



# United States Department of the Interior

**BUREAU OF LAND MANAGEMENT**  
**FISH AND WILDLIFE SERVICE**  
**BUREAU OF RECLAMATION**



## ELECTRONIC SUBMISSION

August 16, 2011

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

Subject: PG&E Topock Compressor Station Remediation Site – Federal Comments on the *Soil RCRA Facility Investigation/Remedial Investigation Work Plan* PG&E Topock Compressor Station, Needles, CA.

Dear Ms. Meeks:

The Department of Interior, on behalf of itself and the Bureau of Land Management, the U.S. Fish and Wildlife Service, and the Bureau of Reclamation (collectively referred to as “DOI”), has completed the review of the *Soil RCRA Facility Investigation/Remedial Investigation Work Plan, PG&E Topock Compressor Station, Needles, California* dated May 2011. Attached you will find the combined comments on the subject document.

If you have any questions, please contact me at (303) 445-2502.

Sincerely,

Pamela S. Innis  
DOI Topock Remedial Project Manager

Attachment (1)

Cc: PG&E Topock Consultative Workgroup (CWG) Members

**DOCUMENT REVIEW AND COMMENT RESOLUTION SHEET**

<b>Document Title</b>		<b>Draft Soil RCRA Facility Investigation/Remedial Investigation Work Plan</b>	<b>Document Date</b>	<b>May 2011</b>
<b>Reviewer, Organization, and Phone Number</b>		DOI – Pamela Innis, Project Manager (303) 445-2502 <hr/> FWS – Carrie Marr – FWS Project Manager, Arizona ESO, 602.242.0210 <hr/> Dennis Smith, HSG Task Manager (303) 933 8875 <hr/> Rick Newill, DOI Consultant (602) 639-2753	<b>Originator, Organization and Phone Number</b>	PG&E/CH2MHILL
			<b>Review Criteria</b>	Technical, CERCLA Compliance, Biological and Toxicological Applications; Havasu NWR
<b>Comment Number</b>	<b>Location</b>	<b>Comment</b>	<b>Comment Response</b>	<b>Accept</b>
	<b>Main Body of Work Plan</b>			
DOI #1	Section 1.1.4 Perimeter Area Investigation third paragraph first sentence Page 1-8	The Perimeter Area investigation should address potential exposure of both humans and ecological receptors.		
DOI #2	Section 1.1.5 Storm Drain System Investigation last paragraph first sentence Page 1-8/1-9	These data are also needed to address assessment of Part A human and ecological risk decisions.		
DOI #3	Section 2.1.2, Surveys	In accordance with the PBA, a qualified biologist will conduct a pre-construction survey of all work areas prior to ground-disturbing activities. How will the biologist conduct pre-construction surveys in the tamarisk at the mouth of BCW? Some disturbance, even if bushwhacking a small trail for one person, may have to be done to gain access into this area. Please propose a pre-construction survey method for this		

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		area.		
DOI #4	Section 2.2.4, pages 2-6 and 2-7	<p>A survey grid for each site should be proposed in the work plan based on the overall objectives of locating geophysical anomalies.</p> <p>It should be noted that GPR results in very high density data and is best used to verify and refine the location of targets in a small area.</p> <p>The 6<sup>th</sup> paragraph implies that only GPR and magnetometry are being considered while the 2<sup>nd</sup> paragraph states that EM will also be used. A time-domain EM, such as the EM-61, may help reduce the noise created by the surface metal. Please clarify which methods will be used. Additionally, it should be noted that the orientation of the boom to the buried object during an EM survey can be important. A finer grid and/or different boom orientation may be needed after initial survey.</p> <p>A station-by-station GPS survey is proposed. It is not clear why streaming GPS data using a base station and rover unit (e.g., RTK unit) yielding a point by point survey is not being considered.</p> <p>Section 2.2.4/Geophysical Surveying/third paragraph/second sentence - Typographic errors</p>		
DOI #5	Section 2.2.6	Options for handling/disposal of vegetation should be included for consideration by the agencies/stakeholders.		
DOI #6	Section 2.2.7.1, page 2-8	<p>Decontamination of all equipment should also be done prior to demobilization.</p> <p>The first paragraph also notes that drilling equipment will be “cleaned between investigation areas ...” It is not clear if this is referencing AOCs/SWMUs or boring locations. Visual inspections should be done between each boring location to determine if decontamination is needed.</p>		
DOI #7	Section 2.2.7.2 Investigation Derived	Please specify what is meant by soil being “free from contaminants.”		

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	Waste Management second paragraph fifth sentence Page 2-8	Also, please explain how soil cuttings be “repatriated”.		
DOI #8	Section 2.3, Post- construction activities	With the exception of the proposed sampling near the mouth of Bat Cave Wash, others areas contain limited to no vegetation. We agree with your plan to let the mouth of BCW reestablish itself after the sampling. Although the proposed sampling locations contain limited to no vegetation, in the event a mature, <u>native</u> tree or other vegetation is destroyed because of crushing, trampling, cutting or killed because of damage to its root system on the Havasu NWR, you must work with the Refuge Manager to replace them and guarantee successful reestablishment.		
DOI #9	Table 4-1 Title Row Page 4-2	The data gaps for each area were previously numbered and were associated with specific sample locations. The approved sampling table sent to PG&E and included in Appendix A provided this information in detail. The data gaps should be numbered and be consistent with the previously agreed-upon list for each area.		
DOI #10	Table 4-1 SWMU 1 Decision 3 – Potential Impacts to Groundwater Page 4-2	Revise text to say “Vertical extent of contamination information ...”		
DOI #11	Table 4-1 AOC 1 Decision 1 – Nature and Extent Bullet 3 Page 4-2	Revise text to say “Chemical concentration in soil and sediment ...”		
DOI #12	Table 4-1 “AOC 4” Page 4-2	Data gaps were not previously defined nor agreed upon for AOC 4.		
DOI #13	Table 4-1 AOC 4 Decision 1 – Nature	This is addressed by the second AOC 1 data gap.		

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	and Extent Bullet 3 Page 4-2			
DOI #14	Table 4-1 “AOC 9” Page 4-3	Three data gaps were previously defined and agreed upon for AOC 9.		
DOI #15	Table 4-1 AOC 9 Decision 4 – Data Sufficiency for CMS/FS Page 4-3	A second data gap was identified for this decision (Data Gap #6 - Total chromium, hexavalent chromium, and lead leachability data (for waste handling and disposal considerations).		
DOI #16	Table 4-1 “AOC 10” Page 4-3	Eight data gaps were previously defined and agreed upon for AOC 10. Data gap #5 - Location of potential additional storm drains adjacent to the employee parking lot was presumably moved to the storm drain investigation. It appears some data gaps have been grouped together. It would be better to keep the data gaps separate and numbered as previously agreed upon.		
DOI #17	Table 4-1 “AOC 11” Page 4-3	Eight data gaps were defined for this AOC, but data gap #1 was made irrelevant by DOI/DTSC final revisions to sampling table.		
DOI #18	Table 4-1 “AOC 14” Page 4-3	Five data gaps were defined for this AOC, but Data Gap #4 – refining the vadose zone leaching model, was made irrelevant by DOI/DTSC final revisions to the sampling table.		
DOI #19	Table 4-1 UA-1 Page 4-3	Please explain why is UA-1 is not applicable.		
DOI #20	Section 4.2 Soil Part B Data Evaluation Process first paragraph last sentence Page 4-4	Please clarify why Category 1 and 2 data are appropriate for Decision 1 – nature and extent of contamination, but not Decision 4 – potential off-site migration.		

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DOI #21	Section 4.2 Soil Part B Data Evaluation Process "Decision 2" Page 4-4	Delete typo "data exist <u>for</u> within the..."		
DOI #22	Section 4.2 Soil Part B Data Evaluation Process "Decision 4" Page 4-4	It is understood that Category 1 data would be needed for any risk evaluation, but it is not clear why the assessment of off-site migration potential would be limited to Category 1 data. Please clarify.		
DOI #23	Section 4.2, page 4-4, Decision 5	The intent of referencing the Part A Investigation Areas is unclear. To be consistent with the Soil Part B DQO document, the data sufficiency evaluation should support the Part B CMS/FS, remedial design, and /or Interim Measures, if required.		
DOI #24	Section 4.2, page 4-5	The discussion notes that perimeter and storm drain investigation areas that exceed background/screening levels will be "assigned to the applicable Part A or Part B unit(s)". It is not clear if this referring to specific AOCs and SWMUs or how the "assignment" will occur. It may be more appropriate to address these separately depending on the contaminant or level of contamination (such as "hot spots").		
DOI #25	Section 5.1, page 5-1, Table 5-1	Although FWS/HNWR personnel have been involved in the review of the soil work plan, a specific HNWR approval is not anticipated. The DOI approval of the work plan will be on the behalf BOR, BLM and FWS.  The SHPO text references approval by USFWS HNWR. This should be modified to reference DOI approval.		
DOI #26	Section 5.1, page 5-1, 2 <sup>nd</sup> paragraph	Portions of the proposed activities also occur on Bureau of Reclamation Land managed by the Bureau of Land Management.		
DOI #27	Section 5.3.2, Project Timing	The first paragraph states that the goal is to finish soil investigation activities by the end of January 2012. This should be updated to reflect the current schedule. The text should note that DOI and FWS are to be notified as soon as project delays are known in areas of species' habitat so we can determine if we need to evaluate the potential		

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		effects of the disturbance. Also, for clarification, DOI/FWS expect PG&E to implement the conservation measures for <b>all</b> migratory or nesting birds season (i.e., not just upland birds).		
DOI #28	Section 5.3.3, Project Location and Habitat Sensitivity	<p>Several typographic errors are noted and should be corrected.</p> <p>The text in the last paragraph of this section discusses how the activities in the workplan will not take place in areas where Yuma clapper rails potentially occur or are known to occur. If additional sediment, porewater, or other types of sample are collected from the marsh habitat where the East Ravine meets the lower Colorado River, you will have to update this section.</p>		
DOI #29	Section 5.3.4, Habitat Loss	It would be helpful to add one more sentence summarizing how much of the 2.5 acres of floodplain vegetation and of the 3.0 upland acres have been disturbed. One item to note is that no destruction of wetland habitat was covered in the PBA or concurrence letter. If you sample in the wetland downstream of the East Ravine (where it meets the river), you might need to contact the FWS/CFGD to evaluate the potential effects of sampling sediment or porewater in the wetland to the Yuma clapper rail. The Bureau of Reclamation does not survey for nesting Yuma clapper rails in the wetland below the East Ravine; therefore, you may need to conduct surveys.		
DOI #31	Section 5.3.6, Listed Species Determinations	Please include a sentence or two summarizing the results from previous years' biological surveys for the southwestern willow flycatcher and Yuma clapper rail. For example, no nesting southwestern willow flycatchers have been detected in California. However, birds have been detected at Sites 4 (tamarisk thicket) and 5 (under the bridges). Have you ever detected any Yuma clapper rails at Sites 4 or 5 during the flycatcher surveys?		
	<b>Appendix A</b>			
DOI #32	General Comment 1 Data Usability For Human Health and Ecological Risk Assessment	In general, the RFI/RI Work Plan (RFI/RI WP) used point by point comparisons to benchmark concentrations to assess data gaps. Much of the future use of the data will involve looking at the data in combined grouping. The WP does not specifically address the current data, or future use of the data		

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		<p>from a human and ecological risk assessment perspective.</p> <p>According to the Risk Assessment Work Plan (RAWP) (Arcadis August 2008), data aggregation for human health (HH) risk assessment will produce two data sets: Bat Cave Wash (SWMU 1 and AOC 1) and all other AOCs (outside the fence) combined. For ecological risk (ECO) assessment, data will be aggregated by AOC. These groupings may pose some analysis dilemmas including:</p> <p><b>a) Unbalanced Data Sets.</b> It is likely that when the existing data and Phase 2 data sets are combined, there may be unbalanced data sets that may complicate the nature and extent of contamination assessment and the risk assessment (i.e., comparability may be compromised, representativeness may not be uniform). An unbalanced data set is one where the analytical suites are not uniformly reported across all samples in the aggregation (see below).</p> <table border="1" data-bbox="630 901 1297 1128"> <thead> <tr> <th><u>Sample A</u></th> <th><u>Sample B</u></th> <th><u>Sample C</u></th> </tr> </thead> <tbody> <tr> <td>Title 22 metals</td> <td>Title 22 metals</td> <td>-</td> </tr> <tr> <td>PAH's</td> <td>-</td> <td>PAH's</td> </tr> <tr> <td>PCB's</td> <td>-</td> <td>PCB's</td> </tr> <tr> <td>Dioxins/furans</td> <td>Dioxins/furans</td> <td>-</td> </tr> <tr> <td>Cr VI</td> <td>Cr VI</td> <td>Cr VI</td> </tr> <tr> <td>Cr Total</td> <td>Cr Total</td> <td>-</td> </tr> </tbody> </table> <p>Considering the spatial aggregation over large areas and the intention of combining of data sets (existing data and Phase 2) collected under different DQO's, please provide a preliminary approach describing how data comparability and representativeness will be considered in the nature and extent of contamination assessment and the HH and ECO risk assessment (e.g., how will spatial relationship integration, Chemical Of Potential Concern [COPC] identification, and</p>	<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>	Title 22 metals	Title 22 metals	-	PAH's	-	PAH's	PCB's	-	PCB's	Dioxins/furans	Dioxins/furans	-	Cr VI	Cr VI	Cr VI	Cr Total	Cr Total	-		
<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>																							
Title 22 metals	Title 22 metals	-																							
PAH's	-	PAH's																							
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Cr VI	Cr VI	Cr VI																							
Cr Total	Cr Total	-																							



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		<p>Exposure Point Concentration [EPC] calculation be affected and the influences addressed). This discussion should incorporate appropriate elements from the RAWP as well as suitable regulatory guidance (e.g., EPA's Data Quality Assessment: A Reviewer's Guide, Data Quality Indicators /Assessment Guidance) as well as data quality indicator discussed in Appendix H dealing with representativeness and comparability.</p> <p><b>b) Identification of Hot Spots.</b> According to the RAWP (Arcadis 2008), small exposure areas may be identified for evaluation (i.e., hot spots or clusters). The RAWP indicates that hot spots will be identified by evaluating the site data for outliers. There are references to hot spot identification in the RFI/RI WP using qualitative and quantitative outlier techniques, (e.g., the March 2010 Revised, Data Quality Objectives Steps 1 through 5 – Part A Soil Investigation Tech Memo). The RFI/RI WP should present an up to date approach to how Hot Spots will be identified for risk assessment and source identification, and how the Phase 1 data, in conjunction with the existing data, will support the approach.</p> <p><b>c) Data Usability Matrix</b> Table A-1, Data Usability Matrix for Soil Risk Assessment (see RCRA Facility Investigation/Remedial Investigation Soil Investigation Work Plan, Part A, Data Quality Objectives Steps 1 through 5 Technical Memorandum (March 2010)) has not been updated to reflect the proposed Phase 2 sampling plans. This table was originally developed as a tool to permit risk assessors and other data users to gauge data adequacy, representativeness, completeness, and comparability as the soil sampling planning evolved. Please update with the proposed Phase 2 data and interpret the matrix in light of risk</p>		

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		<p>assessment needs. This activity could shed light on the unbalanced data sets comment and others in this general comment.</p> <p><b>d) Spatial Averaging Data and Interpretation.</b> According to the RAWP (Arcadis, 2008), much of the soil data will be averaged over relatively large areas for exposure assessment and EPC computation. In simple numeric averaging the spatial relationships can be lost. Additionally, when averaging data over large areas, hot spots and clusters can be blended with other areas less impacted (and vice versa). Previously PG&amp;E had mentioned using spatial statistics (e.g., kriging), Thiessen polygons, or other methods to evaluate data over large areas. There is no reference to these spatial evaluation techniques (or others foreseen) in the RFI/RI WP. Please provide a discussion of how spatial relationships will be evaluated, the type methods that will be used in the data evaluation phase, and how the data specified in the RFI/RI WP, in conjunction with the existing data will support these methods.</p> <p><b>e) Data Sufficient to Calculate EPCs.</b> Section 4.2 of Appendix A assumes that the existing nature and extent of contamination evaluation is adequately representative as a basis for the ensuing evaluation of sufficiency to estimate representative EPCs and that this assumption will be verified after the Phase 2 data have been collected. This seems like circular logic. Please discuss plans for computing representative EPCs in the event that Phase 2 data is not determined to be adequately representative of the nature and extent of contamination.</p> <p>Section 4.2 also discusses how PROUCL sample size guidance and an evaluation of maximum concentration data</p>		

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		<p>was used to evaluate Data Gap 2. DOI does not agree with the conclusion at the bottom of page 4-2 that the soil and sediment data are adequate to support calculation of representative EPCs for HH and/or ECO risk assessment. There has been no assessment of the level of uncertainty that will be acceptable in the calculated EPCs. Please discuss how the conclusion is justified in light of circular logic noted above and the fact that acceptable bounds on the level of uncertainty in the EPCs have not been established.</p> <p>Considering the items above (e.g., spatial averaging, aggregation over large areas, hot spots, unbalanced data sets, un defined uncertainty limits), it unlikely that representative EPC's can be computed without extensive reliance on the use of maximum concentrations. Reliance on the use of maximums then goes back to adequacy of the nature and extent of contamination and the circular logic.</p> <p>Looking ahead to data quality assessment, data adequacy and its' use for risk assessment, please provide preliminary discussion of the assessment using data quality indicators, integration of individual AOC conceptual site models, and handling of identification and assessment of uncertainties will be handled and how underlying assumptions such as unbiased samples will be addressed in computing EPCs.</p>		
DOI #33	Section 1.3 Purpose of Soil Part A Phase 1 Data Gaps Evaluation Report second paragraph last sentence Page 1-4	A sentence or footnote needs to be added discussing the renumbering of the sample locations in comparison to previous versions and providing reference to the crosswalk table (provided to agencies) that should be included in the document.		
DOI #34	Section 4.2, page 4-2	As indicated in our August 4, 2010 comment on the Draft Soil Investigation Part A Phase I Data Summary Report, EPC Estimation must be kept in the context of the limitations of the current representativeness of nature and extent. As indicated, the purpose of assessing Decision 2 is to determine		

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		<p>whether additional data collection is necessary beyond that necessary to resolve Decision 1.</p> <p>This section describes a process used to determine data adequacy for computing risk assessment exposure point concentrations (EPCs) based on detection frequency and minimum parameters for ProUCL computations. The section also discussed the use of maximum concentrations. The discussion is brief and does not convey all the rationale that apparently goes into determining sufficiency to estimate representative EPCs. For example, review of the process for AOC 1 reveals several process points that do not seem to correlate with the discussion in Section 4.2.</p> <p>Table C2-14 (North of Railroad) is completed only for arsenic. Does this mean that no other constituent were detected above screening values in this reach? Figure C2-13 shows detections of lead in this reach exceeding background. Please clarify.</p> <p>Table C2-14 (and companion figures) indicates a comparatively small sample size for this reach (actually only 6 locations). Is Decision 1 for this reach satisfactory? Additionally, it seems that this small a data set may not be sufficient for computing EPC's without a high variance suggesting significant uncertainty in the EPC. Was uncertainty due to sample size and spatial coverage considered in the assessment?</p> <p>These examples illustrate how the brief discussion in Section 4.2 does not convey all that apparently occurs in the Decision 2 actual data gap analysis. Please consider our August 4, 2010 comments and provide additional description (in Section 4.2) of the thinking process on how Decision 2 was actually accomplished. Please then revisit portions of Appendix A and consider whether the results address the additional description in Section 4.2).</p> <p>Please see also General Comment 1 on Data Usability for</p>		

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		<p>Risk Assessment. Overall, DOI does not believe that the rationale presented in Section 4.2, as presented, permits PG&amp;E to conclude that data is sufficient to estimate representative EPC, in many cases.</p>		
DOI #35	Section 5, Decision Rule 3, Threat to Groundwater from Residual Soil Concentrations	<p>This Section describes a three step procedure:</p> <p><b>Step 1</b> is a Background Comparison.</p> <p><b>Step 2</b> Soil screening levels for groundwater SSLs discussed in the second bullet page 5-2 are not presented in this section and are not displayed in the individual AOC/SWMU assessment table. The <i>Calculation of Screening Levels or Protection of Groundwater at the PG&amp;E Compressor Station</i> (CH2MHILL August 2008) document cited in this section presents a leaching calculation approach with information for five metals only (Cr VI, Cr-III, Cu-II, Ni-II, and Zn-II).</p> <p><b>Step 3</b> Soil screening levels that appear in the individual SWMU/ AOC screening tabled (e.g., C2-17 for AOC 1) are not documented but are apparently derived as discussed in Section C.4 using the Hydrus1-D model. However, the analysis using Step 3 (Hydrus 1-D) screening values is not clear or is inconsistent with the description in Section C.4. Examples include:</p> <ul style="list-style-type: none"> <li>• SMWU 1 eliminates Cr VI as a source of contamination to groundwater. Many values in Table C1-12 exceed the 0.22 of mg/kg SSL and the default BGV of 0.83 mg/kg. Note since the location specific SSL derived using Hydrus 1D is less than the BGV, shouldn't any concentration above the BGV indicate potential for leaching to groundwater? See Table C1-12 SWMU 1-8 for example.</li> <li>• AOC 1 eliminates Cr VI as a source of contamination to groundwater. Again, soils values in Table C2-17 exceed the 0.36 mg/kg SSL and the default to BGV 0.83 mg/kg value.</li> </ul>		

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		<p>Similar inconsistencies occur in AOC 9 (Molybdenum), AOC 10C (chromium), and AOC 11a (Molybdenum), and possibly other Appendix A locations.</p> <p>Please provide additional discussion and description of how the 3 Step process was performed.</p> <p>Notwithstanding the additional discussion and description. DOI disagrees that conclusions such as those drawn in Table C1-11 that Step 3 can eliminate the potential for leaching to groundwater can be reached at this stage. As indicated in our August 4, 2010 comment on the Draft Soil Investigation Part A Phase I Data Summary Report, SSL comparisons and modeling cannot be used at the Data Gap evaluation stage to conclude that no threat to groundwater exists, because uncertainties remain regarding the magnitude and extent of contamination.</p> <p>The data gap evaluation is intended to assess whether additional data are necessary to evaluate soil impacts to groundwater, not to reach conclusions that cannot be determined at this time. Please correct all tables citing no impact to groundwater conclusions and the attendant text(s) (e.g., last sentence on page C1-13).</p>		
DOI #36	Section 5, Decision Rule 3, Threat to Groundwater from Residual Soil Concentrations	As has been discussed with PG&E previously, DOI does not concur with statements in the work plan (e.g., Section 4.0 of Appendix C-1) that draw conclusions about the absence of a potential threat to groundwater for any site. In this work plan, DOI accepts the use of the tiered screening model approach only as a tool in assessing data gaps to resolve the threat to groundwater decision. It is not appropriate at this stage of the RI to draw conclusions about whether any site has the potential to affect groundwater. All such conclusions must be deferred pending the completion of the RI. Please remove all such statements from the work plan and all appendices		
DOI #37	Section 5.2 Waste Characterization	The TCRA was implemented to remove all debris and powder. Please explain if any debris and white powder remain.		

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	Parameters first paragraph third sentence Page C10-14			
DOI #38	Section 8.0 Data Gaps Evaluation Summary Decision 2 Page 8-1	Although the data gap analysis did not identify specific additional sampling needs for this purpose, new data collected to address data gaps for nature and extent may need to be incorporated in the calculation of EPCs.		
DOI #39	Section 8.0 Data Gaps Evaluation Summary Decision 3 Page 8-1	A sentence similar to this one may be appropriate for Decision 2.		
DOI #40	Section 8.0, Table 8-1 AOC 4 Page 8-2	The crosswalk table specifies 18 LOCATIONS to be sampled. The total number of samples is much greater.		
DOI #41	Section 8.0 Table 8-1 AOC 10 Page 8-2	The table revised by DOI/DTSC specifies 14 locations plus debris areas for AOC 10.		
DOI #42	Section 8.0 Table 8-1 AOC 14 Page 8-2	The MW-24 Bench is an area containing observed burn-like material exposed by erosion, surface debris, and identified and potentially unidentified buried debris of unknown origin and content. Given the presence of hazardous constituents in burn material and debris identified elsewhere at the TCS site (e.g., AOC 4), comprehensive assessment of this area is appropriate. DOI concurs with the recommended sampling and analysis of the exposed burn-like material, and requires analysis for the full suite of potential site-related contaminants, including dioxins-furans. Further assessment of the nature and extent of this material would be warranted if hazardous constituents are identified in the samples. DOI also concurs with the recommendation to perform XRF screening of the ground surface to assess whether surface contamination is present that would warrant further characterization through sampling and analysis.		

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		<p>With respect to buried debris, DOI concurs with the proposal to conduct surface geophysical surveying across the AOC to identify potential buried debris locations. However, DOI does not believe borehole sampling is an effective method for characterizing the nature of buried debris and conclusively determining whether or not hazardous substances are present at levels of concern. Visual inspection of the debris through potholing or excavation provides the most direct and reliable method for characterizing the nature of the buried debris and selecting samples for the assessment of the presence of hazardous constituents. DOI is also aware of the proximity of this area to important cultural resources. DOI requests further discussion of this topic with PG&amp;E, DTSC and stakeholders at the August TWG meeting.</p>		
DOI #43	Attachment 1, DOI Direction Letter. Topock Soil Investigation Part A Phase 1 Data Gap Evaluation - Proposed Sample Locations and Individual SWMU/AOC Specifications.	<p>There are deviations between the sample Description/Rationale, Analytes, and Rationale/Comments called out in the February 25, 2011 Directive (Attachment A in Appendix A) and the analogous information found in the individual AOC/SWMU Tables. Some of the deviations are significant. In cases where the analytical suites in the AOC/SWMU Proposed Sample Location Tables deviate from the February 25, 2011 Directive, the conflicting specifications are carried over to Appendix F (Summary of Proposed Sampling Program)</p>		
DOI #44	Table 3-1	<p>Comments related to Table 3-1</p> <p><b>a)</b> Table 3-1 and the document, in general, sites Chromium VI soil screening values that are not current with EPA's toxicity model. The current RSL residential (RRSL) for Chromium VI is 0.29 mg/kg (vs. 230 mg/kg used in Table 3-1 [i.e., the former RRSL] and the CHHSL [17 mg/kg]). According to the various tables throughout, the background value (BGV) [0.83 mg/kg] was usually used in the screening rationale and the lower RRSL should not affect the human health risk screening results. Nonetheless the RRSL's (Residential and Commercial) cited the in various</p>		



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		<p>tables are incorrect and should be corrected.</p> <p>Please respond by acknowledging this change in the Cr VI toxicity constant and make the appropriate changes in the tables in affected appendices. As tables are corrected throughout the document, please verify that use of the correct RRSLs for Chromium VI does not affect any of the screening results.</p> <p>This change in the Cr VI toxicity could have significant effects on future risk assessments. Please consider and discuss, if appropriate, how this change could affect human health soil risk assessment.</p> <p><b>b)</b> The Mercury Residential RSL 23 mg/kg is for Mercuric Chloride (and other Mercury salts). EPA lists an RSL of Residential RSL of 5.6 mg/kg for mercury (elemental). Unless PG&amp;E has information supporting the Mercuric Chloride RSL, the elemental mercury RSL (5.6 mg/kg) should be used.</p> <p>Please make the change and determine whether it impacts any of the analysis.</p> <p><b>c)</b> A thallium Residential RSL of 5.1 mg/kg is listed. The November 2010 version of EPA's RSL's does not list a value for thallium. Please clarify.</p>		
	<b>Appendix A C-2</b>			
DOI #45	Appendix C, Section C.2.5	Please retain pesticides in locations where the Agencies have requested their inclusion (e.g., AOC 14).		
DOI #46	Appendix C2, AOC1 Data Gaps Evaluation Results	The analytes planned for the samples in the tamarisk area (mouth of Bat Cave Wash) include hexavalent chromium, Title 22 metals, and PCBs. DOI requests that you also analyze all samples for dioxins/furans and pesticides. Since we are uncertain how deposition of sediments has occurred in this area over time, the TAL/TCL analyses of 10% of the samples in this area will not be sufficient to detect dioxins/furans and pesticides.		

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	<b>Appendix A C-5</b>			
DOI #47	Appendix C5 Figure C5-11 and Table C5-19	Please add discussion of the basis for the locations of AOC 11-8 and AOC 11-9 and provide a discussion of the rationale that will trigger their collection.		
	<b>Appendix A C-7</b>			
DOI #48	Appendix 7 Figure C7-7 and Table 7-15	Please add discussion of and rationale how the x-ray fluorescence and geophysical investigation will trigger their collection of the contingent sample.		
DOI #49	Section 7.0 MW-24 Bench Evaluation	The text notes that geophysical surveying across the bench area will be utilized to further characterize buried waste. A survey grid for the site should be proposed in the work plan based on the overall objectives of locating geophysical anomalies. Additionally, geophysical methods should be proposed for evaluating anomalies.		
DOI #50	Section 7.0 MW-24 Bench Evaluation Last Sentence	The list of analytes for the MW-24 Bench should also include dioxins and furans for a comprehensive investigation.		
	<b>Appendix A C-10</b>			
DOI #51	Appendix C 10 General 1	It is evident that areas within the AOC 4 removal action boundaries exceed screening levels. In evaluating the adequacy of the sampling proposed in this section, it would be useful to have a map of the current conditions showing bedrock exposures, native material and remaining fill.		
DOI #52	Appendix C 10 General 2	This section does not provide an adequate rationale for the Phase 2 samples proposed to fill data gaps. Inspection of Figures in Section C-10 indicates likely clustering of constituents in the northeast portion of AOC 4 just below and near the road in the general vicinity of samples C01S, C02, C03, D01, D01S, C02. The clustering includes constituents common to AOC 4 (e.g., Cr VI, B(a)P <sub>EQ</sub> , Aroclor 1254, and Dioxin/Furan <sub>EQ</sub> ; as well as some constituents not always associated with AOC 4 (e.g., cobalt, copper). There is another apparent clustering of Chromium <sub>total</sub> and Dioxin/Furan <sub>EQ</sub> concentrations exceeding background and/or ECVs further northwest in the general vicinity of samples M01, L01, L02, L04, J03, O02, P03, P04, Q04. Clustering is		

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Comment Number	Location	Comment	Comment Response	Accept
		suggestive of residual contamination associated with waste activity and there is potential for these areas to act as sources of continued release and/or local areas of exposure (e.g., Hot Spots). In light of this apparent clustering, please explain the rationale behind selection of the proposed soil sample locations (AOC 4 21 - 28). Please justify: how the proposed locations will bound the nature and extent of contamination (Data Gap 1) without sampling in the road or going inside the fence; the basis for confidence that a single step step-out approach will address Data Gap 1; and how the arrangement, as proposed, will address Data Gap 2 (exposure point concentration estimation [in light of hot spots]).		
DOI #53	Appendix C10, Section 1.1, 1 <sup>st</sup> paragraph.	The text discounts the reality that more than “trash” was burned in AOC 4. It is apparent that laboratory/industrial waste was also burned in the area, resulting in the presence of dioxin.		
DOI #54	Appendix C10, Section 1.1, 3 <sup>rd</sup> paragraph.	It should be recognized that the TCRA was meant to “address the <u>substantial</u> threat of a release of hazardous substances to the HNWR” and that additional action may be necessary under CERCLA as well. Evaluation of the available data and additional data from the ongoing investigation will determine if the threat of release has effectively been mitigated.		
DOI #55	Appendix C10, Section 1.1, 5 <sup>th</sup> paragraph.	The statement is incorrect. The “ <u>substantial</u> threat of release of hazardous substances” has been mitigated.		
DOI #56	Appendix C10, Section 1.1, 7 <sup>th</sup> paragraph.	It should be noted that soil removed from behind the gabion will be characterized for proper disposal.		
DOI #57	Appendix C10, Section 1.2, 2 <sup>nd</sup> paragraph.	The site conceptual model should be updated to address current conditions at AOC 4. This paragraph leads the reader to believe that debris and significant buried material remain at the site. The 3 <sup>rd</sup> and 4 <sup>th</sup> sentences do not acknowledge that contaminants on surface soil may have also leached into the shallow and subsurface soil. Although this is addressed later in the paragraph, it is misleading.		
DOI #58	Section 1.3	Revise “Solid Waste Management Unit 1” to say AOC 4.		

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Comment Number	Location	Comment	Comment Response	Accept
	AOC 4 Data third paragraph last sentence Page C10-3			
DOI #59	Appendix C10, Section 2.1.6.	It is noted that “two samples (AOC4-J06_J07 and AOC4-M10) in the bottom of the ravine are bounded by topography”. It is unclear if the associated contamination is bounded by topography or if the sample location makes additional sampling impractical. Please clarify.		
DOI #60	Section 2.0 Decision 1 – Nature and Extent first paragraph last sentence Page C10-4	This appears to be a relic from the SWMU 1 write up.		
DOI #61	Section 2.1.4 Cadmium first paragraph second sentence Page C10-5	Revise “barium” to “cadmium”		
DOI #62	Appendix C10 Section 2.2 and 2.3	A review of the sampling results for the various constituents indicates that the lateral extent remains undefined not only at the south-southeast end of the AOC 4 but at the north and northeastern end of the site as well. Lateral extent in this area is not bounded for total chromium (samples 2x background), copper, nickel, PCBs to a lesser extent, and dioxins/furans. DOI requests an opportunity to ground-truth sample locations and is interested in samples at the northern and northeastern boundaries of the site. (Note: These areas are not currently addressed in the perimeter sampling.)		
DOI #63	Section 3.0 Decision 2 – Data Sufficient to Estimate Representative Exposure Point Concentrations last paragraph Page C10-12	It appears that the vast majority of samples are surface samples. Please add a statement on how the existing data are adequate to address the vertical exposure intervals defined in the risk assessment work plan.		

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Comment Number	Location	Comment	Comment Response	Accept
DOI #64	Section 4.0 Decision 3 – Potential Threat to Groundwater from Residual Soil Concentrations second paragraph third sentence Page C10-13	Justify the depth to groundwater suggested at AOC 4. If this is projected from the alluvial aquifer data, then it may not be accurate.		
DOI #65	Section 4.0 Decision 3 – Potential Threat to Groundwater from Residual Soil Concentrations second paragraph last sentence Page C10-13	This does not appear to have been the case at AOC 10. Please remove this statement.		
DOI #66	Appendix C-10 Page C10-13 Decision 3 Potential Threats to Groundwater	<p>The assessment is not complete. Samples collected beneath the Gabion have not been evaluated to address potential impacts to groundwater in Bat Cave Wash. Specifically, there are no comparisons to soil screening levels impacting groundwater (SSL<sub>GW</sub>). Comparing data from AOC4 GB samples (GB 10, 11, 12) with Dioxin Equivalent, B(a)P Equivalent, and Total PCB SSL<sub>GW</sub>s from EPA's November 2010 Regional Screening Levels (RSLs) indicates subsurface concentrations of these constituents well in excess of EPA's conservative RSLs.</p> <p>Please discuss how you intend to address subsurface soils potentially impacting groundwater at this location; including possible use of the proposed Bat Cave Wash samples (AOC BCW 1 though 6), other data as appropriate, estimation techniques if appropriate, and adequacy of the analytical program to address SSL<sub>GW</sub> driven detection limits.</p>		
DOI #67	Section 4.1 Vanadium First bullet Page C10-13	Please explain how this is known with no wells in the AOC 4 area.		
DOI #68	Section 4.1	This was not demonstrated at AOC 10 and should not be		

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Comment Number	Location	Comment	Comment Response	Accept
	Vanadium First bullet Page C10-13	presumed for AOC 4.		
DOI #69	Appendix A Table 3-2	Please add a note identifying the basis of the consensus-based concentrations (the MacDonald, et al., 2000 article).		
DOI #70	Appendix A Table 3-2	Why doesn't Table 3-2 include organic constituents (e.g., PAHs and PCBs) from MacDonald (et al., 2000) article?		
DOI #71	Appendix A Tables 3-3 to 3-7	As indicated, EPA Regional SLs were updated in November 2010. Please update these tables and any consequent analysis, as necessary.		
	<b>Appendix B</b>	No Comments		
	<b>Appendix C</b>			
DOI #72	General Comment	The rationale for the perimeter sampling approach is not provided in sufficient detail.		
DOI #73	Section 1.1, Perimeter Area Description and History first paragraph, fourth sentence Page C-1-1	Need to verify that these areas were not deferred to the perimeter sampling plan in the AOC discussions. There has been some cross pointing with these sections in the past.		
DOI #74	Section 1.1, page C-1-1	The 3 <sup>rd</sup> sentence in the 2 <sup>nd</sup> paragraph only notes that, historically, some areas that are currently bermed may have not been bermed in the past. Provide a discussion of the process used to determine past areas of potential run-off (e.g., review of historical photos). The 4 <sup>th</sup> sentence in the 2 <sup>nd</sup> paragraph notes that perimeter samples will “provide information on potential recent discharges”. Depending on the nature of the contaminant, perimeter samples will provide information on historical discharges as well.		
DOI #75	Section 1.3 Perimeter Area Data Proposed Sampling second paragraph Page C-1-2	The DTSC site walk identified sampling locations based on conditions observed at the time. The site walk did not address historic conditions that were not observable at the time of the walk. The current presence of berms and curbs may not reflect past conditions. Also, the nature of the effectiveness of the partially bermed area along the lower yard as a barrier to historic discharge is not clear. In order to		

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		rule out segments of the perimeter based on the presence of berms or curbs, PG&E must be able to demonstrate that the berms and curbs have always been present and effective at preventing discharge.		
DOI #76	Section 1.3 Perimeter Area Data Proposed Sampling third paragraph first sentence Page C-1-2	This rationale regarding sampling being limited to “only hand sampling” warrants further discussion.		
DOI #77	Section 2.2, page C-2-1	For the Federal agencies, the function of the perimeter sampling is to delineate potential sources of contamination from the compressor station and assess their potential for migration and impact to land under Federal jurisdiction. While combining the data from the perimeter investigation with the closest or “appropriate” Part A or Part B AOC/SWMU may generally be appropriate, there may be instances where it is best to assess the location in and of itself or as an indicator of another source. Please discuss the steps for evaluating and combining the information from this investigation with the Part A or Part B sites. For example will the evaluation involve comparing contaminant profiles between associated data (e.g., sources) including a spatial assessment, and will fate and transport considerations, in light of the Conceptual Site Model (CSM), be integrated in making the association. Additionally, at what point will DOI and DTSC be consulted on these occurrences?		
DOI #78	Section 2.2 Evaluation of Perimeter Area Investigation Data Bullet 3 Page C-2-1	AOCs outside the fence line are subject to different risk assessment considerations than AOCs inside the fence line. It may not be appropriate to exclude data from outside the fence line in the evaluation of Part A AOCs.		
DOI #79	Figure C-1	<p>The justification for samples locations PA09 and PA08 is not clear.</p> <p>The previous Part B perimeter sample locations (AOC13-36 through AOC13-50) are referenced in the text but are not</p>		

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Comment Number	Location	Comment	Comment Response	Accept
		shown on the figure. For clarity and to demonstrate assessment coverage, it would be appropriate to show these sample locations.		
	<b>Appendix D</b>			
DOI #80	Section 1.1 Storm Drain Description and History second paragraph last sentence Page D-1-1	The second sentence in this paragraph notes “Thirteen active and inactive storm drain outfalls have been visually identified outside the fence line.” The last sentence notes “15 identified storm drain outfalls”. Please rectify the inconsistency.		
DOI #81	Section 1.3, page D-1-2, first paragraph	<p>The Decision 4 statement is specific to residual contamination in soils potentially being a source of contamination for receptors outside the fence. It is not clear if the implication is that historical storm drains are considered potential sources similar to soil or if storm drain alignments may indicate a potential soil sample location.</p> <p>The last sentence of the first paragraph needs clarification. Storm drains would only be considered a transport pathway if they were operational (i.e., not abandoned) and should be addressed as part of the facility Storm Water Pollution Prevention Plan, particularly to address “spilled liquids” or “discharge of contaminants”.</p>		
DOI #82	Section 1.3, page D-1-2, second paragraph	<p>The Decision 1 statement is specific to characterization of residual contamination in soils. Please clarify how potential discharge of storm drains may influence soil characterization. In the second sentence, both types of information are required to satisfy Part A <u>and</u> B Decision 4 <u>and</u> Decision 5.</p> <p>See comment on first paragraph regarding facility operation and discharge of contaminants into the storm drains.</p> <p>An evaluation of operational storm drains should be done to assess whether outfalls influence migration of current ‘residual soil contamination’.</p>		
DOI #83	Section 1.4.2 Storm Drain Alignment	This has not yet been determined. The statement should say “No intrusive investigation (i.e., uncovering of lines to trace		



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Comment Number	Location	Comment	Comment Response	Accept
	Investigation Process second paragraph Page D-1-3	them) to identify storm drain alignments is planned”		
DOI #84	Section 1.4.2 Storm Drain Alignment Investigation Process third paragraph last sentence Page D-1-3	Please explain this statement. What would preclude locating subsurface storm drain lines outside the compressor station? Couldn't trenching be used to do this if necessary?		
DOI #84\5	Section 1.4.2.2 Visual Field Verification second paragraph second sentence Page D-1-4	How would this be determined if the catch basin had a soil bottom? Please describe the nature of the identified catch basins.		
DOI #86	Section 1.4.2.2 Visual Field Verification second paragraph last two sentences Page D-1-4	At least one catch basin sample should be analyzed for TAL/TCL, and the sample should be selected based on the nature of the containment basins (i.e., from a basin(s) with potential for association with a broader suite of contaminants, if possible).		
DOI #87	Section 1.4.2.3, page D-1-4	See previous comments on Section 2.2.4 (main body of work plan) regarding Geophysical Surveys.		
DOI #88	Section 1.4.2.3 Geophysical Investigation second paragraph Page D-1-4	DOI/DTSC consultation and concurrence with this decision is necessary.		
DOI #89	Section 1.4.3	A significant effort has been made by the agencies to reduce the amount of intrusive activities during the soil investigation. It is suggested that PG&E follow through with this effort by discussing a reduction of the number of storm drain samples through elimination of redundant samples associated with the other portions of the Part A, Part B and Perimeter investigations.		
DOI #90	Section 1.4.2.4, page D-1-5	This section discusses flow testing and sampling of discharge water from these tests. The last paragraph notes that it may be presumed that storm drains are contaminated if sampling		

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		results indicate elevated concentrations of COPCs in the discharge water. PG&E should have a proposed response to address contaminated storm drain lines as this is operational consideration.		
DOI #91	Section 1.4.2.4 Title Flow Testing third paragraph first sentence Page D-1-5	Please clarify if the intent is to capture and analyze all test water discharged from the storm drains.		
DOI #92	Section 1.4.2.4 Title Flow Testing third paragraph third sentence Page D-1-5	Typographical error “will also be analyzed <b>it</b> for...”		
DOI #93	Section 1.4.2.5 Video Camera Tracing first paragraph last sentence Page D-1-5	Typographical error. “extremely slopes”  Also, alternative camera equipment should be considered that can be used in the steeply dipping pipe segments.		
DOI #94	Section 1.4.2.5 Video Camera Tracing third paragraph Page D-1-6	DOI/DTSC consultation and concurrence with this decision is necessary.		
DOI #95	Section 1.4.2.5 Video Camera Tracing “Photographs” Page D-1-6	Is the intent to provide a separate still photograph of these areas?		
DOI #96	Section 1.4.2.5 Video Camera Tracing “DVD Recordings” Page D-1-6	Does this suggest that the DVDs will be edited to show only the problem areas encountered?		
DOI #97	Section 1.4.2.6 Storm Drain Alignment Map first paragraph second to last sentence Page D-1-7	The term “captured” should be “documented”.		

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Comment Number	Location	Comment	Comment Response	Accept
DOI #98	Section 1.4.2.6 Storm Drain Alignment Map first paragraph last sentence Page D-1-7	The text “will be conducted” should say “is not planned”. This has yet to be determined based on the results of the preliminary steps.		
DOI #99	Section 1.4.3 Storm Drain Soil Investigation first paragraph second to last sentence Page D-1-7	This rationale of sampling from the surface to one foot warrants further discussion with DOI/DTSC.		
DOI #100	Section 1.4.3 Storm Drain Soil Investigation second paragraph second to last sentence Page D-1-7	Unless the topography suggests sampling on only one side is appropriate.		
DOI # 101	Section 1.4.3 Storm Drain Soil Investigation third paragraph last sentence Page D-1-7	Should say “is planned”. This has yet to be determined based on the results of the preliminary steps.		
DOI #102	Section 2.1 Samples at Outfalls and Associated Lateral/Downslope Samples first sentence Page D-2-1	This rationale for combining the data from the closest downslope AOC warrants further discussion with DOI/DTSC.		
DOI #103	Sections 2.1 and 2.2	While combining the data from the outfall investigation with the closest or “appropriate” Part A or Part B AOC/SWMU may generally be appropriate, there may be instances where it is best to assess the location in and of itself or as an indicator of another source. Please discuss the steps for evaluating		

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Comment Number	Location	Comment	Comment Response	Accept
		combining the information from this investigation with the Part A or Part B sites. See comment Section 2.2; page C-2-1 from above.		
DOI #104	Section 2.3	See comment on Appendix D, Section 1.3 regarding the operating facility.		
DOI #105	Table D-2 SD-2	Please explain the basis for the location of this sample shown on Figure D-1.		
DOI #106	Table D-2 SD-8	Please explain the basis for this location. No storm drain is shown on Figure D-1 at this location.		
DOI #107	Table D-2 SD-9	Please explain the basis for the location of this sample shown on Figure D-1.		
DOI #108	Table D-2 SD-16	Typographical error "drowslope"		
DOI #109	Table D-2 SD-19	Typographical error "drowslope"		
DOI #110	Figure D-1	<p>It is assumed that the storm drain alignments shown are operational. The figure should also include historical storm drains that have been abandoned as determined through employee interviews and record searches.</p> <p>Samples PA03/SD-14 and PA06/SD-17 appear to be collocated. The rationale for each should be clearly stated otherwise redundant sampling should be minimized.</p>		
	<b>Appendix F</b>			
DOI #111	Appendix F, Summary Proposed Sampling Program	DOI does not agree that PCBs should only be analyzed in the 0 and 2' bgs sampling intervals in the BCW sediment samples (AOC1-BCW8 through BCW30). Please include PCBs in the 5' and 9' bgs intervals as well.		
	<b>Appendix H</b>			
DOI #112	Appendix H, Addendum to the PG&E Program Quality Assurance Project Plan for the RCRA Facility Investigation/ Remedial Investigation for Soil,	The QAPP Addendum for soil should only reference the QAPP Addendum for dioxins and furans. The current text implies that confirmation results are the same for dioxins and furans as for the other constituents. Alternatively, the two addenda could be combined with a specific section addressing dioxins and furans.		

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Comment Number	Location	Comment	Comment Response	Accept
	Section 4.1			
	<b>Sediment Sampling – East Ravine</b>			
DOI #113	Not currently in work plan.	There is currently no sediment or pore water sampling in the area of discharge from East Ravine. DOI believes that characterization of sediment and pore water at the river interface is necessary to confirm that unacceptable risk from Cr (VI) does not occur. DOI requests further discuss with PG&E, the agencies and stakeholders to determine the path forward for inclusion of this sampling effort in the work plan.		

**Table 1  
DOI Working Information Provided to Assist Resolving Discrepancies'  
Not Verified as Comprehensive- Indicative Not definitive**

**Comparison of DOI/DTSC February 25, 2011 Directive Letter with  
RFI/RI WP Appendix A Tables and Appendix F**

**Terms Used:**

- 1) **Feb 25, 2011 Directive** = DOI /DTCS letter to PG&E: Direction - Proposed Sample Locations (Attachment 1 of Appendix A RFI/RI WP)
- 2) **Crosswalk** = PG&E's Amendment to Feb 25, 2011 with Renumbered Location IDs.
- 3) **Table CX-YZ** = Table(s) in Appendix A RFI/RI WP corresponding to the AOC/SWMU specific Proposed Phase 2 Soil Sampling Locations (e.g., Table C3-16 corresponds to Table AOC 9 Proposed Soil Sample Locations.
- 4) **Appendix F** =Planned Sample Table in RFI/RI WP Appendix F

Track: via:

**February 25, 2011 > Crosswalk > Table CX-YZ > Appendix F**

**Tracking Discrepancy's Only**

<u>AOC/SWMU</u>	<u>Crosswalk Reference</u>	<u>Deviation from Attachment 1 (Feb 25, 2011 Directive)</u>	<u>Appendix F Planned Sample Table</u>
<b>SWMU 1 (Table C1-14)</b>	SWMU1-20	Remove PCBs at depth greater than 0 to 2 foot.	
	SWMU1-21	Remove PCBs at depth greater than 0 to 2 foot.	
	SWMU1-22		SPLP is listed for this location in the cross walk table, but

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			Appendix F does not identify SPLP as an analysis
	SWMU1-23		SPLP is listed for this location in the cross walk table, but Appendix F does not identify SPLP as an analysis
	SWMU1-24		SPLP is listed for this location in the cross walk table, but Appendix F does not identify SPLP as an analysis
<b>AOC 1 (Table C2-19)</b>	AOC1-4 (Former AOC 1-14 contingent)	This location has been moved about 25 feet north from its location on the original map.	
	AOC1-T5d	-	Missing soil physical parameters
	AOC1-T6d (new point)	-	Missing soil physical parameters
	AOC1-BCW7 through AOC1 BCW 30 (All Tamarisk Area Samples) (new point)	For all Tamarisk area sampling points, FMIT had asked that pathway be staggered to prevent a straight line of flood flow.  The assumption used elsewhere that PCBs deposited on surface would not migrate downward more than 2 feet does not hold for Tamarisk area where successive layers of contaminated surface deposition may be buried by later deposits.  PCBs must be sampled for all depths in Tamarisk area. Remove note <sup>a</sup>	Missing metals and PAHs, also missing soil physical parameters.
<b>AOC 9</b>	AOC 10a-2	Pesticides & PCB missing	Pesticides & PCBs missing

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<b>(Table C3-16)</b>			
	AOC 10a-3	Pesticides & PCBs missing	Pesticides & PCBs missing
	AOC 9-16	-	Soil Physical Parameters Missing
	AOC 9-19 (Former 9-21)	-	Soil Physical Parameters Missing
	AOC 9-20 (Former 9-22)	-	Soil Physical Parameters Missing
<b><u>AOC/SWMU</u></b>	<b><u>Crosswalk ID</u></b>	<b><u>Deviation from Attachment 1 (Feb 25, 2011 Directive)</u></b>	<b><u>Appendix F Planned Sample Table</u></b>
<b>AOC 10 (Table C4-18)</b>	AOC 10-11 (Former AOC 10-13)	-	Soil Physical Parameters Missing
	AOC 10-15 (Former AOC10-17 )	PAHs, TPH, SVOC, Dioxin/Furan PCBs added	PAHs, TPH, SVOC, Dioxin/Furan PCBs added
	AOC 10-16 (Former AOC 10-19)	PAHs, TPH, SVOC, Dioxin/Furan PCBs added	PAHs, TPH, SVOC, Dioxin/Furan PCBs added
	AOC 10-18 0 and 2 <sup>a</sup>  Sample mistakenly deleted. Note AOC 10- 18 was original Feb 25, 2011 Directive sample number.	Hexavalent chromium, Title 22 metals, PAHs	Add Hexavalent chromium, Title 22 metals, PAHs to Table
	AOC10c-6 14 To Groundwater  Sample mistakenly deleted  The DOI/DTSC revision table original (Feb 25, 2011 Directive) only changed the depth to specify that it extend to groundwater. (AOC 10c -6 was the original	Hexavalent chromium, total chromium	Add Hexavalent chromium, total chromium

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	sample number)		
	Assorted debris locations	ACM, XRF screen	Appendix F does not include this debris sampling
<b><u>AOC/SWMU</u></b>	<b><u>Crosswalk ID</u></b>	<b><u>Deviation from Attachment 1 (Feb 25, 2011 Directive)</u></b>	<b><u>Appendix F Planned Sample Table</u></b>
<b>AOC 11 (Table C5-19)</b>			Appendix F has several out-of-order entries that make it appear as if there are more samples than are really planned (e.g., 11c-3 and 11e-5).
	AOC 11c-3	PAH's missing	PAH's missing
	AOC 11-2 (Former AOC 11-3)	PCBs missing	PCBs missing
	AOC 11-3 (Former AOC 11-4)	PCBs missing	PCBs missing
<b><u>AOC/SWMU</u></b>	<b><u>Crosswalk ID</u></b>	<b><u>Deviation from Attachment 1 (Feb 25, 2011 Directive)</u></b>	<b><u>Appendix F Planned Sample Table</u></b>
<b>AOC 14 C7-15</b>	AOC 14-15 (former AOC 14-21)	-	Soil Physical Parameters Missing
	AOC 14-21	Dioxins Furans	Dioxins Furans Soil Physical Parameters missing
	AOC 14-18 to 43	Samples 18 through 43 were not specified in the DOI/DTSC table.  Please explain their origin.	
<b><u>AOC/SWMU</u></b>	<b><u>Crosswalk ID</u></b>	<b><u>Deviation from Attachment 1 (Feb 25, 2011 Directive)</u></b>	<b><u>Appendix F Planned Sample Table</u></b>
<b>AOC 4 Table C10-15</b>	AOC4 BCW1	Cr VI missing PAHs missing Please add PAH's	Cr VI missing PAHs missing Please add PAH's
	AOC4 BCW2 (Former BCW 3)	Cr VI missing PAHs missing Please add PAH's	Cr VI missing PAHs missing Please add PAH's
	AOC4 BCW3	Cr VI missing	Cr VI missing



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	(Former BCW 4)	PAHs missing Please add PAH's	PAHs missing Please add PAH's
	AOC4 BCW 4 (Former BCW 5)	Cr VI missing PAHs missing Please add PAH's	Cr VI missing PAHs missing Please add PAH's
	AOC4 BCW 5 (Former BCW 6)	Cr VI missing PAHs missing Please add PAH's	Cr VI missing PAHs missing Please add PAH's
	AOC4 BCW 6 (Former BCW 7)	Cr VI missing PAHs missing Please add PAH's	Cr VI missing PAHs missing Please add PAH's
	AOC 4-17 through 28	Locations NOT ON Feb 25, 2011 memo. Rationales vary as do analytes specifications.	