Department of Toxic Substances Control

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# Moss Landing Power Plant Fire
# Sampling Report

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|---|---|
| **Facility / Site Name:** | Moss Landing Power Plant |
| **Facility / Site Address:** | 7301 CA-1, Moss Landing, CA 95039 |
| **Sampling Location:** | Various Locations within approx. 5 miles of Power Plant |
| **Date Samples Collected:** | January 24, 2025 |
| **Date of Report:** | February 24, 2025 |
| **Report Completed by:** | Gabriel Trevino |

## I. Purpose of Sampling Event

On January 16, 2025, a fire occurred at the Moss Landing Power Plant. The California Environmental Protection Agency (CalEPA) in collaboration with Monterey County requested assistance from the Department of Toxic Substances Control (DTSC) to perform preliminary surface screening using an X-Ray Fluorescence (XRF) instrument and corresponding surface sampling prior to an impending rain event.

## II. Representatives Present

### DTSC Personnel

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**Additional Persons Present**

Monique Fountain
Tidal Wetland Project Director
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Email: Monique@elkhornslough.org

## III. XRF Screening and Sampling Activities

**Summary**: DTSC staff conducted 27 XRF surface scans across eight locations in Monterey County and collected samples at seven of those sites (**Attachment 1,** Overview Site Map). DTSC's samples included eight surface samples, two aqueous samples, one equipment blank, and six additional aqueous samples provided by Monique Fountain that had been collected by Elkhorn Slough Reserve staff on January 22, 2025, at various sites within the Slough Reserve area. The samples were tested for Total Metals and/or Polycyclic Aromatic Hydrocarbons (PAHs) analyses, which were identified as the initial contaminants of concern by the county and CalEPA.

All photographs taken during this sampling event are summarized in the Photographic Log (**Attachment 2**). The original photos are saved in electronic format on the DTSC drives. A shared OneDrive link can be used to share the photographs to anyone needing a copy.

**Sampling Team and Roles:**
Bonny Lew – Primary Sampler, GPS Recorder
Faith Friend – Photographs, Sampling Assistant
Patrick Hsieh – XRF Scanner, Sample Custodian
Gabriel Trevino – Sample Documentation

**Sampling Equipment and QA Procedures:**
Sampling containers used: New certified clean 16-ounce clear glass jars and 32-ounce clear glass jars

Sampling devices used: New disposable plastic scoops for surface sampling, and a clean pond skimmer and 16-ounce clear glass jar for aqueous samples.

New sample collection devices and sample containers were used to collect samples. Disposable nitrile gloves were changed between each sample collected. Samples were labeled with identifying information and evidence tape was applied to each container. Samples were photographed near where they were collected. Sample jars were wrapped with aluminum foil and then bubble wrap and preserved in a cooler with blue ice.

**XRF Screening and Sampling Strategy:**
In selecting the sites, Monterey County, CalEPA, and the DTSC team prioritized public locations where sensitive receptors may frequent and access did not require consent. As many sites as possible were visited in the day. See **Table 1** on the next page for site details.

XRF screening is a preliminary qualitative tool used to measure the concentration of metal at the surface of a material such as soil, plastic or paint. XRF surface screening is a quick tool that can help to identify areas of increased metal concentrations where media sampling for confirmatory, quantitative analytical results may be needed. Each XRF scan screens up to 1 $cm^2$ area and 1 to 2 mm depth, depending on the surface matrix.

Surface samples were collected from the top quarter-inch of material and within about 1 to 2 $ft^2$ area surrounding the spot that was screened.

**Chain of Custody:**
Hsieh maintained custody of the samples as they were being collected on January 24, 2025. Hsieh observed the samples being collected and once labeled and sealed with evidence tape placed the samples into a cooler with blue ice. Hsieh kept the cooler in the trunk of his state vehicle and maintained control of the keys. Hsieh retained custody of the samples as he transported the samples to DTSC's Cypress Regional office located in 5796 Corporate Ave, Cypress, CA 90630, where he stored the samples in a locked evidence room over the weekend. On January 27, 2025, Hsieh transported the samples to DTSC's Environmental Chemistry Lab (ECL), located at 757 South Raymond Avenue, Suite 105, Pasadena, California 91105, where he transferred custody of the samples to Naomi Ameresekere, Environmental Scientist, ECL (**Attachment 3,** Sample Chains of Custody).

**Table 1. Site Visit Summary**

| Location | Address | Actions Completed | Roles |
|---|---|---|---|
| **Site 1**<br>Ohlone Elementary School | 21 Bay Farms Road, Royal Oaks, CA 95076 | 4 XRF scans | XRF Scanner: Hsieh<br>Photos: Friend |
| **Site 2**<br>Moss Landing Mobile Home Park | 1900 CA-1, Moss Landing, CA 95039 | 4 XRF scans<br>1 surface sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |
| **Site 3**<br>Moss Landing Community Park | 7881 Sandholdt Road “a” Dock, Moss Landing, CA 95039 | 7 XRF scans *(including two lead wipes)*<br>3 Microphazir scans *(no asbestos >1% threshold detected)*<br>1 surface sample | XRF Scanner: Hsieh<br>Microphazir: Lew<br>Sampler: Friend<br>Photos: Friend |
| **Site 4**<br>Island Beach Moss Landing | Island Beach Moss Landing, CA 95039 | 1 XRF scan<br>1 surface sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |
| **Site 5**<br>Monte Del Lago Mobile Home Park | 13100 Monte Del Lago, Castroville, CA 95012 | 1 XRF scan<br>1 surface sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |
| **Site 6**<br>Elkhorn Elementary School | 2235 Elkhorn Road, Castroville, CA 95012 | 1 XRF scan<br>1 surface sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |
| **Site 7**<br>Elkhorn Slough Visitor Center | 1700 Elkhorn Road, Watsonville, CA 95076 | 5 XRF scans<br>1 surface sample<br>1 aqueous sample<br>1 equipment blank (QC) sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |
| **Site 8**<br>Private Road Residence/ Marsh Area (debris and ash visible) | 36.808517 N, 121.782853 W, Moss Landing CA 95039 | 4 XRF scans<br>2 surface samples<br>1 aqueous sample | XRF Scanner: Hsieh<br>Sampler: Lew<br>Photos: Friend |

## Sample Details

For each location where a sample was collected, the first image is a photo of the sampling location and the second is an overhead map marking the location of the sampling. An overview map is provided in **Attachment 1** and all of the pictures are included in the photographic log **(Attachment 2).**

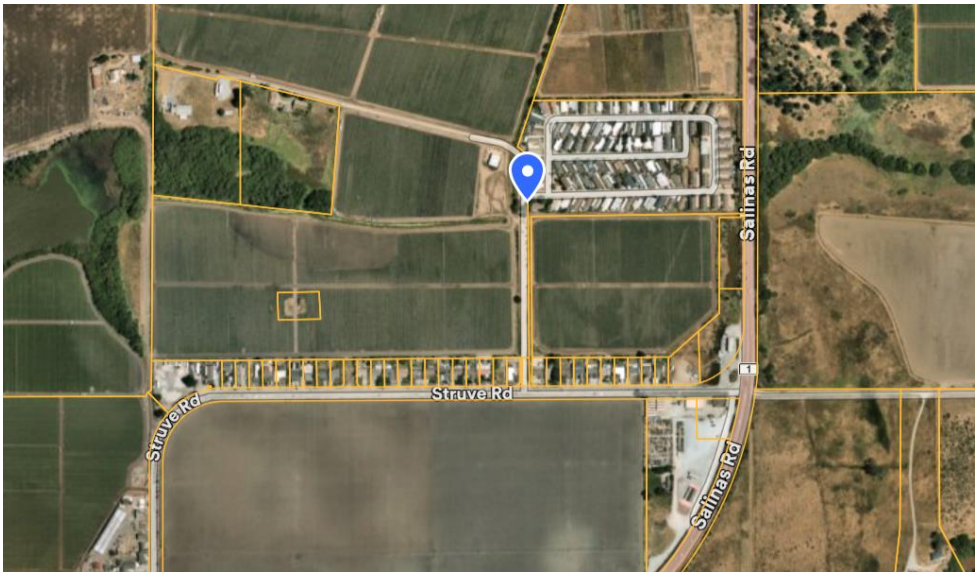
**Site 1: XRF screening only**

Based on the XRF results, distance from the fire, lack of visual indicators of fire impacts and time constraints, we did not collect a sample.

**Site 2: Sample BIA01461-A / ML001**

The sample was collected from a southwest corner patch dry sandy soil at the corner of a dirt road residents frequently use. During DTSC's sampling, multiple residents walked or drove by this location. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of sandy soil into a 32-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2133-2135).

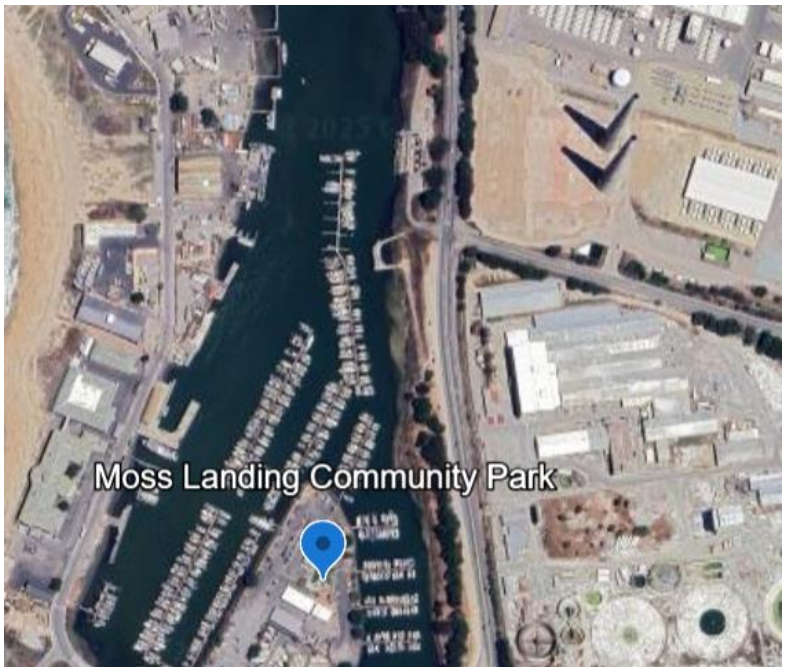
IMG_2122




Nearmaps, 06/17/2024

**Site 3: Sample BIA01462-A / ML002**
The sample was collected within the boundaries of the fire smoke plume model shared within the county resources and along a pathway next to a play structure where sensitive receptors likely frequent. The play structure itself did not contain soil, so this location was better suited for sampling. No visible ash was observed in this sampling area. Friend used a new disposable plastic scoop to scrape from the top quarter-inch of soil into a 16-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2172-2175).

IMG_2156




Google Earth, 06/30/2024

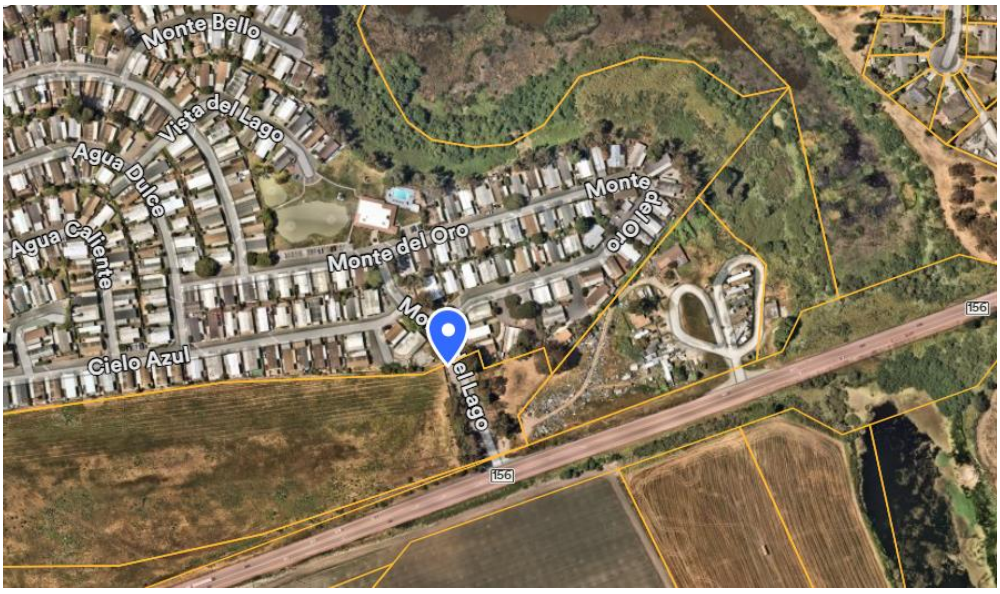
**Site 4: Sample BIA01463-A / ML003**
This sample was collected within the peninsula about half a mile north of the Moss Landing Community Park. The sample location was adjacent to the dune restoration area, and within 15 feet away from the wooden walkway to access this portion of the beach. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of sand into a 16-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2182-2186).

IMG_2178

Google Earth, 06/30/2024

**Site 5: Sample BIA01464-A / ML004**
This sample was collected along the pathway leading to the entrance/exit of the mobile home park. Due to prohibited access further into the park, this area was the closest point to screen and sample. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of soil into a 16-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2191-2194).

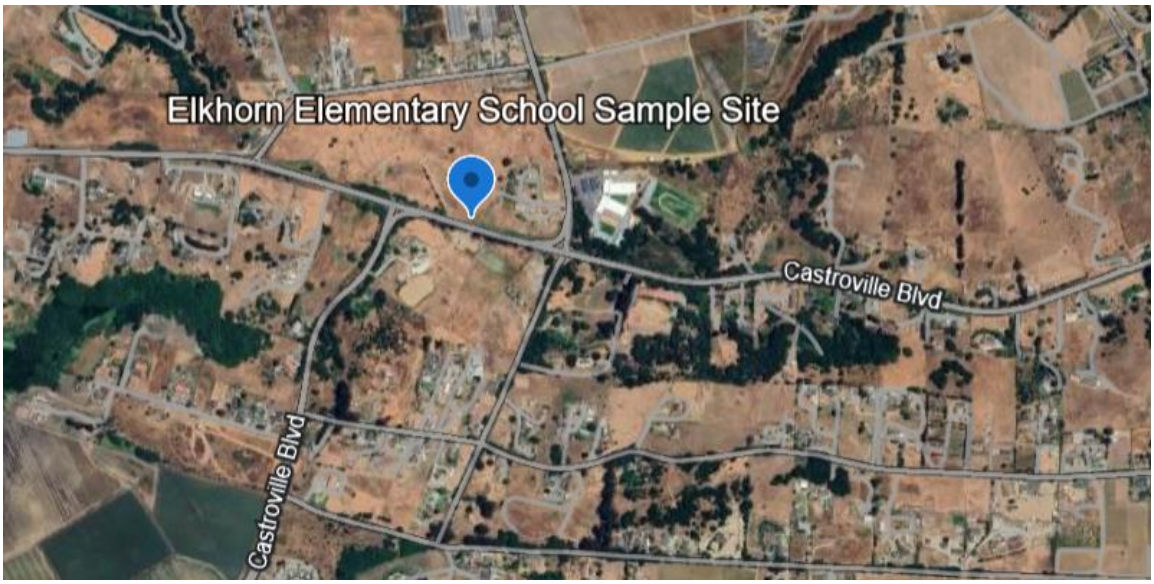
IMG_2187




Nearmaps, 06/17/2024

**Site 6: Sample BI01465-A / ML005**
The sample was collected along the road leading to the Elkhorn Elementary School entrance. DTSC did not access school grounds due to active after-school pick-up traffic. This soil was coarse and dry. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of soil into a 16-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2201-2203).

IMG_2196




Google Earth, 06/30/2024

**Site 7: Sample BIA01466-A / ML006**

This sample was collected from soil along the public trail a short walk from the Visitor Center. This soil was dry, loose, and surrounded by other similar soil patches in this grassy area. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of soil into a 16-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2240-2243).

IMG_2234

Google Earth, 06/30/2024

**Site 7: Sample BIA01467-A/B / ML007A/B and Sample ELK BLANK (aqueous samples)**
This liquid sample was collected from a small duckweed-covered pond easily accessible from the public trail a short walk from the Visitor Center. No visible ash was observed in this sampling area. Before sample collection, Lew collected an equipment blank (Sample ELK BLANK) by filling the pond skimmer with a previously unopened bottle of Pure Life-branded water, then pouring the water into a 32-ounce clear glass jar, which Friend labeled, sealed with evidence tape, and photographed. Lew then used the pond skimmer to collect water and duckweed at two access points, alternately filling two separate 32-ounce clear glass jars. Friend labeled, sealed with evidence tape, and photographed the samples (**Attachment 2,** IMG_2218-2223).

IMG_2224

Google Earth, 06/30/2024

**Site 8: Sample BIA01468-A / ML008**
The DTSC sampling team, along with Monique Fountain (Fountain), Tidal Wetland Project Director at Elkhorn Slough Reserve, gained consent from a resident to enter the private road adjacent to the site of the Moss Landing Power Plant. This sample was collected from loose soil directly along the fence line of the Moss Landing Power Plant, parallel to the private road. No visible ash was observed in this sampling area. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of soil into a 32-ounce clear glass jar. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2263-2265).

IMG_2259

Google Earth, 06/30/2024

**Site 8: Sample BIA01469-A / ML009**
This sample was collected from dry, clustered, crumbly soil in the marshy tide area east of the private road. Lew used a new disposable plastic scoop to scrape from the top quarter-inch of soil from various soil patches into a 32-ounce clear glass jar. There were several ashy flakes observed in the area that Lew included in the soil sample using gloved hands. Friend applied evidence tape and sample label, then photographed the sample (**Attachment 2,** IMG_2284-2286).

IMG_2277

IMG_2278

Google Earth, 06/30/2024

**Site 8: Sample BIA01470-A / ML010A/B (aqueous sample)**

This sample was collected from a small marshy pond near where Sample ML009 was collected. The liquid surface had a thin oily sheen. Lew used a new 16-ounce clear glass jar to transfer the slight brown liquid from the surface into two 32-ounce clear glass jars, alternately filling both jars. Friend applied evidence tape and sample labels, then photographed the samples (**Attachment 2,** IMG_2291-2295).

IMG_2287

Google Earth, 06/30/2024

**Additional Samples Given to DTSC**

After DTSC completed sampling at Site 7 (Elkhorn Slough Reserve), Fountain transferred custody of six additional water samples she and her colleagues took to DTSC sample custodian Hsieh. Elkhorn Slough Reserve staff collected these samples on January 22, 2025. The details of these samples are listed in **Table 2** below, transcribed from **Attachment 2,** IMG_2244. The Chain of Custody is included in **Attachment 3**. Please refer to **Attachment 2** for specific site photos where samples were collected from. Fountain provided the original photos pertaining to their samples to DTSC.

**Table 2. Summary of Samples Collected by Elkhorn Slough Reserve Staff**

| Date | Sample ID | Time Collected | Container Size(s) | Sample Description | Initials of Samplers |
|---|---|---|---|---|---|
| 1/22/2025 | CAT | 11:57 | 1 L | Turbid water | MS/RJ |
| 1/22/2025 | ROK | 12:05 | 1 L | Turbid water | MS/RJ |
| 1/22/2025 | HESTER POND (HP) | 12:27 | 0.5 L<br>2 x 0.25 L | Turbid water | MS/RJ |
| 1/22/2025 | SEED POND (SP) p3 | 12:44 | 4 x 250 mL | Clean water | MS/RJ |
| 1/22/2025 | MCS | 12:58 | 4 x 250 mL | Green/ Turbid water | MS/RJ |
| 1/22/2025 | MLWA | 13:15 | 4 x 250 mL | Clear water with green algae | MS/RJ |

## IV. Analytical Results

All samples were analyzed using EPA-approved SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods or the DTSC ECL-approved test methods. **Table 3**, **Table 4**, and **Table 5** on the following pages summarize the significant results relating to metals of concern that were tested. PAH constituents were detected in the parts per billion (ppb) range for surface samples, please reference lab report. PAH analysis was not performed on aqueous samples due to insufficient volume collected.

For details and all results, see **Attachment 4,** Analytical Laboratory Reports. Please refer to the laboratory reports for the detection limits of each analysis.

For the XRF screening data, please see **Attachment 5**.

**Table 3. Summary of Metal Results - Surface Samples**

| ECL ID | Field ID | Location | Matrix | Metals of Concern Results (mg/kg) |
|---|---|---|---|---|
| BIA01461-A | ML001 | Site 2<br>Moss Landing Mobile Home Park<br>(36.833105 N, 121.774348 W) | Dry sandy soil along dirt road behind homes | Cobalt (Co): Not detected (ND)<br>Copper (Cu): ND<br>Nickel (Ni): 13.2 |
| BIA01462-A | ML002 | Site 3<br>Moss Landing Community Park<br>(36.800883 N, 121.785160 W) | Soil next to play structure | Co: ND<br>Cu: 29.0<br>Ni: 21.2 |
| BIA01463-A | ML003 | Site 4<br>Island Beach<br>(36.804429 N, 121.788007 W) | Beach sand near publicly accessed walkway | Co: 13.2<br>Cu: ND<br>Ni: 38.2 |
| BIA01464-A | ML004 | Site 5<br>Monte Del Lago Mobile Home Park<br>(36.772007 N, 121.734148 W) | Soil, dry, along entrance/exit of Park | Co: ND<br>Cu: 22.0<br>Ni: 13.8 |
| BIA01465-A | ML005 | Site 6<br>Elkhorn Elementary School<br>(36.798094 N, 121.720628 W) | Soil, coarse, dry, along road leading to school | Co: 10.6<br>Cu: ND<br>Ni: 21.0 |
| BIA01466-A | ML006 | Site 7<br>Elkhorn Slough Visitor Center<br>(36.816958 N, 121.730922 W) | Soil along frequently used trail | Co: 10.4<br>Cu: ND<br>Ni: 18.6 |
| BIA01468-A | ML008 | Site 8<br>Private Road near Power Plant<br>36.808452 N, 121.782835 W) | Soil along fence line of Power Plant | Co: 17.7<br>Cu: 44.6<br>Ni: 47.1 |
| BIA01469-A | ML009 | Site 8<br>Marsh Area near Power Plant<br>(36.810590 N, 121.778090 W) | Soil, dry, crumbly, ash flakes | Co: 32.9<br>Cu: 26.4<br>Ni: 116 |

**Table 4. Summary of Metal Results – Aqueous Samples**

| ECL ID | Field ID | Location | Matrix | Metals of Concern Results (mg/L) |
|---|---|---|---|---|
| BIA01467-A/B | ML007A/B | Site 7 Elkhorn Slough Visitor Center (36.816765 N, 121.731693 W) | Multiphasic, duckweed present; cloudy | Co: 0.327<br>Cu: ND<br>Ni: 0.382 |
| BIA01477-A | ELK BLANK (Equipment QC Sample) | Site 7 Elkhorn Slough Visitor Center (36.816765 N, 121.731693 W) | Aqueous Liquid; clear | Co: ND<br>Cu: ND<br>Ni: ND |
| BIA01470-B | ML010A/B | Site 8 Marsh Area near Power Plant (36.810594 N, 121.777951 W) | Aqueous Liquid, unknown oily film on top layer; light brown | Co: ND<br>Cu: ND<br>Ni: ND |

**Table 5. Summary of Metal Results – Aqueous Samples Collected by Elkhorn Slough Reserve Staff**

| ECL ID | Field ID | Location | Matrix | Metals of Concern Results (mg/L) |
|---|---|---|---|---|
| BIA01471-A | CAT | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: ND |
| BIA01472-A | ROK | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: ND |
| BIA01473-A | HESTER POND (HP) | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: 0.386 |
| BIA01474-C | SP p3 | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: ND |
| BIA01475-C | MCS | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: ND |
| BIA01476-C | MLWA | Elkhorn Slough Visitor Center | Aqueous Liquid | Co: ND<br>Cu: ND<br>Ni: ND |

## V. Attachments

1. Overview Sample Map
2. Photographic Log
3. Sample Chains of Custody
4. Analytical Laboratory Reports
5. XRF Screening Data

## VI. Signatures

Gabriel Trevino _____ 02/24/2025 _____

Gabriel Trevino
Environmental Scientist
Office of Criminal Investigations

Date Signed

Bonny Lew _____ 02/24/2025 _____

Bonny Lew
Senior Environmental Scientist (Supervisor)
Office of Criminal Investigations

Date Signed