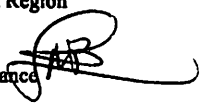


Memorandum

To: Michaela E. Noble, Director
Office of Environmental Policy & Compliance

Through: Amy Lueders, Director
U.S. Fish and Wildlife Service, Southwest Region

Through: William Lodder, ECLM Team Lead
Office of Environmental Policy & Compliance 

From: Pamela Innis, CHF Remedial Project Manager

Subject: Approval Memorandum for an Engineering Evaluation/Cost Analysis at the Pacific Gas and Electric Topock Compressor Station, San Bernardino County, CA

The purpose of this memorandum is to request approval to proceed with an Engineering Evaluation/Cost Analysis (EE/CA) to evaluate non-time critical removal action alternatives at the Pacific Gas and Electric (PG&E) Topock Compressor Station Remediation Site (Site) to address contaminated soil at Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) within the Site. At this time, the Department of the Interior (DOI) expects PG&E to prepare the EE/CA and, if warranted, to implement any removal action that the DOI subsequently selects based on the findings of the EE/CA and subject to the DOI oversight.

I. Site Background

Investigative and remedial activities at the Site date to the 1980s with the identification of solid waste management units through a RCRA facility assessment. Since 1996, there have been multiple phases of investigation at the Topock site to collect soil data to evaluate the nature and extent of contamination at up to forty SWMUs, AOCs, and Undesignated Areas. Soil investigation activities were completed in 2017. Eleven areas are located on or adjacent to Federal lands, of which five areas contain contaminant concentrations significantly above background values, ecological comparison values, and/or residential human screening levels. Below are descriptions and background information for those five areas.

AOC 1 and SWMU 1 – Former percolation bed and surrounding area

AOC 1 and SWMU 1 are located outside the facility fence line west of the compressor station within Bat Cave Wash (Figure 1). AOC 1 comprises a portion of Bat Cave Wash

adjacent to the station including SWMU 1, as well as the portion of Bat Cave Wash extending to the north of SWMU 1 toward the Colorado River. SWMU 1 is the former percolation bed located in Bat Cave Wash. From about 1964 to approximately 1971, the facility discharged wastewater to the percolation bed (SWMU 1) and allowed water to percolate into the ground and/or evaporate. Historical aerial photos indicate that, prior to the establishment of the bermed percolation bed, discharges to Bat Cave Wash may have extended as far downstream as the railroad tracks (just of Figure 1 to the north). Further north, near the mouth of Bat Cave Wash, the thick vegetation, widening of the channel, and blockage of flow by National Trails Highway greatly reduces the energy of flow during runoff events, resulting in deposition of entrained soil within the vegetated area at the lower end of Bat Cave Wash. The area is heavily vegetated, predominately with salt cedar (also known as tamarisk), which is an aggressive, non-native plant species. This heavily vegetated portion of Bat Cave Wash is a long-term depositional area that existed before the compressor station was built, although the depositional history and patterns within this area are not well known. AOC 1 is located partially on PG&E property, the Havasu National Wildlife Refuge (HNWR), Bureau of Reclamation property (managed by Bureau of Land Management), BNSF Railway Company (BNSF) property, and Fort Mojave Indian Tribe property with PG&E as an easement holder. SWMU 1 is located on both PG&E property and the HNWR.

AOC 10 – East Ravine

AOC 10 is located outside the facility fence line southeast of the compressor station in a small ravine known as east ravine. The ravine runs eastward toward the Colorado River. AOC 10 generally includes all of east ravine as well as the specific areas shown on Figure 2. The ravine is approximately 1,600 feet long and is bisected by three constructed berms. Due to the berms, surface flow within the ravine does not typically reach the Colorado River. AOC 10 likely received runoff from the compressor station, the access road to the compressor station, and AOC 9; discharge from stormwater drain pipes; surface debris on the slopes of the ravine; and incidental overflows of wastewater via the former trench drain at the top of the station access road. AOC 10 is located on both PG&E property and the HNWR.

AOC 14 – Railroad Debris Site

AOC 14 is located outside the facility fence line approximately 1,000 feet north of the compressor station and is currently bounded by the BNSF railway tracks to the north, Interstate 40 to the south, Bat Cave Wash to the west, and a former access road to the east (Figure 1). AOC 14 currently contains miscellaneous construction debris related to construction of the rail line including chunks of asphalt, railroad ties, and piping. Asbestos-containing material and burned material have also been identified within AOC 14. Former compressor station employees reported that water softening (lime) sludge was disposed of in this area. An asbestos removal action was completed in 1999. Surface water

runoff along the western side of AOC 14 flows into Bat Cave Wash (AOC 1). AOC 14 is located on property owned by BNSF, Bureau of Land Management, HNWR, and CalTrans Right-of-Way.

AOC 27 – MW-24 Bench

AOC 27 is located outside the facility fence line north of the compressor station, south of Interstate 40, and east of Bat Cave Wash (AOC 1) shown on Figure 1. A former PG&E Topock Compressor Station Employee indicated that AOC 27, informally known as MW-24 bench, was used as a waste disposal area. Miscellaneous construction debris and burned material are present in AOC 27. The burned debris occurs along the eastern edge of the road cut on the road from AOC 27 to Bat Cave Wash (AOC 1). Runoff from AOC 27 likely flowed into Bat Cave Wash (AOC 1). AOC 27 is located on HNWR and the Caltrans Right-of-Way.

II. Threat to Public Health, Welfare, or the Environment

Metals and dioxins and furans were detected at concentrations significantly exceeding background values, ecological comparison values (ECVs) and/or residential human health screening levels in certain locations within AOC 1, SWMU 1, AOC 10, AOC 14, and AOC 27. For the purposes of this memorandum, those locations that are located on Federal land or have the potential to migrate to Federal land are called "potential action areas", and are discussed below.

Metals with elevated concentrations include total chromium, copper, lead, mercury, molybdenum, and zinc. Dioxins and furans toxicity equivalent (TEQ) values are calculated from 17 individual dioxin and furan congeners for human/mammal and avian receptors.

Contaminant Information for AOC 1 and SWMU 1

Total chromium and dioxins and furan TEQs were detected at concentrations significantly exceeding background value/ecological comparison values and/or residential human screening levels at several locations within AOC 1 and SWMU 1. Four potential action areas (one in SWMU 1 and three in AOC 1) have been identified within AOC 1 and SWMU 1 that contain soil samples with high factors of exceedance of total chromium and dioxin and furans (See Figure 1). These areas are located on Federal land or have the potential to migrate to Federal land. Figure 1 presents TEQ-avian concentrations compared to the TEQ avian ECV of 16 nanograms per kilogram (ng/kg). Locations with elevated total chromium concentrations generally correspond to the locations with elevated dioxin and furan concentrations.

Table 1 presents the soil sample concentrations in AOC 1 and SWMU 1 potential action areas compared to respective screening levels and the factors of exceedance of each screening level.

Summary of exceedances:

- Total chromium concentrations range from 41 to 4,400 milligrams per kilogram (mg/kg); maximum detected concentration was in AOC 1, potential action area #2 at Old Well-BCW-2 (4 to 5 feet below ground surface (bgs)). The total chromium background value is 39.8 mg/kg.
- TEQ-avian concentrations range from 20 to 11,000 ng/kg; maximum detected concentration was in SWMU 1, potential action area #1 at SWMU1-25 (0 to 1 foot bgs). The TEQ-avian ECV is 16 ng/kg.
- TEQ-human concentrations range from 51 to 12,000 nanograms per kilogram (ng/kg); maximum detected concentration was also at SWMU1-25 (0 to 1 foot bgs). The TEQ-human residential screening level is 50 ng/kg.
- TEQ-mammal concentrations range from 6.4 to 12,000 ng/kg; maximum detected concentration was again at SWMU1-25 (0 to 1 foot bgs). The TEQ-mammal screening level is based on a background concentration of 5.58 ng/kg.

Contaminant Information for AOC 10

Copper, total chromium, lead, mercury, and dioxins and furans were detected at concentrations significantly exceeding background value/ecological comparison values and/or residential human screening levels at several locations within AOC 10. Five proposed action areas have been identified within AOC 10 that contain soil samples with high factors of exceedance of metals and dioxin and furans (See Figure 2). These areas are located on Federal land or have the potential to migrate to Federal land. Figure 2 presents TEQ-avian concentrations compared to the TEQ avian ECV of 16 ng/kg. Locations with elevated metals concentrations generally correspond to the locations with elevated dioxin and furan concentrations.

Table 2 presents the soil sample concentrations in AOC 10 proposed action areas compared to respective screening levels, and the factors of exceedance of each screening level.

Summary of exceedances:

- Total chromium concentrations range from 41 to 4,000 mg/kg; maximum detected concentration was in proposed action area #2 at MW-58BR_S (1.5 to 2 feet bgs). The total chromium background value is 39.8 mg/kg.
- Copper concentrations range from 17 to 3,100 mg/kg; maximum detected concentration was in proposed action area #1 at AOC10-21 (0 to 0.5 foot bgs). The copper background value is 16.8 mg/kg.
- Lead concentrations range from 8.9 to 920 mg/kg; maximum detected concentration was also at AOC10-21 (0 to 0.5 foot bgs). The lead background value is 8.39 mg/kg.

- Mercury concentrations range from 0.12 to 35 mg/kg; maximum detected concentration was also at AOC10-21 (0 to 0.5 foot bgs). The mercury ECV is 0.0125 mg/kg.
- TEQ-avian concentrations range from 27 to 1,100 ng/kg; maximum detected concentration was in proposed action area #1 at PA-20 (0 to 1 foot bgs). TEQ-avian ECV is 16 ng/kg.
- TEQ-human concentrations range from 53 to 1,600 ng/kg; maximum detected concentration was also at PA-20 (0 to 1 foot bgs). TEQ-human residential screening level is 50 ng/kg.
- TEQ-mammal concentrations range from 8.8 to 1,600 ng/kg; maximum detected concentration was also at PA-20 (0 to 1 foot bgs). The TEQ-mammal screening level is based on a background concentration of 5.58 ng/kg.

Contaminant Information for AOC 14

Lead and dioxins and furans were detected at concentrations significantly exceeding background value/ecological comparison values and/or residential human screening levels at several locations within AOC 14. One proposed action area has been identified within AOC 14 that contain soil samples with high factors of exceedance of lead and dioxin and furans (See Figure 1). These areas are located on Federal land or have the potential to migrate to Federal land. Figure 1 presents TEQ-avian concentrations compared to the TEQ avian ECV of 16 ng/kg. Locations with elevated lead concentrations correspond to the locations with elevated dioxin and furan concentrations.

Table 3 presents the soil sample concentrations in AOC 14 proposed action areas compared to respective screening levels, and the factors of exceedance of each screening level.

Summary of exceedances:

- Lead concentrations range from 15 to 1,600 mg/kg and the maximum detected concentration was in proposed action area #1 at AOC14-19 (2 to 3 feet bgs). The lead background value is 8.39 mg/kg.
- TEQ-avian concentrations range from 21 to 780 ng/kg; maximum detected concentration was in proposed action area #1 at AOC14-14W (5 to 5.5 feet bgs). TEQ-avian ECV is 16 ng/kg.
- TEQ-human concentrations range from 140 to 480 ng/kg; maximum detected concentration was also at AOC14-14W (5 to 5.5 feet bgs). TEQ-human residential screening level is 50 ng/kg.
- TEQ-mammal concentrations range from 6 to 480 ng/kg; maximum detected concentration was also at AOC14-14W (5 to 5.5 feet bgs). The TEQ-mammal screening level is based on a background concentration of 5.58 ng/kg.

Contaminant Information for AOC 27

Copper, lead, mercury, zinc, and dioxins and furans were detected at concentrations significantly exceeding background value/ecological comparison values and/or residential human screening levels at several locations within AOC 27.

One proposed action area has been identified within AOC 27 that contain soil samples with high factors of exceedance of metals and dioxin and furans (See Figure 1). These areas are located on Federal land. Figure 1 presents TEQ-avian concentrations compared to the TEQ avian ECV of 16 ng/kg. Locations with elevated metals concentrations correspond to the locations with elevated dioxin and furan concentrations.

Table 4 presents the soil sample concentrations in AOC 27 proposed action area compared to respective screening levels, and the factors of exceedance of each screening level.

Summary of exceedances:

- Copper concentrations ranged from 18 to 1,000 mg/kg; maximum detected concentration was in proposed action area #1 at AOC27-7 (2 to 3 feet bgs). The copper background value is 16.8 mg/kg.
- Lead concentrations ranged from 8.4 to 630 mg/kg; maximum detected concentration was in proposed action area #1 at AOC27-6 (0 to 1 foot bgs). The lead background value is 8.39 mg/kg.
- Detected mercury concentrations ranged from 0.12 to 0.95 mg/kg (the reporting limit exceeded the screening level); maximum detected concentration was also at AOC27-7 (2 to 3 feet bgs). The mercury ECV is 0.0125 mg/kg.
- Zinc concentrations ranged from 74 to 1,300 mg/kg; maximum detected concentration was also at AOC27-7 (2 to 3 feet bgs). The zinc background value is 58 mg/kg.
- TEQ-avian concentrations range from 32 to 260 ng/kg; maximum detected concentration was also at AOC27-7 (2 to 3 feet bgs). TEQ-avian ECV is 16 ng/kg.
- TEQ-human concentrations range from 57 to 230 ng/kg; maximum detected concentration was also at AOC27-7 (2 to 3 feet bgs). TEQ-human residential screening level is 50 ng/kg.
- TEQ-mammal concentrations range from 5.8 to 230 ng/kg; maximum detected concentration was also at AOC27-7 (2 to 3 feet bgs). The TEQ-mammal screening level is based on a background concentration of 5.58 ng/kg.

Evaluation of Threat

Sufficient evidence exists to justify the preparation of an EE/CA. The goals of the EE/CA are to identify removal action objectives for the AOCs; analyze the effectiveness, implementability, and cost of various alternatives that satisfy these objectives; and recommend a removal action alternative. The primary concerns are potential impacts to ecological receptors and specific human exposures. Several AOC locations are within active wash areas where ephemeral discharges could move contamination toward the Colorado River. If this removal action is not taken, then necessary cleanup work will be delayed until

after completion of a site-wide Remedial Investigation/ Feasibility Study and Record of Decision (ROD), during which time contaminant migration and unacceptable exposures will continue to occur. It is anticipated that the ROD will be completed in 2022, at the earliest.

III. Statutory Basis for Action

The information presented in this memorandum indicates that actual or threatened releases of hazardous substances from these sites present a substantial threat to public health and the environment. Based on this information, further evaluation, in the form of an EE/CA, is warranted to evaluate alternatives that may be necessary to address such risks. The results of this EE/CA will provide the basis for the selection of a removal action to prevent, minimize, or mitigate risks to public health and the environment.

IV. Factors for Determining Appropriateness of a Removal Action Section

The National Contingency Plan (NCP) provides factors for determining the appropriateness of a removal action. Factors found in 40 C.F.R. § 300.415(b)(2) most applicable to current conditions at the TCS AOCs include: the actual or potential contamination of drinking water supplies or sensitive ecosystems; actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate; and weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. In accordance with 40 C.F.R. § 300.415(b)(4) of the NCP, the DOI has determined that a planning period of at least six months exists before on-site activities could be initiated; therefore, an EE/CA must be conducted prior to selecting a non-time critical removal action.

V. Enforcement/Proposed Actions/Cost Estimates

The DOI has entered into an Administrative Order on Consent (AOC) with PG&E to conduct this work. Pursuant to this AOC, PG&E will prepare the EE/CA and implement any subsequent removal action selected by the DOI. The DOI estimates that the approximate cost of proposed removal actions could range from ten to forty million dollars.

VI. Public Involvement

The DOI will issue the EE/CA for public comment in accordance with section 300.415(n)(4) and anticipates the EE/CA will be available for public comment in 2019. The DOI will also comply with (former) Section 106 of the National Historic Preservation Act, 54 U.S.C. § 300101 et. seq.

VII. Approval/Disapproval

The conditions at the PG&E Topock Compressor Station Remediation Site AOCs and SWMUs meet the NCP criteria for undertaking an EE/CA that will provide the basis for the selection of a removal action, if warranted. Therefore, I am requesting approval to proceed with an EE/CA. Your approval or disapproval should be indicated below.

Director, Office of Environmental Policy and Compliance

Approve: Matthew Zell Date: 10/18/18

Disapprove: _____ Date: _____

U.S. Fish and Wildlife Service

Approve: Richard Meyers Date: 10/16/2018

Disapprove: _____ Date: _____

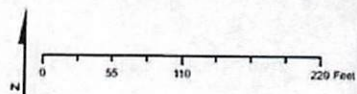
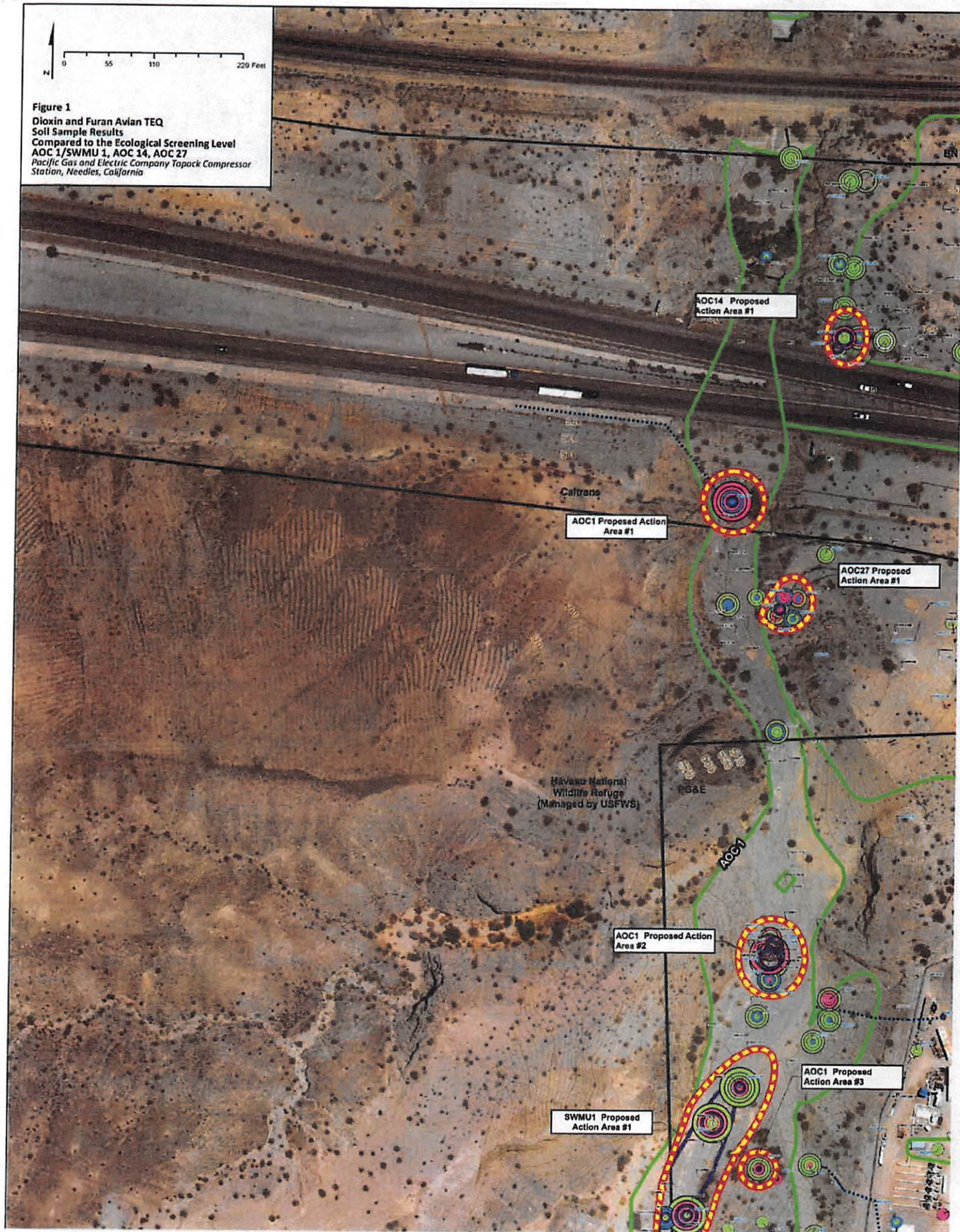


Figure 1
Dioxin and Furan Avian TEQ
Soil Sample Results
Compared to the Ecological Screening Level
AOC 1/SWMU 1, AOC 14, AOC 27
Pacific Gas and Electric Company Topack Compressor
Station, Needles, California



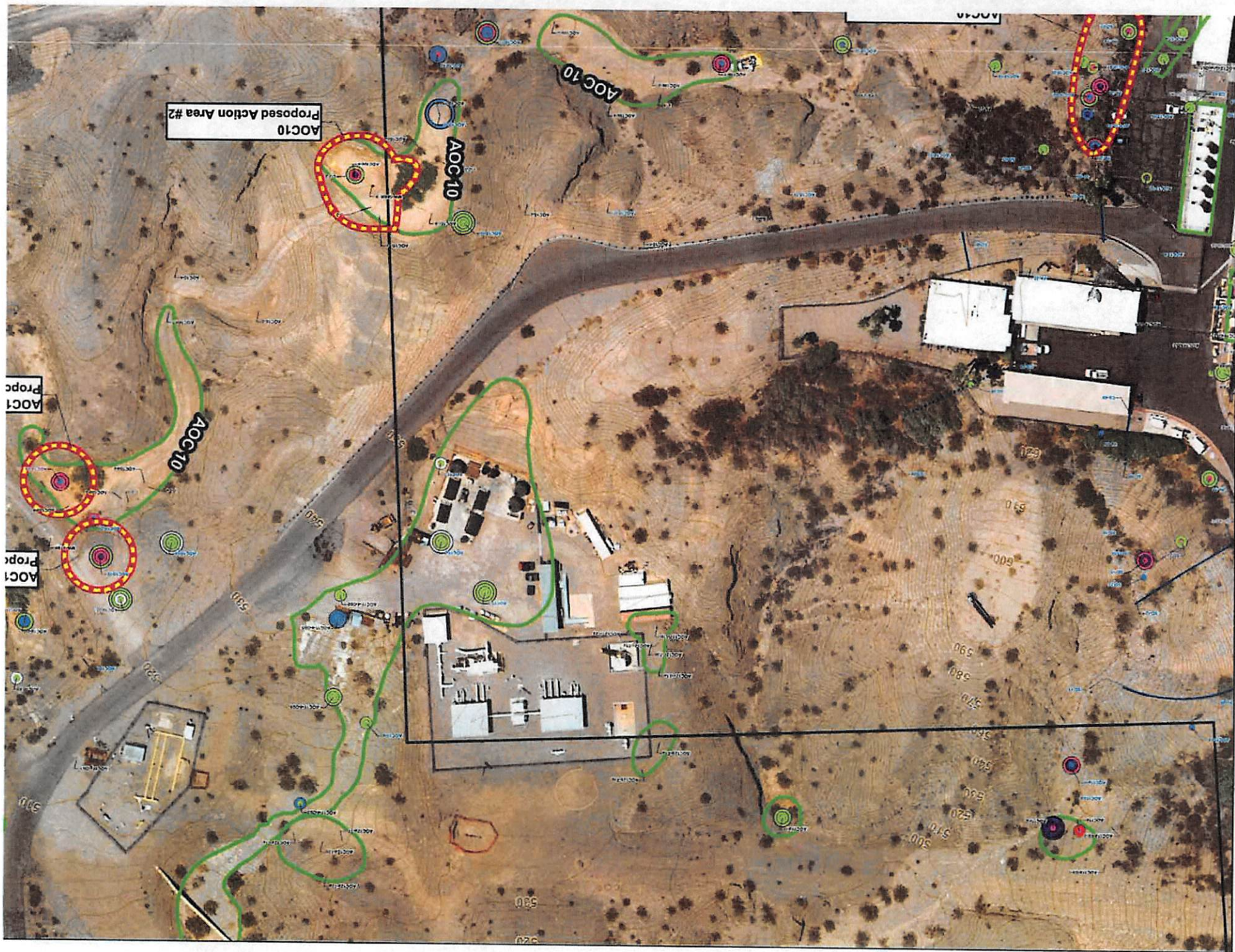


TABLE 1

Proposed Action Areas, AOC 1 and SWMU 1

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| Screening Level Type | | Chromium, Total | | TEQ Arsen | | TEQ Human | | TEQ Mammals | |
|---------------------------------------|------------|-----------------|------------|-----------|------------|-----------|----------------------|-------------|----------------------|
| Screening Level Value * | | BKG | ECV | ECV | | RES | COM | BKG | ECV |
| | | 39.80 | 36.3 | 16 | | 50 | 200 | 5.58 | 1.6 |
| Location * | Depth | Result | Factor of | Result | Factor of | Result | Factor of Exceedance | Result | Factor of Exceedance |
| | (feet bgs) | (mg/kg) | Exceedance | (ng/kg) | Exceedance | (ng/kg) | | (ng/kg) | |
| AOC 1 Potential Action Area #1 | | | | | | | | | |
| AOC1-TSb | 0 - 0.5 | 26 | | | | | | | |
| | 2 - 3 | 41 | 1 | 1 | | | | | |
| | 5 - 6 | 61 | 2 | 2 | | | | | |
| AOC1-TSD | 0 - 1 | 23 | | | 7.4 | 10 | | 10 | 2 |
| | 2 - 3 | 69 | 2 | 2 | 600 | 38 | 1100 | 1100 | 197 |
| | 5 - 6 | 80 | 2 | 2 | 58 | 4 | 92 | 92 | 16 |
| | 9 - 10 | 23 | | | 15 | | 21 | 21 | 4 |
| Samples Exceeding SL (%) | | - | 50% | 50% | - | 50% | 25% | - | 100% |
| Total # of Samples | | 8 | | 4 | 4 | 4 | | 4 | |

TABLE 1
Proposed Action Areas, AOC 1 and SWMU 1
Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| Screening Level Type | Depth (feet bgs) | Chromium, Total | | TEQ Arsenic | | TEQ Human | | TEQ Mammals | |
|--------------------------------------|---------------------|-------------------|-------------------------|-------------------|-------------------------|-------------------|----------------------|-------------------|----------------------|
| | | BKG | ECV | ECV | | RES | COM | BKG | ECV |
| Screening Level Value * | | 39.80 | 35.3 | 16 | | 50 | 200 | 5.58 | 1.6 |
| Location * | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance |
| AOC 1 Proposed Action Area #2 | | | | | | | | | |
| AOC1-T2b | 0 - 0.5 | 26 | | | | | | | |
| | 2 - 3 | 26 | | | | | | | |
| | 5 - 6 | 53 | 1 | 1 | | | | | |
| | 9 - 10 | 18 | | | | | | | |
| AOC1-T2d | 0 - 0.5 | 46 | 1 | 1 | | | | | |
| | 2 - 3 | 970 | 24 | 27 | | | | | |
| | 5 - 6 | 370 | 9 | 10 | | | | | |
| | 9 - 10 | 140 | 4 | 4 | | | | | |
| AOC1-T2g | 9 - 10 | 2100 | 53 | 58 | 89 | 6 | 130 | 3 | 81 |
| AOC1-T2h | 0 - 1 | 100 | 3 | 3 | 21 | 1 | 34 | | 21 |
| | 2 - 3 | 24 | | | 12 | | 19 | | 12 |
| | 5 - 6 | 200 | 5 | 6 | 1.2 | | 1.9 | | 1 |
| | 9 - 10 | 28 | | | 16 | | 21 | | 13 |
| AOC1-T2i | 0 - 1 | 28 | | | 15 | | 25 | | 16 |
| | 2 - 3 | 25 | | | 7.9 | | 14 | | 9 |
| | 5 - 6 | 16 | | | 0.75 | | 0.91 | | 0.91 |
| | 9 - 10 | 40 | 1 | 1 | 20 | 1 | 32 | | 20 |
| AOC1-T2j | 0 - 1 | 31 | | | 2.2 | | 4.8 | | 3 |
| | 2 - 3 | 21 | | | 8.6 | | 13 | | 8 |
| | 5 - 6 | 18 | | | 3.6 | | 4.8 | | 3 |
| | 9 - 10 | 16 | | | 0.65 | | 0.71 | | 0.71 |
| Old Well-BCW-1 | 7 - 8 | 4200 | 106 | 116 | 250 | 16 | 350 | 7 | 219 |
| Old Well-BCW-2 | 4 - 5 | 4400 | 111 | 121 | 100 | 6 | 230 | 5 | 144 |
| TCS4-E | 4 - 5 | 3400 | 85 | 94 | 600 | 38 | 870 | 17 | 544 |
| | 5 - 6 | 13 | | | 3 | | 4.6 | | 3 |
| TCS4-N | 4 - 5 | 3400 | 85 | 94 | 74 | 5 | 110 | 2 | 69 |
| | 5 - 6 | 3300 | 83 | 91 | 150 | 9 | 210 | 4 | 131 |
| TCS4-S | 4 - 5 | 840 | 21 | 23 | 130 | 8 | 180 | 4 | 113 |
| | 5 - 6 | 2200 | 55 | 61 | 34 | 2 | 47 | | 29 |
| Samples Exceeding SL (%) | | - | 48% | 48% | - | 48% | - | 33% | 19% |
| Total # of Samples | | 33 | | | 21 | | 21 | | 21 |

TABLE 1

Proposed Action Areas, AOC 1 and SWMU 1

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| Bioscience Resource Project: San Francisco Bay Area, Redwood, California | | | | | | | | | | | | |
|--|------------------|-----------------|----------------------|----|----------------|----------------------|----------------|----------------------|------|----------------|----------------------|-----|
| Screening Level Type | | Chromium, Total | | | TEQ Arsenic | | TEQ Human | | | TEQ Mammals | | |
| Screening Level Value * | | BKG | ECV | | ECV | | RES | COM | | BKG | ECV | |
| | | 39.80 | 36.3 | | 16 | | 50 | 200 | | 5.58 | 1.6 | |
| Location * | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | | Result (mg/kg) | Factor of Exceedance | |
| SWMU 1 Proposed Action Area #1 | | | | | | | | | | | | |
| SSB-4 | 3 | 1520 | 38 | 42 | | | | | | | | |
| | 1 | 10.1 | | | | | | | | | | |
| | 10 | 201 | 5 | 6 | | | | | | | | |
| | 6 | 297 | 7 | 8 | | | | | | | | |
| SSB-5 | 3 | 1440 | 36 | 40 | | | | | | | | |
| | 1 | 521 | 13 | 14 | | | | | | | | |
| | 10 | 31.6 | | | | | | | | | | |
| | 6 | 617 | 16 | 17 | | | | | | | | |
| SWMU1-1 | 0-0.5 | 44 | 1 | 1 | | | | | | | | |
| | 2-3 | 67 | 2 | 2 | | | | | | | | |
| | 5-6 | 3200 | 80 | 88 | | | | | | | | |
| | 9-10 | 55 | 1 | 2 | | | | | | | | |
| SWMU1-11 | 0-0.5 | 200 | 5 | 6 | | | | | | | | |
| | 2-3 | 840 | 21 | 23 | | | | | | | | |
| SWMU1-19 | 0-1 | 1400 | 35 | 39 | 3 | | 3.9 | | | 3.9 | 2 | |
| | 2-3 | 23 | | | 850 | 53 | 1100 | 22 | 5.5 | 1100 | 197 | 688 |
| | 5-6 | 680 | 17 | 19 | 25 | 2 | 41 | | | 41 | 7 | 26 |
| | 9-10 | 2100 | 53 | 58 | 170 | 11 | 210 | 4 | 1.05 | 210 | 38 | 131 |
| SWMU1-2 | 0-0.5 | 26 | | | | | | | | | | |
| | 2-3 | 36 | | | | | | | | | | |
| | 5-6 | 44 | 1 | 1 | | | | | | | | |
| | 9-10 | 2000 | 50 | 55 | | | | | | | | |
| SWMU1-20 | 1-1.5 | | | | 3.4 | | 5.5 | | | 5.5 | | 3 |
| | 2-3 | | | | 2.8 | | 3.7 | | | 3.7 | | 2 |
| | 5-6 | | | | 78 | 5 | 110 | 2 | | 110 | 20 | 69 |
| | 9-10 | | | | 780 | 49 | 950 | 19 | 4.75 | 950 | 170 | 594 |
| SWMU1-21 | 0-1 | | | | 65 | 4 | 190 | 4 | | 190 | 34 | 119 |
| | 2-3 | | | | 580 | 36 | 870 | 17 | 4.35 | 870 | 156 | 544 |
| | 5-6 | | | | 23 | 1 | 41 | | | 41 | 7 | 26 |
| | 9-10 | | | | 0.57 | | 1.8 | | | 1.8 | | 1 |

TABLE 1
Proposed Action Areas, AOC 1 and SWMU 1
Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| | | Chromium, Total | | | TEQ Avian | | TEQ Human | | | TEQ Mammals | | |
|--|---------------------|-------------------|-------------------------|-----|-------------------|-------------------------|-------------------|----------------------|-----|-------------------|----------------------|------|
| Screening Level Type | | BKG | ECV | | ECV | | RES | COM | | BKG | ECV | |
| Screening Level Value * | | 39.80 | 36.3 | | 16 | | 50 | 200 | | 5.58 | 1.6 | |
| Location * | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | | Result (ng/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance | | Result (ng/kg) | Factor of Exceedance | |
| SWMU 1 Proposed Action Area #1 (Continued) | | | | | | | | | | | | |
| SWMU1-25 | 0 - 1 | 2000 | 50 | 55 | 11000 | 688 | 12000 | 240 | 60 | 12000 | 2151 | 7500 |
| | 2 - 3 | 450 | 11 | 12 | 5.4 | | 9.9 | | | 9.9 | 2 | 6 |
| | 5 - 6 | 200 | 5 | 6 | 4.2 | | 6.4 | | | 6.4 | 1 | 4 |
| | 9 - 10 | 17 | | | 1.9 | | 2.6 | | | 2.6 | | 2 |
| SWMU1-29 | 0 - 0.5 | 19 | | | 5 | | 7.8 | | | 7.8 | 1 | 5 |
| | 2 - 3 | 1100 | 28 | 30 | 250 | 16 | 320 | 6 | 1.6 | 320 | 57 | 200 |
| | 5 - 6 | 270 | 7 | 7 | 15 | | 19 | | | 19 | 3 | 12 |
| | 9 - 10 | 98 | 2 | 3 | 9.3 | | 15 | | | 15 | 3 | 9 |
| SWMU1-3 | 0 - 0.5 | 28 | | | | | | | | | | |
| | 2 - 3 | 41 | 1 | 1 | | | | | | | | |
| | 5 - 6 | 1300 | 33 | 36 | | | | | | | | |
| | 9 - 10 | 96 | 2 | 3 | | | | | | | | |
| SWMU1-4 | 0 - 0.5 | 17 | | | | | | | | | | |
| | 2 - 3 | 870 | 22 | 24 | | | | | | | | |
| | 5 - 6 | 100 | 3 | 3 | | | | | | | | |
| | 7 - 8 | 40 | 1 | 1 | | | | | | | | |
| SWMU1-5 | 9 - 10 | 47 | 1 | 1 | | | | | | | | |
| SWMU1-6 | 0 - 0.5 | 220 | 6 | 6 | | | | | | | | |
| | 2 - 3 | 270 | 7 | 7 | | | | | | | | |
| SWMU1-7 | 0 - 0.5 | 27 | | | | | | | | | | |
| | 2 - 3 | 630 | 16 | 17 | | | | | | | | |
| | 5 - 6 | 330 | 8 | 9 | | | | | | | | |
| | 9 - 10 | 51 | 1 | 1 | | | | | | | | |
| SWMU1-8 | 0 - 0.5 | 120 | 3 | 3 | | | | | | | | |
| | 2 - 3 | 970 | 24 | 27 | | | | | | | | |
| | 5 - 6 | 1600 | 40 | 44 | | | | | | | | |
| | 9 - 10 | 15 | | | | | | | | | | |
| Samples Exceeding SL (%) | | - | 70% | 70% | - | 50% | - | 40% | 30% | - | 75% | 100% |
| Total # of Samples | | 54 | | | 20 | | 20 | | | 20 | | |

TABLE 1

Proposed Action Areas, AOC 1 and SWNU 1

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| Screening Level Type Screening Level Value ^a | Chromium, Total | | TEQ Arsenic | | TEQ Human | | TEQ Mammals | |
|--|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|
| | BKG | ECV | Result | Factor of Exceedance | Result | Factor of Exceedance | Result | Factor of Exceedance |
| Location ^a (feet bgs) | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance |
| AOC 1 Proposed Action Area #3 | | | | | | | | |
| AOC1-3 | 0 - 0.5 | 410 | 10 | 11 | 250 | 16 | 330 | 59 |
| | 2 - 3 | 210 | 5 | 6 | 130 | 8 | 180 | 32 |
| Samples Exceeding SL (%) | | | 100% | 100% | | | | |
| Total # of Samples | | 2 | 2 | | 2 | | 2 | |

^a Screening levels are presented in the same units shown for the results.^b For simplicity, some locations/depts without exceedances are not shown. The number of samples reflects the full dataset.

bgs = below ground surface

BKG = Background Level

CDM = Commercial Screening Level

ECV = Ecological Screening Level

FoE = Factor of exceedance

RES = Residential Screening Level

SL = Screening level

TEQ = toxicity equivalent

mg/kg = milligrams per kilogram

ng/kg = nanograms per kilogram

TABLE 2

Proposed Action Areas, AOC 10

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| Screening Level Type Screening Level Value * | | Chromium, Total | | | Copper | | | | Lead | | | | Mercury | | | TEQ Avian | | TEQ Human | | TEQ Mammals | | | | | | |
|---|---------------------|-------------------|-------------------------|-----|-------------------|----------------------|------|-------|-------------------|----------------------|-------|------|-------------------|----------------------|------|-------------------|-------------------------|-----------|-------------------|-------------------------|----|------|------|-----|------|------|
| | | BKG | ECV | | BKG | ECV | RES | COM | BKG | ECV | RES | COM | ECV | RES | COM | ECV | RES | COM | BKG | ECV | | | | | | |
| | | 39.80 | 35.3 | | 16.8 | 20.6 | 3100 | 47000 | 8.39 | 0.0166 | 80 | 320 | 0.0125 | 1 | 4.5 | 16 | 50 | 200 | 5.58 | 1.6 | | | | | | |
| Location | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | | Result (mg/kg) | Factor of Exceedance | | | Result (mg/kg) | Factor of Exceedance | | | Result (mg/kg) | Factor of Exceedance | | Result (mg/kg) | Factor of Exceedance | | Result (mg/kg) | Factor of Exceedance | | | | | | |
| AOC 10 Proposed Action Area #1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC10-21 | 0-0.5 | 270 | 7 | 7 | 3100 | 185 | 150 | | 920 | 110 | 55422 | 12 | 3 | 35 | 2800 | 35 | 8 | 33 | 2 | 53 | 1 | 53 | 9 | 33 | | |
| | 2-3 | 8.1 | | | 5 | | | | 2.9 | | 175 | | | 0.099 | | | | 0.33 | | 0.22 | | 0.22 | | | | |
| AOC10-23 | 0-1 | 72 | 2 | 2 | 140 | 8 | 7 | | 30 | 4 | 1807 | | | 0.24 | 19 | | | 440 | 28 | 1100 | 22 | 6 | 1100 | 197 | 688 | |
| | 1-2 | 130 | 3 | 4 | 22 | 1 | 1 | | 22 | 3 | 1325 | | | 0.1 | | | | 6.3 | | 8.8 | | | 8.8 | 2 | 6 | |
| | 2-3 | 5.5 | | | 4.2 | | | | 2.2 | | 133 | | | 0.1 | | | | 9.7 | | 17 | | | 17 | 3 | 11 | |
| PA-19 | 0-1 | 34 | | | 160 | 10 | 8 | | 30 | 4 | 1807 | | | 0.12 | | | | 150 | 9 | 220 | 4 | 1 | 220 | 39 | 138 | |
| | 2-3 | | | | | | | | | | | | | | | | | 0.95 | | 0.62 | | | 0.62 | | | |
| | 5-6 | | | | | | | | | | | | | | | | | 1.5 | | 0.89 | | | 0.89 | | | |
| PA-20 | 0-1 | 33 | | | 11 | | | | 23 | 3 | 1386 | | | 0.1 | | | | 1100 | 69 | 1600 | 32 | 8 | 1600 | 287 | 1000 | |
| | 2-3 | | | | | | | | | | | | | | | | | 27 | 2 | 53 | 1 | | 53 | 9 | 33 | |
| | 5-6 | | | | | | | | | | | | | | | | | 63 | 4 | 130 | 3 | | 130 | 23 | 81 | |
| PA-21 | 0-1 | 49 | | | 26 | 2 | 1 | | 32 | 4 | 1928 | | | 0.1 | | | | 320 | 20 | 580 | 12 | 3 | 580 | 104 | 363 | |
| | 2-3 | | | | | | | | | | | | | | | | | 9.5 | | 14 | | | 14 | 3 | 9 | |
| | 5-6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| SD-04 | 0-1 | 10 | | | 5.1 | | | | 2.7 | | 163 | | | 0.1 | | | | 38 | 2 | 73 | 1 | | 73 | 13 | 46 | |
| | 2-3 | 8 | | | 4.4 | | | | 2.5 | | 151 | | | 0.1 | | | | | | | | | | | | |
| Samples Exceeding SL (%) | | - | 30% | 30% | - | 50% | 50% | 0% | 0% | - | 60% | 100% | 10% | 10% | - | 20% | 10% | 10% | - | 57% | - | 57% | 29% | - | 79% | 79% |
| Total # of Samples | | 10 | | | 10 | | | | 10 | | | | | 10 | | | | 14 | | 14 | | | 14 | | | |
| AOC 10 Proposed Action Area #2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC10c-4 | 0-0.5 | 120 | 3 | 3 | 46 | 3 | 2 | | 36 | 4 | 2169 | | | 0.1 | | | | 220 | 14 | 360 | 7 | 2 | 360 | 65 | 225 | |
| | 2-3 | 90 | 2 | 2 | 19 | 1 | | | 8.9 | 1 | 536 | | | 0.1 | | | | 44 | 3 | 66 | 1 | | 66 | 12 | 41 | |
| | 5-6 | 27 | | | 14 | | | | 2.6 | | 157 | | | 0.1 | | | | 2.3 | | 3.1 | | | 3.1 | | 2 | |
| | 9-10 | 92 | 2 | 3 | 25 | 1 | 1 | | 13 | 2 | 783 | | | 0.1 | | | | | | | | | | | | |
| L-2 | 2 | 3360 | 84 | 93 | 211 | 13 | 10 | | | | | | | | | | | | | | | | | | | |
| | 0 | 86.8 | 2 | 2 | 42.7 | 3 | 2 | | | | | | | | | | | | | | | | | | | |
| L-2-3 | -2 | 2740 | 69 | 75 | 288 | 17 | 14 | | | | | | | | | | | | | | | | | | | |
| MW-588R_5 | 1.5-2 | 4000 | 101 | 110 | 300 | 18 | 15 | | 160 | 19 | 9639 | 2 | | 0.33 | 26 | | | | | | | | | | | |
| Samples Exceeding SL (%) | | - | 88% | 88% | - | 88% | 75% | 0% | 0% | - | 80% | 100% | 20% | 0% | - | 20% | 0% | 0% | - | 67% | - | 67% | 33% | - | 67% | 100% |
| Total # of Samples | | 8 | | | 8 | | | | 5 | | | | | 5 | | | | 3 | | 3 | | | 3 | | | |
| AOC 10 Proposed Action Area #3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC10-15 | 0-1 | 70 | 2 | 2 | 27 | 2 | 1 | | 21 | 3 | 1265 | | | 0.1 | | | | 180 | 11 | 290 | 6 | 1 | 290 | 52 | 181 | |
| | 2-3 | 41 | 1 | 1 | 22 | 1 | 1 | | 17 | 2 | 1024 | | | 0.1 | | | | 74 | 5 | 110 | 2 | | 110 | 20 | 69 | |
| | 5-6 | 33 | | | 14 | | | | 7.6 | | 458 | | | 0.1 | | | | 49 | 3 | 77 | 2 | | 77 | 14 | 48 | |
| | 9-10 | 17 | | | 11 | | | | 1.5 | | 90 | | | 0.1 | | | | 3.2 | | 2.9 | | | 2.9 | | 2 | |
| Samples Exceeding SL (%) | | - | 50% | 50% | - | 50% | 50% | 0% | 0% | - | 50% | 100% | 0% | 0% | - | 0% | 0% | 0% | - | 75% | - | 75% | 25% | - | 75% | 100% |
| Total # of Samples | | 4 | | | 4 | | | | 4 | | | | | 4 | | | | 4 | | 4 | | | 4 | | | |
| AOC 10 Proposed Action Area #4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC10-26 | 0-0.5 | | | | | | | | | | | | | | | | | 7.8 | | 9.5 | | | 9.5 | 2 | 6 | |
| | 2-3 | | | | | | | | | | | | | | | | | 140 | 9 | 180 | 4 | | 180 | 32 | 113 | |
| | 2.5-2.7 | 340 | 9 | 9 | 40 | 2 | 2 | | 18 | 2 | 1084 | | | 0.15 | 12 | | | 300 | 19 | 410 | 8 | 2 | 410 | 73 | 256 | |
| | 4.5-5 | | | | | | | | | | | | | | | | | 86 | 5 | 100 | 2 | | 100 | 18 | 63 | |
| AOC10d-4 | 0-0.5 | 29 | | | 25 | 1 | 1 | | 25 | 3 | 1506 | | | 0.1 | | | | | | | | | | | | |
| | 2-3 | 130 | 3 | 4 | 27 | 2 | 1 | | 26 | 3 | 1566 | | | 0.11 | | | | | | | | | | | | |
| | 5-6 | 66 | 2 | 2 | 21 | 1 | 1 | | 17 | 2 | 1024 | | | 0.1 | | | | | | | | | | | | |
| | 9-10 | 32 | | | 16 | | | | 5.2 | | 313 | | | 0.1 | | | | | | | | | | | | |
| Samples Exceeding SL (%) | | - | 60% | 60% | - | 80% | 80% | 0% | 0% | - | 80% | 100% | 0% | 0% | - | 20% | 0% | 0% | - | 75% | - | 75% | 25% | - | 100% | 100% |
| Total # of Samples | | 5 | | | 5 | | | | 5 | | | | | 5 | | | | 4 | | 4 | | | 4 | | | |

TABLE 2

Proposed Action Areas, AOC 10

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| CITY OF SAN JOSE, CALIFORNIA SOLID WASTE DEPARTMENT | | | | | | | | | | | | | | | | | | | | |
|---|------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|--|
| Screening Level Type | Chromium, Total | | | Copper | | | | Lead | | | | Mercury | | | TEQ Avian | | TEQ Human | | TEQ Mammals | |
| | BKG | ECV | | BKG | ECV | RES | COM | BKG | ECV | RES | COM | ECV | RES | COM | ECV | RES | COM | BKG | ECV | |
| Screening Level Value * | 39.80 | 36.3 | | 16.8 | 20.6 | 3100 | 47000 | 8.39 | 0.0166 | 80 | 320 | 0.0125 | 1 | 4.5 | 16 | 50 | 200 | 5.58 | 1.6 | |
| Location | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | Result (mg/kg) | Factor of Exceedance | |
| AOC 10 Proposed Action Area #3 | | | | | | | | | | | | | | | | | | | | |
| AOC10c-3 | 0 - 0.5 | 110 | 3 3 | 42 | 3 2 | | | 32 | 4 1928 | | | 0.1 | | | | | | | | |
| | 2 - 3 | 690 | 17 19 | 60 | 4 3 | | | 31 | 4 1867 | | | 0.1 | | | | | | | | |
| | 5 - 6 | 29 | | 9 | | | | 4.5 | 271 | | | 0.1 | | | | | | | | |
| | 9 - 10 | 22 | | 11 | | | | 2.7 | 163 | | | 0.1 | | | | | | | | |
| Samples Exceeding SL (%) | - | 50% | 50% | - | 50% | 50% | 0% | 0% | - | 50% | 100% | 0% | 0% | - | 0% | 0% | 0% | - | 0% | |
| Total # of Samples | 4 | | | 4 | | | | 4 | | | | 4 | | | 0 | #DIV/0! | #DIV/0! | 0 | #DIV/0! | |
| * Screening levels are presented in the same units shown for the results. | | | | | | | | | | | | | | | | | | | | |

* Screening levels are presented in the same units shown for the results.

bgs = below ground surface

BKG = Background Level

COM = Commercial Screening Level

ECV = Ecological Screening Level

FoE = Factor of exceedance

RES = Residential Screening Level

SL = Screening level

TEQ = toxicity equivalent

mg/kg = milligrams per kilogram

ng/kg = nanograms per kilogram

TABLE 3

Proposed Action Area, AOC 14

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| | | Lead | | | | TEQ Avian | | TEQ Human | | TEQ Mammals | | |
|--|---------|----------------------|--------|-------|-----|-----------|----------------------|-----------|----------------------|-------------|----------------------|-----|
| Screening Level Type | | BKG | ECV | RES | COM | ECV | | RES | COM | BKG | ECV | |
| Screening Level Value * | | 8.39 | 0.0166 | 80 | 320 | 16 | | 50 | 200 | 5.58 | 1.6 | |
| Depth | Result | | | | | Result | Factor of Exceedance | Result | Factor of Exceedance | Result | Factor of Exceedance | |
| Location (feet bgs) | (mg/kg) | Factor of Exceedance | | | | (ng/kg) | Factor of Exceedance | (ng/kg) | Factor of Exceedance | (ng/kg) | Factor of Exceedance | |
| AOC 14 Proposed Action Area #1 | | | | | | | | | | | | |
| AOC14-14E | 0 - 1 | 7.2 | | 434 | | 2.6 | | 4.6 | | 4.6 | 3 | |
| | 2 - 3 | 3.5 | | 211 | | 7.4 | | 14 | | 14 | 3 | |
| | 5 - 5.5 | 2.1 | | 127 | | 21 | 1 | 32 | | 32 | 6 | |
| | 6 - 7 | 2.1 | | 127 | | 1.8 | | 2.5 | | 2.5 | 2 | |
| | 9 - 10 | 2.6 | | 157 | | 3.5 | | 6.6 | | 6.6 | 1 | |
| AOC14-14W | 0 - 1 | 15 | 2 | 904 | | 2.5 | | 3.5 | | 3.5 | 2 | |
| | 2 - 3 | 3.4 | | 205 | | 1.1 | | 1.1 | | 1.1 | | |
| | 5 - 5.5 | 160 | 19 | 9639 | 2 | 780 | 49 | 480 | 10 | 480 | 86 | |
| | 6 - 7 | 70 | 8 | 4217 | | 33 | 2 | 27 | | 27 | 5 | |
| | 9 - 10 | 2.6 | | 157 | | 3.4 | | 6 | | 6 | 1 | |
| AOC14-19 | 2 - 3 | 1600 | 191 | 96386 | 20 | 5 | 210 | 13 | 140 | 3 | 140 | 25 |
| | 3 - 4 | 6.3 | | 380 | | 1.3 | | 1.2 | | 1.2 | 88 | |
| Samples Exceeding SL (%) | . | 33% | 100% | 17% | 8% | . | 33% | . | 17% | 8% | . | 58% |
| Total # of Samples | 12 | | | | | 12 | | 12 | | 12 | | |
| * Screening levels are measured in the same units as the Contaminant of Concern. | | | | | | | | | | | | |

* Screening levels are presented in the same units shown for the results.

bgs = below ground surface

BKG = Background Level

COM = Commercial Screening Level

ECV = Ecological Screening Level

FoE = Factor of exceedance

RES = Residential Screening Level

SL = Screening level

TEQ = toxicity equivalent

mg/kg = milligrams per kilogram

ng/kg = nanograms per kilogram

TABLE 4

Proposed Action Area, AOC 27

Pacific Gas and Electric Company Topock Compressor Station, Needles, California

| | | Copper | | | | Lead | | | | Mercury | | | | Zinc | | | | TEQ Avian | | TEQ Human | | TEQ Mammals | | | |
|---|------------------|----------------|----------------------|------|-------|----------------|----------------------|-------|------|----------------|----------------------|-----|------|----------------|----------------------|--------|-----|----------------|----------------------|----------------|----------------------|----------------|----------------------|-----|-----|
| Screening Level Type | | BKG | ECV | RES | COM | BKG | ECV | RES | COM | ECV | RES | COM | BKG | ECV | RES | COM | ECV | | RES | COM | BKG | ECV | | | |
| Screening Level Value * | | 16.8 | 20.6 | 3100 | 47000 | 8.39 | 0.0166 | 80 | 320 | 0.0125 | 1 | 4.5 | 58 | 0.164 | 23000 | 350000 | 16 | | 50 | 200 | 5.58 | 1.6 | | | |
| Location | Depth (feet bgs) | Result (mg/kg) | Factor of Exceedance | | | Result (mg/kg) | Factor of Exceedance | | | Result (mg/kg) | Factor of Exceedance | | | Result (mg/kg) | Factor of Exceedance | | | Result (ng/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance | Result (ng/kg) | Factor of Exceedance | | |
| AOC 27 Proposed Action Area #1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC27-20 | 0-1 | 9.2 | | | | 8.4 | 1 | 506 | | 0.1 | | | 38 | | 232 | | 13 | | 19 | | 19 | 3 | 12 | | |
| | 2-3 | 9.7 | | | | 4.6 | | 277 | | 0.1 | | | 42 | | 256 | | 4 | | 5.8 | | 5.8 | 1 | 4 | | |
| | 5-6 | 27 | 2 | 1 | | 15 | 2 | 904 | | 0.13 | 10 | | 74 | 1 | 451 | | 8 | | 10 | | 10 | 2 | 6 | | |
| | 9-10 | 11 | | | | 2.7 | | 163 | | 0.1 | | | 41 | | 250 | | | | | | | | | | |
| AOC27-50 | 0-1 | 25 | 1 | 1 | | 73 | 9 | 4398 | | 0.13 | 10 | | 250 | 4 | 1524 | | 13 | | 12 | | 12 | 2 | 8 | | |
| | 2-3 | 100 | 6 | 5 | | 190 | 23 | 11446 | 2 | 0.47 | 38 | | 330 | 6 | 2012 | | 59 | 4 | 57 | 1 | 57 | 10 | 36 | | |
| | 5-6 | 7.9 | | | | 2.1 | | 127 | | 0.13 | 10 | | 39 | | 238 | | | | | | | | | | |
| | 9-10 | 9.1 | | | | 2.1 | | 127 | | 0.12 | 10 | | 38 | | 232 | | 0.5 | | 0.41 | | 0.41 | | | | |
| AOC27-6 | 0-1 | 500 | 30 | 24 | | 630 | 75 | 37952 | 8 | 0.51 | 41 | | 700 | 12 | 4268 | | 120 | 8 | 120 | 2 | 120 | 22 | 75 | | |
| | 2-3 | 76 | 5 | 4 | | 37 | 4 | 2229 | | 0.26 | 21 | | 130 | 2 | 793 | | 32 | 2 | 32 | | 32 | 6 | 20 | | |
| | 5-6 | 18 | 1 | | | 51 | 6 | 3072 | | 0.14 | 11 | | 92 | 2 | 561 | | 6.2 | | 6.9 | | 6.9 | 1 | 4 | | |
| AOC27-7 | 0-1 | 580 | 35 | 28 | | 170 | 20 | 10241 | 2 | 0.32 | 26 | | 420 | 7 | 2561 | | 110 | 7 | 110 | 2 | 110 | 20 | 69 | | |
| | 2-3 | 1000 | 60 | 49 | | 570 | 68 | 34337 | 7 | 0.95 | 76 | | 1300 | 22 | 7927 | | 260 | 16 | 230 | 5 | 230 | 41 | 144 | | |
| | 5-6 | 9.8 | | | | 2.6 | | 157 | | 0.1 | | | 38 | | 232 | | 4.1 | | 4.3 | | 4.3 | | | | |
| AOC27-8 | 1-2 | 29 | 2 | 1 | | 24 | 3 | 1446 | | 0.17 | 14 | | 93 | 2 | 567 | | 36 | 2 | 33 | | 33 | 6 | 21 | | |
| | 5-6 | 15 | | | | 6.1 | | 367 | | 0.1 | | | 45 | | 274 | | 2.9 | | 2.8 | | 2.8 | | | | |
| Samples Exceeding SL (%) | | - | 56% | 50% | 0% | 0% | - | 63% | 100% | 25% | 13% | - | - | 56% | 100% | 0% | 0% | - | 43% | - | 29% | 7% | - | 79% | 93% |
| Total # of Samples | | 16 | | | | 16 | | | | 16 | | | 16 | | | | 14 | | 14 | | 14 | | | | |
| * Screening levels are presented in the same units shown for the results. | | | | | | | | | | | | | | | | | | | | | | | | | |

* Screening levels are presented in the same units shown for the results.

bgs = below ground surface

BKG = Background Level

COM = Commercial Screening Level

ECV = Ecological Screening Level

FoE = Factor of exceedance

RES = Residential Screening Level

SL = Screening level

TEQ = toxicity equivalent

mg/kg = milligrams per kilogram

ng/kg = nanograms per kilogram