

April 24, 2023

Subject: Draft Soil Sampling Workplan – Martinez Refinery
Contra Costa Health Hazardous Materials Program
Martinez, California

On behalf of Contra Costa County Health, Hazardous Materials Program (County), TRC Solutions, Inc. (TRC) has prepared this Soil Sampling Workplan (Workplan) to guide collection of shallow soil samples from potentially affected areas in the vicinity of the Martinez Refinery Company in Martinez, California (Site). The sampling program is outlined herein to determine concentrations of constituents of concern (COCs) likely to be present in the spent catalyst dust atmospherically deposited to shallow soils during the release which occurred in November 2022. The concentrations of COCs in these shallow soils will be used as exposure point concentrations in a screening level assessment of human health and ecological risks posed by potential exposure to the catalyst dust.

1.0 Introduction and Background

Spent catalyst dust was released between November 24-25, 2022 into the surrounding community from a Fluid Catalytic Cracker Unit at the Martinez Refining Company facility located at 3485 Pacheco Boulevard in Martinez, California. Physical evidence of the release has been observed and reported by community members as a white powder covering surfaces in local residential communities. This evidence includes actual dust particulates observed on vehicles, trash cans, and residential garden areas within the community.

The objective of the proposed screening level human health and ecological risk assessment is to provide both the community and applicable regulatory agencies with an understanding of the potential risks posed by the presence of and potential exposure to this dust which could potentially be found in soil. The risk assessment is further intended to inform potential corrective actions, as applicable, to mitigate these risks. It is understood that the results of this screening level risk assessment may lead to additional, more detailed risk quantification if the risks are determined to be above applicable regulatory thresholds for human health and ecological receptors.

Based on preliminary analyses of particulates collected and analyzed for relevant constituents, elevated levels of metals (e.g., aluminum, nickel, and vanadium) were detected (**Table 1**). There may be additional constituents that warrant evaluation and risk characterization, and TRC's proposed scope of work includes the collection and analysis of soil samples from areas to be determined in collaboration with County staff.

2.0 Scope of Work

2.1 Pre-Field Activities

A comprehensive Health and Safety Plan (HASP) will be prepared for this project. The intent of the HASP is to ensure the health and safety of onsite project employees, visitors, and the public during project work. The HASP identifies policy, procedures, and systems to be followed by

project personnel and is required to be followed by TRC employees, subcontractors, vendors, visitors, and agency representatives at the Site.

A copy of the HASP will be readily available during the soil sampling activities. Prior to any field activity, TRC will conduct a “tailgate” health and safety meeting with all workers to discuss the health and safety issues and concerns related to the specific work. All workers involved in the field activities will review and sign the TRC HASP before work begins.

2.2 Soil Sampling

It is TRC’s understanding that existing samples of soil and/or catalyst dust have been collected from the community, as well as from the refinery, and data results confirmed that the spent catalyst contained elevated levels of several inorganics, including aluminum, nickel, and vanadium (**Table 1**).

Using hand auger or other hand tool methods, TRC will collect soil samples at 14 locations in order to conduct a preliminary soil evaluation to complement the data collected by the County for catalyst dust depositions. These samples will be collected from areas specified by the County where significant accumulation of catalyst dust was initially observed and where the County is able to provide access for sampling. The locations of proposed sampling are additionally informed by the results of dispersion modeling conducted and previously presented by the Bay Area Air Quality Management District (BAAQMD); the proposed sampling locations are superimposed on the map summarizing the results of BAAQMD’s dispersion modeling in **Figure 1**. The resulting concentrations of COCs in the soil samples will be compared with applicable human health and ecological screening levels published by the Human and Ecological Risk Office (HERO) of the California Department of Toxic Substances Control (DTSC) and the US Environmental Protection Agency (USEPA).

To characterize nearby residential soil potentially affected by airborne spent catalyst, surface soil samples (depth of 0-6 inches) will be collected at all 14 locations (**Table 2**). Preference will be given to soil in the shallower portion of the sampling interval (upper 3 inches) where possible, and if any visible dust is observed, it will also be included in the sample.

A total of 14 soil samples will be analyzed by Eurofins Environment Testing, a State-certified chemical laboratory, under an expedited 5-day turnaround time, for the following constituents:

- Title 22 metals + aluminum using USEPA Methods 6010B and 7471A
- Hexavalent chromium using USEPA Method 7199

Soil samples will be placed in laboratory-provided glass jars and kept on ice. Samples will be collected using standard industry practices, including worker safety protocols, equipment decontamination, sample handling, and chain-of-custody documentation. Upon completion, sample locations will be backfilled with soil cuttings to match existing grade.

3.0 Schedule

Sampling activities will commence following approval of this Workplan and coordination with the County. A table summarizing the results of the soil analyses and a figure showing sample locations

will be prepared within ten (10) days of receipt of laboratory data, and a summary report will be prepared and submitted to the County within 30 days of receipt of laboratory data.

4.0 Closing Statement

If you have any questions or require any additional information, please call Jonathan Scheiner at 925.260.4809.

Sincerely,
TRC SOLUTIONS, INC.



Jonathan Scheiner, PhD
Project Manager



Laura Tait, PG
Project Geologist

Figures

Figure 1: Proposed Soil Sampling Locations

Tables

Table 1: Results of Previous Analyses

Table 2: Sampling Design and Analytical Methods