

Topock Soil RFI/RI – Plan to Address Data Gaps Identified During Work Plan Implementation (DG-WP-01)

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PG&E is implementing the *Soil Resources Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Work Plan* (January 2013) associated with the Topock Compressor Station (TCS) in Needles, California (Work Plan). Field data are collected to resolve the project Data Quality Objectives (DQOs), in support of future decisions about cleanup of contaminated soil, if needed. As defined in the Work Plan, PG&E is coordinating with DTSC and DOI (agencies) to review data collected during the field implementation of the Work Plan to assess potential data gaps. As data gap(s) are identified, the agencies will direct PG&E to conduct additional tasks in the field to satisfy the data gaps.

Based on evaluation of data collected to date, the agencies directed PG&E to prepare a plan to describe additional soil sampling activities to fill identified data gaps. In accordance with the *PG&E Topock Compressor Station Soil Investigation Project Final Environmental Impact Report* (Soil Investigation EIR) (August 2015), this plan is being provided to Tribes and stakeholders for review and comment.

Overview

This plan provides information for an additional 22 soil sampling locations and activities that will be conducted at the following five investigation areas to address data gaps identified to date:

- AOC 10 – East Ravine (5 additional locations)
- AOC 14 – Railroad Debris Site (2 additional locations)
- AOC 19 – Former Cooling Liquid Mixing Area and Former Hotwell (1 additional location)
- AOC 27 – MW-24 Bench (7 additional locations)
- Storm Drain Assessment (7 additional locations)

The data gaps addressed in this plan are based on review of data collected during initial field surveys including x-ray fluorescence (XRF) analysis of surface soil samples, geophysical/underground utility surveys, and recent field observations. The attached tables list the additional soil sampling locations and rationale for each additional location. These additional locations are in known investigation areas. It is anticipated that as additional data is available from both the originally planned sampling locations and the additional locations included in this plan, specifically as the results of laboratory analysis of soil samples are obtained, additional data gaps might be identified and require additional field work. As a result, additional plans to address data gaps are anticipated in the coming months.

In addition to activities required to address the data gaps, this plan also presents clarification on the approach to field work at originally planned sample locations at AOC 14, AOC 27, and as part of the

storm drain assessment. While the revised approach at each area is consistent with the activities included in the Work Plan, it is different than what has been discussed with the Tribes to date and is provided for project understanding.

The general methods and procedures that are included in the Work Plan will continue to apply to these additional activities. Work Plan figures have been annotated and attached to this plan to show the location of the additional activities. Anticipated collection methods listed on these tables are estimated based on experience and knowledge at the site; actual collection method will be chosen in the field based on field conditions and site access restrictions at the time of work. Additional activities identified in this plan will be implemented following agency approval, as part of the current field work effort.

AOC 10 – East Ravine

Data that has been collected and reviewed to date at AOC 10 include:

- Results of x-ray fluorescence (XRF) analysis of surface soil samples collected at 12 locations (AOC10-XRF-01 through AOC10-XRF-12)
- Recent field observation of an additional area of debris that was not identified in the Work Plan

Five additional sample locations are included in this plan to address data gaps (annotated Work Plan Figure C4-11).

AOC 10 – List of Additional Soil Sampling Locations

Additional Location ID	Depths (ft bgs)	Description/Rationale	Analytes	Anticipated Collection Method
AOC10-19	0, 2, 5 and 9 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location XRF-04 (elevated concentration of nickel). Data collected at this location will be used to resolve Data Gap #4 – Assess potential impacts from debris on south slope.	Hexavalent chromium Title 22 metals PAHs	Hand tools
AOC10-20	0, 2, 5 and 9 (as feasible)	Added based on field observation of debris and discolored soils on the western slope of AOC 10 (adjacent to visitor parking area). Data collected at this location will be used to resolve Data Gap #4 – Assess potential impacts from debris in the area east of the AOC.	Hexavalent chromium, Title 22 metals, PAHs, TPH, VOCs (excluding surface sample), SVOCs, PCBs, Pesticides, pH, Dioxins and furans (two locations where debris is dark in appearance only)	Hand tools
AOC10-21	Same as AOC10-20	Same as AOC10-20	Same as AOC10-20	Hand tools
AOC10-22	Same as AOC10-20	Same as AOC10-20	Same as AOC10-20	Hand tools
AOC10-23	Same as AOC10-20	Same as AOC10-20	Same as AOC10-20	Hand tools

AOC 14 – Railroad Debris Site

Data that has been collected and reviewed to date at AOC 14 include:

- Results of XRF analysis of surface soil samples collected at 10 locations (AOC14-XRF-01 through – AOC14-XRF-10)

- Recent field observation of a debris area that was not specifically addressed in the Work Plan.

Two additional sample locations are included in this plan to address data gaps (annotated Work Plan Figure C7-7.)

AOC 14 – List of Additional Soil Sampling Locations

Additional Location ID	Depths (ft bgs)	Description/Rationale	Analytes	Anticipated Collection Method
AOC14-18	0, 2, 5 and 9 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location XRF-07 (elevated concentrations of nickel and copper). Data collected at this location will be used to resolve Data Gap #2, - assess lateral and vertical extent of contamination due to debris east of AOC 14.	Hexavalent chromium Title 22 metals	Hand tools
AOC14-19	Debris and directly beneath.	Added based on the observation of debris in the road cut. The observed debris and soil directly beneath the debris will be sampled from the road cut side wall at this location. Data collected at this location will be used to resolve Data Gap #2 – assess the additionally identified potential burn area west of AOC 14.	Hexavalent chromium, Title 22 metals, PAHs, TPH, SVOCs, PCBs, Pesticides, pH, Dioxins and furans	Hand Tools

The objective of data collection for locations AOC14-14 through AOC14-17 has been reviewed with the agencies, and as a result, the approach to sample collection at these locations has been modified from roto sonic to backhoe. While this approach to sample collection is consistent with the potential methods identified in the Work Plan, it is different than what has been discussed with the Tribes in the field to date. As initially planned these locations would be sampled using a roto sonic drill rig that would access the work area from the Interstate 40 freeway using a crane; however, after further discussion with the agencies, it was determined that the use of a backhoe to collect these samples would yield better data than core from a drilled boring and help minimize the potential for data gaps. This approach will also provide a safer work environment for the field crew since the freeway will not need to be controlled for equipment access (the backhoe will access the site from the north, across the railroad tracks). The Work Plan specifies that samples should be collected at each of these locations to a depth of 14 feet. It is acknowledged that a backhoe may not be able to achieve this depth, but that it is appropriate to sacrifice the depth of sample collection for the ability to see trench sections and assess the extent of potentially buried debris. This work will be conducted from south to north and the extent of buried debris visible in the side wall (due south of AOC14-14 at additional location AOC14-19) will be used to guide the eastern extent of the trenches if no buried debris are observed. As debris is encountered in the trenches, samples of the debris (i.e. unconsolidated, visually impacted material) and immediately below the debris will be collected in addition to the sample depths included in the work plan. The trenches will be installed to the depth feasible using a backhoe. Material that is removed from the trenches will be replaced into the trench from which it was removed; however, to the extent practicable, debris or visually impacted material that is removed from the trenches will be contained and characterized for disposal in accordance with the Work Plan.

AOC 19 – Former Cooling Liquid Mixing Area and Former Hotwell

Data that has been collected and reviewed to date at AOC 19 include the results of XRF analysis of surface soil samples collected at 21 locations (multiple locations associated with AOC19-6 through -8, AOC19-10, and XRF-34). Per the Work Plan, XRF results have been used to optimize the precise location of soil sample collection at each of the proposed AOC 19 locations. Based on XRF results, soil samples will be collected at location XRF-34. The location where data was collected and where the additional work is being proposed is shown on annotated Work Plan Figure B16-4.

AOC 19 –Additional Soil Sampling Location

Additional Location ID	Depths (ft bgs)	Description/Rationale	Analytes	Anticipated Collection Method
AOC19-11	0-0.5 and 3 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location XRF-34 (elevated concentration of molybdenum). Data collected at this location will be used to resolve Data Gap #1, lateral and vertical extent of contamination at AOC 19.	Hexavalent chromium Title 22 metals pH	Hand tools

AOC 27 – MW-24 Bench

Data that has been collected and reviewed to date at AOC 27 include:

- Results of XRF analysis of surface soil samples collected at 41 locations (AOC27-9 through -49)
- Results of surface geophysical surveys conducted across the investigation area
- Recent field observation of a debris area that was not specifically addressed in the Work Plan

Three additional sample collection locations are included in this plan to address data gaps (annotated Work Plan Figure C11-2). In addition, a new area of debris that was observed during work plan implementation will be investigated by trenching/potholing. Three geophysical anomalies were identified during the geophysical survey and will also be investigated by trenching/potholing. Samples within the trenches/potholes will be collected from debris that is encountered (i.e. unconsolidated, visually impacted material) and immediately below the debris at three locations (one location at each end, and one in the middle).

AOC 27 – List of Additional Soil Sampling Locations

Additional Location ID	Depths (ft bgs)	Description/Rationale	Analytes	Anticipated Collection Method
AOC27-9	0, 2, 5 and 9 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location AOC27-9. Data collected at this location will be used to resolve Data Gap #1 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area.	Hexavalent chromium, Title 22 metals, PAHs, TPH, VOCs (excluding surface sample), SVOCs, PCBs, Pesticides, pH, Dioxins and furans (where debris/soil is dark in appearance or appears burned only)	Rotosonic
AOC27-20	0, 2, 5 and 9 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location AOC27-20. Data collected at this location will be used to resolve Data Gap #1 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area.	Same as AOC27-9	Backhoe
AOC27-27	0, 2, 5 and 9 (as feasible)	Added based on the results of XRF analysis of a surface soil sample collected at location AOC27-27. Data collected at this location will be used to resolve Data Gap #1 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area.	Same as AOC27-9	Rotosonic
Field Observation 1	Bottom of trench, and if debris is encountered, within and beneath the debris	Added based on field observation of an area of potentially burned debris contained in a soil pile. Data collected at this location will be used to resolve Data Gaps #1 and #2 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area and nature and extent of debris.	Same as AOC27-9	Backhoe
Geophysical Anomaly 1	Bottom of trench, and if debris is encountered, within and beneath the debris	Added based on subsurface geophysical anomaly. Data collected at this location will be used to resolve Data Gaps #1 and #2 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area and nature and extent of debris.	Same as AOC27-9	Backhoe
Geophysical Anomaly 2	Bottom of trench, and if debris is encountered, within and beneath the debris	Added based on subsurface geophysical anomaly. The area of this anomaly is interrupted by a subsurface utility; therefore, a trench on either side of the utility is required. Data collected at this location will be used to resolve Data Gaps #1 and #2 – Nature and extent of contamination in the additionally identified debris area in	Same as AOC27-9	Backhoe

		the MW-24 bench area and nature and extent of debris.		
Geophysical Anomaly 3	Bottom of trench, and if debris is encountered, within and beneath the debris	Added based on subsurface geophysical anomaly. Data collected at this location will be used to resolve Data Gaps #1 and #2 – Nature and extent of contamination in the additionally identified debris area in the MW-24 bench area and nature and extent of debris.	Same as AOC27-9	Backhoe

A change in AOC 27 site conditions since the Work Plan was finalized has been reviewed with the agencies, and as a result, the approach to sample collection for locations AOC27-6 through AOC27-8 has been modified from hand tools to a trench using a backhoe. While this approach to sample collection is consistent with the potential methods identified in the Work Plan, it is different than what has been discussed with the Tribes in the field to date. At the time of work plan development, the locations were previously located in an eroded drainage channel on the east side of the access road, but that channel is now filled due to road maintenance conducted after the Work Plan was finalized. Based on site observation and review of a photograph previously taken by DTSC, the general area was confirmed and it was determined that instead of collecting three discrete surface samples, PG&E should install a shallow trench (3 feet deep, or less) to expose the debris that had been recently covered by road maintenance. Samples will be collected from the debris (i.e. unconsolidated, visually impacted material) and immediately below the debris at three locations within the trench (one location at each end, and one in the middle). Material that is removed from the trenches will be replaced into the trench from which it was removed; however, to the extent practicable, debris or visually impacted material that is removed from the trenches will be contained and characterized for disposal in accordance with the Work Plan.

Storm Drain Assessment

Data that has been collected and reviewed to date associated with the assessment of the TCS storm drain system include:

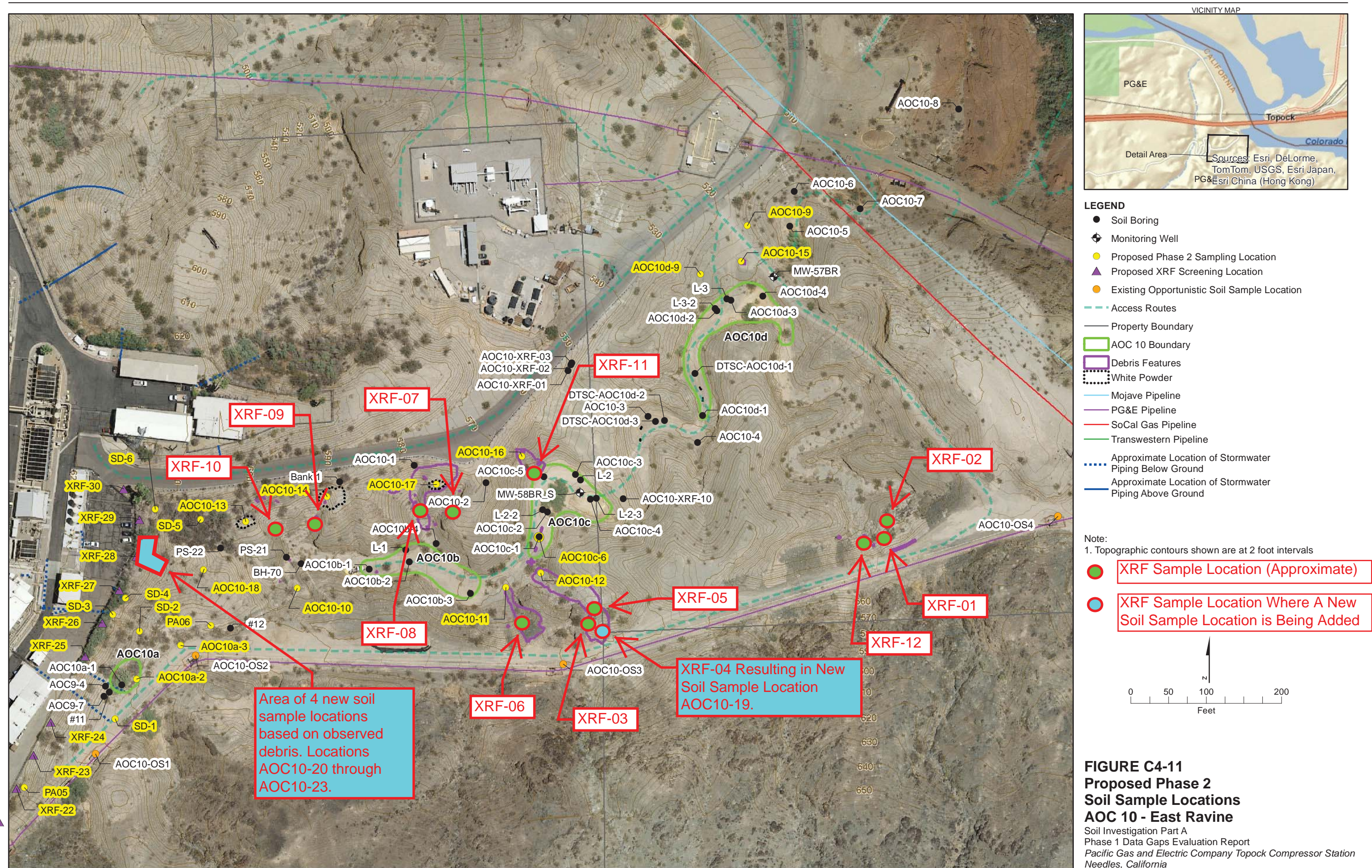
- Initial results of geophysical/utility location surveys and flow tests conducted to confirm storm drain alignment
- Field observation of the condition of above-ground storm drain piping

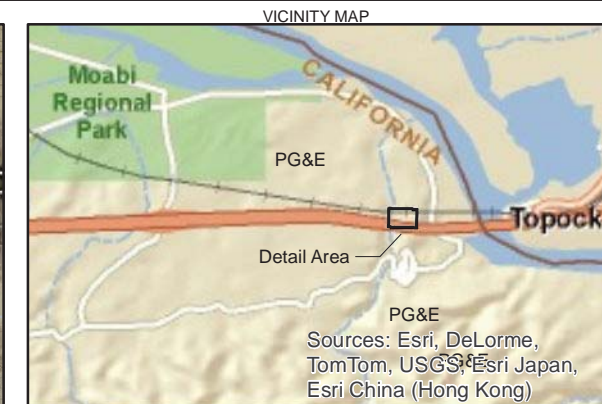
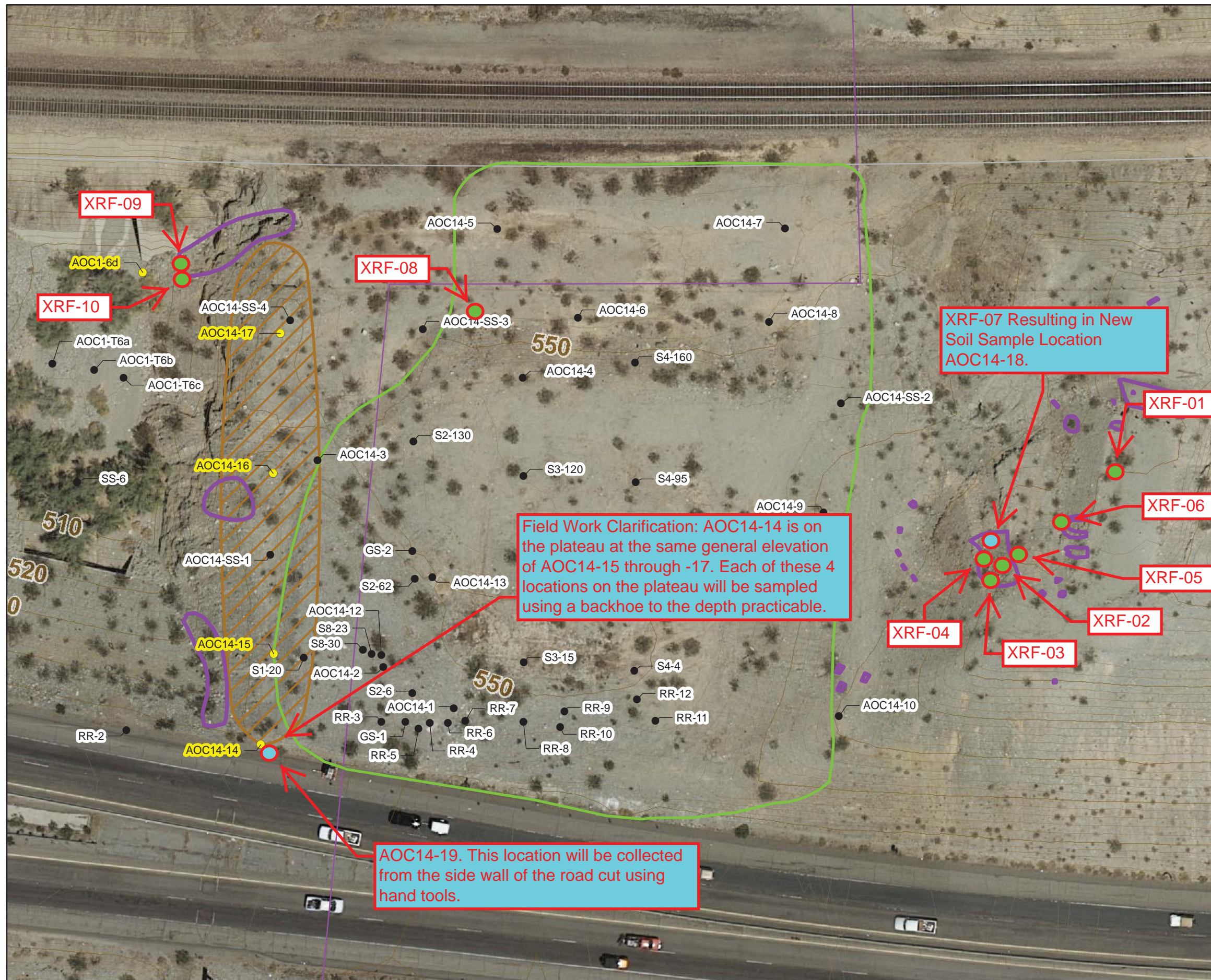
Seven additional sample locations are included in this plan to address data gaps (annotated Work Plan Figure D-2).

Storm Drains – List of Additional Soil Sampling Locations

Additional Location ID	Depths (ft bgs)	Description/Rationale	Analytes	Anticipated Collection Method
SD-20	0-0.5 and 3	Added to assess soil at a break in Storm Drain Line 9 that was identified during work plan implementation. These samples have already been collected.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-21	0-0.5, 3, 5 and 10 (as feasible)	Added to assess a storm drain outfall that was discovered during work plan implementation and not included in the original work plan.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-22	0-0.5, 3, 5 and 10 (as feasible)	Added to assess a drainage channel where runoff exits the TCS access road and potentially where runoff exited a former storm water trench drain.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-23	0-0.5, 3, 5 and 10 (as feasible)	Added to assess soil directly beneath the outfall of Storm Drain Line 8 (closer to the outfall than where samples for location SD-12 were collected).	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-24	0-0.5, 3, 5 and 10 (as feasible)	Added to assess soil at a break in Storm Drain Line 6 that was identified during work plan implementation. This location is inside the TCS fence line.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-25	0-0.5, 3, 5 and 10 (as feasible)	Added to assess a storm drain outfall that was confirmed during work plan implementation and not included in the original work plan.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools
SD-26	0-0.5, 3, 5 and 10 (as feasible)	Added to assess a storm drain outfall that was confirmed during work plan implementation and not included in the original work plan.	Hexavalent chromium, Title 22 metals, PAHs, TPH, PCBs	Hand tools

Information collected during the storm drain assessment to date has also been used to refine the original scope of work, and two original sample locations will be moved (SD-1 and SD-11). The flow testing and geophysical/utility location survey data collected to date indicates Storm Drain Lines 1 and 2 do not exist as shown in the Work Plan, but there is a previously unidentified storm drain line that flows and outfalls near the Storm Drain Line 2 outfall as shown in the Work Plan. As a result the SD-1 location has been moved to the location of this outfall, which is in the vicinity of former sampling location AOC10a-1 (only a surface sample was collected at this location). SD-1 will be sampled at 0-0.5, 3, 5 and 10, as feasible, and might require some trimming or removal of tamarisk. Location SD-11 is located along, or near, Storm Drain Line 8. DTSC has indicated that this sample location, which is included in the Work Plan, is associated with their interpretation of an old abandoned storm drain line based on observation of wooden footings and an old detached corrugated metal storm drain segment. After reviewing the location in the field it was determined that moving SD-11 from the location in the Work Plan (upslope, along Storm Drain Line 8) to the current outfall of the old corrugated metal storm segment, would yield more representative data than collecting the samples on the slope. Per the Work Plan, SD-11 will be sampled using hand tools to 10 feet, as feasible.





- LEGEND**
- Soil Boring
 - Proposed Phase 2 Sample Locations
 - Property Boundary
 - PG&E Pipeline
 - AOC 14 Boundary
 - Debris Features
 - Potential Burning Related Location
- XRF Sample Location (Approximate)
- XRF Sample Location Where A New Soil Sample Location is Being Added

Note:
1. Topographic contours are shown at 2 foot intervals.

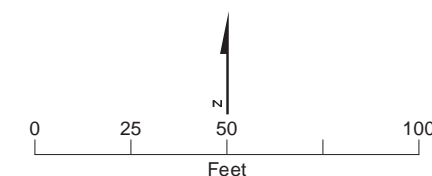
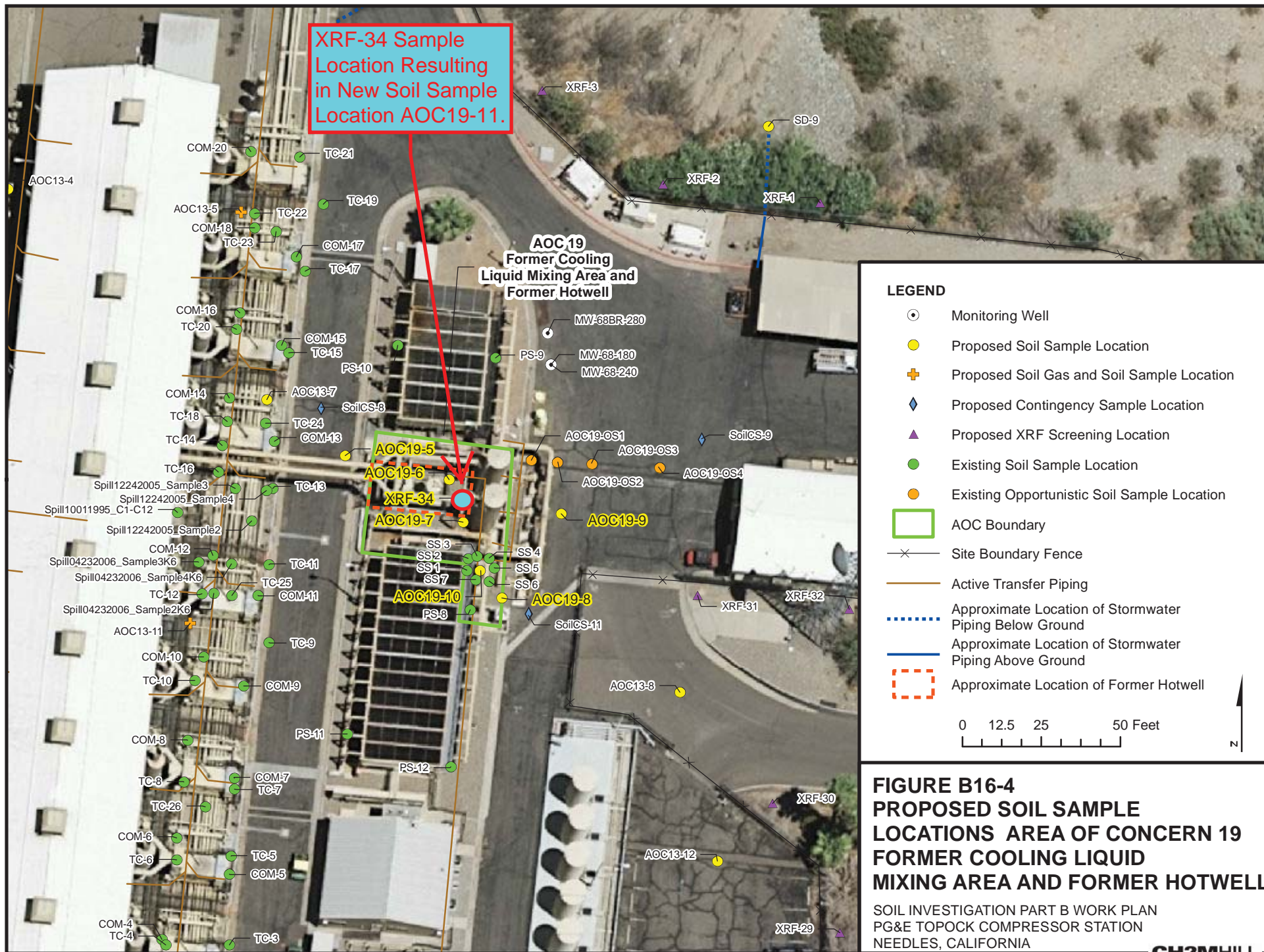
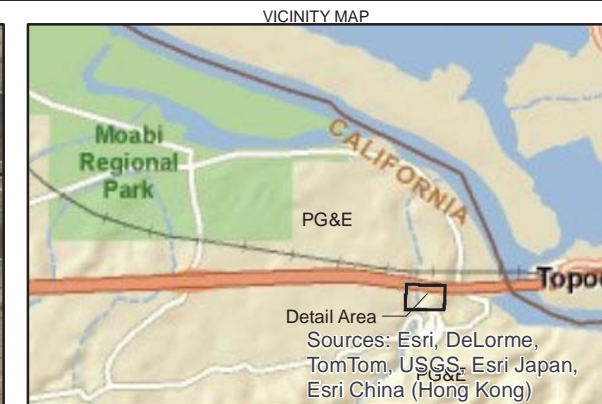
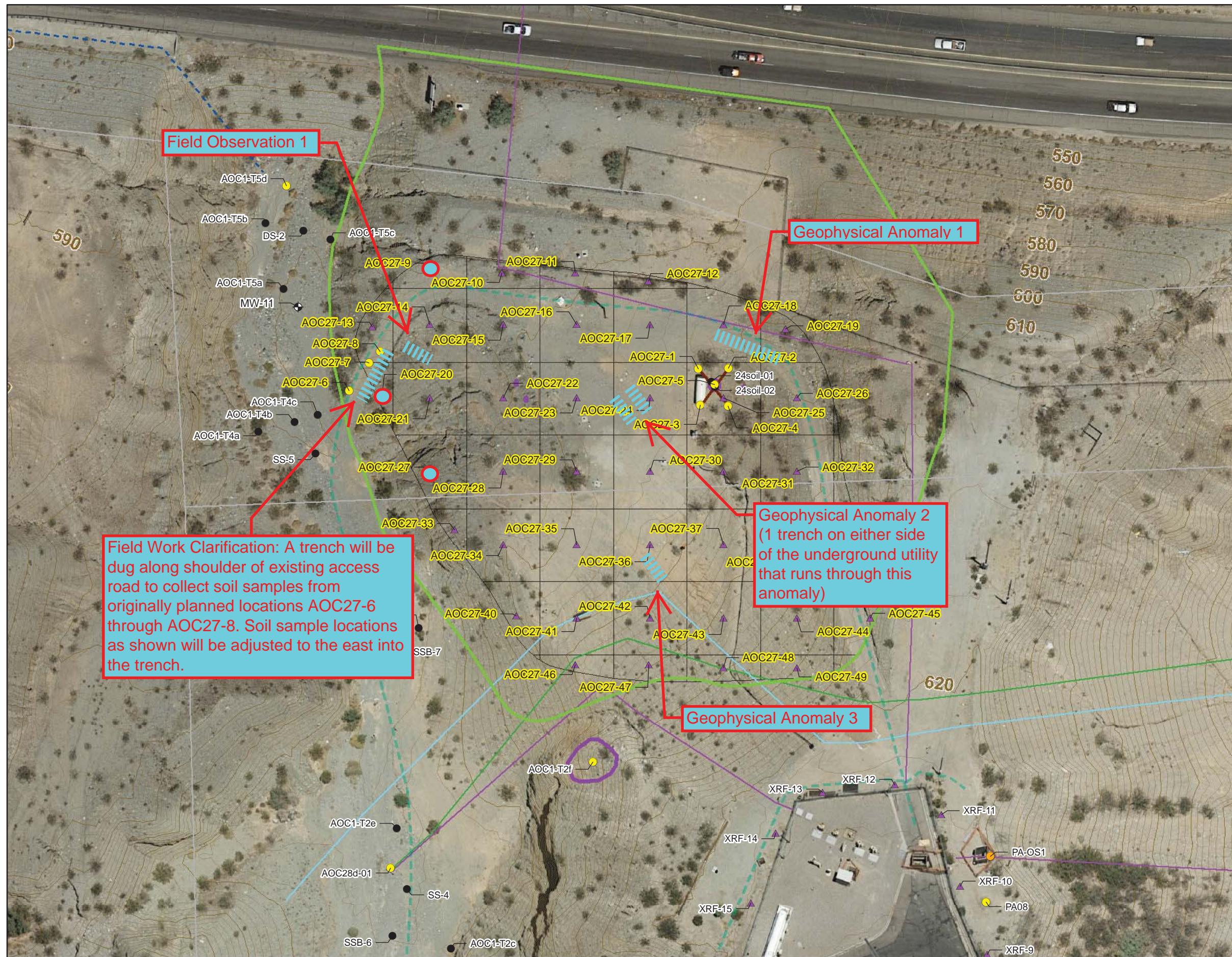


FIGURE C7-7
Proposed Phase 2
Soil Sample Locations
AOC 14 - Railroad Debris Site

Soil Investigation Part A
Phase 1 Data Gaps Evaluation Report
Pacific Gas and Electric Company Topock Compressor Station
Needles, California





- LEGEND**
- Proposed Soil Sample Location
 - Proposed XRF Screening Location
 - Soil Boring
 - MW
 - Proposed Trench
 - Access Routes
 - Property Boundary
 - AOC Boundary
 - Debris Features
 - Transwestern Pipeline
 - Mojave Pipeline
 - PG&E Pipeline
 - SoCal Gas Pipeline
 - 50-Foot Sampling Grid
 - Stormwater Piping Below Ground

XRF Sample Location Where A New Soil Sample Location is Being Added

- Note:**
- Topographic contours are shown at 2 foot intervals.
 - An additional 20 trenches/potholes may be conducted in this area, pending geophysical surveys and XRF sampling results

Geophysical Anomaly or Observed Debris Area Where Soil Samples Will Be Collected.

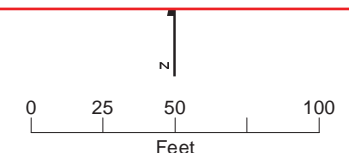


FIGURE C11-2
Proposed Phase 2
Soil Sample Locations
AOC 27 - MW-24 Bench
Soil Investigation Part A
Phase 1 Data Gaps Evaluation Report
Pacific Gas and Electric Company Topock Compressor Station
Needles, California

