery Dates*

Reference	Equipment Description	Scheduled RTS Date	Guaranteed Delivery Date
B.1	Gas Turbine Generator	23 Jan 2015	Week of 2 Mar 2015
B.2	Once-Through Steam Generator	20 Feb 2015	Week of 30 Mar 2015
B.3	Steam Turbine Generator	27 Feb 2015	Week of 6 Apr2015
B.4	Surface Condenser	9 Mar 2015 ~~21Jan 2015~~	20 Apr 2015 ~~4 Mar 2015~~
B.5	Cooling Tower	6 Mar 2015 ~~23 Jan 2015~~	17 Apr 2015 ~~6 Mar 2015~~
B.6	Gas Turbine Inlet Chiller	17 Dec 2014	28 Jan 2015
B.7	Condensate Pumps	4 Mar 2015 ~~10 Dec 2014~~	15 Apr 2015 ~~21Jan 2015~~
B.8	Boiler Feedwater Pumps	4 Mar 2015 ~~10 Dec 2014~~	15 Apr 2015 ~~21Jan 2015~~
B.9	Circulating Water Pumps	4 Mar 2015 ~~10 Dec 2014~~	15 Apr 2015 ~~21Jan 2015~~
B.10	Steam Turbine Bypass Valve	4 Mar 2015 ~~10 Dec 2014~~	15 Apr 2015 ~~21Jan 2015~~
B.11	Condensate Polisher	27 Feb 2015 ~~19 Dec 2014~~	10 Apr 2015 ~~30 Jan 2015~~
B.12	Continuous Emissions Monitoring System	30 Jan 2015 ~~19 Dec 2014~~	13 Mar 2015 ~~30 Jan 2015~~
B.13	Generator Step Up Transformer	13 Feb 2015 ~~19 Dec 2014~~	3 Apr 2015 ~~6 Feb 2015~~

8.14	Compressed Air System Skid	27 Mar 2015 ~~5 Dec 2014~~	8 May 2015 ~~16 Jan 2015~~
8.15	Fuel Gas Compressor	9 Feb 2015	23 Mar 2015
G.8	Auxiliary Boiler and Pump	25 Feb 2015	8 Apr 2015
G.10	Auxiliary Seal Steam Superheater	25 Feb 2015	8 Apr 2015

*These schedule dates are based on a NTP of 27 September 2013. If the NTP date changes, the scheduled deliveries shall be adjusted as provided in Article 2(a) of the Contract.

Attachment 11

Document Packages and Delivery Schedule

City of Pasadena

CKOM Date (Please Refer To General Note #7 Below):		**GTG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
General Arrangement, Main Unit		12	Y	R
One Line Diagram, Generator		12	Y	R
Installation Foot Print, Anchor Bolt & Shear Lug Location, Main Unit		12	N	I
Piping, Penetration Option		12	N	I
Lift Arrangement		16	N	I
Shipping Data		16	N	I
Flow & Equipment Symbols, Mechanical		10	N	I
Flow & Instrument Diagram, Turbine Fuel System		10	N	I
Flow & Instrument Diagram, Turbine Lube Oil System		10	N	I
Flow & Instrument Diagram, Generator / Gearbox Lube Oil System		10	N	I
Flow & Instrument Diagram, Water Wash System		10	N	I
Flow & Instrument Diagram, Ventilation & Combustion Air System		10	N	I

CKOM Date (Please Refer To General Note #7 Below):		GTG Deliverables Schedule	LD's Assigned [Y/N]	For Review / For Information [R/I]
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Flow & Instrument Diagram, Fire Protection System CO_2 [6]		10	N	I
Flow & Instrument Diagram, Hydraulic Start System		10	N	I
Flow & Instrument Diagram, Water Injection System		10	N	I
Flow & Instrument Diagram, Sprint System Skid		10	N	I
Flow & Instrument Diagram, Sprint System Main Unit		10	N	I
Instrumentation Diagram, Auxiliary Systems		10	N	I
General Arrangement, Auxiliary Skid		12	N	I
General Arrangement, Air Filter		12	N	I
General Arrangement, Sprint Skid		12	N	I
General Arrangement, Fire Protection Skid[6]		12	N	I
Abbr., Symbols & Reference Data, Electrical		12	N	I
Schematic, Generator Excitation System		12	N	I
Schematic, Diagram, Circuit Breaker Control		12	N	I

CKOM Date (Please Refer To General Note #7 Below**):**		**GTG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Schematic Diagram, Motor Control Center		14	N	I
Three Line Diagram, Generator Metering		12	N	I
Schedule, Motor Control Center		14	N	I
Interconnect Plan, Electrical System		14	N	I
Interconnection Wiring Diagram, Customer		14	N	I
Interconnect Cable Schedule		14	N	I
Plan & Elevation, Turbine Control Panel		10	N	I
Plan & Elevation, Lineside Cubicle		12	N	I
Plan & Elevation, Neutral Cubicle		12	N	I
Schematic, Lighting & Distribution		14	N	I
Instrument Loop Diagram, Vibration System		12	N	I
Schematic, Communication		12	N	I

CKOM Date (Please Refer To General Note #7 Below):		**GTG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Area Classification Drawing		12	N	I
Area Classification Report		12	N	I
Instrument Loop Diagram, Hydraulic Start System		16	N	I
Instrument Loop Diagram, Ventilation and Combustion Air System		16	N	I
Instrument Loop Diagram, Mineral Lube Oil System		16	N	I
Instrument Loop Diagram, Turbine Lube Oil System		16	N	I
Instrument Loop Diagram, Fire and Gas Protection System		16	N	I
Instrument Loop Diagram, NOx Water Injection System		16	N	I
Instrument Loop Diagram, Fuel System		16	N	I
Instrument Loop Diagram, Water Wash System		16	N	I
Instrument Loop Diagram, Auxiliary System		16	N	I
Instrument Loop Diagram, SPRINT System		16	N	I
Generator Protective Relay Settings		10	N	I

CKOM Date (Please Refer To General Note #7 Below):		GTG Deliverables Schedule	LD's Assigned [Y/N]	For Review / For Information [R/I]
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Digital Multi-function Meter Settings		10	N	I
Digital Synchronizer Settings		10	N	I
AVR Settings		10	N	I
Speed Switch Settings		10	N	I
Nameplate List, Engraving Schedule and Switch Development		10	N	I
NOx Water Injection Pump SR Drive Settings		10	N	I
Schematic Diagram, DC Power Distribution		16	N	I
Schematic Diagram, Critical Shutdown Path		16	N	I
Schematic Diagram, Miscellaneous		16	N	I
Schematic Diagram, Cabinet Heat Exchangers		16	N	I
Worksheet, Control System		16	N	I
Wiring Diagram, Lineside Cubicle		With O&M manuals	N	I

CKOM Date (Please Refer To General Note #7 Below**):**		**GTG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Wiring Diagram, Neutral Cubicle		With O&M manuals	N	I
Wiring Diagram, Turbine Control Panel, Control Cubicle		With O&M manuals	N	I
Wiring Diagram, Turbine Control Panel, Termination Cubicle		With O&M manuals	N	I
Wiring Diagram, Auxiliary Skid		With O&M manuals	N	I
Wiring Diagram, Generator Skid		With O&M manuals	N	I
Wiring Diagram, Turbine Skid		With O&M manuals	N	I
Wiring Diagram, Sprint Skid		With O&M manuals	N	I
Wiring Diagram, Air Filter		With O&M manuals	N	I
Wiring Diagram, Fire & Gas Protection System[6]		With O&M manuals	N	I
Installation & Commissioning Manual		1 month prior to Scheduled RTS Date	N	I
General Notes:				
#1 Not used.				

CKOM Date (Please Refer To General Note #7 Below**):**		**GTG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Gas Turbine Generator Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
#2 Cycle time for California Professional Engineer stamping of drawings is not reflected on the drawing schedule. First Revision of drawings will be supplied without PE stamp. Eight (8) weeks to be added to the drawing cycle time after customer has reviewed and sent back first revision of drawings supplied. California Professional Engineer stamp of foundation, and loading drawings, and fire system drawings only.				
#3 Not used.				
#4 Submittal time is for standard equipment and is shown in weeks after the Customer Kickoff Meeting date, Customer Kickoff Meeting to take place a minimum of 12 weeks prior to drawing due dates.				
#5 A drawing is considered submitted when uploaded to the online collaboration system.				
#6 Vendor Supplied Drawing				
#7: The CKOM Date will be adjusted to reflect the later of: (i) the actual date of the last day of the CKOM; or (ii) as mutually agreed to by the Parties during the CKOM.				
#8: Any liquidated damages for late drawing deliveries will only be assessed on the initial issue of the drawing package and not to any follow-up transmittals or updates as applicable.				
#9: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.				

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**HRSG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
HRSG Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Preliminary General Arrangement Drawing		12	Y	R
General Arrangement Drawing		15	N	I
Preliminary Foundation & Loading Diagram		15	Y	R
Foundation & Loading Diagram		17	N	I
Baseplate Assembly Drawing		18	Y	R
Flowsheets		13	N	I
Equipment, Valve & Instrument List (without Datasheets)		13	N	I
Equipment, Valve & Instrument List with Datasheets		19	N	I
Performance Tables		18	N	I
Piping Isometrics		23	N	I
Preliminary Utility Lists; conditions at terminal points		17	Y	R
Utility Lists; conditions at terminal points		25	N	I

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**HRSG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
HRSG Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Ducting and Erection Drawings		2 weeks prior to shipment	Y	R
Platform Arrangement Drawings		2 weeks prior to shipment	Y	R
Erection Instructions		1 weeks prior to shipment	Y	R

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The initial issue of the isometrics are for stress analysis. The Buyer must complete the stress analysis and return comments per the above schedule. The "Follow-up Submittal" will be the fabrication isometrics required for the HRSG erection.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below):	t.b.d.	STG Deliverables Schedule		
STG Deliverable Description		Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM	LD's Assigned [Y/N]	For Review / For Information [R/I]
STEAM TURBINE OUTSIDE VIEW		24	N	I
STEAM TURBINE ASSEMBLY		28	N	I
LAY OUT		24	N	I
FOUNDATION DRAWING		24	Y	R
LOADING DATA		24	Y	R
P&IDs		20	Y	R
INSTRUMENT LIST		36	Y	R
TEST & INSPECTION PROCEDURE		32	N	I
NO-LOAD MECHANICAL RUNNING TEST PROCEDURE		36	N	I
RUST PREVENTION & PAINTING PROCEDURE		36	N	I
PIPING MATERIAL SECIFICATION		24	N	I
TECHNICAL SPECIFICATION FOR STEAM TURBINE		20	N	I

CKOM Date (Please Refer To General Note #1 Below):	t.b.d.	STG Deliverables Schedule		
STG Deliverable Description		Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM	LD's Assigned [Y/N]	For Review / For Information [R/I]
ALLOWABLE NOZZLE FORCE & MOMENTS		26	Y	R
PIPING CONNECTION		48	Y	R
PRE-FABRICATION PIPING FOR SITE		48	Y	R
TURBINE LOCAL PANEL		48	N	I
JUNCTION BOX DRAWING		48	Y	R
SEQUENCE DIAGRAM FOR local panel		40	N	I
GLAND CONDENSER OUTSIDE VIEW		32	N	I
OIL UNIT		32	N	I
GENERATOR DRAWING PACKAGE				
Generator Outline Drawing		26	Y	R
Shaft Mass Elastic Diagram		26	N	I
Accessory Interconnection Diagram		26	Y	R
Incoming Line Cubicle Drawing		26	Y	R

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**STG Deliverables Schedule**		
STG Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Final Electrical Data Sheets		28	Y	R
Final Electrical Curves		28	Y	R
Inspection and Test Plan		28	Y	R
Neutral Grounding Resistor Drawing (if applicable)		28	Y	R
Generator Control Panel Drawings (if applicable)		28	Y	R
Generator and Panel Test Reports (Final)		2 weeks after test completion	Y	R
Acoustical Enclosure General Arrangement		~~24~~ 29	N	I
Acoustical Enclosure Foundation Arrangement		~~24~~ 29	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The initial issue of the isometrics are for stress analysis. The Buyer must complete the stress analysis and return comments per the above schedule. The "Follow-up Submittal" will be the fabrication isometrics required for the HRSG erection.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**STG Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
STG Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
#5: Issue dates do not include any outside agency or third party certifications.				

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Steam Surface Condenser Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Steam Surface Condenser Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
General Arrangement/Outline Drawings		22	Y	R
Foundation Loading Drawing		22	Y	R
Packing, Shipment Instructions, Weights and Dimensions		8 weeks prior to shipment	N	I
Installation Instructions and Matchmarked Assembly Drawing		8 weeks prior to shipment	N	I
Performance Curves		22	N	I
Nozzle Connection Schedule/Dwgs		22	N	I
Surface Preparation and Coating Specifications		22	N	I
List of Start-Up Consumables		22	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Steam Surface Condenser Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Steam Surface Condenser Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.				
#5: Issue dates do not include any outside agency or third party certifications.				

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**Steam Surface Condenser Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Cooling Tower Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Cooling Tower Structural Design		~~32~~ 35	N	I
General Arrangement Drawings		~~32~~ 35	Y	R
Basin Layout and Load Requirements		~~32~~ 35	Y	R
Piping and Instrumentation Diagrams		~~32~~ 35	N	I
Technical Data sheets and performance curves		~~32~~ 35	N	I
ELECTRICAL Submittal		~~36~~ 39	Y	R

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**Pump Deliverables Schedule**		
Pump Deliverable Description (Boiler Feedwater, Condensate and Circulating Water Pumps)		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Mechanical (outline dwg, shipping weights, terminal point ratings)		~~24~~ 36	N	I
GENERAL ARRANGEMENT (FOUNDATION)		~~24~~ 36	Y	R
Pump data sheets and performance curves		~~24~~ 36	N	I
ELECTRICAL Submittal		~~26~~ 38	Y	R

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d**	**Steam Bypass System Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Steam Bypass System Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
Preliminary Design data - Datasheets / sizing calculations / Weights and Dimentions		~~22~~ 34	Y	R
Control and wiring diagrams		~~22~~ 34	N	I
Final Design data		~~34~~ 46	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**CEMS Deliverables Schedule**		
CEMS Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
PFD/SAMPLE FLOW DIAGRAM		~~16~~ 22	N	I
SHELTER GENERAL ARRANGEMENT (EXTERIOR/INTERIOR)		~~16~~ 22	Y	R
ELECTRICAL Submittal		~~18~~ 24	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Air Compressor Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
AIR COMPRESSOR SKID Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
P&ID		~~16~~ 32	N	I
GENERAL ARRANGEMENT (FOUNDATION)		~~16~~ 32	Y	R
ELECTRICAL Submittal		~~18~~ 34	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**F.G. Compressor Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
FUEL GAS COMPRESSOR SKID Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
P&ID		20	N	I
GENERAL ARRANGEMENT		20	Y	R
FOUNDATION DWG		20	Y	R
COMPRESSOR DATASHEET		26	N	I
ELECTRICAL Submittal		26	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller to supply.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Chiller Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
CHILLER SKID Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
P&ID		~~14~~ 20	N	I
GENERAL ARRANGEMENT		~~14~~ 20	Y	R
FOUNDATION LOADING (NOT TO EXCEED) DWG		~~14~~ 20	Y	R
ELECTRICAL SINGLE LINE DWG		~~14~~ 20	N	I
ELECTRICAL LOAD LIST		~~14~~ 20	Y	R
ELECTRICAL CABLE SCHEDULES & FIELD INSTALL PLAN		~~18~~ 24	N	I
I/O LIST		~~18~~ 24	N	I
FUNCTIONAL DESCRIPTION		~~22~~ 28	N	I
MODULE SHIPPING/RIGGING DIAGRAMS		~~20~~ 26	N	I

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

#2: ny liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Chiller Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
CHILLER SKID Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.				
#5: Issue dates do not include any outside agency or third party certifications.				

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**Gas Filter Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
DUPLEX GAS FUEL FILTER Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
P&ID		~~16~~ 28	N	I
GENERAL ARRANGEMENT (FOUNDATION DWGS)		~~18~~ 30	Y	R
ELECTRICAL SUBMITTAL		~~20~~ 32	N	I

General Notes:

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#2: Any liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.

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#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

#5: Issue dates do not include any outside agency or third party certifications.

CKOM Date (Please Refer To General Note #1 Below):	**t.b.d.**	**Condensate Polisher Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Condensate Polisher ~~**CHILLER SKID**~~ **Deliverable Description**		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
P&ID		~~15~~ 25	N	I
GENERAL ARRANGEMENT		~~17~~ 27	Y	R
Filter Vessel Drawing and ASME Calcs		~~19~~ 29	Y	R
Steel Details Drawing		~~19~~ 29	Y	R
Air Receiver Details, Drawing and ASME Calcs		~~19~~ 29	N	I
Automated Valve Data Sheets		~~17~~ 27	N	I
Relief Valve Sizing/Data Sheets		~~19~~ 29	N	I
Inspection & Test Plan		~~19~~ 29	N	I
Electrical Panel Drawings/BOM		~~19~~ 29	Y	R
System Functional Description		~~19~~ 29	N	I
Instrument Data Sheets		~~17~~ 27	N	I
General Notes:				

CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Condensate Polisher Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
CHILLER SKID Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.				
#2: ny liquidated damages for late drawing deliveries will only be assessed to the initial issue of the respective drawing and/or document and not to any follow-up transmittals or updates as applicable.				
#3: "Follow-up Transmittals" will be approximately twelve (12) weeks after the initial transmittal as required.				
#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.				
#5: Issue dates do not include any outside agency or third party certifications.				

CKOM Date (Please Refer To General Note #1 Below):	t.b.d.	GSU Transformer Deliverables Schedule	LD's Assigned [Y/N]	For Review / For Information [R/I]
Step-Up Transformer Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
GSU Outline Drawing		~~28~~ 36	Y	R
Nameplate Drawing		~~28~~ 36	N	I
Current Transformers Wiring Diagram		~~28~~ 36	Y	R
Alarms Schematic diagrams		~~28~~ 36	N	I
Cooling Schematic Diagram		~~28~~ 36	N	I
Control Cabinet Layout and wiring diagram		~~28~~ 36	Y	R

General Notes:

#1: The CKOM Date will be adusted to reflect the later of: (i) the actual date of the last day of the CKOM; (ii) as mutually agreed to by the Parties during the CKOM.

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#4: The drawings and documents as listed above may vary depending on the final vendor selected by the Seller.

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CKOM Date (Please Refer To General Note #1 Below**):**	**t.b.d.**	**Engineering Deliverables Schedule**	**LD's Assigned [Y/N]**	**For Review / For Information [R/I]**
Engineering Deliverable Description		**Initial Issue Time In Weeks After The Date Of The Last Day Of The CKOM**		
O&M Manual		prior to commissioning	N	I
Plant Testing Procedure		6 months prior to commissioning	Y	R
Performance Correction Curves		6 months prior to commissioning	Y	R
Data Block Diagrams		20	Y	R
Start-up & Operating Description (Document No. T210)		22	Y	R

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Project Deliverables List

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Document No.	Engineering Discipline	Document Title	Current Rev. Date	Current Rev. No.	Released
081113	ARCHITECTURAL	HOLLOW METAL DOORS AND FRAMES	10-Oct-13	A	RFP
083323	ARCHITECTURAL	OVERHEAD COILING DOORS	10-Oct-13	A	RFP
087100	ARCHITECTURAL	DOOR HARDWARE	10-Oct-13	A	RFP
092900	ARCHITECTURAL	GYPSUM BOARD	10-Oct-13	A	RFP
093100	ARCHITECTURAL	CERAMIC TILE	10-Oct-13	A	RFP
095113	ARCHITECTURAL	ACOUSTICAL PANEL CEILINGS	10-Oct-13	A	RFP
096513	ARCHITECTURAL	RESILIENT BASE AND ACCESSORIES	10-Oct-13	A	RFP
096519	ARCHITECTURAL	RESILIENT TILE FLOORING	10-Oct-13	A	RFP
096723	ARCHITECTURAL	RESINOUS FLOOR COATING	10-Oct-13	A	RFP
096900	ARCHITECTURAL	ACCESS FLOORING	10-Oct-13	A	RFP
099123	ARCHITECTURAL	INTERIOR PAINTING	10-Oct-13	A	RFP
102113	ARCHITECTURAL	TOILET COMPARTMENTS	10-Oct-13	A	RFP
102800	ARCHITECTURAL	TOILET ACCESSORIES	10-Oct-13	A	RFP
105113	ARCHITECTURAL	METAL LOCKERS	10-Oct-13	A	RFP
123200	ARCHITECTURAL	MANUFACTURED WOOD CASEWORK	10-Oct-13	A	RFP
123553	ARCHITECTURAL	LABORATORY CASEWORK	10-Oct-13	A	RFP
133419	ARCHITECTURAL	METAL BLDG SYS SINGLE METAL PANELS WALLS AND ROOF	10-Oct-13	A	RFP
260000	ELECTRICAL	ELECTRICAL-MECHANICAL EQUIPMENT	10-Sep-13	D	RFP
260533	ELECTRICAL	NON-SEG BUS SPECIFICATION	9-Sep-13	A	RFP
261200.2	ELECTRICAL	MEDIUM VOLTAGE AUXILIARY TRANSFORMERS SPECIFICATION	9-Sep-13	B	RFP
262050	ELECTRICAL	LOW VOLTAGE MOTORS	10-Sep-13	C	RFP
262600	ELECTRICAL	PDC SPECIFICATION	9-Sep-13	B	RFP
263323.1	ELECTRICAL	125VDC BATTERY SYSTEM SPECIFICATION	9-Sep-13	B	RFP
262323.2	ELECTRICAL	24VDC BATTERY SYSTEM SPECIFICATION	6-Sep-13	A	RFP
480020	ALL	PASADENA SITE CONDITIONS	10-Sep-13	I	RFP
480033	ALL	NOISE CONTROL PERFORMANCE	10-Dec-13	B	RFP
480032.1	-	BALANCE OF PLANT CONTRACTOR PERFORMANCE TESTING	21-Oct-13	A	RFP
485072	MECHANICAL	COATING OF PIPING AND TANKS	9-Sep-13	A	RFP
485080	MECHANICAL	PIPING AND EQUIP INSULATION	18-Sep-13	A	RFP
485090	MECHANICAL	CATHODIC PROTECTION	9-Sep-13	A	RFP
485121	MECHANICAL	GENERAL SERVICE CONTROL VALVES	15-Jul-13	A	RFP
485172	MECHANICAL	FIELD FABRICATED TANKS - STEEL SPECIFICATION	15-Jul-13	A	RFP
485173	MECHANICAL	SHOP FABRICATED TANKS SPECIFICATION	10-Dec-13	C	RFP
485311.10	MECHANICAL	HORIZONTAL CENTRIFUGAL PUMPS – GENERAL SERVICE SPECIFICATION	10-Dec-13	C	RFP
485325.11	MECHANICAL	AMMONIA FORWARDING PUMP SKID SPECIFICATION	26-Jul-13	A	RFP
485422	MECHANICAL	SHELL AND TUBE HEAT EXCHANGER	9-Dec-13	B	RFP
485951.96	MECHANICAL	POTABLE WATER SYSTEM PUMP SKID	9-Dec-13	B	RFP
485952.05	MECHANICAL	CHEMICAL FEED SYSTEM - COOLING TOWER	14-Oct-13	B	RFP
485952.06	MECHANICAL	CHEMICAL FEED SYSTEMS - STEAM GENERATOR	14-Oct-13	B	RFP
485956	MECHANICAL	FIRE PREVENTION AND PROTECTION SYSTEM	30-Jan-14	C	RFP
485956.10	MECHANICAL	FIRE ALARM AND SIGNALING SYSTEMS	29-Aug-13	A	RFP
485956.30	MECHANICAL	FIRE WATER SPRINKLER SYSTEM	14-Oct-13	B	RFP
037-1758	ALL	SOIL EXCAVATION VOLUMES	18-Aug-11	A	RFP
037-5033	ALL	PASADENA GT-5 DESIGN CRITERIA	17-Dec-13	D	SPEC
037-4780	CONTROLS	PCS/CONTROL SYSTEM SPECIFICATION	10-Dec-13	B	SPEC
037-5056	ARCHITECTURAL	ARCHITECTURAL SCOPE OF WORK	23-Oct-13	B	SPEC
261300-1	ELECTRICAL	15KV SWITCHGEAR SPECIFICATION	10-Oct-13	B	SPEC
261300-2	ELECTRICAL	5KV SWITCHGEAR SPECIFICATION	10-Oct-13	B	SPEC
263323-2	ELECTRICAL	24VDC BATTERY SYSTEM SPECIFICATION	9-Sep-13	A	SPEC
A1-2-1	ARCHITECTURAL	CONTROL BUILDING MAIN FLOOR PLAN	10-Oct-13	D	SPEC
A1-3-1	ARCHITECTURAL	CONTROL BUILDING EXTERIOR ELEVATIONS	10-Oct-13	D	SPEC
A1-9-1	ARCHITECTURAL	CONTROL BUILDING & WATER LAB ROOM FINISH, DOOR AND WINDOW SCHEDULES	10-Oct-13	D	SPEC
A1-9-2	ARCHITECTURAL	CONTROL BUILDING & WATER LAB DOOR AND WINDOW DETAILS	10-Oct-13	D	SPEC
A2-1-1	ARCHITECTURAL	ROOF DEMOLITION PLAN	24-Sep-13	C	SPEC

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Document No.	Engineering Discipline	Document Title	Current Rev. Date	Current Rev. No.	Released
A2-1A	ARCHITECTURAL	WELDING SHOP FLOOR PLAN	16-Jul-13	A	SPEC
A2-2-1	ARCHITECTURAL	MAINTENANCE SHOP MAIN FLOOR PLAN	10-Oct-13	D	SPEC
A2-2-2	ARCHITECTURAL	MAINTENANCE SHOP MEZZANINE	24-Sep-13	C	SPEC
A2-3-1	ARCHITECTURAL	MAINTENANCE SHOP EXTERIOR ELEVATIONS	24-Sep-13	C	SPEC
A2-4-1	ARCHITECTURAL	MAINTENANCE SHOP SECTIONS	10-Oct-13	D	SPEC
A2-5-1	ARCHITECTURAL	MAINTENANCE SHOP DETAILED PLANS	10-Oct-13	D	SPEC
A2-9-1	ARCHITECTURAL	ROOM DOOR FINISH SCHEDULES	10-Oct-13	D	SPEC
A3-1	ARCHITECTURAL	CONTROL BUILDING EXTERIOR ELEVATIONS	27-Mar-13	B	SPEC
A3-2-1	ARCHITECTURAL	WELDING SHOP FLOOR PLAN	24-Sep-13	C	SPEC
A3-3-1	ARCHITECTURAL	WELDING SHOP EXTERIOR ELEVATIONS	24-Sep-13	C	SPEC
A4-1	ARCHITECTURAL	CONTROL BUILDING & WATER LAB BUILDING SECTIONS	10-Oct-13	D	SPEC
A4-2-1	ARCHITECTURAL	WATER LABORATORY FLOOR PLAN	10-Oct-13	D	SPEC
A4-3-1	ARCHITECTURAL	WATER LABORATORY EXTERIOR ELEVATIONS	24-Sep-13	C	SPEC
C1-3	CIVIL	PRELIMINARY SITE PLAN LM6000 CONFIGURATION	17-Jan-14	L	SPEC
C3-1	CIVIL	PRELIMINARY GRADING & DRAINAGE PLAN GAS TURBINE/AXIAL EXHAUST	17-Jan-14	G	SPEC
C3-3	CIVIL	PRELIMINARY SITE SURFACING PLAN GAS TURBINE/AXIAL EXHAUST	17-Jan-14	B	SPEC
C3-4	CIVIL	CONSTRUCTION PARKING, LAYDOWN, STAGING AND ACCESS PLAN	2-Oct-13	B	SPEC
C3-5	CIVIL	PRELIMINARY SITE DETAILS GAS TURBINE/AXIAL EXHAUST	7-Oct-13	A	SPEC
CSK-1	CIVIL	BOREHOLE LOCATION PLAN	29-Apr-11	B	SPEC
E1-1A	ELECTRICAL	ELECTRICAL OVERALL CONCEPTUAL ONE-LINE DIAGRAM (LM 6000)	7-Jan-14	G	ADD 2
E1-2	ELECTRICAL	ELECTRICAL OVERALL CONCEPTUAL PDC BUILDING LAYOUT	10-Dec-13	E	ADD 2
E6-1	ELECTRICAL	ELECTRICAL UNDERGROUND NOTES AND LEGEND	4-Oct-13	A	SPEC
E6-10	ELECTRICAL	PROPOSED ELECTRICAL UNDERGROUND ROUTING	7-Jan-14	C	ADD 2
I1-1	CONTROLS	PLANT CONTROL SYSTEM ARCHITECTURE	30-Aug-13	A	SPEC
I1-2	CONTROLS	CONTROL ROOM WORKSTATIONS	30-Aug-13	A	SPEC
ISK1-1	CONTROLS	CONTROL SYSTEM ARCHITECTURE	26-May-11	A	SPEC
M1-1-1	MECHANICAL	GENERAL ARRANGEMENT GAS TURBINE/AXIAL EXHAUST	3-Jan-14	L	ADD 2
M1-1-6	MECHANICAL	TIE POINT DRAWING GAS TURBINE/AXIAL EXHAUST	3-Jan-14	E	ADD 2
M2-2-1	MECHANICAL	PROCESS FLOW DIAGRAM WATER BALANCE (W/ INLET CHILLING)	28-Feb-12	D	SPEC
M2-2-4	MECHANICAL	GLENARM INDUSTRIAL WASTEWATER	17-Jul-13	C	SPEC
M3-1-0	MECHANICAL	P&ID-COVER SHEET	15-Oct-13	E	SPEC
M3-10-1	MECHANICAL	P&ID-GLAND STEAM SYSTEM	6-Dec-13	E	SPEC
M3-1-1	MECHANICAL	P&ID - SYMBOLS AND LEGEND	15-Oct-13	C	SPEC
M3-11-1	MECHANICAL	P&ID-CONDENSATE SYSTEM	30-Jan-14	H	SPEC
M3-11-2	MECHANICAL	P&ID-CONDENSATE SYSTEM	30-Jan-14	H	SPEC
M3-11-3	MECHANICAL	P&ID-CONDENSATE SYSTEM	6-Dec-13	G	SPEC
M3-1-2	MECHANICAL	P&ID - SYMBOLS AND LEGEND	8-Oct-12	A	SPEC
M3-12-1	MECHANICAL	P&ID-CONDENSER AIR EXTRACTION	29-Nov-13	F	SPEC
M3-1-3	MECHANICAL	P&ID - SYMBOLS AND LEGEND	15-Oct-13	B	SPEC
M3-13-1	MECHANICAL	P&ID-CIRCULATING WATER SYSTEM	30-Jan-14	H	SPEC
M3-14-1	MECHANICAL	P&ID-AUXILIARY COOLING WATER SYSTEM	6-Dec-13	F	SPEC
M3-15-1	MECHANICAL	P&ID-COMPONENT COOLING WATER SYSTEM	15-Oct-13	D	SPEC
M3-15-2	MECHANICAL	P&ID-COMPONENT COOLING WATER SYSTEM	15-Oct-13	D	SPEC
M3-15-3	MECHANICAL	P&ID-COMPONENT COOLING WATER SYSTEM	15-Oct-13	E	SPEC
M3-16-1	MECHANICAL	P&ID-COOLING TOWER CHEMICAL FEED SYSTEM	13-Sep-13	D	SPEC
M3-17-1	MECHANICAL	P&ID-AQUEOUS AMMONIA SYSTEM	6-Dec-13	G	SPEC
M3-18-1	MECHANICAL	P&ID-FUEL GAS SYSTEM	6-Dec-13	G	SPEC
M3-18-2	MECHANICAL	P&ID-FUEL GAS SYSTEM	6-Dec-13	G	SPEC
M3-18-3	MECHANICAL	P&ID-FUEL GAS SYSTEM	15-Oct-13	B	SPEC
M3-19-1	MECHANICAL	P&ID-SERVICE AIR SYSTEM	15-Oct-13	E	SPEC
M3-20-1	MECHANICAL	P&ID-INSTRUMENT AIR SYSTEM	13-Sep-13	D	SPEC
M3-2-1	MECHANICAL	P&ID-GAS TURBINE INTERCONNECTIONS	15-Oct-13	E	SPEC
M3-21-1	MECHANICAL	P&ID-FIREWATER SYSTEM	15-Oct-13	D	SPEC
M3-22-1	MECHANICAL	P&ID-SERVICE WATER SYSTEM	15-Oct-13	E	SPEC
M3-23-1	MECHANICAL	P&ID-DEMINERALIZED WATER SYSTEM	15-Oct-13	E	SPEC
M3-23-2	MECHANICAL	P&ID-DEMINERALIZED WATER SYSTEM	15-Oct-13	C	SPEC

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Document No.	Engineering Discipline	Document Title	Current Rev. Date	Current Rev. No.	Released
M3-24-1	MECHANICAL	P&ID-POTABLE WATER SYSTEM	15-Oct-13	E	SPEC
M3-25-1	MECHANICAL	P&ID-CHILLED WATER SYSTEM	30-Jan-14	G	SPEC
M3-25-2	MECHANICAL	P&ID-CHILLED WATER SYSTEM	30-Jan-14	G	SPEC
M3-26-1	MECHANICAL	P&ID-WASTEWATER COLLECTION SYSTEM	15-Oct-13	E	SPEC
M3-26-2	MECHANICAL	P&ID-WASTEWATER COLLECTION SYSTEM	15-Oct-13	D	SPEC
M3-27-1	MECHANICAL	P&ID-AUXILIARY STEAM SYSTEM	15-Oct-13	C	SPEC
M3-3-1	MECHANICAL	P&ID-OTSG INTERCONNECTIONS (EXHAUST GAS)	6-Dec-13	G	SPEC
M3-3-2	MECHANICAL	P&ID-OTSG INTERCONNECTIONS (STEAM)	30-Jan-14	H	SPEC
M3-4-1	MECHANICAL	P&ID-BOILER FEEDWATER SYSTEM	6-Dec-13	G	SPEC
M3-5-1	MECHANICAL	P&ID-HIGH PRESSURE STEAM	6-Dec-13	E	SPEC
M3-6-1	MECHANICAL	P&ID-STEAM TURBINE INTERCONNECTIONS	6-Dec-13	F	SPEC
M3-7-1	MECHANICAL	P&ID-STEAM DRAINS ￢ﾀﾓ DRAIN TANK	10-Dec-13	G	SPEC
M3-8-1	MECHANICAL	P&ID-STEAM AND WATER SAMPLING	15-Oct-13	D	SPEC
M3-9-1	MECHANICAL	P&ID-CYCLE CHEMICAL FEED SYSTEM	13-Sep-13	D	SPEC
M9-1	MECHANICAL	EQUIPMENT LIST	6-Dec-13	C	SPEC
M9-10	MECHANICAL	TIE-IN LIST	20-Nov-13	D	SPEC
M9-2	MECHANICAL	SERVICE INDEX	22-Nov-13	C	SPEC
SKE6-1	ELECTRICAL	EXISTING ELECTRICAL UNDERGROUND ROUTING	4-Oct-13	A	SPEC
SKE6-2	ELECTRICAL	EXISTING ELECTRICAL UNDERGROUND ROUTING	4-Oct-13	A	SPEC
SKM1-7	MECHANICAL	AMMONIA (EXISTING)	4-Dec-13	A	SPEC
SKM1-8	MECHANICAL	INTERIM/TEMPORARY CONFIGURATION	18-Dec-13	B	ADD 2
SKM1-9	MECHANICAL	FINAL CONFIGURATION	18-Dec-13	B	ADD 2

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Attachment A3-Reference Information Documents

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
Air Compressor	Typical Drawing	10/06/08	1	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Air Compressor
260000	Elec-Mech Equip	09/10/13	D	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
261050	MV Motors	09/10/13	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
261200	GSU Transformer	09/10/13	G	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
262050	LV Motors	09/10/13	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
409413.22	CEMS	09/10/13	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
480020	Site Conditions	09/10/13	I	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
480031	Noise Control Perf	09/10/13	I	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
480032	Power Island Perf	09/10/13	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
481100	Combined Cycle PIE	09/10/13	N	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485122.11	Steam Bypass Valves	09/10/13	E	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485221	ST and TEWAC Generator	09/10/13	G	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485222	GTG Aeroderivative	09/10/13	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485311.10	Condensate Pumps	09/10/13	F	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485311.20	Boiler Feedwater Pumps	09/10/13	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485312	Circ Water & Aux Cooling Water Pumps	09/10/13	F	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485374.21	Compressed Air System	09/10/13	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485374.22	Fuel Gas Compressor	09/10/13	E	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485413	OTSG Spec	09/10/13	I	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485432	Surface Condenser	09/10/13	G	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485471	Inlet Air Chiller	09/10/13	E	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485491	Cooling Tower	09/10/13	F	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Att 24 Specs
485952	Condensate Polisher	08/24/12	F	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
ElectricBoiler brochure	ElectricBoiler brochure	-	11/10	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Aux Boiler Specs
ElectricBoiler Specifications	ElectricBoiler Specifications	-	11/10	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Aux Boiler Specs
ElectricBoilers Boiler Book	ElectricBoilers Boiler Book	-	11/10	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Aux Boiler Specs
CEMS	CEMS System Overview (Typical layout with optional equipment)	-	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\CEMS
PASADENA CHILLER GA	Chiller Module General Arrangement	09/12/12	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Chiller

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Attachment A3-Reference Information Documents

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
969031	One Line Diagram	-	F	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Electrical Drawings
Attachment 4	Attachment 4 Scheduled Major Component RTS and Delivery Dates_GE_13Dec4	-	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Equip Delivery Sched
Gas Compressor1	Machinery Arrangement Feed Gas Compressor System	11/20/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Gas Compressor
Att 10.1 MID-TD-0000-1	Fuel Gases for Combustion in Aeroderivative Gas Turbines Sept 2009	9/2009	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GE MID TD Specs
Att 10.2 MID-TD-0000-3	Water and Steam Purity for Injection in Aero Derivative Gas Turbines June 2010	6/2010	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GE MID TD Specs
Att 10.3 MID-TD-0000-4	Compressor Cleaning for GE Aircraft Derivative Gas Turbines June 2010	6/2010	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GE MID TD Specs
Att 10.4 MID-TD-0000-5.	Liquid Detergent for GE Aircraft Aero Derivative Gas Turbines June 2010	6/2010	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GE MID TD Specs
Att 10.5 MID-TD-0000-6	Lubricating Oil Specification for GE Aircraft Aero Derivative Gas Turbines June 2010	6/2010	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GE MID TD Specs
7253049-969014	Plan & Elevation Turbine Control Panel	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969741	Instrument Loop Diagram Hydraulic Start System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969742	Instrument Loop Diagram Ventilation & Combustion Air System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969743	Instrument Loop Diagram Mineral Lube Oil System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969744	Instrument Loop Diagram Turbine Lube Oil System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969746	Instrument Loop Diagram Fire & Gas Protection System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969750	Instrument Loop Diagram Nox Water Injections System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969751	Instrument Loop Diagram Fuel System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969753	Instrument Loop Diagram Water Wash System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969755	Instrument Loop Diagram Auxiliary Systems	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969758	Instrument Loop Diagram Sprint System	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
Pasadena CKOM -GTG Controls	LM6000 GE Aeroderivative Package	11/19/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Controls
7253049-969005	Electrical Symbols Abbreviations and Reference Data	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969006	Interconnect Plan Electrical	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969007	Interconnect Wiring Diagram Customer	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969009	Interconnect Cable Schedule	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969013	Nameplate List Engraving Schedule & Switch Development	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969021	Plan & Elevation Generator Lineside Cubicle Cable Entry Top/Bottom	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969023	Plan & Elevation Generator Neutral Cubicle	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969031	One Line Diagram	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
7253049-969032	Three Line Diagram Generator Metering	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969035	Schedule Motor Control Center	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969037	System Schematic Generator Excitation	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969041	Schematic Diagram Circuit Breaker Control	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969044	Schematic Diagram Motor Control Centers	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969690	Area Classification Drawing Main Unit	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969767	Schematic Diagram DC Power Distribution	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969768	Schematic Diagram Critical Shutdown Path	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969769	Schematic Diagram Miscellaneous	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969930	Schematic Diagram Lighting & Distribution	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
7253049-969934	Schematic Diagram Communication	10/09/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
Brush_GTG_Curves	Electrical Data Sheet	10/23/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Electrical
969224	Installation Footprint Anchor Bolt and Shear Lug Location	-	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
120E4746	General Arrangement	10/18/12	G	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969201	General Arrangement Main Unit - LH	11/12/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969204	General Arrangement Air Filter	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969219	General Arrangement Auxiliary Skid Left Hand	11/11/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969221	General Arrangement Generator / Gearbox Mineral Lube Oil Skid	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969224	Installation Footprint Anchor Bolt and Shear Lug Location	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969293	Piping Penetrations Option LH	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
CD19671	Air Filter GE-AEP_GSX LM6000 with Chiller Coil	02/10/12	0	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
ElectricBoiler Dimensions and ratings	ElectricBoiler Dimensions and ratings	-	11-10	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
GA 69200	GA 9 Main Unit - RH	-	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
GA 969209	GA Sprint Skid	-	D	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
GA 969218	GA Auxiliary Skid Right Hand	-	H	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
GA 969221	GA Generator_Gearbox Mineral Lube Oil Skid	-	F	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
GA A0 321638800	GA Generator	07/17/12	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
Sample 00	ElectricBoiler sample drawing S-302-700kW @ 480V	06/08/10	00	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
SK-01	GE_STG_Sk1 - PWP Comments	11/15/12	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Arrangement Drawings
7253049-969232	Flow & Instrument Diagram Hydraulic Start System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969239	Flow & Instrument Diagram Ventilation & Combustion Air System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969244	Flow & Instrument Diagram Turbine Lube Oil System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969247	Flow & Instrument Diagram Turbine Hydraulic System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969248	Flow & Instrument Diagram Mineral Lube Oil System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969254	Flow & Instrument Diagram Fire & Gas Protection System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969260	Flow & Instrument Diagram Fuel System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969262	Flow & Instrument Diagram Water Wash System	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969268	Flow & Instrument Diagram Sprint System Main Unit	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969269	Flow & Instrument Diagram Water Injection Pump	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969270	Flow & Instrument Diagram Sprint System Sprint Skid	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969272	Flow & Instrument Diagram Auxiliary Systems	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
Inlet Air Chilling_Heating Conceptual Design_R3 add pre-cooler	Inlet Air Chilling_Heating Conceptual Design_R3 add pre-cooler	10/08/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M005_(RG)_120E4746_SEP-12-2013	General Arrangement	09/12/13	G	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M101_(RB)_230F5536_AUG-23-2013	Flow Diagram Steam System	08/23/13	B	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M105 230F5512	Feedwater System	11/07/12	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M106 203D7522 sheet 2	Condenser Terminal Points On Waterboxes	08/23/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams

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M106_(RA)_203D7522_AUG-23-2013	Condenser Terminal Points	08/23/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M107_(RB)_120E4791_AUG-23-2013	Flow Diagram Circulating Water	08/23/13	B	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M109 230F5537	Auxiliary Cooling Water System	01/28/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M112_(RA)_230F5538_AUG-23-2013	Steam Drains System	08/23/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M119 120E4734 Sheet 2	Flow Diagram Steam Turbine	08/23/13	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M119_(RC)_120E4734_AUG-23-2013	Flow Diagram Steam Turbine	08/23/13	C	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M125_(RA)_230F5539_AUG-23-2013	Condenser Air Removal System	08/23/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M190_(RD)_230F5504_AUG-23-2013	Combined Cycle system Overview Diagram	08/23/13	D	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M195 230F5496 sheet 2	Ammonia Dilution Heating Flow Diagram	02/07/13	B	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
M195_(RD)_230F5496_AUG-23-2013	Flow Diagram OSTG-1 Pressure	08/23/13	D	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\F&IDs and Flow Diagrams
7253049-969225	Lift Arrangement	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Lift and Shipping Info
7253049-969226	Shipping Data	10/16/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Lift and Shipping Info
PWP_Estimated Heaviest Lifts_Equipment Weights	PWP_Estimated Heaviest Lifts_Equipment Weights	-	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical\Lift and Shipping Info
7253049-000231	Flow & Equipment Symbols Mechanical	10/31/13	A	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Mechanical
Chart Only SNM Start up	Chart Only SNM Start up	04/02/12	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Performance Data
Pasadena CKOM - GT Inlet Air Conditioning	Turbine inlet Air Temperature Conditioning System	-	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\GTG\Performance Data
Attachment 12	Mechanical Completion Certificate	-	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Mechanical Completion
C12079-EI RevP	ONCE THROUGH STEAM GENERATOR ERECTION & INSTALLATION INSTRUCTIONS	09/13/13	0	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\OTSG
IST Start-Up Curve	OTSG Start-Up Curve	-	-	SPEC	Attachment A3-Reference Information \A.3.A City-Supplied Power Island Equipment Info\OTSG
OTSG Erection Training - SCR-CO - Revised	OTSG INSTALLATION AND ERECTION TRAINING PRESENTATION	03/01/13	-	SPEC	Attachment A3-Reference Information \A.3.A City-Supplied Power Island Equipment Info\OTSG
Pasadena CKOM - OTSG (IST)	Glenarm Repowering Project OTSG Design	11/15/13	-	SPEC	Attachment A3-Reference Information \A.3.A City-Supplied Power Island Equipment Info\OTSG
11303-001	General Arrangement LM6000 PG OSTG	11/01/13	P1	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Typical OTSG Erection Drawings	Typical OTSG Erection Drawings	-	-	SPEC	Attachment A3-Reference Information \A.3.A City-Supplied Power Island Equipment Info\OTSG

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
Attachment 6	Performance Guarantees	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Performance Data
Attachment 22	LM6000PG Degradation	02/01/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Performance Data
GE Guarantee Heat Balances	GE Guarantee Heat Balances	02/12/13	0	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Performance Data
Attachment 1.1	Scope of Supply GTG	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.2	Scope of Supply OTSG	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.3	Scope of Supply CEMS	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.4	Scope of Supply Mechanical and Fluid	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.5	Scope of Supply Terminal Points	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.7	Scope of Supply Engineering Design	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Attachment 1.8	Scope of Supply Commissioning and Startup	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Scope of Supply Documents
Pasadena CKOM - GE BOP Mechanical	Steam Turbine & Generator Overview	11/19/13	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\STG
STG Layout For Information Only	Steam Turbine Layout (For Information Only)	-	0	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\STG
STG_Generator Curves for Information Only	REACTIVE CAPABILITY CURVE, EFFICIENCY CURVES, SATURATION CURVES	-	0	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\STG
Attachment 23	Obligations of Site Representatives	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Technical Advisors
Attachment 5.1	Typical Site Test Measurement Procedures-Test Philosophy	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Testing Documents
Attachment 5.2	Typical Site Test Measurement Procedures-Standard Field Testing Procedure for Emission Compliance Based on US EPA, ISO and EN Methodology	10/2011	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Testing Documents
Attachment 5.3	Typical Site Test Measurement Procedures-SPECIFICATION FOR GAS TURBINE GENERATOR PERFORMANCE TEST MEASUREMENT (SGTGPTM) LM6000 PC / PG SAC, NATURAL GAS FUEL	-	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Testing Documents
Attachment 14.1	GTG Training Descriptions	-	2	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Training
Attachment 14.2	Training Program	2013	-	SPEC	Attachment A3-Reference Information\A.3.A City-Supplied Power Island Equipment Info\Training
mitigation summary	Mitigation Summary	-	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\Air Permit
South Coast Facility Permit to Construct and Operate	South Coast Facility Permit to Construct and Operate	08/15/13	26	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\Air Permit
Title V Facility Significant Permit Revision	Title V Facility Significant Permit Revision	08/15/13	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\Air Permit
0 TOC	Environmental Impact Report-Table Of Contents	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
0 TOC_Revised	Environmental Impact Report-TOC Revised	3/2013	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
0 Executive Summary	Environmental Impact Report-Executive Summary	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
1.0 Introduction	Environmental Impact Report-Introduction	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
1.0 Introduction_Revised	Environmental Impact Report-Introduction_Revised	3/2013	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
2.0 Project Description	Environmental Impact Report-Project Description	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
2.0 Comments and Responses on DEIR_Revised	Environmental Impact Report-Comments and Responses on DEIR_Revised	3/2013	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
3.0 Environmental Setting	Environmental Impact Report-Environmental Setting	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
3.0 Corrections and Additions_Revised_Revised	Environmental Impact Report-Corrections and Additions_Revised_Revised	3/2013	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.0 Mitigation Monitoring and Reporting Program	Environmental Impact Report-Mitigation Monitoring and Reporting Program	3/2013	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.A Aesthetics	Environmental Impact Report-Aesthetics	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.B Air Quality	Environmental Impact Report-Air Quality	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.C Cultural Resources	Environmental Impact Report-Cultural Resources	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.D Greenhouse Gases	Environmental Impact Report-Greenhouse Gases	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.E Hazards	Environmental Impact Report-Hazards	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.F Land Use and Planning	Environmental Impact Report-Land Use and Planning	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.G Noise	Environmental Impact Report-Noise	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
4.H Water Supply	Environmental Impact Report-Water Supply	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
5.0 Alternatives	Environmental Impact Report-Alternatives	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
6.0 Other Environmental Considerations	Environmental Impact Report-Other Environmental Considerations	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
7.0 Persons and Organizations	Environmental Impact Report-Persons and Organizations	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
8.0 References	Environmental Impact Report-References	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix_Table_of_Contents	Environmental Impact Report-Appendix Table of Contents	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix A_Revised	Environmental Impact Report-Appendix Table of Contents_Revised	04/15/10	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-A_NOP-IS-Scoping Meeting Materials	Environmental Impact Report-NOP-IS-Scoping Meeting Materials	09/16/11	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-B_Air Quality Assessment Files	Environmental Impact Report-Air Quality Assessment Files	11/2012	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
Appendix-C_Greenhouse Gas Impact Assessment	Environmental Impact Report-Greenhouse Gas Impact Assessment	06/15/12	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-D.1_Figures 1-13	Environmental Impact Report-Figures 1-13	-	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-D_Hazardous Materials	Environmental Impact Report-Hazardous Materials	07/29/11	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-E_Noise	Environmental Impact Report-Noise	01	12/2011	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
Appendix-F_Water Supply Documentation	Environmental Impact Report-Water Supply Documentation	05/23/12	2	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\EIR CEQA
GT 3&4 SWPPP (Draft)	GT 3&4 SWPPP (Draft)	01/31/03	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\SUSMP & SWPPP
PWP SUSMP	Stormwater Treatment Certification	02/03/03	-	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\SUSMP & SWPPP
Broadway Wastewater Permit Rev B	Broadway Wastewater Permit Rev B	07/31/12	B	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\Waste Water
Glenarm Wastewater Permit Rev C	Glenarm Wastewater Permit Rev C	07/18/13	C	SPEC	Attachment A3-Reference Information\A.3.B City-Supplied Permitting Information\Waste Water
20001-C-004-06 4-06	GSU foundation plan	12/08/03	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural
8-2-2368	Electrical Shop Plot Plan	10/16/69	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2369	Electrical Shop Plan & Elevations	12/08/60	3	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2370	Electrical Shop Mezzanine Floor Plan & Details	09/21/60	3	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2371	Electrical Shop Floor Plan Anchor Bolt Setting Plan	06/21/20	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2372	Electrical Shop Partial Deck Plan & Longitudinal Sect.	03/03/60	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2373	Electrical Shop Basement Plan Sections & Details	02/17/69	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2374	Electrical Shop North & Partial East Elevations & Roof Slab Over Room B1	06/21/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2375	Electrical Shop Foundation Plan for New Deck Slab Basement Ramp & Room B1 Floor Slab	02/17/69	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2376	Electrical Shop Reinforcing Details for Beams, Girders, Floor Slab & Ramp	06/21/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2381	Electrical Shop Architectural Floor Plan & Room Elevations	02/17/69	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2382	Electrical Shop Architectural Room Elevations	09/16/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2383	Electrical Shop Miscellaneous Architectural Details	09/20/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing
8-2-2384	Electrical Construction Shop Electrical Layout	09/15/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Architectural and Structural\Pump Building Existing

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
8-2-49	Circ Pipe Tunnels Demo 2	08/02/49	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
8-2-49B	Circ Pipe Tunnels Demo 3	08/02/49	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
8-2-49C	Circ Pipe Tunnels Demo 4	04/27/49	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
8-2-1337	Overall Tunnel Demo 1	01/02/58	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
8-2-1355	Stack Foundation Demo 5	11/01/56	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
8-2-1670	Plot Plan Crane Rail Demo 6	02/26/62	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
SKM-1	Existing Tunnels and Proposed Equipment Overlay	06/12/13	B	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Demolition Scope
2-2-1562	Underground Fair Oaks ave.	04/22/03	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
8-2-547	Receiving Stations and Dispatching Center Electrical Plot Plan	01/30/95	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
8-2-575	Powerhouse to Receiving Station Section A Interconnecting Tunnel Ground System	10/14/48	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
8-2-1341	General Arrangement of Existing Structures and Foundations	03/27/58	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
20001E004-01	Overall conduit routing plan & sect	04/10/03	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
20001E004-02	Overall conduit routing plan & sect	12/08/03	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
20001E004-03	Overall conduit routing plan & sect	12/08/03	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
20001E004-05	Conduit ductbank sect & misc sect	12/08/03	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
20001E004-13 004-13	Conduit ductbank details-GSU hv lines	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
8-2-6643, 6507, 6606, 6510, 6603, 6613 & 6602	Existing Trench and Sanitary Sewer East of Glenarm Building	-	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
Storm Drain and Conduit Trench Drawing	Storm Drain and Conduit Trench Drawing	04/10/03	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
V-228	UG Vault Standards	06/27/07	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Electrical
8-2-300	Fountain Drawing	09/02/38		SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001-071R0	Waste Water F & ID	11/08/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001-090	Flow & Instrument Diagram Ammonia System	05/19/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical

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Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
20001M001	Overall Site Plan GT 3 & 4	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001P001-02	Key plan above ground and trenches	12/08/03	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001P026-01	29% NH3 tank area above ground piping	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001P026-02	29% NH3 tank area above ground piping	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
20001-P-011-01	Piping and Plan Details Existing OWS	11/18/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
Existing Oil-Water Separator	Existing Oil-Water Separator Manufacturer's Information	01/23/03	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Mechanical
Glenarm Parcel Map	Glenarm Parcel Map	08/09/04	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Survey Info
Glenarm Parcel Plan	Glenarm Parcel Plan	09/28/04	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Survey Info
Pasadena Glenarm Facility	Pasadena Glenarm Facility	-	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Survey Info
8-2-1002	General Location Plan	03/29/73	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Arrangement Dwgs Existing or Past
8-2-1477	Piping Arrangement	11/25/60	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Arrangement Dwgs Existing or Past
8-2-1669	Gas Equipment Building Miscellaneous Sections & Details	02/26/62	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Arrangement Dwgs Existing or Past
8-2-1670	Gas Equipment Building Plot Plan Paving & Yard Details	02/26/62	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Arrangement Dwgs Existing or Past
Site Water Utility Information	Site Water Utility Information	-	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Arrangement Dwgs Existing or Past
8-2-1355	Sootblowing Stack & Precipitator Support Foundations	11/05/56	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001c002-01	Civil Key Plan Paving / Grading & U.G. Sewer PDF	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001c002-01	Civil Key Plan Paving / Grading & U.G. Sewer CAD	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001c002-03	Area 2 paving grading sewer	12/23/03	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001c002-04	Area 3 paving grading sewer	12/23/03	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001c006-04	Oily Water Separator foundation sections and details	03/06/03	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
20001-c003-05	Civil Sections & Details	01/24/03	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil
8-2-6643, 6507, 6606, 6510, 6608, 6613 & 6602	Existing Trench and Sanitary Sewer East of Glenarm Building	6/1987	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Civil

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8-2-49	Circ Pipe Tunnels	02/06/31	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-49B	Circ Pipe Tunnels	08/14/31	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-49C	Circ Pipe Tunnels	08/05/31	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-49D	Circ Pipe Tunnels	05/22/31	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-598	Circ Pipe Tunnels	10/03/50	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-949	Broadway to Glenarm Pipe Tunnel	12/22/65	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
8-2-1337	Station Service Plot Plan	01/02/58	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P006-03	West end culvert piping	11/18/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P006-04	West end culvert piping	05/19/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P027-01	Pipe trench between culvert & NH3 tanks	12/16/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P028-01	Demin Water Pump 158A & Pipe Trench	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P028-02	East end culvert & trench piping details	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
20001P00601	Ammonia truck unloading and culvert piping	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Mechanical Tunnels
33W	Location of power plant water services	08/29/40	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
3716	Utility Drawings in Public ROW - Fair Oaks Ave - Glenarm to State St	03/27/87	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001-274-M	Oil Water Separator Flo Trend Systems	01/16/03	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001E011-04	Cathodic protection pipe pit area	02/24/03	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001P001-01	Key plan underground piping A	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001P003-01	GT 3&4 equipment drains underground	12/08/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001P004-01	GT3 area underground piping	12/17/03	1	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001P005-01	GT4 area underground piping	12/17/03	2	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001P009-01	NH3 tank area underground piping	12/16/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities

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20001P011-01	Oily water separator pit piping	11/18/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
20001-P-011-01	Piping Plan & Details Oily Water Separator Pit	11/18/02	0	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
Glenarm Plant Fire Protection Drawing	Glenarm Plant Fire Protection Drawing	06/30/03	3	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
GT1 GT2 UG GAS DWG	Piping Area III	04/30/75	4	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
k350 OWS flow diagram	k350 oil water separator flow diagram	10/11/02	A	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
Storm Drain and Conduit Trench Drawing	Storm Drain and Conduit Trench Drawing	04/10/03	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Existing PWP Dwgs\Underground\Underground Utilities
3626-04-02	GT-5 FIRSTPCRCorrectionEnvironmental Investigation	07/29/11	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR
3626-04-02	GT-5 Environmental Investigation - 1 of 4 txt only	07/29/11	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR\Enviro
3626-03	Geophysical Investigation	04/15/10	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR\Geotech
3626-04-01	GT5 Geotechnical Investigation	08/01/11	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR\Geotech
11195Hydrologue_ThermalResistivity_01	Soil Thermal Resistivity Tests	09/16/11	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR\Soil Resistivity
geovisionthermal Resistivity	Soil Thermal Resistivity Tests	08/10/11	-	SPEC	Attachment A3-Reference Information\A.3.C Existing Site and Reference Drawings\Geotech Report and GPR\Soil Resistivity
Attachment 1.6 Scope of Supply DOR	Attachment 1.6 Scope of Supply DOR	-	-	SPEC	Attachment A3-Reference Information\A.3.D Division of Responsibility
Completion Turnover Start-Up	GLENARM REPOWERING PROJECT SCOPE OF RESPONSIBILITY MATRIX	10/11/13	A	SPEC	Attachment A3-Reference Information\A.3.D Division of Responsibility
14-ST Steam Quality	Steam Quality	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
2014-01-08 GT5 Pre-Bid Meeting Introduction	2014-01-08 GT5 Pre-Bid Meeting Introduction	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
2014-01-08 GT5 Pre-Bid Meeting Local Participation	2014-01-08 GT5 Pre-Bid Meeting Local Participation	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
2014-01-08 GT5 Pre-Bid Meeting Working with Pasadena	2014-01-08 GT5 Pre-Bid Meeting Working with Pasadena	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
505-101 Sheet 01	Topographic Survey Pasadena Glenarm Facility	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
505-101 Sheet 02	Topographic Survey Pasadena Glenarm Facility	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
505-101 Sheet 03	Topographic Survey Pasadena Glenarm Facility	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
5065A0-C23	Generator outline dwg for reference	08/23/13	F	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2

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Attachment A3-Reference Information Documents

January 30, 2014

Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
BOP RFP Pre-Bid Presentation 010814-updated	BOP RFP Pre-Bid Presentation 010814-updated	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
C8 foundation dwg	STG Foundatoin Drawing			ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
C8 Layout STG	Layout	04/30/08	2	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
8 Loading data STG Foundatio	Loading Data [kN]	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Construction Staging and Traffic Management Plan	Construction Staging and Traffic Management Plan	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Contracts_Purchase Orders_Permits Insurance Requirements	Contracts Purchase Orders Permits Insurance Requirements	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
ES-1000 Rev 9	Feedwater Quality Requirements for Superheated Steam Applications	07/22/11	9	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Exhibit A - DW_221732D01	Drawing 221732C1	-	0	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Exhibit B - HA_221732D01	Form 3.2.1-D	-	0	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
FY 2014 Adopted General Fee Schedule Part 2	FY 2014 Adopted General Fee Schedule Part 2	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
JV468844D	SPX Cooling Technologies Prelim Dwg - Basin Section & Details	10/22/12	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
JV4688445	SPX Cooling Technologies Prelim Dwg - Schematic View	10/22/12	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Jv468844B	SPX Cooling Technologies Prelim Dwg - Basin Section & Details	10/22/12	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Location and Working Hours	Location and Working Hours	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Moving Permit Application - For Wide Load and Heavy Equipment	Moving Permit Application - For Wide Load and Heavy Equipment	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
P12079-00 Jumper Tubes	Jumper Installation Proposal - IST	11/27/13	0	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Public Right-of-Way Permit	Public Right-of-Way Permit	12/19/12	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Rotor removal instructions _skid pan_	Rotor removal instructions skid pan	-	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
SK-8371-0	Condenser Outline Proposal Level (Proposal No. H-8371.HX)	-	0	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Storage Container - Application	Storage Container - Application	07/01/13	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Truck Route	Truck Route Map Exhibit 1	06/22/11	CAD90070A.MXD	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
11302-0004	Generic Flowsheet Dual Pressure OTSG W/ Burner, SCR & CO	02/20/06	P1	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
COP BOP Pre-Bid GE BOP Equipment_14Jan02	COP BOP Pre-Bid GE BOP Equipment	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
IST Presentation 20140108 (NXPowerLite)	IST Presentation 20140108 (NXPowerLite)	01/08/14	-	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2

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Attachment A3-Reference Information Documents

January 30, 2014

Document No./ Filename	Document Title	Current Rev. Date	Current Rev. No.	Released	Location
LM6000_Package_Layout_Evolution1.5.14r1	LM6000 Package Layout Evolution	-		ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
Bidder's Questions 2013-01-15 Rev 0	Bidder's Questions	01/15/14	0	ADD 2	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 2
7253049-969960	Recommended Settings For Model 175 Nox Water Injection Pump Sr Drive	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969961	Jaquet T401 GT Backup Overspeed Device Settings, SSW1	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969962	Digital Multifunction Meter Settings Satec Pm174	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum
7253049-969964	Suggested Settings For Beckwith Model M-3425a Generator Protection System	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969965	Automatic Voltage Regulator Settings, Brush Prismic A30	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969966	DSM Settings	10/09/13	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3
7253049-969966	Asbestos Survey and Lead-Based Paint Assessment Report	02/24/99	A	ADD 3	EMAT\Procurement\Packages\BOP Contractor Scope\Addenda\Addendum 3

Enclosure 13

i+icon ENERGY™
One Bigelow Square, Suite 708, Pittsburgh, PA 15219
412-471-4202

i+iconENERGY
is requesting bids from qualified City of Pasadena, California Subcontractors and Suppliers for the following project:

CITY OF PASADENA WATER AND POWER DEPARTMENT
GLENARM REWPOWERING PROJECT
GT-5 (71 MW) COMBINED-CYCLE INSTALLATION
PASADENA, CA

Submit Bids by 03/11/2014 at 2:00 PM PST

We are seeking bids for all trades and suppliers, including asphalt, earthwork, grading, paving, utilities, concrete, rebar, landscaping, masonry, framing, carpentry, casework, cabinets, structural steel, miscellaneous metals, sheet metal, HVAC, plumbing, mechanical fencing, glass, glazing, insulation, drywall, roofing, fireproofing, acoustical, flooring, tile, fire protection, paint/wall coverings, electrical, low voltage, building specialties, doors, frames, hardware, equipment, furnishings, equipment rentals, office supplies, testing services, staff augmentation and other related trades or materials.

Plans and specifications available on Dropbox via the following link:
https://www.dropbox.com/sh/m8vft4cc6pznzrd/qTL0EOYMj7

i+iconENERGY
One Bigelow Square, Suite 708, Pittsburgh, PA 15219
Phone: 412-471-4202 Fax: 412-471-4220
Contact: Anne Ritchey at estimating@iiconenergy.com