



CH2MHILL

June 3, 2005
184288

Mr. William Pfanner
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5504

RE: Data Response, Set 3A
San Francisco Electric Reliability Project (04-AFC-1)

Dear Bill:

On behalf of the City of San Francisco, please find attached 12 copies and one original of Data Response, Set 3A, in response to Staff's Data Requests dated May 2, 2005. We are filing copies of this Data Response both electronically and in hard copy. Because of its size, only five copies of Attachment WM-184A are being furnished to the CEC and no electronic copies are being filed.

In addition, again due to size, Attachment WS-187, the Stormwater Pollution Prevention Plan is being sent in electronic form without the figures and attachments. However, hard copies of the complete document are being provided to the proof-of-service list.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

c: Project File
Proof of Service List

**SAN FRANCISCO ELECTRIC
RELIABILITY PROJECT
(04-AFC-1)**

DATA RESPONSE, SET 3A
(Responses to Data Requests: 161-193)

Submitted by
CITY AND COUNTY OF SAN FRANCISCO

June 3, 2005



2485 Natomas Park Drive, Suite 600
Sacramento, California 95833-2937

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Cultural Resources

CEC Authors: Beverly E. Bastian and Gary Reinoehl

SFERP Author: Doug Davy and Lori Durio

BACKGROUND

Section 8.3.3.6.1 of Supplement A summarizes the results of an archaeological field survey of the new project plant site, transmission alignment, natural gas pipeline route, and water supply pipelines (process and potable) conducted on February 21, 2005. No individual report of this survey has been provided with this application.

DATA REQUEST

161. Please provide a technical report in Archaeological Resource Management Reports (ARMR) format documenting the February 21, 2005 archaeological survey (methodology, transect intervals, ground visibility, etc.) prepared by an individual that meets the U.S. Secretary of the Interior's Professional Standards. Please append a copy of the record search (NWIC 04-687) to the technical report. If the ARMR identifies any site locations the report should be submitted under confidential cover.

Response: The Archaeological Resource Management Report is attached to this submittal as Attachment CR-161. It is not necessary to file this report under confidential cover because it does not contain confidential site records. The Applicant previously submitted the record search report (NWIC 03-548) prepared by the California Historical Resources Information Center Northwest Information Center under confidential cover (see AFC Confidential Appendix 8.3D). A qualified archaeologist, Dr. Douglas Davy, visited the Northwest Information Center to inspect the archaeological and historic site records to determine whether or not sites have been recorded near the project site or linear facilities since the previous records search. This record search update determined that there are no newly recorded sites within or near the Area of Potential Effects. There is no written record search report of this update other than the Application for Certification and Archaeological Resource Management Report provided in response to this data request.

BACKGROUND

Section 8.3.3.6.7 of Supplement A contains a discussion of the efforts made by the previous applicant, SECAL/Mirant, and the cultural resources firm, CH2M HILL, to initiate Native American consultation on an earlier power plant project, located two blocks north of the present project proposed by the City and County of San Francisco (CCSF). From this discussion, it is clear that the CCSF has not consulted with Native Americans about possible impacts to resources of concern to them in the new location of the proposed power plant.

In December, 2003, the Native American Heritage Commission (NAHC) provided CCSF with a list of Native American contacts with historic ties to the project area. In that letter, the NAHC advised: "If a response has not been received within two weeks of

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.” Native American contact efforts by CCSF for the previous proposed plant site are outlined in Supplement A, Section 8.3.3.6.7. The discussion provides no indication that the officially requested follow-up telephone contacts were carried out.

DATA REQUEST

162. Please contact the NAHC, request a current list of the names, addresses, and telephone numbers of Native Americans having historic ties to the project area, and send a letter and map indicating the new project area, with the request that they notify your Cultural Resources consultant if they know of any cultural resources that could be affected by the revised project. Please provide Energy Commission staff with copies of the letters to the Native Americans on the NAHC list and copies of any written responses received from Native Americans.

Response: The Applicant has contacted the Native American Heritage Commission and requested a search of the Sacred Lands File and a list of Native American consultants. NAHC’s response is provided as Appendix B of Attachment CR-161. Copies of the letters sent to the NAHC list are also provided in Appendix B of Attachment CR-161.

163. If responses from Native Americans are not received in the time allowed, please make follow-up telephone calls and provide Energy Commission staff with copies of either letters from the NAHC responding to your request(s) or telephone logs of the calls, evidencing that the notification was made and documenting any other information provided by Native Americans.

Response: See Data Response #162.

BACKGROUND

In the Supplement A, the applicant did not provide a map or written description of the Impact Area (IA) of the project. Staff needs to determine if impacts from the construction of the linear facilities will extend beyond their proposed footprints.

DATA REQUEST

164. For the trenches of the transmission alignment (two alternate routes), the natural gas pipeline route, and the water supply pipelines (process and potable (two alternate routes)), please provide a discussion of:

a) the width and maximum depth of the trenches;

Response: Trench widths and depths will vary depending on soil conditions and any obstructions that may be encountered. In general, in areas with sound soil conditions and no obstructions, trenches will be 2 to 3 feet wide and about 5 feet deep. It is expected that the HV transmission duct bank will have a slightly larger trench, 5 feet wide and 7 feet deep. In areas where soil is unstable, shoring may be used to keep trench walls vertical. However, in such cases trenches may be as much as 5 to 6 feet wide or wider

San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A

depending on the design requirements of the shoring. If obstructions (such as existing utilities) or poor soil conditions are encountered, trenches may need to be excavated deeper to allow new utility lines to be routed beneath the obstructions or to improve soil conditions. The depth of any additional excavation that may be required is unknown at this time.

b) the width of the construction area to either side of the trenches;

Response: The construction area for utilities will be about 12 feet wide where open-trench construction is used. The area will include space for stockpiling excavated material on one side of the trench, the trench, and space for equipment and trucks on the other side of the trench.

c) the location and size in all three dimensions of the starting and ending pits for the jack-and-bore segments of the trenches including the description of the construction area around the pit;

Response: The precise locations of jack-and-bore construction are not known at this time. The locations will be defined during final design. However, for the recycled water line, it is likely that a trenchless construction method (such as jack and bore) will be required to cross beneath the Muni light rail at the intersection of Third Street and Cesar Chavez Street. For the HV transmission duct bank it is expected that trenchless construction will be required at the intersection of 24th Street and Illinois Street. Trenchless construction may also be required if other large obstructions are encountered. The size of the entrance pit would need to be approximately 30 feet long and 15 feet wide. Depths of pits will match depths of other trenches: +/- 5 feet if no obstructions exist.

Jack and bore does not have a receiving pit. If microtunneling is used, a receiving pit will be needed to remove the tunneling head. The dimensions of the receiving pit would be about 5 feet wide x 20 feet long x pipe trench depth (+/- 5 feet).

d) the location of areas where excavated soil will be stored before backfilling;

Response: Excavated material that is suitable for use as backfill will be stockpiled along the lengths of the trenches. The stockpiles will be approximately 5 feet wide. It is anticipated that only portions of the trenches will be open at any given time during construction; stockpiles will only be present along the open portions. Soil excavated from trenches that cross intersections and driveways will be stockpiled away from these areas to permit traffic flow as required.

e) any soil disturbing activities that will be done on areas where trench and other construction equipment will be stored and where and of what size those storage areas will be; and

Response: It is anticipated that the construction laydown area will be used to store materials and equipment used to construct offsite utilities (ref. Supplement A, Figure 1-2). Material to be stored in the laydown area will consist of sections of pipe, cable, fittings, and appurtenances. Equipment stored in the laydown area may include trenching equipment and other equipment commonly used in pipeline construction such

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

as soil compactors. It is expected that the material and equipment will fit within the laydown area.

- f) the impact of vibrations from the construction of the trenches on the historic buildings within one block to either side of the trenches, especially along Third Street between 20th and 23rd Streets.

Response: Construction of utilities is not expected to generate significant vibrations that would affect existing structures. Any vibrations that may be generated will be equivalent to existing truck traffic.

BACKGROUND

The Supplement A indicates that the process water pipeline on Marin Street, Mississippi Street, and part of Chavez Street will be installed in existing collection boxes.

DATA REQUEST

165. Please indicate whether the entry into the existing collection boxes will disturb the earth around the boxes, and, if so, in what way and to what extent.

Response: Entry into the existing box structures will be through existing manways. Access may require foot traffic and some equipment traffic in the immediate vicinity of the manways. However, no excavations around the box structures specifically intended to provide access are anticipated.

BACKGROUND

Review of multiple sections of the SFERP Supplement A (pp. 1-2; 1-6; 2-1; 7-1; 8.11-12; 8.14-14) reveals that the specifications for the process water pumping station to be located on Marin Street are not clearly set out.

DATA REQUEST

166. Please indicate whether the process water pumping station is new construction or re-use of an existing structure.

Response: The water pumping station will be new construction.

167. If the process water pumping station would re-use an existing structure, please indicate if the structure to be re-used meets the criteria for eligibility to the California Register for Historic Resources (CRHR), and, if so, what impacts the re-use will have on the structure.

Response: The water pumping station will be new construction.

168. If the process water pumping station would re-use an existing structure, please indicate how much ground disturbance the adaptation will cause both vertically and horizontally.

Response: Not applicable.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

169. If the process water pumping station would require construction of a new structure, please indicate how large the new structure is, whether it is above or below ground, and how much ground disturbance the construction will cause both vertically and horizontally.

Response: The pump station will be primarily constructed below ground, but small electrical power supply and control panels will be constructed above ground. The electrical power and control panels may be located in an enclosure to protect them from vandalism and weather damage. The wet well of the pump station (the below-ground portion of the pump station) will be approximately 24 feet by 12 feet in plan and approximately 20 feet deep. The excavation required to construct the pump station will extend approximately 5 feet beyond the pump station walls on each side. Shoring will be required to hold the walls of the excavation. Additional trenching for piping and electrical wiring will be required in the immediate vicinity of the pump station.

BACKGROUND

The Supplement A does not assess the impact of the change in setting which the proposed project will impose on two historic sugar warehouses.

DATA REQUEST

170. Please provide a description of the change in setting and feeling to the two historic sugar warehouses located on the south side of 23rd Street, east of Michigan Street that would occur because of the construction of the project and assess the impact to the two warehouses.

Response: The two former sugar warehouses on 23rd Street are the only remaining buildings of the California Sugar Refinery, which was constructed in 1881 by San Francisco industrialist Claus Spreckels. The California & Hawaiian Sugar Refining Corporation purchased the property in 1949 and demolished the plant and most of the buildings in 1951. According to the San Francisco Planning Department's (2001) Central Waterfront Cultural Resources survey, DPR-523 building record form, the buildings were constructed in 1923 and 1929, respectively, as part of a facility expansion. They were used for final preparation and packaging of sugar products. Their reinforced concrete construction represented an advance over the use of wooden or brick buildings for sugar processing and storage because it was easier, in these buildings, to keep the sugar dry. This City report recommends that these properties be evaluated as contributors to a potential Pier 70 historic district or as individual historic resources and that they are eligible for listing in the National Register under Criterion A at the local level of significance. The DPR-523 building record indicates that these two buildings are "little altered and possess integrity of location, design workmanship, materials, and association." It also states that "by the loss of the rest of the plant, there is a substantial loss of integrity of setting and feeling."

Construction of the SFERP will change the setting of these two buildings by introducing a new element to the general surroundings. The SFERP is approximately 700 feet from the warehouses at the nearest point. Large buildings are located between the

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

warehouses and the SFERP that block views of the lower portion of the SFERP from most of the area near the warehouses. From the warehouses, the stacks, combustion turbine air intakes, and SCR housing may be visible above the roof lines of the intervening buildings. At the extreme western end of the westernmost warehouse, however, there would be a more direct line of sight to the SFERP, across the open water that is directly south of the westernmost warehouse and northeast of the SFERP.

This change in setting that the SFERP causes would be modest, however, and would not significantly damage the integrity of setting, feeling, and association of these buildings. All of the other buildings associated with the sugar refinery on Potrero Point have been demolished, so a great deal of their historical integrity of setting has been removed, as the DPR-523 form notes. As stated above, these properties are significant because of their integrity of location, design, workmanship, and association, but not because of their integrity of setting or feeling, which has been significantly diminished by the removal of the remainder of the sugar refinery buildings.

Although older industrial buildings are located near the warehouses on the southeast, west, and northwest, the design of the SFERP, with its warehouse-like control building and other industrial equipment, is not out of keeping with the heavy industrial character of the area in general. Neither does power generation equipment add a new industrial element to this area, considering that the Potrero Power Plant is immediately adjacent to (north of) the westernmost sugar warehouse. This is a structure several stories high with a massive exhaust stack more than 200 feet high. It would, therefore, be fair to say that the SFERP is in keeping with the industrial setting of the warehouses and that its effect on them and their significance and integrity would be negligible.

BACKGROUND

In Data Responses Set 1A, provided by SFERP, the response to Data Request 23, provided a District Record (DPR 523) for a proposed Central Waterfront Historic District. The boundaries for the district are described as 16th Street to the north, Interstate 280 to the west, Islais Creek to the south, and San Francisco Bay to the east. The supplementary application describes the project site and most of the linear facilities as being within the district.

DATA REQUEST

171. Please provide a discussion of the character-defining features of the district and the impacts of the project to the proposed Central Waterfront Historic District by an individual who meets the U.S. Secretary of the Interior's Professional Standards for history or architectural history. Please ensure that the discussion includes changes in the attributes of integrity, and address whether the impacts would materially impair the eligibility of the proposed district.

Response: The Central Waterfront District is significant as an area within which there are a number well-preserved industrial buildings that reflect and embody the history of heavy industrial development in San Francisco. The district was largely undamaged in the 1906 earthquake, so it has preserved many types of older industrial buildings that

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

were damaged or destroyed elsewhere. Heavy industry is the most important character-defining theme of the Central Waterfront District. The Dogpatch residential neighborhood, which is “significant as the oldest and most intact surviving concentration of Victorian-era industrial workers housing in San Francisco” (City of San Francisco Planning Department 2001) provides an important secondary theme. Early industries that have defined the character of the district, including many that have a maritime association, have included the DuPont gunpowder manufacturing plant, Tubbs Cordage rope-making facility, Pacific Rolling Mills and associated shipyards, Union Iron Works, Bethlehem Steel, American Can Company, American Barrel, the California/Western Sugar Refinery, and San Francisco Gas & Electric Company. During the 1930s, Third Street was widened, and many of the buildings along this street were remodeled to incorporate Art Deco facades, many of which are well-preserved.

There are three important sub-districts within the Central Waterfront District: 1) Pier 70 Area at the north end, 2) Dogpatch residential area to the west, and 3) PG&E Area in the central portion of the district. The Pier 70 Area contains the largest number of buildings with good historic integrity and much of this area was associated with iron-working and shipbuilding industries. Dogpatch, as mentioned above, was a residential area for many of the Central Waterfront District’s workers. The PG&E area contains the remnants of one of the City’s largest early power plants. In 1901, San Francisco industrialist and owner of the California Sugar Refinery Claus Spreckels formed the Independent Electric Power & Light Company to build the Potrero Steam Plant (later called Station A) partly because of a disagreement with the president of San Francisco Gas & Electric Company, Joseph B. Crockett. The plant came into PG&E ownership 4 years later.

The SFERP would have a negligible effect on the integrity of the Central Waterfront District. It is located south of the PG&E Area, in a zone of relatively recent fill (since 1930) that is not near or adjacent to any of the buildings or structures identified as historic properties in the Central Waterfront study. The project will add a heavy industrial element to the project area, but this is entirely in keeping with the character of the district.

Power generation, in fact, has been an important industrial use in the Central District’s PG&E Area, approximately 800 feet north of the SFERP site, as noted above. Several of the Station A buildings remain at Potrero Point, and PG&E has constructed the very large Potrero Power Plant at the western end of Potrero Point, north of the SFERP.

The SFERP would not be visible, or would be barely visible, from areas within the Central Waterfront District that retain the most historic integrity, such as Pier 70, Dogpatch, and the PG&E Area. No other effects on the Central Waterfront District are anticipated from the SFERP project.

BACKGROUND

The supplemental application states that a site history report to describe past uses of the site will be prepared (p. 8.9-12).

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

DATA REQUEST

172. Please provide a copy of any site history report prepared for this project.

Response: The site history report referred to in Section 8.9 of Supplement A is provided in Section 2.2 of the Site Characterization/Corrective Measure Study and Article 22A Soil Characterization Report that is being provided as Attachment WM-184.

BACKGROUND

The Supplement A states that a geotechnical boring study of the proposed site will be done (p. 10G-4). Such a study could provide information on submerged cultural resources located on the former Bay floor.

DATA REQUEST

173. If geotechnical boring has not yet been completed, please have an archaeologist, who meets the Secretary of the Interior's Professional Standards, monitor the boring and write a report, consistent with ARMR format, on any cultural materials present in the cores, descriptions of sediments, and an assessment of the potential of the project to disturb buried cultural resources. Please provide staff with a copy of that report within 30 days of completion of the boring. If it is not possible to meet that schedule, please provide staff with a projected date for submitting the report.

Response: The Applicant will monitor the geotechnical borings and provide a report of the results within 3 weeks following completion of the borings.

BACKGROUND

The Supplement A postpones a decision on the necessary depth of the foundations of the components of the power plant site, but describes the fill on which the plant will be built as quite variable in depth (up to 40 feet), and of a character probably requiring the use of pilings or caissons (p. 10G-4-5). Pilings or caissons could potentially impact any cultural resources buried under the fill at the proposed plant site, such as sunken vessels, lost cargoes, collapsed wharves, and buried or submerged archaeological sites. The application makes no mention of the potential for submerged historic-period resources under the fill at the plant site. More information is needed for staff to assess the potential for submerged or buried archaeological resources.

DATA REQUEST

174. Please provide a detailed discussion of the history of the nineteenth and twentieth century filling of the bay in the area bounded by old Potrero Point on the north, Mississippi Street on the west, and Islais Creek on the south, including maps depicting the progression of the filling.

Response: Figure CR-174 depicts the progressive filling of the bay in the project area (source: AGS Inc. 1999). Supplement A provides a detailed discussion of the history of

ILLINOIS ST

MICHIGAN ST

25TH ST

26TH ST

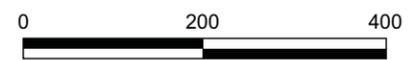
Approximate Location of 1935 Shoreline

Approximate Location of Current Shoreline (Since 1966)

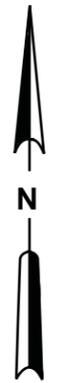
Approximate Location of 1948 Shoreline

Approximate Location of 1955 Shoreline

SCALE: 1" = 200'



Approximate Scale In Feet



CESAR CHAVEZ ST

ILLINOIS ST

MICHIGAN ST



SFERP Project Site

FIGURE CR-174
PROJECT AREA FILL PROGRESSION
SAN FRANCISCO ELECTRIC RELIABILITY PROJECT
SUPPLEMENT A

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

nineteenth and twentieth century filling of the bay in the area bounded by Old Potrero Point, Mississippi Street, and Islais Creek. Figure 8.3-2 in that document shows the boundaries of early filling for the Third Street and Army (Cesar Chavez) Street trestles. Figure CR-178, referenced below, shows the prehistoric shoreline.

175. If the project site was underwater prior to the filling, please consult Pam Griggs (916-574-1854) with the State Lands Commission and with the San Francisco Maritime Museum to determine if there are known shipwrecks in the project site and provide a copy of maps or other information obtained by this search.

Response: The Applicant has conducted a search of the State Lands Commission's (SLC) on-line shipwrecks database. This database lists 140 shipwrecks for San Francisco County. None of these, however, are located near the project area (the wrecks are listed by latitude and longitude). Most of the listed wrecks are for the outer Pacific Coast or areas further north in San Francisco Bay. Ms. Griggs of the SLC has advised the Applicant that there is a more comprehensive shipwrecks database that is not available to the public and has agreed to conduct a search of this database. The Applicant has not yet received the results of this database search, however, and will file them with the Commission when received. The Applicant has also conducted an information search at the San Francisco National Maritime Museum Library, to determine whether or not shipwreck locations are known for the project area. This information search did not result in the identification of shipwrecks near the SFERP project site.

The literature search indicates that shipwrecks due to bad weather, faulty navigation, etc. are more likely to found along the outer Pacific Coast and along rocky shores near the Golden Gate and Alcatraz Island than in more sheltered portions of San Francisco Bay such as Islais Creek Cove. This research also indicated, however, that it was a relatively common practice to scuttle boats or ships in shallow areas of the Bay where bay filling was taking place, to help provide some sort of structural foundation for the fill (personal communication, Steven Davenport, Reference Librarian, San Francisco Maritime National Historic Park, 2005). Ships or boats were sometimes hauled to shallow water, salvaged, and then burned to the waterline. Fill would then be placed around or over them. Because this filling was generally an informal activity that did not require official authorization, however, detailed records of the locations of these vessels were not kept.

176. Using the maps cited in the Cultural Resources "References" (Section 8.3.9) and additional information on the project area gathered from the files and publications of San Francisco historical organizations, please provide a discussion of the potential for submerged or buried cultural resources under the fill at the proposed plant site.

Response: The project site is located on land that was filled between 1935 and 1948. Before that time, the project site was occupied by a shallow embayment in Islais Creek Cove. Submerged or buried resources at the project site would, therefore, likely be: 1) prehistoric shell middens or other sites representing a time period when the bay's water level was lower (pre-6,000 B.P); 2) a boat or ship wreck; or 3) refuse dumped in the bay to create fill during the filling episode (1935 to 1948). Investigations with local experts and the San Francisco National Maritime Museum have not resulted in the

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

identification of specific resources such as known shipwrecks in the vicinity of the project site (see also Data Response #175).

177. If the archeological assessment of the geotechnical boring at the plant site and/or the requested assessment of the potential for submerged or buried cultural resources indicate the possible presence of such cultural resources, please provide a discussion of what impact the proposed pilings or caissons will have on those resources.

Response: Although the literature review indicates that there is some potential for buried resources at or near the project site, this cannot be known with certainty until some kind of material excavation takes place. Any assessment of the impacts of pile-driving would be purely hypothetical without knowing about a resource, its location, integrity, and significance. If pile driving were to avoid directly affecting such resources, there would be little or no impact. If the piles were to penetrate, for example, a shipwreck, the significance of impact would depend on the significance of the resource and possibly the location impacted. The feasibility of recovering information that would permit an assessment of significance and an assessment of pile-driving impacts would also have to be considered if a buried resource were found, given the probable depth of the fill.

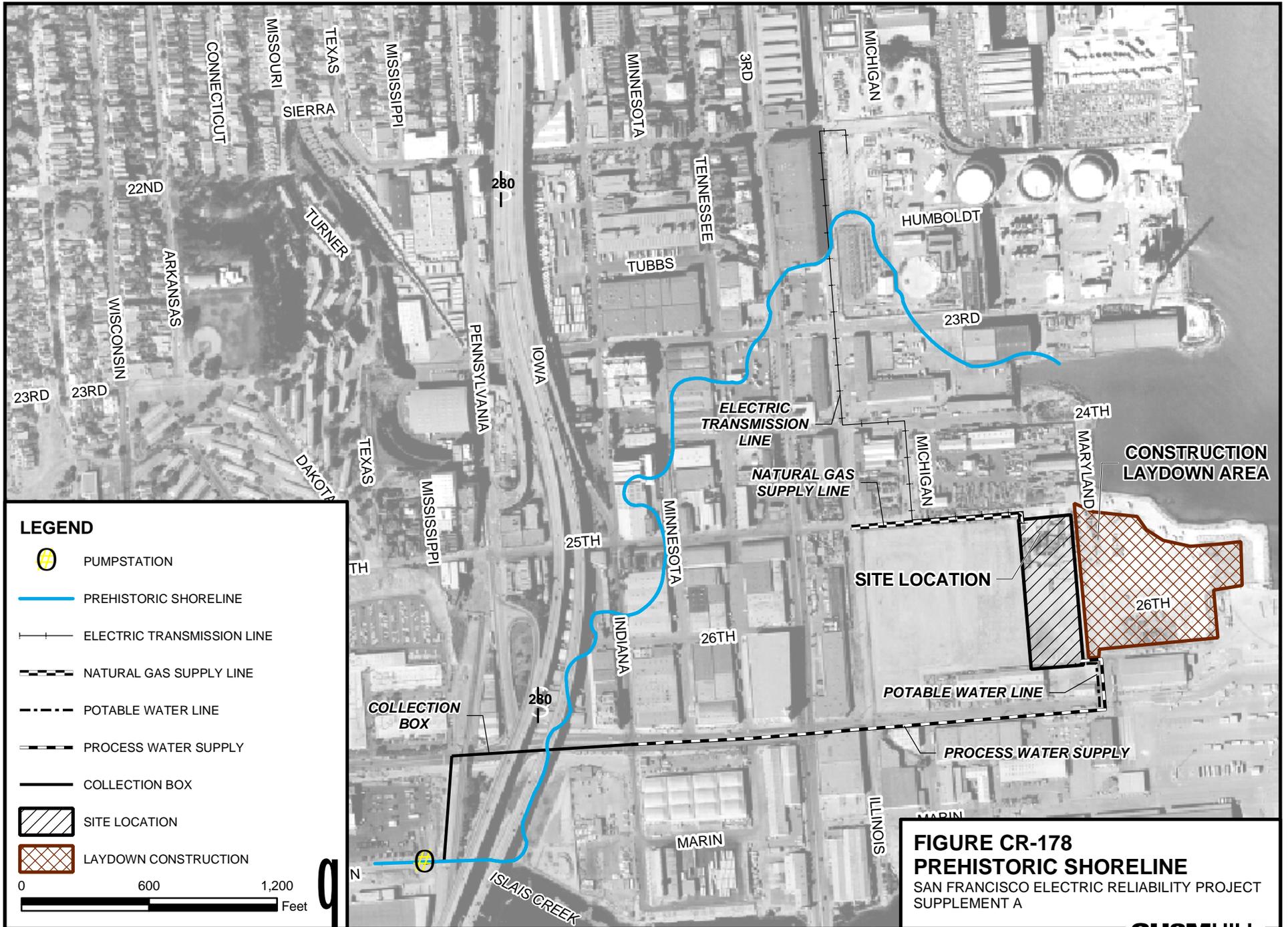
BACKGROUND

The application acknowledges the high potential for the presence of prehistoric archaeological resources on the western end of the process water pipeline route, but fails to include that area on their map of the prehistoric shoreline (Figure 8.3-2). To appropriately assess the potential for prehistoric archaeological resources at the plant site, along the process water pipeline, and at the construction site of the water pumping station, staff needs more information on the horizontal extent of the shoreline in the area of Marin, Mississippi, and Cesar Chavez Streets, and Interstate 280.

DATA REQUEST

178. Using the maps cited in the Cultural Resources “References” (Section 8.3.9) and any additional relevant sources, please provide a map delineating the earliest known shoreline in the area of Marin, Mississippi, and Cesar Chavez Streets, and Interstate 280.

Response: Figure CR-178 depicts the earliest known shoreline in the area of Marin, Mississippi, and Cesar Chavez Streets, and Interstate 280.



**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

INSERT ATTACHMENT CR-161

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Efficiency
CEC Author: Kevin Robinson
SFERP Author: Barry Flynn

BACKGROUND

As designated in the AFC Supplement A, the applicant states that the SFERP is a peaking facility and will be operated as a dispatchable power plant (SFERP 2005a, AFC §§ 10.3.2, 10.4).

DATA REQUEST

179. Please elaborate and define the intended uses (such as ancillary service, peaking, load following, voltage support, frequency support, etc.) of the SFERP.

Response: Consistent with a Power Purchase Agreement (PPA) between the City and the Department of Water Resources (DWR), during the term of the PPA, DWR has the discretion to schedule and dispatch the SFERP, including use of the CAISO day-ahead and hour-ahead scheduling processes, any other scheduling process that may be implemented by the CAISO, and real time dispatchability. Thus, during the term of the PPA, DWR will determine the uses of the SFERP.

Nonetheless, it is the City's expectation that the SFERP will mostly operate to provide local reliability service. As described in Data Response 180 below, a simple-cycle configuration is consistent with and supports this expectation since the units will not be competitive with base load facilities. The City is pursuing the SFERP to support the closure of existing in-City generation while maintaining reliability. As stated in Section 3 of Supplement A, Purpose and Need, with the completion of 14 transmission projects, the SFERP and a small generating facility at the San Francisco International Airport (SFIA), the CAISO will release two existing reliability must run plants in the City, the Potrero power plant and the Hunters Point power plant, from the applicable reliability must run agreement. The City understands that the CA ISO would then use the SFERP and the small generating facility at SFIA to meet the reliability needs that were met in the past by the Hunters Point and Potrero power plants. It is also the City's expectation that the SFERP will be required to operate less than the Hunters Point and Potrero power plants to meet local area reliability needs because of the substantial improvements that have been made recently to the transmission system in the Greater Bay Area.

BACKGROUND

In the Alternatives section of the AFC Supplement A, the applicant does not address the possible alternative of a combined cycle facility (SFERP 2005a, AFC § 9.0).

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

DATA REQUEST

180. Please evaluate a combined cycle alternative and compare this to the proposed simple cycle facility. Also support the reasoning behind the choice of a simple cycle project instead of a more efficient combined cycle project.

Response: A simple-cycle configuration is consistent with the City's objectives for the SFERP, environmental justice considerations, and the state's and the City's policy to prioritize the use of energy conservation and renewables to meet energy needs.

As detailed in section 3 of Supplement A on purpose and need, the City is pursuing the SFERP in order to close down the Hunters Point and Potrero power plants. During the course of the development of the SFERP, the CAISO repeatedly indicated the need for generation north of the San Mateo substation to provide the reliability services that to date have been provided by the Hunters Point and Potrero power plants. During the development of the SFERP, the City communicated informally with the CAISO to ensure that the configuration and permitted hours of operation would be adequate to support closure of the Hunters Point power plant and then the Potrero power plant. The November 2004 Revised Action Plan confirms that this objective has been achieved.

Also consistent with the reliability purpose of the facility, a simple-cycle configuration provides quick start times, and consequently operating flexibility. In contrast, depending upon the design, a combined-cycle configuration could, require several hours from startup to full operation and could result in the need to operate units in low load periods just to ensure they are available to meet high load periods.

The quick start feature of a simple cycle configuration is also consistent with the City's objective to minimize the operation of the SFERP in order to minimize the impacts of the facility on Southeast San Francisco. Section 4 of Supplement A on environmental justice details the City's recognition that Southeast San Francisco is a community of color with relatively high rates of serious respiratory diseases, and that has been disproportionately impacted by industrial facilities including electric power generation. In this location, it is important to select a configuration that discourages operation of the plants for purposes other than reliability.

Further, the simple cycle configuration supports the loading order set forth in the Energy Action Plan by allowing utilities to prefer conservation and renewable generation to meet the bulk of their energy requirements. Like the state, it is the policy of the City to prioritize use of energy efficiency and renewables to meet electricity needs.

In addition, the configuration is consistent with PG&E's 2005-2014 Long-Term Procurement Plan and the Request for Offer (RFO) issued on March 18, 2005. The PG&E 2005 - 2014 Long Term Procurement Plan was approved by the CPUC in Decision 04-12-048, December 16, 2004. In that decision, the CPUC authorized PG&E to procure dispatchable peaking and shaping resources to fill in the gaps between projected production from existing generation and contracted resources and projected demand. The RFO indicates that PG&E intends to acquire, either through power purchase agreements or utility-owned facilities, dispatchable capacity of approximately 1,200 MW in 2008, and an additional 1,000 MW in 2010. There is a preference for adding peaking capacity in 2008.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Finally, a combined-cycle configuration requires significantly more cooling water than a simple-cycle configuration.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Noise
CEC Author: Steve Baker
SFERP Author: Mark Bastasch

BACKGROUND

The project will create noise that may or may not adversely affect several residential receptors near the project site. These receptors are described only vaguely. In order to properly evaluate potential noise impacts on sensitive receptors, staff would like to know the nature of these residences.

DATA REQUEST

181. Please describe, in general terms, the residential receptors at locations R-1 through R-4 (AFC Supplement, § 8.5.4) in more detail. Describe the nature of each residential use (apartments, single or double dwelling units, etc.) and the approximate number of such units at each location.

Response: A description of the various locations as well as a picture is provided below.

R-1: Located at 1415 Indiana Street is a 21-unit building. Some of the units are offices and some are residences. This unit covers the entire block between Indiana and Minnesota streets. Picture is from 25th Street showing the Minnesota side of the building.



**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

R-2: Located at 1310 Minnesota Street, R-2 is a 6-story building with 34 units. Some of the units are offices and some are residential.



R-3: R-3 is a group of mostly 2-story buildings on Third Street comprising addresses: 2642, 2644, 2646, 2630, 2638, 2628 (units A and B) and 2626. It appears that there is one family per unit.



**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

R-4: R-4 is a group of 5- or 6-story units located at 1568 (8 units), 1578 (12 units) and 1588 (12 units) Indiana Street. They are located at the corner of Indiana and Cesar Chavez streets.



M1: Monitoring Location 1 is a work/live complex at 1011 Minnesota Street (at the corner of 23rd Street). It contains 20 units.



Ajax Auto Dismantlers: During the site visit on May 6th the question was raised if there was a dwelling unit in the upstairs of the Ajax Auto Dismantlers located at 2895 Third Street. According to Jack Brice, the owner of Ajax, the upstairs unit is used as an artist studio. It is not a dwelling unit.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Transmission System Engineering
CEC Author: Mark Hesters
SFERP Author: Steven Brock

BACKGROUND

Staff needs to completely identify facilities required for termination of the project and all “downstream” transmission facilities required by interconnection of the project. The System Impact Study provided in the AFC studied the project with a 900-foot interconnection to the Potrero substation. The AFC Supplement A describes two possible 3000-foot underground cables to the Potrero substation. Staff needs an approved facility study for the new interconnection.

DATA REQUEST

182. Provide a Facilities Study completed by PG&E for any interconnection for which you are seeking certification. The study or studies should, at a minimum, demonstrate conformance or non-conformance with National Electric Reliability Council/Western States Coordinating Council (NERC/WSCC), California Independent System Operator (Cal-ISO) and utility reliability and planning criteria with the following provisions:

Response: Please refer to the May 11, 2005, Applicant's Clarifications and Notices of Need for Additional Time in Response to May 2, 2005, Data Requests. As set forth below, some of the information requested is included in the System Impact Study that was provided as Appendix 5 in AFC, and in the Updated Facility Study (Attachment TSE-70A, provided in Data Response Set 1A). Pacific Gas and Electric Company (PG&E) is undertaking a supplemental Facility Study. The City will provide the report of the study as soon as it is complete. A January 24, 2005 letter from Barbara Hale to Gary Brown informing him of the change of site and the existence of an effective System Impact Study and Facility Study is included as Attachment TSE-182A.

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

Response: Major assumptions in the base cases are identified in the System Impact Study, AFC Appendix 5.

- b) Analyze system for Power Flow for N-0, important N-1 and critical N-2 contingency conditions, and provide a list of pre and post project overload criteria violations.

Response: This analysis has been provided in the System Impact Study, Appendix 5 of the AFC.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

- c) Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list of voltage criteria violations.

Response: This analysis has been provided in the System Impact Study, Appendix 5 of the AFC.

- d) Provide a Short Circuit Study Report showing fault currents at important substation buses with and without the new generation and respective breaker interrupting ratings in a table side by side.

Response: Please refer to Section 7 of the System Impact Study, Appendix 5 of the AFC.

- e) Identify the reliability and planning criteria utilized to determine the criteria violations.

Response: The reliability and planning criteria used was provided in the System Impact Study, AFC Appendix 5.

- f) Provide a list of contingencies evaluated for each study.

Response: The list of contingencies evaluated were provided in the System Impact Study, AFC Appendix 5.

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

Response: The mitigation measures considered were provided in the System Impact Study, AFC Appendix 5 and those selected are provided in the Facilities Study Report, Attachment TSE-70A, Data Response, Set 1A.

- h) Provide power flow diagrams (MW, % loading & P. U. voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations occur.

Response: The power flow diagrams were provided in the System Impact Study, AFC Appendix 5.

- i) Provide electronic copies of *.sav and *.drw GE PSLF and EPCL contingency and comparison files (if available).

Response: In July 2004, the City was informed by PG&E that Karen Grosse of PG&E provided copies of the files directly to the CEC. (See Data Response 79, Data Response Set 1A.)

- j) A letter approving the Facilities Study.

Response: Please refer to the May 28, 2004 Letter Regarding San Francisco Electric Reliability Power Project Final Interconnection Approval, Attachment TSE-70B, provided in Data Response 70, Data Response Set 1A. The letter discusses the System Impact Studies and Facility Studies and approves interconnection based on the referenced studies. In addition, the City expects to receive a further CAISO Final

San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A

Interconnection Approval letter based on the results of the Supplemental Facility Study.
The City will provide the letter to the CEC as soon as it is received from CAISO.

DATA REQUEST

183. Provide the Cal-ISO Final Interconnection Approval letter for the new interconnection to the Potrero substation.

Response: Please refer to Data Response 182 j) above.



ATTACHMENT TSE-182A

FRANCISCO PUBLIC UTILITIES COMMISSION

1155 Market St., 11th Floor, San Francisco, CA 94103 • Tel. (415) 554-3155 • Fax (415) 554-3156



January 24, 2005

- GAVIN NEWSOM
MAYOR
- E. DENNIS NORMANDY
PRESIDENT
- RICHARD SKLAR
VICE PRESIDENT
- ANN MOLLER CAEN
ADAM WERBACH
RYAN L. BROOKS
- SUSAN LEAL
GENERAL MANAGER

Mr. Gary Brown
 Lead Project Manager
 Grid Planning Department
 California ISO
 P.O. Box 639014
 Folsom, CA 95763-9014
 Overnight address: 151 Blue Ravine Road, Folsom, CA 95630

RE: Submission of Generator Interconnection Applications

Subject: San Francisco Electric Reliability Project, Interconnection at the Potrero Substation

Dear Mr. Brown:

The San Francisco Public Utilities Commission is developing the San Francisco Electric Reliability Project, a 146 MW combustion turbine peaking plant near the Potrero Substation. Due to our inability to complete negotiations for the Mirant property adjacent to the Potrero substation, the SFPUC has been forced to relocate the SFERP project to City-owned property approximately 750 feet east of Illinois Street between 25th Street and Cesar Chavez (see Figure 1). The new site is approximately 0.3 miles from the original site on property owned by Mirant. Our intent is to route two redundant, underground 115 kV circuits from the plant site west on 25th to Illinois and South on Illinois to 22nd Street. The cables would then enter the Potrero Substation from 22nd Street.

To date, we have completed the system impact and facilities studies and are working to obtain final approvals on a Generator Special Facilities Agreement.

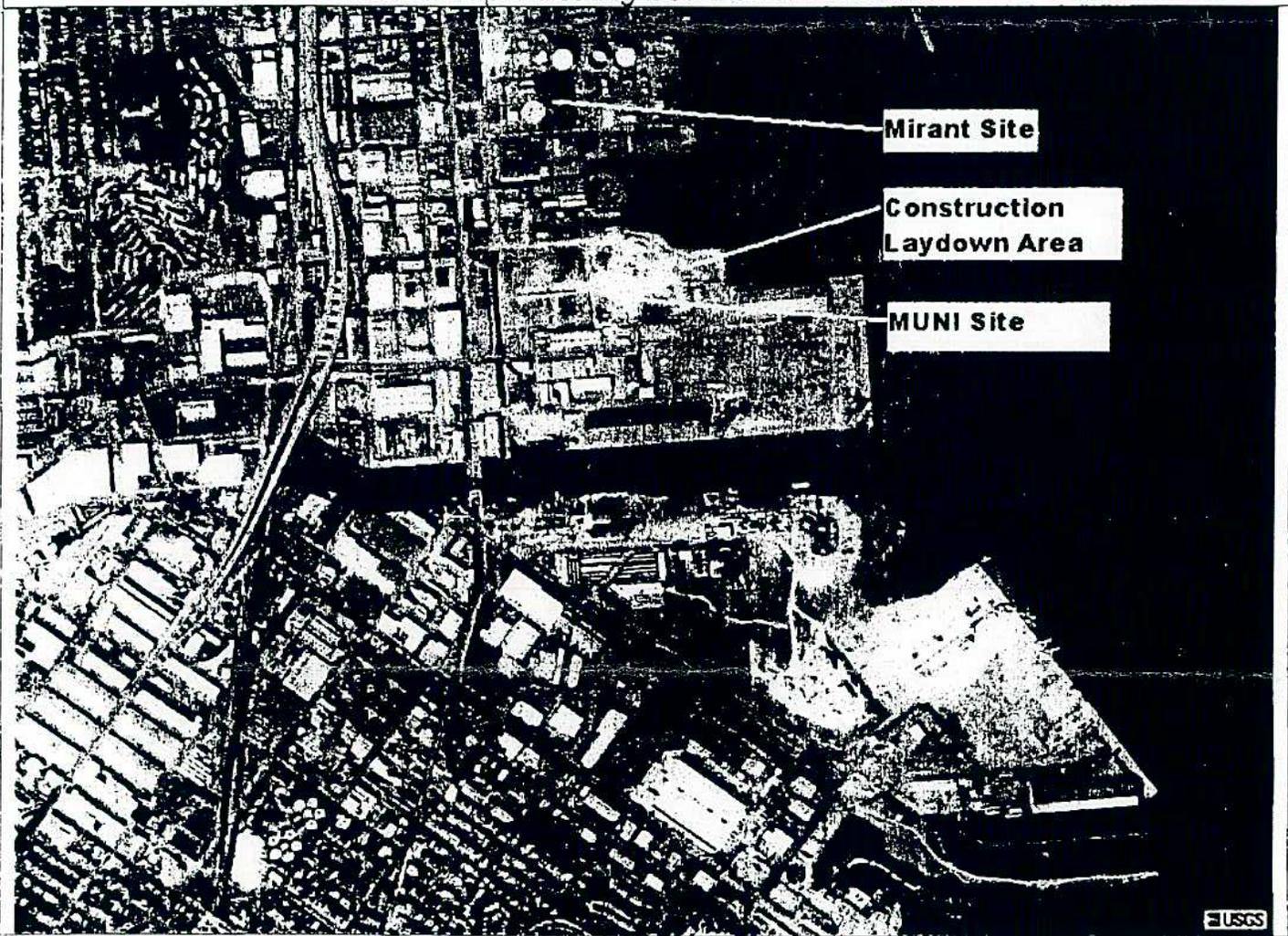
If you have any questions or comments regarding the proposed changes, please contact me at (415) 554-2483 or Bhale@sfgwater.org.

Sincerely,

Barbara Hale
 Policy Power Director

Cc.: Ms. Donna Jordan
Mr. John Vardanian
Ms. Karen Kubick
Ms. Jackie Minor
Ms. Jeanne Sole
Mr. Ralph Hollenbacher
Mr. Russell Stepp

Figure 1
Aerial Map Indicating New Power Plant Site



**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Waste Management
CEC Author: Alvin Greenberg, Ph.D.
SFERP Author: Steve De Young

BACKGROUND

The proposed new location is likely to be contaminated with hazardous wastes. A site investigation conducted in 1999 for the adjacent property on which the MUNI project is proposed to be built found soils contaminated with petroleum hydrocarbons, arsenic, and lead. It is necessary to have full and complete Phase I, and if necessary, Phase II Environmental Site Assessments in order for staff to assess the impacts of waste generation and also to assess potential health impacts to workers and the off-site public.

DATA REQUEST

184. Please conduct Phase I, and if necessary, Phase II Environmental Site Assessments and provide staff with full and complete reports.

Response: There is considerable data that has been collected over more than 15 years on the SFERP site and adjacent properties.

Summary of Previous Studies: In December 1999, AGS, Inc. prepared a Final Site Characterization/Corrective Measure Study and Article 22A Soil Characterization Report (SC/CMS) for the MUNI site. As discussed during the May 6 Data Response/Issue Resolution workshop, and clarified in Applicant's Clarifications and Notices of Need for Additional Time in Response to May 2, 2005 Data Requests, the City will provide volume one of three volumes that comprise the SC/CMS as Attachment WM-184A. Volumes 2 & 3 will be provided if requested upon review of Volume 1. The previous investigations include a 1987 Preliminary Site Assessment, a 1987 Site Characterization Study (Phase 1 Investigation), a 1988 to 1989 Phase 2 Site Characterization/Risk Assessment (Phase 2 Investigation), groundwater sampling performed in 1992 at the request of the San Francisco Bay Regional Water Quality Board (RWQCB), and a 1992 Remedial Action Plan and subsequent Removal Action. In addition to the data provided by the SC/CMS, Applicant has committed to conduct soil sampling and analysis during the upcoming geotechnical investigation and to provide CEC Staff with the results of those sampling efforts. Finally, Applicant notes that the property upon which the SFERP will be located is subject to two deed restrictions that address development of the property. These deed restrictions can be found in Supplement A, Appendix 8.13.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

ATTACHMENT WM-184A

Final Site Characterization/Corrective Measure Study and Article 22A Soil Characterization Report, Volume 1. Five hard copies of this document are being provided to the CEC. Copies will be provided to other parties upon request.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

Technical Area: Water and Soil Resources
CEC Author: Richard Latteri
SFERP Author: Matt Franck

BACKGROUND

Because the SFERP construction site will be larger than one acre, a National Pollution Discharge Elimination System (NPDES) permit for Stormwater Runoff from Construction Activities is required. To evaluate the potential impacts from stormwater runoff, it is necessary to identify run on/runoff quantities and characteristics for the SFERP site and areas associated with the project (laydown/staging areas, parking area, and linear facilities). Stormwater and erosion/sediment control plans are components of the SWPPP and are crucial to the evaluation of potential impacts related to construction of the SFERP.

DATA REQUEST

185. Provide the pre- and post-construction runoff and drainage patterns for the 100-year frequency and 24-hour runoff event.

Response: The pre- and post-construction runoff and drainage patterns are shown on the attached Figures WS-185A and WS-185B.

186. Provide supporting calculations and a drainage diagram for the off-site and on-site runoff during the 100 year/24 hour event.

Response: The requested calculations are provided in Attachment WS-186.

187. Provide a draft stormwater and an erosion/sediment control plan for the SFERP, the water pumping station, laydown area and associated linear facilities (potable and process water pipelines, natural gas pipeline, and transmission line) that includes the following:

- a) a site map at 1"=100' or less that depicts existing and proposed topography (contours) with labeled elevations, site perimeter, existing and proposed buildings, drainage patterns to stormwater inlets, and on-site and off-site soil stockpile areas;

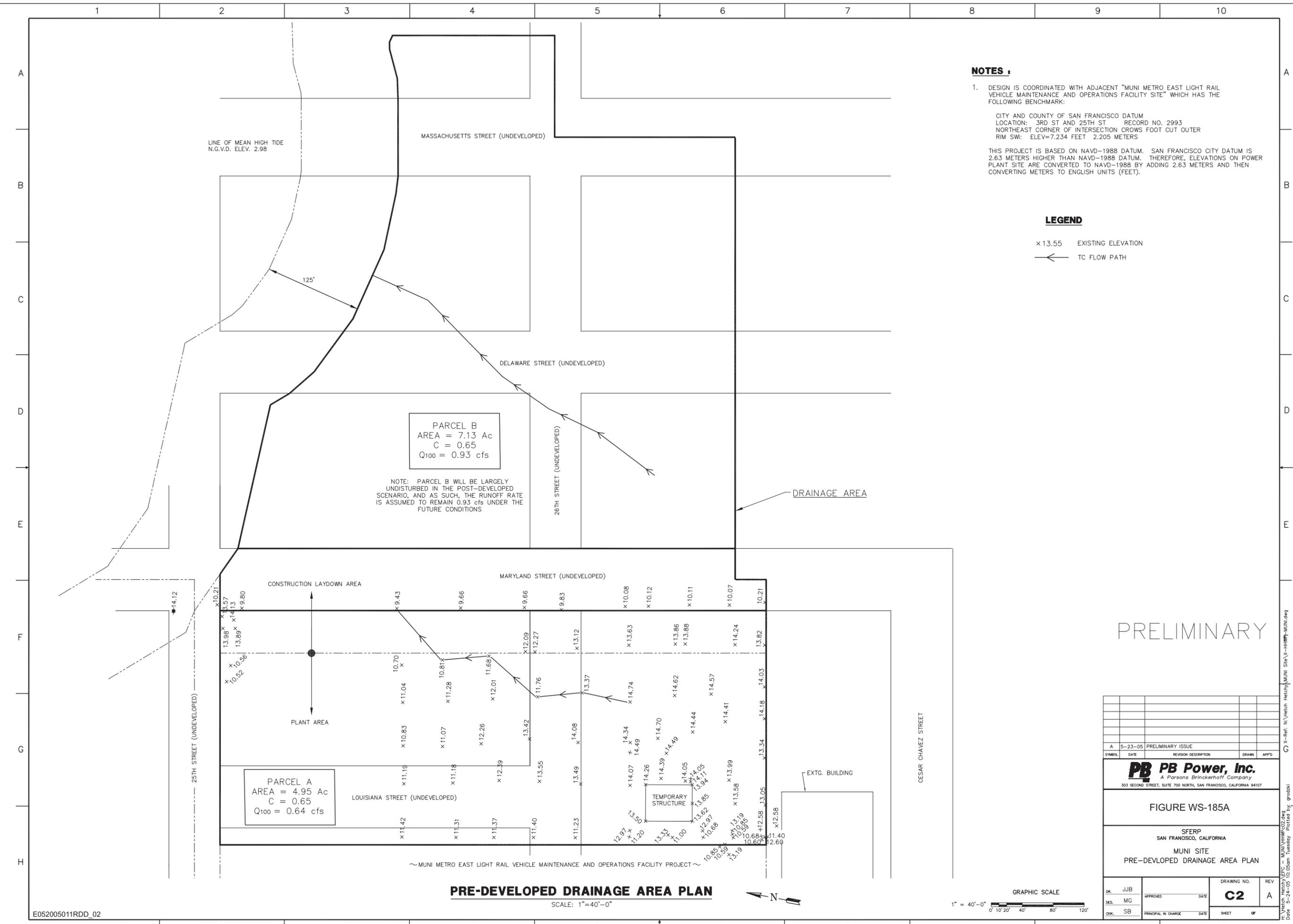
Response: See Figures WS-185A and 185B.

- b) a discussion of the Best Management Practices (BMP) to be implemented which will divert off-site drainage from entering the site and a BMP construction sequence on the site map;

Response: Please see the Preliminary Draft Stormwater Pollution Prevention Plan (SWPPP) provided as Attachment WS-187.

- c) a complete mapping symbols legend on the site map;

Response: Figure WS-185B has a mapping symbol legend.



NOTES :

1. DESIGN IS COORDINATED WITH ADJACENT "MUNI METRO EAST LIGHT RAIL VEHICLE MAINTENANCE AND OPERATIONS FACILITY SITE" WHICH HAS THE FOLLOWING BENCHMARK:

CITY AND COUNTY OF SAN FRANCISCO DATUM
 LOCATION: 3RD ST AND 25TH ST RECORD NO. 2993
 NORTHEAST CORNER OF INTERSECTION CROWS FOOT CUT OUTER
 RIM SWI: ELEV=7.234 FEET 2.205 METERS

THIS PROJECT IS BASED ON NAVD-1988 DATUM. SAN FRANCISCO CITY DATUM IS 2.63 METERS HIGHER THAN NAVD-1988 DATUM. THEREFORE, ELEVATIONS ON POWER PLANT SITE ARE CONVERTED TO NAVD-1988 BY ADDING 2.63 METERS AND THEN CONVERTING METERS TO ENGLISH UNITS (FEET).

LEGEND

- x 13.55 EXISTING ELEVATION
- ← TC FLOW PATH

PARCEL B
 AREA = 7.13 Ac
 C = 0.65
 Q₁₀₀ = 0.93 cfs

NOTE: PARCEL B WILL BE LARGELY UNDISTURBED IN THE POST-DEVELOPED SCENARIO, AND AS SUCH, THE RUNOFF RATE IS ASSUMED TO REMAIN 0.93 cfs UNDER THE FUTURE CONDITIONS

PARCEL A
 AREA = 4.95 Ac
 C = 0.65
 Q₁₀₀ = 0.64 cfs

PRELIMINARY

SYMBOL	DATE	REVISION DESCRIPTION	DRAWN	APP'D
A	5-23-05	PRELIMINARY ISSUE		

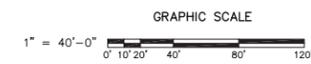
PB Power, Inc.
 A Parsons Brinckerhoff Company
 303 SECOND STREET, SUITE 700 NORTH, SAN FRANCISCO, CALIFORNIA 94107

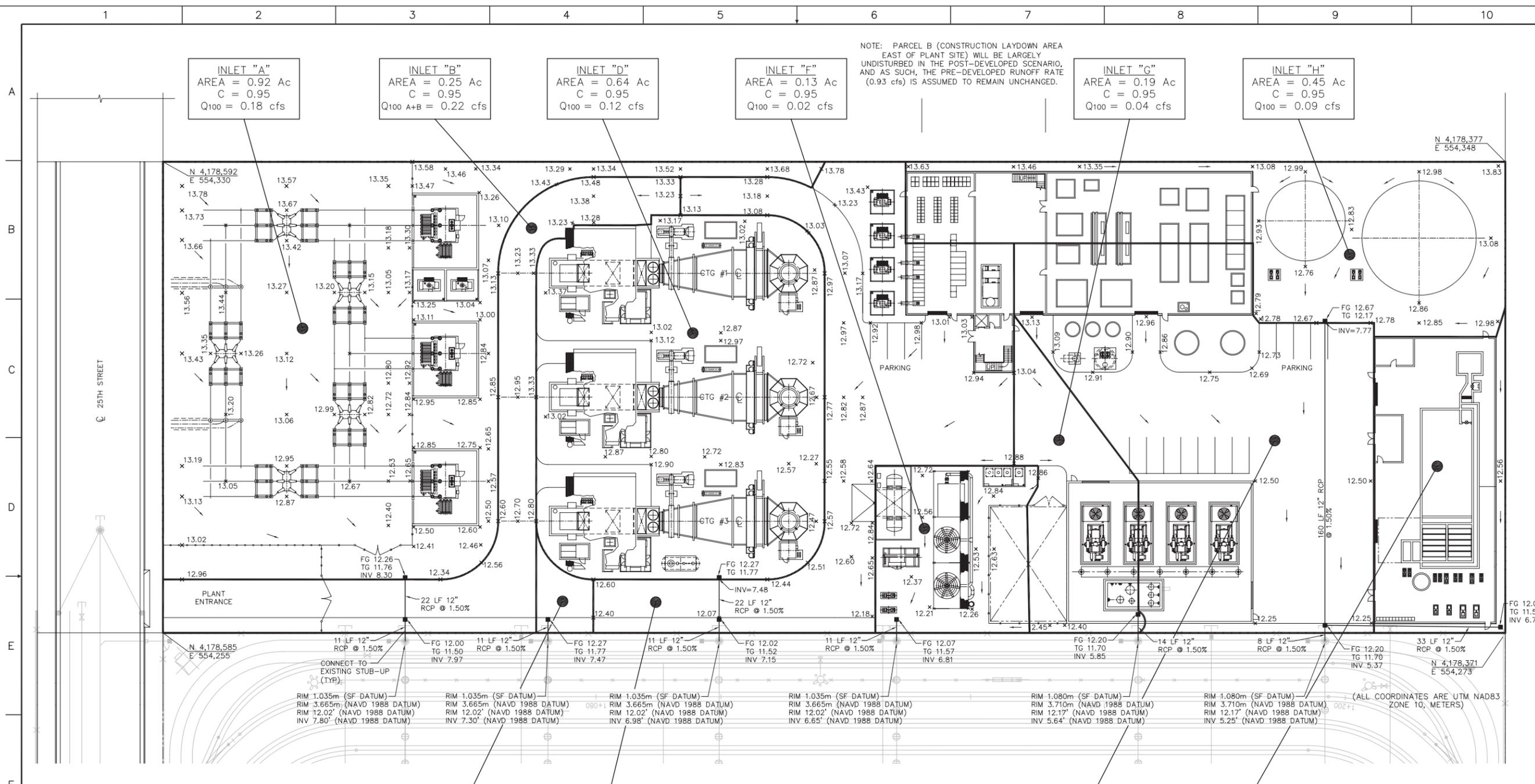
FIGURE WS-185A

SFERP
 SAN FRANCISCO, CALIFORNIA
 MUNI SITE
 PRE-DEVELOPED DRAINAGE AREA PLAN

DR. JJB	APPROVED	DATE	DRAWING NO. C2	REV A
DES. MGC	PRINCIPAL IN CHARGE	DATE	SHEET	OF
CHK. SB				

PRE-DEVELOPED DRAINAGE AREA PLAN
 SCALE: 1"=40'-0"





NOTE: PARCEL B (CONSTRUCTION LAYDOWN AREA EAST OF PLANT SITE) WILL BE LARGELY UNDISTURBED IN THE POST-DEVELOPED SCENARIO, AND AS SUCH, THE PRE-DEVELOPED RUNOFF RATE (0.93 cfs) IS ASSUMED TO REMAIN UNCHANGED.

INLET "A"
AREA = 0.92 Ac
C = 0.95
Q100 = 0.18 cfs

INLET "B"
AREA = 0.25 Ac
C = 0.95
Q100 A+B = 0.22 cfs

INLET "D"
AREA = 0.64 Ac
C = 0.95
Q100 = 0.12 cfs

INLET "F"
AREA = 0.13 Ac
C = 0.95
Q100 = 0.02 cfs

INLET "G"
AREA = 0.19 Ac
C = 0.95
Q100 = 0.04 cfs

INLET "H"
AREA = 0.45 Ac
C = 0.95
Q100 = 0.09 cfs

RIM 1.035m (SF DATUM)
RIM 3.665m (NAVD 1988 DATUM)
RIM 12.02' (NAVD 1988 DATUM)
INV 7.80' (NAVD 1988 DATUM)

RIM 1.035m (SF DATUM)
RIM 3.665m (NAVD 1988 DATUM)
RIM 12.02' (NAVD 1988 DATUM)
INV 7.30' (NAVD 1988 DATUM)

RIM 1.035m (SF DATUM)
RIM 3.665m (NAVD 1988 DATUM)
RIM 12.02' (NAVD 1988 DATUM)
INV 6.98' (NAVD 1988 DATUM)

RIM 1.035m (SF DATUM)
RIM 3.665m (NAVD 1988 DATUM)
RIM 12.02' (NAVD 1988 DATUM)
INV 6.65' (NAVD 1988 DATUM)

RIM 1.080m (SF DATUM)
RIM 3.710m (NAVD 1988 DATUM)
RIM 12.17' (NAVD 1988 DATUM)
INV 5.64' (NAVD 1988 DATUM)

RIM 1.080m (SF DATUM)
RIM 3.710m (NAVD 1988 DATUM)
RIM 12.17' (NAVD 1988 DATUM)
INV 5.25' (NAVD 1988 DATUM)

PRELIMINARY

- x3.71 PROPOSED ELEVATION
- FLOW ARROW
- MH EXISTING MANHOLE
- EXISTING AREA DRAIN
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- SD PROPOSED STORM DRAIN LINE
- LF LINEAR FEET
- FG FINISHED GROUND
- TG TOP OF GRATE
- INV. INVERT
- RCP REINFORCED CONCRETE PIPE
- C COVER COEFFICIENT
- Ac ACRES
- Q100 100 YR. 24-HR. RUNOFF
- CFS CUBIC FEET PER SECOND

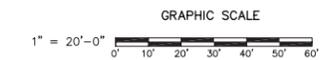
INLET "C"
AREA = 0.04 Ac
C = 0.95
Q100 = 0.01 cfs

INLET "E"
AREA = 0.49 Ac
C = 0.95
Q100 D+E = 0.22 cfs

TOTAL OVERALL SITE RUNOFF
AREA = 4.0 Ac
C = 0.95
Q100 = 0.76 cfs

INLET "I"
AREA = 0.64 Ac
C = 0.95
Q100 H+I+J = 0.26 cfs

INLET "J"
AREA = 0.25 Ac
C = 0.95
Q100 = 0.13 cfs



SYMBOL	DATE	REVISION DESCRIPTION	DRAWN	APP'D
A	5-23-05	PRELIMINARY ISSUE		

PB PB Power, Inc.
A Parsons Brinckerhoff Company
303 SECOND STREET, SUITE 700 NORTH, SAN FRANCISCO, CALIFORNIA 94107

FIGURE WS-185B
SFERP
SAN FRANCISCO, CALIFORNIA
MUNI SITE
POST-DEVELOPED DRAINAGE AREA PLAN

DR. JUB	APPROVED	DATE	C3	REV	A
SES. MG	PRINCIPAL IN CHARGE	DATE	SHEET	OF	
CHK. SB					

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

- d) on-site stormwater calculations in the narrative; and

Response: See Attachment WS-186.

- e) a statement of quantities of material excavated and or/filled and the amount of such material to be imported or exported from the site or associated linear facilities.

Response: Fill calculations are provided in Attachment WS-186.

BACKGROUND

The AFC Supplement A mentions in Section 8.14.4.4 that the depth to groundwater at the project site is approximately 5 to 10 feet. Section 8.14.4.4 further states that the quality of the groundwater is generally unknown but there is a high likelihood that groundwater quality has been affected by current and former industrial land use. During foundation excavation, there is the possibility that groundwater will be encountered resulting in the dewatering and discharge of the groundwater to the city's combined sewer system. Dewatering activities may result in accelerated groundwater movement and contamination of areas which otherwise may not have been affected.

DATA REQUEST

188. Provide a groundwater chemical characteristics table of all constituents identified in Supplement A, Table 8.14.2, for the Islais Creek groundwater basin in the vicinity of the SFERP site.

Response: Please refer to Figures WS-2 through ES-6 of Attachment WM-184A for information on groundwater chemical characteristics in the vicinity of the SFERP site.

189. Provide the location of the well where the groundwater sample was obtained and the location of all wells within a one mile radius of the SFERP.

Response: Please refer to Figures WS-2 through ES-6 of Attachment WM-184A for information on groundwater monitoring wells in the vicinity of the SFERP site. To identify all wells within a one mile radius would require extensive file review at the Port and other agencies.

BACKGROUND

The AFC Supplement A mentions in Section 8.14.5.1.3 that the city's auxiliary water supply system is also available for fire protection needs.

DATA REQUEST

190. What is the average annual yield and source of the city's auxiliary water supply system?

Response: In response to this request, the City has confirmed that the City's Auxiliary Water Supply System (AWSS), the secondary high pressure firefighting system has

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

hydrants off the 14-inch AWSS main that runs on Third Street from downtown to 25th Street. At 25th Street it turns west to Pennsylvania Street. The AWSS would be utilized by the Fire Department in the event of a major conflagration at either MUNI Metro East or the SFERP. SFFD will run overland hoses and use a pumper truck to get water to the facility. The source of water for the AWSS is City water, but the system is considered to be a non-potable supply and is only used for fire fighting.

BACKGROUND

The SFERP will require three separate pipelines (natural gas, potable water and recycled water) for project operation. Hydrostatic testing is the industry standard for testing pipeline integrity.

DATA REQUEST

191. Provide an estimate, in gallons, of the amount of water required to perform hydrostatic testing for each pipeline.

Response: The estimated hydrostatic testing water quantities in gallons (including rinses) are as follows:

Natural gas line	7,370 gallons
Recycle water line	10,506 gallons
Potable water line	6,752 gallons
Wastewater line	5,296 gallons

192. Provide a discussion of alternative sources of hydrostatic test water for the natural gas and recycled water pipelines that can be used in lieu of water suitable for potable use.

Response: The City of San Francisco has a limited supply of chlorinated secondary effluent available for soil compaction and dust control construction purposes only. This supply is available at a single truck-loading station at the Southeast Water Pollution Control Plant. This water is available for soil compaction and dust control only to permitted users. Potable water from the San Francisco Water Department water distribution system will be used for hydrostatic testing water for the natural gas and recycled water pipeline. The auxiliary water supply system is a high-pressure fire fighting system that is non-potable water, the quality, high pressure and designated use for this system make this water not suitable for the hydrostatic testing.

Computation Sheet

Subject: SFERP Drainage Calculations

Attachment WS-186**Introduction**

The San Francisco Electric Reliability Project (at the MUNI Site) is a simple cycle, natural gas fired, combustion turbine generator (CTG) power plant using three GE LM6000PC Spring CTG units. The MUNI site is located on a brownfield site on the eastern project line of the MUNI Metro East Maintenance and Operation Facility (under construction).

Grading and Drainage

The plant site is located in an area that is currently unoccupied and generally of flat topography, sloping towards the San Francisco Bay. It is not anticipated that off-site areas contribute significantly to runoff at the site.

The general site grading will establish a working surface for construction and plant operating areas, provide positive drainage from buildings and structures, and provide adequate ground coverage for subsurface utilities.

Onsite drainage will be accomplished through gravity flow. The surface grading will direct stormwater runoff to the proposed collection system via overland flow at a minimum of 0.4%. Inlets will be constructed of cast-in-place or pre-cast concrete. The underground pipes will be sized to limit flow velocities to a maximum of 10 feet per second (fps) and a minimum, self-scouring velocity.

The buildings and structures will be located with the ground floor elevation a minimum of 6 inches above the finished grade.

Pre- and Post-Development Runoff Conditions

The peak flow associated with the 100 year storm events at the site prior to construction (pre-development) will be compared to the post-development (after construction) conditions. Calculations reveal that the total post development runoff (to both the Bay and combined sewer) will exceed the pre-development runoff conditions due to the additional impervious surfaces such as buildings, pavement and structures.

The existing Plant site is generally flat, with an indistinct, meandering ridge which directs the large majority of the stormwater toward the low point at the northeast corner of the site (the corner of Maryland Street and 25th Street) where it eventually reaches the Bay. Under the developed conditions, the runoff will be redirected on-site and collected, thereby reducing the volume of untreated runoff to the San Francisco Bay. Stormwater collected on the MUNI site will be discharged to the collection system of the adjoining MUNI Metro East Maintenance and Operation facility.

Also included in these calculations is a seven-acre piece of land known as Parcel B (which is located east of the Power Plant site). No survey data is available for this parcel, so it is assumed that it will exhibit similar flow characteristics as the smaller plant site. This remainder area will remain undeveloped after the Power Plant construction is complete, therefore, the runoff rate will be the same under both conditions (pre and post-development).

Computation Sheet

Subject: SFERP Drainage Calculations

Preliminary Storm Drainage Calculations

Perform pre- and post-development calculations for the site(s) for the 100-year storm event.

Storm Drainage Design

The Rational Formula shall be used to determine the peak runoff flow rate.

Q (cfs) = CIA C = Runoff Coefficient
0.65 is assumed for the hard-packed soil of the existing site
0.95 is assumed for impervious areas (pavement, roofs, etc.) of the future site

I = rainfall intensity in inches/hour – referenced from Isopluvial map of 100-yr. 24-hr. precipitation for the northern half of California as found in NOAA Atlas 2, Volume XI.

A = tributary area in acres

- Power Plant associated runoff resulting from rainfall shall be collected by sloping the tributary surface areas to gravel swales, overland and/or to the plant roadway which will direct the runoff to catch basins. From there the surface water shall be conveyed by reinforced concrete pipe to the adjacent MUNI railyard system.

Pre-Developed Stormwater Runoff – Parcel A

Use Rational Method

 Q (cfs) = CIA

A = Area = 4.95 acres *

C = 0.65

I = Rainfall Intensity = 0.2 inches/hour (100-yr. 24-hr. precipitation for San Francisco is 5 inches, from which one may interpolate 0.2 inches/hour assuming storm intensity is constant over the duration of the storm event).

Therefore $Q=(C)(I)(A)$ = (0.65)(0.2)(4.95) = 0.64 cubic feet per second (cfs) rate of runoff for the 100-year 24-hr. storm event.**Pre-Developed Stormwater Runoff – Parcel B** Q (cfs) = CIA

A = Area of Parcel B = 7.13 acres

San Francisco Electric Reliability Project**Computation Sheet**

Made By: MG

Date: May 23, 2005

Subject: SFERP Drainage Calculations

$$C = 0.65$$

$$I = \text{Rainfall Intensity} = 0.2 \text{ inches/hour}$$

$$\text{Therefore } Q=(C)(I)(A) = (0.65)(0.2)(7.13) = 0.93 \text{ cubic feet per second (cfs) rate of runoff for the 100-year 24-hr. storm event.}$$

Post-Developed Stormwater Runoff – New Plant Site

$$Q \text{ (cfs)} = CIA$$

A = Area = 4.0 * (note that the Plant site is smaller than the 4.95 acre pre-developed Parcel A. The 0.95 Ac. remainder will be calculated separately and is assumed to flow overland toward the Bay)

$$C = 0.95$$

$$I = \text{Rainfall Intensity} = 0.2 \text{ inches/hour}$$

$$\text{Therefore } Q=(C)(I)(A) = (0.95)(0.2)(4.0) = 0.76 \text{ cubic foot per second (cfs) rate of runoff for the 100-year 24-hr. storm event.}$$

Post-Developed Stormwater Runoff – Parcel B

$$Q \text{ (cfs)} = CIA$$

$$A = \text{Area of Parcel B} = 7.13 \text{ acres}$$

$$C = 0.65$$

$$I = \text{Rainfall Intensity} = 0.2 \text{ inches/hour}$$

$$\text{Therefore } Q=(C)(I)(A) = (0.65)(0.2)(7.13) = 0.93 \text{ cubic feet per second (cfs) rate of runoff for the 100-year 24-hr. storm event.}$$

*** Post-Developed Stormwater Runoff – Remainder Parcel (difference between Parcel A and Plant site)**

$$Q \text{ (cfs)} = CIA$$

$$A = \text{Area of Parcel A} = 4.95 \text{ Ac.} - 4.00 \text{ Ac.} = 0.95 \text{ acres (since future Plant site will not encompass entirety of Parcel A)}$$

$$C = 0.65$$

$$I = \text{Rainfall Intensity} = 0.2 \text{ inches/hour}$$

$$\text{Therefore } Q=(C)(I)(A) = (0.65)(0.2)(0.95) = 0.12 \text{ cubic feet per second (cfs) rate of runoff for the 100-year 24-hr. storm event.}$$

San Francisco Electric Reliability Project**Computation Sheet**

Made By: MG

Date: May 23, 2005

Subject: SFERP Drainage Calculations

Comparing the pre-developed to post-developed runoff rate conditions.

	<u>Parcel A</u>	<u>Parcel B</u>	<u>Remainder</u>	<u>TOTAL</u>
<i>Pre-Dev.</i>	0.64 cfs	0.93 cfs	---	1.57 cfs (<i>all flowing to Bay</i>)
<i>Post-Dev. Runoff to Bay</i>	---	0.93 cfs	0.12 cfs	1.05 cfs
<i>Post-Dev. Runoff to Sewer</i>	0.76 cfs	---	---	0.76 cfs

It is demonstrated above that while there is an increase in the overall, total rate of runoff after construction of the Power Plant site, there will be a reduction in untreated runoff to the San Francisco Bay due to the collection and discharge of Power Plant site associated stormwater to the combined City of San Francisco Storm and Sanitary Sewer system.

Cut/Fill Volume Estimate

Examining only the existing and proposed spot elevations and using the grid-area method, it is estimated that approximately 4,000 cubic yards of fill material may be necessary to achieve the elevations indicated on the Grading and Drainage plan. However, this estimate does not account for excavation of foundations for the plant equipment, which has been estimated at 6,500 cubic yards of excess.

$$6,500 \text{ cy of cut} - 4,000 \text{ cy of fill} = 2,500 \text{ cy of cut or excess.}$$

This excess will be reduced when accounting for the depth of the future plant roadway section, and may be completely eliminated by equal distribution of excess material over the plant area, thereby raising the site several inches.



Parsons Brinckerhoff

STORM SEWER COMPUTATIONS

Project: Hetch Hetchy MUNI Site

Project No: 13607A

Desc: Drain calc's.

Designed: M. Grodzki

Date: 05/19/05

Checked: _KC_

Date: 05/20/05

Page 1 of 1

Rainfall Data: California Dept of Water Resources IDF Data Base

Units: English

Manning's "n" values:		Fr	B	D	E
RC	0.013	10			
DI	0.010	15			
CM	0.022	25			
HDPE	0.011	50			

LOCATION	SUBAREA DATA										PIPE DATA										DESIGN FLOW						
	Area Ac	"C"	CxA	CxA Sum	Tc min	Tc Sum	Fr Yr	"I" in/hr	Q _A cfs	Mat Pipes	# of Pipes	Type C,E,B	Span in	Hgt in	L ft	Slope %	n	Q _{cap} cfs	Inverts Upper	Inverts Lower	Upper Grate	Cover Upper	Cover Lower	% of Cap	Q _A cfs	d ft	V _A fps
A	0.92	0.95	0.87	0.87	10.0	10.0	0.20	0.18	RCP	1	C	12	12	22	1.50	0.013	4.4	8.30	7.97				4	0.2	0.14	2.74	0.5
B	0.25	0.95	0.24	1.11	10.0	10.0	0.20	0.22	RCP	1	C	12	12	11	1.50	0.013	4.4	7.97	7.80				5	0.2	0.15	2.97	0.5
C	0.04	0.95	0.04	0.04	10.0	10.0	0.20	0.01	RCP	1	C	12	12	11	1.50	0.013	4.4	7.47	7.30				0	0.01	0.01	0.50	0.5
D	0.64	0.95	0.61	0.61	10.0	10.0	0.20	0.12	RCP	1	C	12	12	22	1.50	0.013	4.4	7.48	7.15				3	0.1	0.12	2.33	0.5
E	0.49	0.95	0.47	1.07	10.0	10.0	0.20	0.22	RCP	1	C	12	12	11	1.50	0.013	4.4	7.15	6.98				5	0.2	0.15	2.87	0.5
F	0.13	0.95	0.12	0.12	10.0	10.0	0.20	0.02	RCP	1	C	12	12	11	1.50	0.013	4.4	6.81	6.65				1	0.02	0.07	1.02	0.5
G	0.19	0.95	0.18	0.18	10.0	10.0	0.20	0.04	RCP	1	C	12	12	14	1.50	0.013	4.4	5.85	5.64				1	0.04	0.07	1.49	0.5
H	0.45	0.95	0.43	0.43	10.0	10.0	0.20	0.09	RCP	1	C	12	12	160	1.50	0.013	4.4	7.77	5.37				2	0.1	0.10	2.17	0.5
J	0.25	0.95	0.24	0.67	10.0	10.0	0.20	0.13	RCP	1	C	12	12	33	1.50	0.013	4.4	6.75	5.37				3	0.1	0.12	2.55	0.5
I	0.64	0.95	0.61	1.27	10.0	10.0	0.20	0.26	RCP	1	C	12	12	8	1.50	0.013	4.4	5.37	5.25				6	0.3	0.17	3.00	0.5

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

ATTACHMENT WS-187

Administrative Draft Construction Drainage, Erosion, and Sedimentation Control/
Stormwater Pollution Prevention Plan

This document is bound separately from these Data Responses.

**San Francisco Electric Reliability Project (SFERP)
(04-AFC-1)
Supplement A Data Response, Set 3A**

TECHNICAL AREA: Visual Resources

CEC AUTHOR: Mark R. Hamblin and William Walters

SFERP Authors: Gary Rubenstein

BACKGROUND

Staff needs to determine if any new visible plume frequency modeling analysis for the cooling tower is necessary at the new location.

DATA REQUEST

193. Please provide written confirmation that the cooling tower operating assumption values presented in the applicant's previous visible plume modeling data request response(s) and found in Informal Data Responses Set 1A, (Docket 04-AFC-1 dated August 2, 2004) are still valid for the currently proposed project. If the previous cooling tower operating assumption values are no longer valid, please provide the new values for the proposed project requested in Data Request Set 1A (noted above).

Response: The applicant confirms that the that the cooling tower operating assumption values presented in the applicant's previous visible plume modeling data response(s) and found in Informal Data Response Set 1A, (Docket 04-AFC-1 dated August 2, 2004) are still valid for the project as currently proposed.