Department of Toxic Substances Control

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5796 Corporate Avenue
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Linda S. Adams
Secretary for
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Sent Via Email

August 10, 2007

Ms. Yvonne Meeks
Portfolio Manager – Site Remediation
Pacific Gas and Electric Company
4325 South Higuera Street
San Luis Obispo, CA 93401

COMMENTS AND CONDITIONAL APPROVAL OF THE RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION SOIL INVESTIGATION WORK PLAN, PART A, PACIFIC GAS AND ELECTRIC COMPANY (PG&E), TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Ms. Meeks,

The Department of Toxic Substances Control (DTSC) has completed the review of the *RCRA Facility Investigation/Remedial Investigation, Soil Investigation Work Plan, Part A*, dated November 16, 2006 (hereafter referred to as "Part A Work Plan"), PG&E's December 2006 revision of Figures 5-1, 6-1, 6-7, 6-8, 6-12, 6-14, 6-16, 6-18, 6-23, 6-25 of the Part A Work Plan, and the supplemental information on the *Former 300B Pipeline Liquids Tank in a Technical Memorandum* dated April 27, 2007. The Part A Work Plan, the revised figures and the Technical Memorandum for 300B were submitted by CH2M Hill on behalf of PG&E for the investigation of the solid waste management units and areas of concern outside the PG&E Topock Compressor Station fence lines. The Part A Work Plan was circulated to the PG&E Topock Consultative Work Group by DTSC for review and comments on December 20, 2006. As a result, DTSC received comments from the Fort Mojave Indian Tribe on February 9, 2007. DTSC subsequently met with representatives of the Fort Mojave Indian Tribe on May 31, 2007 and provided a formal response to their comments on June 11, 2007. DTSC notes that the Fort Mojave Indian Tribe hired a risk assessor, Dr. Michael Sullivan to support their review of the risk assessments associated with the final remedy and that Dr. Sullivan issued additional comments on the Part A Work Plan on June 29, 2007. DTSC intends to provide appropriate response to Dr. Sullivan's comments at a later date.

Enclosed with this letter are DTSC Geological Services Unit (GSU) comments on the Part A Work Plan. Although DTSC considers the comments to be extensive and

substantial, we recognize that the resolution of the underlying issues could be lengthy due to the degree of uncertainties associated with the fate and transport of contamination at the site, and the incomplete documentation on past waste management practices. Furthermore, DTSC recognizes the need to balance the desire of all stakeholders to reach a final remedy as quickly as possible, and the need to properly evaluate the nature and extent of soil contamination resulting from former PG&E activities while respecting the sensitive landscape. Therefore, DTSC believes that a phased approach to the soil investigation would be more productive and will ultimately reduce site intrusion as requested by the Fort Mojave Indian Tribe. As a result of the extensive comments, DTSC is rejecting Sections 3 and 4 of the Part A Work Plan. However, as a means to quickly gather additional site specific information, including the background data set for better data gap analysis, DTSC is requiring PG&E to implement Sections 1, 2, and 5 through 10 of the Part A Work Plan with modifications based on the enclosed GSU comments and conditions as specified below as the first phase (Phase I) of the investigation. In addition, DTSC notes that the Department of Interior will also require PG&E to add sediment sampling for metals (including mercury) in the western portion of the vegetated habitat near the mouth of Bat Cave Wash at three and six foot depths.

DTSC anticipates that the results of the Phase I investigation will be reported, evaluated, reviewed and approved prior to the preparation of the Phase II investigation work plan consistent with the GSU comments. DTSC also expects PG&E to include the substantive information presented in Sections 3 and 4 of the Part A Work Plan as part of the Phase II Part A Soil Sampling Work Plan after full evaluation of the results from the Phase I site characterization work. Please note for completeness, DTSC also concurs with Section 11 – References of the work plan after addressing the GSU specific comment number one.

Conditions of Approval:

1. PG&E shall begin Phase I field work within 30 days of receiving all applicable permits associated with the approved portion of the Part A Work Plan.

2. Per request of the Fort Mojave Indian Tribe, PG&E shall prepare a site map depicting all study areas proposed in both Part A (outside the compressor station fence line) and Part B (within the compressor station fence line) for reference. This site map shall be made available to interested parties upon their requests.

3. PG&E shall issue a Phase I Part A Soil Sampling Technical Memorandum for evaluation within 60 days of completion of the Phase I field activities.

4. PG&E shall prepare a Phase II Part A Soil Sampling Work Plan when directed by DTSC after the evaluation of the Phase I Soil Sampling Technical Memorandum.

The Phase II Part A Soil Sampling Work Plan shall address, at a minimum, the remaining issues deferred to the Phase II investigation as specified in the attached GSU comments, as well as discussions and evaluation pertinent to the rejected sections of the Phase I Part A Work Plan.

5. PG&E shall make a reasonable attempt to work with interested tribes to establish a tribal monitor during the site investigation field work.

6. PG&E shall ensure all personnel associated with the field work to be oriented on tribal sensitivity issues and to reasonably avoid unnecessary disturbance to the sensitive landscape.

7. At the request of the Fort Mojave Indian Tribe, DTSC requests that PG&E engage in discussion with the land owner/ manager and interested tribes to explore options in managing non-contaminated investigation-derived wastes. PG&E must, however, properly characterize and manage hazardous waste pursuant to the California Code of Regulations, Title 22, Division 4.5, Chapter 12.

If you have any questions or comments regarding the enclosed DTSC GSU Part A Work Plan comments or the conditions of the Phase I field work approval, please contact me at (714) 484-5439.

Sincerely,

Aaron Yue
Project Manager
Geology, Permitting and Corrective Action Branch

Enclosure

aky:070702C

cc: PG&E Topock Consultative Workgroup Members – Via e-mail

PG&E Topock Technical Workgroup Members – Via e-mail

Native American Tribal Contacts for PG&E Topock project – Via e-mail

Department of Toxic Substances Control

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Aaron Yue
Project Manager
Geology, Permitting & Corrective Action Branch

FROM: Chris Guerre, CHG
Senior Engineering Geologist
Geological Services Unit

Greg Neal, PG
Engineering Geologist
Geological Services Unit

DATE: July 27, 2007

SUBJECT: RCRA Facility Investigation/Remedial Investigation
Soil Investigation Work Plan, Part A
PG&E Topock Compressor Station, Needles, California
Project No. 22120/540015-48/36-HWMP Tracking No. 640338/640160

DOCUMENTS REVIEWED

RCRA Facility Investigation/Remedial Investigation Soil Investigation Work Plan, Part A PG&E Topock Compressor Station, Needles, California (Workplan). The Workplan is dated November 16, 2006 and was prepared for Pacific Gas and Electric Company (PG&E) by CH2M Hill.

Technical Memorandum Former 300B Pipeline Liquids Tank Closure Plan (Tech Memo). The Tech Memo is dated April 27, 2007 and was prepared for Pacific Gas and Electric Company (PG&E) by CH2M Hill.

Revised Workplan figures dated either December 4 or 5, 2006: Figures 5-1, 6-1, 6-7, 6-8, 6-12, 6-14, 6-16, 6-18, 6-23, 6-25.

INTRODUCTION

The Geological Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the above-referenced documents and figures regarding the soil investigation of previously identified Areas of Concern (AOCs) and Solid Waste Management Units (SWMUs) located off-site outside the compressor station fence line. The review focused on assessing proposed sampling locations identified in Section 6 of the Workplan. Recommendations for additional sampling locations are based on a judgmental sampling approach in order to minimize the total number of samples for a given AOC/SWMU. A minimal number of sample locations is sought to address concerns regarding the sacred landscape as described by the Fort Mojave Indian Tribe. A two phased soil sampling approached is assumed which would evaluate data from this first phase before addressing any remaining data gaps. Comments regarding each AOC/SWMU are included in the Specific Comments below while General Comments have been prepared for nonspecific AOC/SWMU issues. Comments regarding Data Quality Objectives related to the soils investigations are being addressed by DTSC and PG&E separately.

GENERAL COMMENTS

1. The constituents of potential concern (COPCs) for each of the solid waste management units (SWMUs) and areas of concern (AOCs) have been previously identified in a GSU memorandum dated March 29, 2006. COPCs should not be reduced or eliminated without sampling analytical data at this point of the RCRA Facility Investigation (RFI) program. PG&E may provide past analytical data to demonstrate the absence of COPCs as identified in the GSU memorandum in support of a reduced laboratory analytical program which does not include all COPCs. However, in the absence of such information, all COPCs identified for each SWMU or AOC must be evaluated.

2. Due to the sensitive landscape in which the proposed soil sampling will take place, any modifications to the proposed sampling locations identified in the Workplan should only be conducted with prior DTSC approval.

3. The third bullet in Section 6.2.4 on page 6-4 of the Workplan discusses an approach for analyzing Total Petroleum Hydrocarbons, Polycyclic Aromatic Hydrocarbons, and Volatile Organic Compounds (TPH, PAHs, and VOCs respectively). It states that if elevated organics are detected in lower yard samples, then they will be added to the COPCs at each AOC that is hydrologically connected to the compressor station. This approach, however, is not applicable for those AOCs that are not hydrologically connected to the lower yard, but may still be connected to the compressor station.

DTSC notes that this lower yard organic screening approach could only be applied to AOC 1 and possibly to AOCs 4 and 14.

4. For all AOCs and SWMUs, where potential asbestos-containing materials (ACM) are identified, the materials should be appropriately characterized to determine if the material does indeed contain asbestos and if the asbestos is friable. Otherwise, the material should be assumed to contain friable asbestos and handled accordingly.

5. The proposed soil sampling locations depicted on Workplan figures (6-7, 6-12, 6-16, 6-18, and 6-23) are differentiated into groups representing "Risk/Remediation/ Characterization" and "To/Toward Background". In most cases this differentiation appears unfounded and arbitrary. The DTSC toxicologist has indicated that the ecological risk evaluation requires evaluation of inorganic chemicals to background, and organic chemicals to an appropriate detection limit below the appropriate ecological screening levels. Therefore, no differentiation is warranted as each soil sampling location should provide the same level of information useful to the evaluation of risk and environmental conditions at the site. The GSU recommends that all future figures and text be prepared and/or revised to acknowledge this issue.

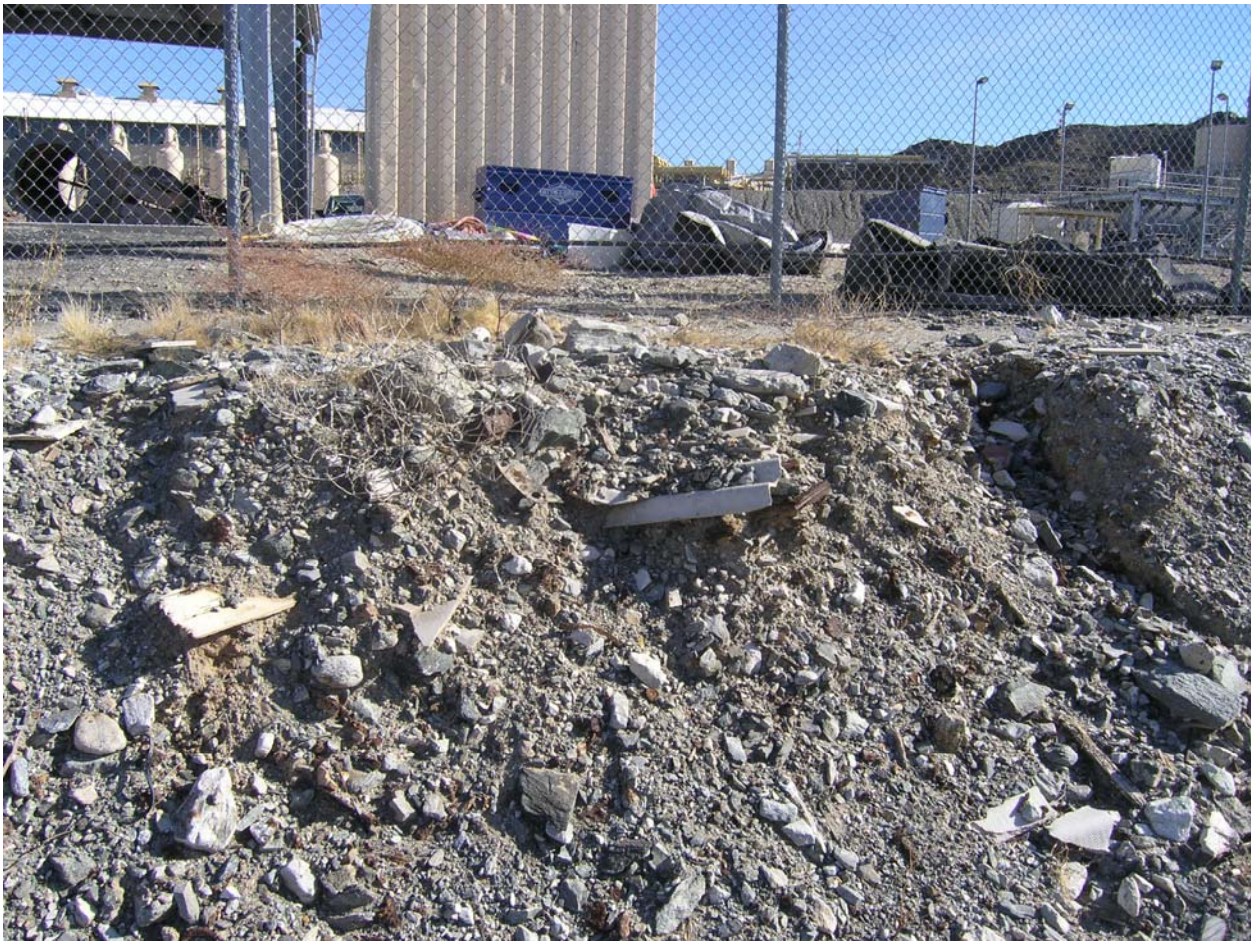
6. In order to facilitate an adequate review of the historical activities within the area of potential effect, please provide true photographic enlargements (at a scale which appropriately depicts the investigation area) of all historical aerial photographs. The electronic copies provided with the first draft of Volume 1 of the RFI are useful; however, magnification to a useful scale distorts the image. An alternative to photographic reprints would be to provide electronic images at a resolution which would allow detail to be preserved during magnification. Additionally, pertinent photographs of the PG&E Compressor Station (e.g., those photos kept at the site or at other PG&E offices) should be copied and provided to DTSC.

7. Two concerns exist regarding the perimeter of the compressor station (the fence line) that separates the Part A off-site soils investigation from the Part B on-site investigation.

   First, DTSC believes that sampling along historic discharge areas around the perimeter of the facility is warranted. Storm water discharge pipes (storm drains) are documented by PG&E as the suspected source of contamination at some areas of concern at the site (e.g., AOC 9 – Southeast Fence Line; AOC-10a – East Ravine). Potential contamination associated with all storm drains that discharge off the site should be evaluated as part of the RFI soils investigation. It would be undesirable to have to wait for erosion channels along slopes to expose discolored, contaminated soil. Historic releases from the facility to offsite areas should also be investigated near the fence line where contaminant concentrations would be expected to be

higher and/or detectable closer to the source of contamination. The Workplan discusses a historic release from Cooling Tower B to the northeast ravine yet sampling along the perimeter of the site to evaluate this release is not proposed. At another area, debris (including apparent transite) is located outside the fence line along the perimeter of the site (See Figure 1). This type of waste is considered significant at other AOCs and should be addressed by PG&E. PG&E should submit a plan to DTSC to evaluate the perimeter of the site. A site survey of the perimeter of the station should be conducted to identify obvious areas requiring characterization.

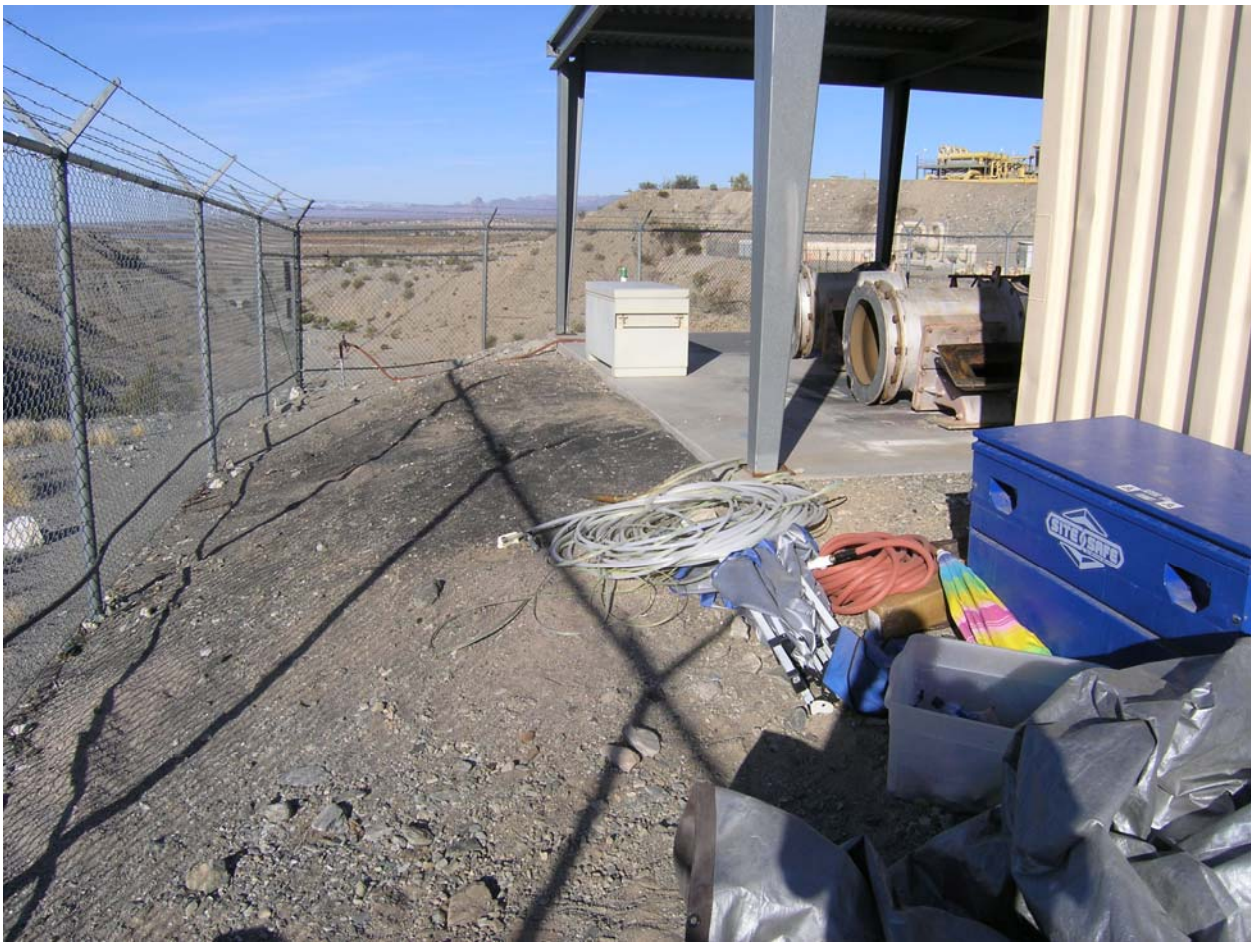
Figure 1. Easterly view of the facility fence line near the sand blast area illustrating visible waste (including apparent transite shingles) within the slope outside the fence line.



Concern also exists regarding the transition of the on-site area to the off-site area. Contaminant concentrations within an on-site area may be protective for industrial

scenarios, but might cause excessive human or ecological risk at off-site areas if contaminated on-site soil is released offsite (via storm drains, wind storms, or storm water run off). Figure 2 illustrates this issue. PG&E's plan to evaluate the perimeter of the site should address this issue.

Figure 2. Northerly view of the sand blast area on-site illustrating black material on the ground that can be transported to off-site areas to the left of the chain link fence during rain and wind storm events.



SPECIFIC COMMENTS

1. Section 4.2.2.5 – Calculation of Groundwater Leaching Screening Levels for Metals in Soil

   Two documents referenced in this section (Hevesi et al., 2003 and Ronan et al., 1998) do not appear in the full references in section 11. Please provide the full

references so DTSC can evaluate the appropriateness of each document to the current investigation. It is also recommended that preliminary calculations be provided for each metal to allow DTSC and other stakeholders to clearly understand the methodology.

2. Section 5.3.1 – Outlier Analysis

   Based upon descriptions in the USEPA Data Quality Assessment document (USEPA QA/G9S), it appears that the proposed mathematical outlier tests (Rosner's test and Dixon's Extreme Value test) assume a normal distribution of the dataset. At the point in the dataset evaluation that the outlier test is conducted, a determination of normality has not been conducted. Utilization of a test which assumes normality would be inappropriate. The DTSC recommends identifying outliers as those data points which exceed 1.5 times the inter-quartile range of the dataset above the third quartile [i.e., Q3 + 1.5(IQR)] as a simpler evaluation capable of identifying multiple outliers with each calculation.

3. Section 6 – Investigation Area Soil Sampling Plan

   Comments regarding AOCs and SWMUs are presented below in the AOC/SWMU Specific Comments.

4. Section 7 – Soil Sampling Methods

   In order to provide completeness of the description of the scope of work, relevant standard operating procedures (SOPs) should be included as attachments to all future workplans rather than inclusion only by reference.

5. Section 7.6 – Trenching

   Each exploratory trench should extend no less than six feet below ground surface (bgs) in order to evaluate potential environmental conditions to the depths previously agreed to (See also Specific Comments for AOC12).

AOC/SWMU SPECIFIC COMMENTS

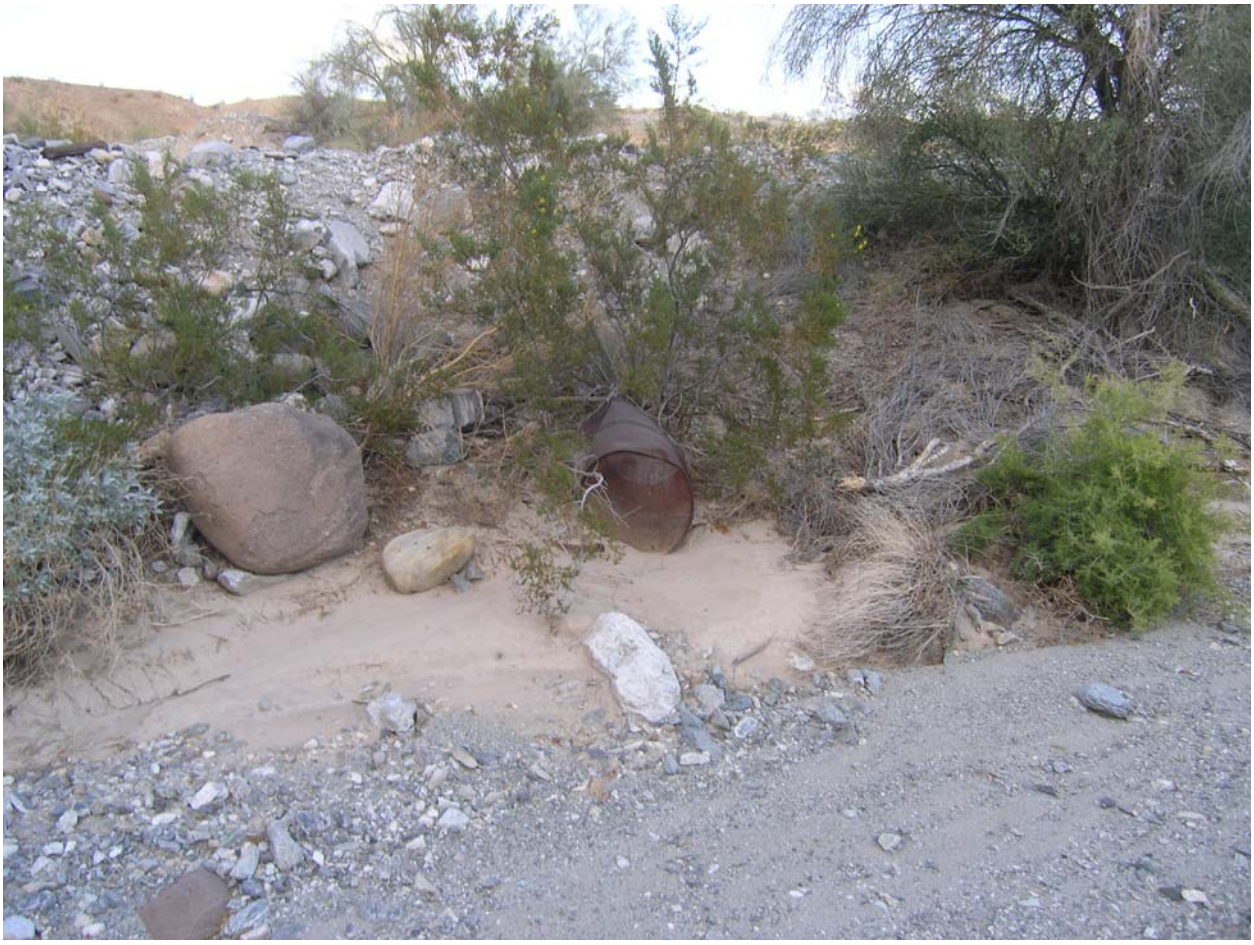
Section 6.3 – SWMU 1/AOC 1 – Former Percolation Bed

During a site walk of AOC 1 conducted on December 11, 2006, it appeared that excessive sampling density was employed at three soil sampling locations that had been staked out by PG&E. Two of the samples (one identified as WP-NEW-2) were staked in recently discovered white powdery material near the toe of the slope on the

east side of the wash. The third stake was located just to the west in the wash. PG&E should indicate why such a tight sampling grid is needed. If sufficient rationale does not exist for each sample, DTSC suggests that one of the borings characterizing the white powder be dropped from the investigation and that third boring be moved 10 to 20 feet to the west away from the remaining boring.

An additional sample location is suggested near a 55 gallon drum discovered in Bat Cave Wash (see Figure 3). The drum suggests a depositional environment within that specific portion of the wash and is located near boring SSB-8 that detected total chromium above background and Ecological Comparison Values as described in the Workplan. PG&E should locate the drum and determine if it contains waste that would require characterization and disposal.

Figure 3. Easterly view of a 55 gallon drum within Bat Cave Wash in the general vicinity of borings SSB-8 and MW-13.



The fourth bullet on page 6-7 of the workplan discusses elevated iron in well MW-17. Since well MW-17 is not associated with AOC 1, PG&E should clarify or amend the iron discussion.

Section 6.4 - AOC 4 - Debris Ravine

Significant waste has been pushed off the northern edge of the ravine (See Figures 4 to 6). The AOC 4 area delineated on Figure 6-12 of the Workplan should be thoroughly walked and all debris carefully documented and mapped so the distribution of the debris and potential contamination associated with it can be established. The map generated should be provided to DTSC prior to the sampling effort. Soils that are identified as containing debris should be sampled if the debris is removed during implementation of this phase of the workplan. A DTSC site walk of the site resulted in the addition of sample locations AOC4-14 and 15 as pictured in revised workplan Figure 6-12. Figures 8 and 9 below illustrate the debris (metal, glass, red clay pipe, transite shingles, etc.) that was not originally planned to be sampled in the Workplan. A pile of wood slats (possibly from cooling towers) similar to those in Figure 6 was also identified near the AOC4-14/15 location. Some of the slats were encrusted with scale of unknown composition and toxicity. This wood and scale, and soil from the immediate area should be sampled and analyzed for all COPCs. Concern exists that slope materials will continue to erode and potentially contribute contaminants to the ravine and Bat Cave Wash/Havasu National Wildlife Refuge.

Borings are needed throughout fill areas to identify the thickness of fill and potentially contaminated soils/wastes. These data are needed to assist in evaluating remedial alternatives during the Corrective Measures Study. PG&E should consider ways to assess the thickness of fill areas and obtain samples along the slope. PG&E may be able to bench slopes or create small pads so that mechanized tools, such as small power augers, could be used to place borings and reach appropriate depths. PG&E might also be able to use an excavator bucket to reach out over the slope and bring soil/fill/waste to the road for evaluation and sampling.

Section 6.4.4 on Page 6-12 of the Workplan appropriately indicates that additional samples will be collected if stained soils are found. Green stained soils have been identified on the northern slope exposed within an erosion channel below a black tank (see Figure 7 below). This stained area should be sampled and analyzed for all COPCs.

Figure 4. Northwesterly view of the north side of the Debris Ravine. Green stained soil visible in Figure 7 within the erosion channel is located within the erosion channel below the black tank on the bench road to the right of the picture.

Figure 5. Northerly view of waste that has traveled down the north side of the ravine.

Figure 6. Easterly view of waste that has traveled down the north side of the ravine to the floor of the ravine. Wood slats may be from cooling towers.

Figure 7. Northerly view from the floor of the ravine of green stained soil visible from an erosion channel on the north side of the ravine.

Figure 8. Northwesterly view of debris in foreground placed along old road within the central portion of AOC 4 (Debris Ravine).

Figure 9. Southwesterly view of debris in foreground placed along old road within the central portion of AOC 4 (Debris Ravine).

Section 6.5 - AOC 9 – Southeast Fence Line

Historical aerial photographs (particularly the oblique images from 1955) identify the presence of a structure (potentially a historic wash rack) near the head of slope. Therefore, the limits of AOC 9 should be expanded approximately 50 feet to the southwest along the slope. Soil sampling shall be expanded in this area. Dark marks in the face of the slope, potentially indicating liquid migration, are also identified in the 1955 aerial photograph and shall be sampled as part of AOC 10.

Sufficient sampling and analysis is not proposed for AOC 9. Sample locations should be included in the former area where visibly contaminated soil had been noted (e.g., area where samples No. 4 to 9 were collected) and where elevated contaminant levels have already been identified (e.g., Sample No. 10). This will provide data on the nature of the contamination and assist in identifying specific constituents of concern for AOC 9. Sampling in potentially clean areas elsewhere will not meet this objective. Sampling for VOCs and SVOCs in these two areas is suggested as the source of contamination emanated from a storm water drainage pipe that has been characterized as possibly draining the facility's steam-cleaning wash rack area. Deeper samples (greater than 3 feet below ground surface) should also be collected from these two areas to determine the vertical extent of contamination. If necessary, PG&E should develop ways to obtain samples along slope. PG&E may be able to bench slopes or create small pads so that mechanized tools, such as small power augers, could be used to obtain samples from appropriate depths. PG&E might also be able to use an excavator bucket to reach out over the slope and bring soil/fill to the road for evaluation and sampling. PG&E must evaluate field conditions and sampling logistics well in advance to minimize amendments to the sampling program just prior to the field effort.

Section 6.5.3, Page 6-14, Line 4 of the Workplan refers to a nonexistent Table 3-3 and a total number of samples (49) that does not correlate with the total number of proposed samples (47) contained in Table 3-2 of the Workplan. Table 3-2 should be checked for accuracy for all investigative areas and updated as necessary.

Section 6.6 - AOC 10 – East Ravine

During a site visit in July 2006, GSU staff observed small amounts of metal debris in either subarea 10b or subarea 10c. The debris identifies depositional areas in the wash that have been affected by former operations. The location of the metal debris should be confirmed, documented and mapped.

Page 6-15 of the Workplan describes a white waste layer occurring in subarea 10c. However, the Workplan does not address sample collection, characterization, and

delineation of this white layer. Additional sampling and analyses are required to characterize the waste layers (see Phase II Recommendations Section).

The conceptual model for the East Ravine wash should be updated. The Workplan should acknowledge that prior to the construction of the dams, run off from the site, including potential contaminants, could have moved more freely down the wash during rain events or releases to the drainage. The fourth paragraph on page 6-15 of the Workplan indicates that the easternmost road/dam is not eroded suggesting water has not flowed over it. It is assumed that water could have overtopped this dam in the past as it is assumed that the road/dam is periodically maintained. PG&E has indicated that PG&E personnel have conducted training on earth moving equipment in this general area.

VOCs and SVOCs are recommended to be analyzed at location AOC-10a-1 due to the presence of stained soil, possibly old hydrocarbon staining, and at the storm drain discharge location discussed in the preceding paragraph.

Samples AOC10-1 and 2 pictured in the original Figure 6-16 of the Workplan were removed in the revised figure. These sample locations should be reinstated because the Workplan indicates, “Because runoff from larger spills near the station access road could have entered the East Ravine, additional sampling along the slope leading into the East Ravine is also required.”

Sample AOC-10a-2 appears redundant with sample AOC-10a-1 and should be eliminated unless PG&E has selected it for a specific purpose (e.g., contaminant delineation) or the stained area downslope from AOC 9 is difficult to locate.

Additional soil borings seem necessary to evaluate specific potential contaminant pathways and further define the lateral extent of previously identified contamination. DTSC believes these locations should be further evaluated with additional soil borings:

- within the defined area of AOC 10c to provide additional data in the area of former sample location L-2-2 (north of previous sample location) for further definition of elevated contaminant concentrations

- approximately 60 feet downstream of area AOC 10c on outside of the wash meander to ensure sufficient sample coverage

- approximately 20 feet upstream of area AOC 10d on the outside of the wash meander to ensure sufficient sample coverage

- one to three samples in depositional areas downstream of AOC10-3 and before the Colorado River to ensure sufficient sample coverage

Section 6.7 - AOC 11 – Topographic Low Areas

Section 6.7.4 of the Workplan indicates that samples from subarea 11b and supplemental samples northwest of 11a can only be collected by hand and that only the top two samples will be collected. However, a track mounted limited access rig or equivalent should be utilized to obtain deeper samples. It is also recommended that all AOC 11 samples be analyzed for TPH and PAHs and not be held contingent on results from subarea 11a. PG&E has inadvertently eliminated boring location AOC11b-2 from the revised Figure 6-18 dated December 2006. DTSC believes that this boring is warranted to ensure sufficient sample coverage within the depositional area.

Figure 6-18 should be expanded to the south and southwest to depict the fence line of the compressor station. This visual depiction will provide assistance with evaluation of potential surface water flow pathways from the compressor station.

DTSC staff observed an area south of PG&E's staging area along the access road that should be added to the topographic low area. This area, pictured in Figures 10 and 11, has accepted waste (cement and debris) from PG&E operations and, therefore, warrants investigation similar to other AOC 11 subareas (see Phase II Recommendations Section). Figure 6-19 of the Workplan also includes an aerial view of the area.

Figure 10. Easterly view of topographic low area containing cement spoils and debris south of PG&E's staging area along the access road.

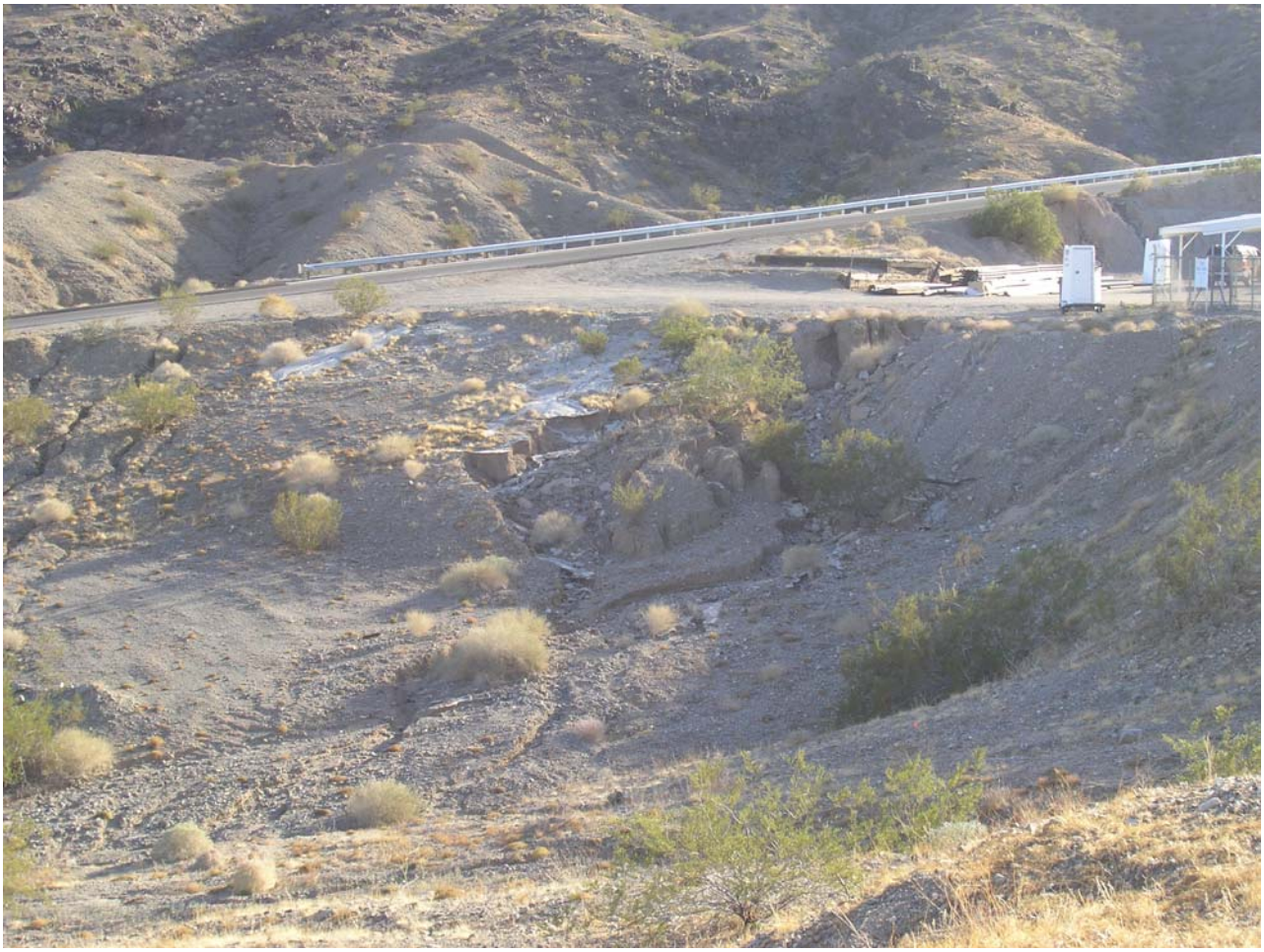


Figure 11. Easterly view of topographic low area south of PG&E's staging area.

Section 6.8 - AOC 12 – Fill Area

Section 6.8.1 of the Workplan discusses the history of potential areas filled with waste materials. A detailed evaluation of aerial photographs and topographic maps should be conducted to search for soil disturbance in the area over time to better locate the disposal and fill areas.

Trenches should encounter native soil unless depth limitations for the selected trenching method are met (e.g., 15 to 20 feet bgs.). Trench logs should be prepared and included in the RFI report.

During the trenching activities associated with AOC 12, soil samples shall be collected and analyzed from within each trench. Samples should be collected at the bottom of each trench at an approximate interval of one sample per 20 feet of trench length and at

other areas identified in the field (e.g., debris or discoloration). Trenching without sampling and analysis as proposed in the Work Plan would require an unnecessary return to AOC 12 to conduct sampling. Sampling and analysis is required to assess potential impacts from documented disposal activities. The absence of buried debris and laboratory analytical data indicating no residual chemical contamination would provide the basis for a no further investigation determination for this AOC. As indicated in General Comment 1 above, laboratory analytes shall consist of those previously identified in the GSU memorandum dated March 29, 2006.

Section 6.9 - AOC 14 – Railroad Debris Site

The GSU is unclear how the Railroad Debris Site Boundary pictured in Workplan figures (e.g., Figure 6-23) was derived and the rationale for indenting the northwest boundary. Text and illustrations should be prepared in sufficient detail with respect to the white powdery waste observed from old aerial photographs (circa 1950's and 1960's) to demonstrate that it has been accurately delineated on current site figures. The May 18, 1964 aerial photograph (Figure 3-18) from the Volume I RFI Report (CH2MHill, 2006) suggests that the white waste is located further south from the railroad tracks than the current Railroad Debris Site Boundary (Figure 6-23) would suggest.

The first paragraph of Section 6.9.3 of the Workplan suggests that SVOC, TPH, and PAH results only correlated with the railroad ties and black sandy waste when in fact these analyses were only conducted and detected at the three railroad tie/black sandy waste sample locations. As SVOC, TPH, and PAH analyses have not been conducted within any soils from the Railroad Debris Site, it is recommended that these analytes be evaluated as a COPC for several more (e.g., 10 samples) of the proposed samples to provide sufficient coverage across the site. The SVOC, TPH, and PAH analyses should not just be limited to sampling under the same three previous waste areas where they were detected. The section also states friable ACM encountered in past sampling events had been removed. A site visit conducted by DTSC in 2006 still observed apparent ACM material (transite) at the surface at AOC 14 supporting the asbestos analyses proposed in the Workplan.

Section 6.9.3 of the Workplan indicates that the extent of the white powdery residue will be defined by additional sampling. However, visible white powdery material (see Figure 12 on the following page) should be mapped and documented in figures. Additionally, previous investigations (e.g., PG&E, 1999) for this AOC need to be better summarized to ensure samples are being collected at appropriate locations. Trench logs from previous investigations should be utilized to delineate the known extent of the white material (as well as debris and encountered soils) in map and cross-sectional views. This framework should be developed to ensure the sampling program will meet its objectives. PG&E should identify additional sampling and analysis locations based on

the preceding tasks. Currently, tables and figures in the Workplan do not indicate which samples encountered soil and which samples were obtained from the white material in the past. Several samples of the white material should be collected and analyzed for the complete suite of COPCs to characterize this material. This characterization objective is not clearly stated in the Workplan which focuses on the extent of the white powdery material.

Figure 12. Northerly view of AOC 14. White layer visible in the freeway cut on the north side of the I-40 and in the background.

In PG&E's 1999 document regarding the Railroad Debris Site, black material is identified on maps, cross-sections and tables as "Black Material" or "Sandy Black Material". The Workplan identifies the Black Material as "Asphalt Material". The GSU is uncertain if the "Black Material" is actually asphalt and requests that PG&E clarify this issue. The black waste should be clearly defined in the Workplan report and associated boring logs.

Table 6-22, AOC 14 Proposed Sampling Plan, Footnotes: Footnote 1 from Table 6-22 indicates that "mechanical equipment" access may be an issue at the site. This does not appear to be a significant concern due to generally flat lying topography (see Figure 12). Unless PG&E obtains prior approval from DTSC, PG&E should utilize mechanical equipment (e.g., a drill rig) to collect samples from the proposed depths specified in the Workplan. Footnote 2 indicates that debris and white waste material "may" be sampled and analyzed. DTSC is uncertain of the rationale for not sampling and analyzing debris and waste material.

Section 6.10 – Undesignated Area 1 – Potential Pipeline Disposal Area

The following additional information should be added to the investigation:

- The evaluation of the presence of buried pipes should not be limited to metallic pipes. The geophysical method utilized should evaluate the presence of any buried material with subsequent confirmation of the composition.

- The suspected dates of disposal should be identified so appropriate aerial photographs can be carefully examined to look for disturbed surface soil where potential burial could have taken place.

- The facility process from which the asbestos-covered pipes originated should be disclosed to determine if other COPCs should be included in the assessment. With the limited information currently provided, it is recommended that a larger list of COPCs be included in the investigation (currently the only COPC is asbestos). This would require soil sampling that is not proposed in the Workplan.

- Sampling soil from the trenches is not included in the Workplan. Soil associated with the pipe disposal should be sampled for related COPCs. Additional analyses may be required if soil discoloration, odors, etc. are observed during trenching.

- If the geophysical survey does not locate the pipelines, then the geophysical survey should be expanded and include information obtained from examination of aerial photographs and site reconnaissance. The geophysical search would terminate if the expanded search did not locate geophysical anomalies. Should geophysics not provide valuable information, trenching in the most likely disposal area (disturbed area) is still suggested to confirm the results of the geophysical survey.

Section 6.11 – Undesignated Area 2 – Former 300B Pipeline Liquids Tank

CH2M Hill, on behalf of PG&E, submitted a technical memorandum, dated April 27, 2007, which summarizes information pertaining to the closure of the Former 300B Pipeline Liquids Tank (Unit). Additional historic information about the Unit has been obtained since the Workplan was prepared. The Tech Memo concludes that the site investigation and closure process at the Former 300B Pipeline Liquids Tank is complete and no further investigation is proposed for this location. However, the GSU's review of the Tech Memo has found that the historic data are insufficient to characterize the nature and extent of the contamination and, therefore, insufficient to asses risk. Only one sample was collected on April 16, 1996 to assess COPCs. Unfortunately, the sample collected was a composite sample from a depth of 0 to four inches bgs and was placed in a glass jar. The composite sample is not appropriate to assess COPCs and the VOC data are invalid due to the poor sampling methodology employed. Reporting limits for PAHs were also significantly elevated (8 mg/kg) and would not be appropriate for risk purposes. It is therefore recommended that the sampling proposed in the Workplan be conducted for the Unit for the COPCs originally established in the 1990's (i.e., TPH, Metals, SVOCs, VOCs, PAHs, and polychlorinated biphenyls).

Section 6.12 – Identification of Existing White Powdery Residue

Section 6.12.1 of the Workplan should also identify the white powdery material described in the Workplan for AOC 10 – East Ravine. Characterization of this white material is requested as a Phase II activity (see Phase II Recommendations Section).

PHASE II AOC/SWMU SAMPLING RECOMMENDATIONS

The following comments capture issues which the GSU believes are best addressed during a second round of sampling (Phase II sampling) after the Phase I data are collected and reviewed and/or after PG&E has developed acceptable workplans to implement the activities identified below.

PHASE II SWMU 1/AOC 1 – Former Percolation Bed

In addition to the sampling proposed for the white powdery material, shallow trenching or potholing combined with careful and precise documentation is recommended to quickly determine and document the extent of the white material based on visual observation.

The easterly extent of the white powdery material for this AOC should be delineated to evaluate how far back it extends within the slope leading up to facility operations.

Concerns exist that either the material or potentially contaminated soil within this slope could continue to impact the wash over time.

PHASE II AOC 4 - Debris Ravine

DTSC believes that one or two additional sampling locations should be added to the Bat Cave Wash where the Debris Ravine discharges to the wash on the Havasu National Wildlife Refuge. This outfall area appears to be visible in the wash as seen in the aerial view pictured in Figure 6-12 of the Workplan. The data from these locations will assess potential contaminant transport and deposition that would occur as the ravine discharges to the wash during storm events. GSU staff have noted limited amounts of visible debris material (metal, rubber, concrete) emanating from this outfall area in the wash.

Plans for sampling soils that are identified as containing debris should be developed based on the debris mapping to be conducted as part of the Workplan.

PHASE II AOC 10 – East Ravine

During a site visit in July 2006, GSU staff observed small amounts of metal debris in either subarea 10b or subarea 10c. The debris identifies depositional areas in the wash that have been affected by former operations. The location of the metal debris should be confirmed, documented and mapped. Samples and analyses of the soil from this debris area should be conducted during Phase II.

Additional sampling and analysis is required to characterize the white layer occurring in subarea 10c. Shallow trenching or potholing is recommended to quickly determine the extent of the white waste layer. PG&E should indicate exactly where the white waste layer was found in the past and if it was sampled and analyzed. The same requirements apply to the greenish gray layer identified in subarea 10b (CH2MHill, 2006).

The Workplan documents that the history of the two small dams in the East Ravine wash located on the Havasu National Wildlife Refuge is uncertain. Furthermore, the source of the soil used to construct the dams is also of unknown origin. DTSC believes that the dams should be investigated since the dams could contain contaminated materials or buried contaminated soils or wastes when they were constructed. DTSC speculates that the dams may have incorporated contaminated soil from the East Ravine wash.

Since there is a storm drain that discharges and feeds the East Ravine from the west, DTSC believes an additional sample point is needed at the storm drain outfall. This

area is located in a vegetated area near the intersection of the access road and visitor parking lot. This particular storm drain has existed since at least 1955 as illustrated by visible discharges in oblique aerial photographs of the site dated May 19, 1955. Contaminant concentrations may be concentrated near the storm drain outfalls similar to releases identified at AOC-9 and AOC-10a.

PHASE II AOC 11 – Topographic Low Areas

The first paragraph of Section 6.7.1 of the Workplan indicates that the topographic low area designated L6 was separated from AOC 11 and incorporated into AOC1 – Former Percolation Bed. However, review of the AOC 1 section of the Workplan reveals that no investigation of the L6 area is proposed as part of AOC-1. DTSC is puzzled over this oversight and recommends that at least two borings be installed at the L6 area and that the samples be analyzed for the AOC 11 COPCs.

The second paragraph of Section 6.7.1 on page 6-18 of the Workplan indicates that a release from Cooling Tower B had entered the drainage to the east as do storm drain discharges. Storm drains and potential soil discoloration are observed along the slope above the AOC 11 ravine in the May 19, 1955 oblique aerial photograph of the site. Therefore, sampling along the top of the ravine outside the northeast facility fence line should be conducted. Furthermore, sampling at the base of the storm drain outlets in the area should also be considered as contaminants may be concentrated near the source of releases as observed at AOC-9 and AOC-10a. TPH, PAHs, and possibly VOCs should also be analyzed from these ”source” areas.

Approximately four locations are suggested for sample collection and analyses to characterize the topographic low area pictured in Figures 10 and 11 of this memorandum.

PHASE II AOC 14 – Railroad Debris Site

Additional samples are requested to assess contaminant transport via surface run off from the Railroad Debris Site. Current and historic transport should be considered and assessed. PG&E should submit sample locations for DTSC review and approval. DTSC believes the site currently drains to Bat Cave Wash to the west and, therefore, requests that samples from the wash also be obtained at known outfall locations. Metal debris has been observed entering Bat Cave Wash from the Railroad Debris Site area near the northwest corner of the site.

PHASE II Identification of Existing White Powdery Residue

The workplan indicates that no sampling program is proposed unless additional white material is identified. It is necessary to provide a general description of a sampling program to guide sampling of white material (e.g., AOC - 10) and any new areas of white material that may also be identified. PG&E should prepare procedures of the investigation program for DTSC review and approval. It should be noted that areas of white residue have been recently identified within Bat Cave Wash and at the Railroad Debris Site.

PHASE II Site Perimeter and Storm Drain Sampling

PG&E should prepare a sampling plan for the site perimeter/fence line area and areas associated with historic releases and historic storm drain discharges to address concerns described in General Comment 7 of this memorandum.

FINDINGS

Based on a review of the Workplan, historic information, and various in-person and teleconference meetings, the GSU has determined that the proposed investigation will provide valuable and useful information to gain a better understanding of the environmental conditions in soils outside of the fence line of the Pacific Gas and Electric Topock Compressor Station. Although deficiencies are noted in the Workplan, the GSU supports the conditional approval of the proposed investigation by dividing the investigation into multiple phases. The GSU has identified and recommended activities that should be conducted under the first phase of the investigation, as well as concerns and deficiencies to be addressed after evaluation of the first phase sampling report.

If you have any questions, please contact Chris Guerre by telephone at (714) 484-5422 or by email at cguerre@dtsc.ca.gov or Greg Neal at (714) 484-5455 or gneal@dtsc.ca.gov.

REFERENCES

PG&E, February 5, 1999. Soil Sampling Results RCRA Facility Investigation at Bat Cave Wash Area PG&E Topock Compressor Station, Needles California EPA ID No.CAT080011729.

CH2M Hill, September 6, 2006. RCRA Facility Investigation/Remedial Investigation Report, Volume 1 – Site Background and History, PG&E Topock Compressor Station, Needles, California.

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