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By Alameda County Environmental Health 11:46 am, Jul 21, 2016

ECOLOGICAL RISK EVALUATION WORKPLAN

FORMER CALTRANS HEGENBERGER
MAINTENANCE STATION
555 HEGENBERGER ROAD
OAKLAND, ALAMEDA COUNTY, CALIFORNIA



GEOCON
CONSULTANTS, INC.

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

CALIFORNIA DEPARTMENT OF
TRANSPORTATION, DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE, 14TH FLOOR
OAKLAND, CA

PREPARED BY

GEOCON CONSULTANTS, INC.
6671 BRISA ST.
LIVERMORE, CA 94550

CALTRANS CONTRACT NO. 04A4337
TASK ORDER NO. 1

GEOCON PROJECT NO. E8722-02-01B

JULY 2016



Geocon Project No. E8722-02-01B
July 15, 2016

Mr. Keith Nowell
Alameda County Health Care Services
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: ECOLOGICAL RISK EVALUATION WORKPLAN
FORMER CALTRANS HEGENBERGER MAINTENANCE STATION
555 HEGENBERGER ROAD
OAKLAND, ALAMEDA COUNTY, CALIFORNIA

Dear Mr. Nowell:

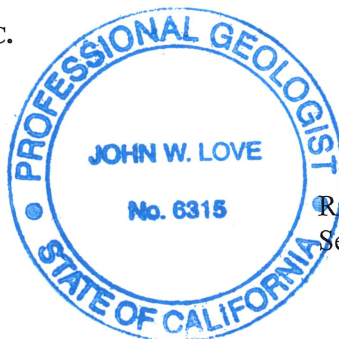
Geocon Consultants, Inc. has prepared this *Ecological Risk Evaluation Workplan* for the Former Caltrans Hegenberger Maintenance Station site located in Oakland, California. The report contains details of field services and laboratory analytical results.

Caltrans' authorization to submit this workplan is provided in Appendix C. Please contact the undersigned if you have any questions or comments.

Sincerely,

GEOCON CONSULTANTS, INC.

John Love
Senior Project Geologist



Richard Day, CEG, CHG
Senior Geologist

- (1) Addressee
- (5) Bahram Sazegar, Caltrans – District 4

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- A Client Authorization Letter

ECOLOGICAL RISK EVALUATION WORKPLAN

1.0 INTRODUCTION

On behalf of Caltrans District 4, Geocon Consultants, Inc. (Geocon) has prepared this Ecological Risk Evaluation Workplan for the Former Caltrans Hegenberger Maintenance Station site located at 555 Hegenberger Road in Oakland, Alameda County, California (Figure 1). The contents of this workplan were prepared as directed by the Alameda County Health Services Agency (HSA) in their letter dated June 13, 2016.

1.1 Background

Since 1948, the site is known to have been used as both City of Oakland and Caltrans maintenance yards. The Caltrans maintenance yard occupied the site from at least 1978 until the early 1990s. In 1994, two 2,000-gallon diesel underground storage tanks (USTs) and two 6,500-gallon gasoline USTs were reportedly removed. The USTs were reportedly last used in 1986.

In September 1994, GHH Engineering, Inc. removed the four USTs. During the UST removals, approximately 8,100 gallons of water and product were removed from the tanks. Upon removal from the ground, holes were observed in each UST indicating that a release had occurred. Approximately 280 cubic yards of soil was over-excavated from the common UST pit and disposed offsite during the UST removal.

After the USTs were removed in 1994, several subsurface investigations were conducted at the site to delineate the petroleum impacts to soil and groundwater resulting from the unauthorized release(s) of gasoline and diesel fuel from the four USTs.

The most recent investigation at the site was conducted by Geocon in April 2015. The intent of this investigation was to provide additional soil and groundwater data to fill in data gaps necessary to close the site case under the 2012 Low Threat Closure Policy (LTCP) guidelines. The goals of this investigation were to assess hydrogeologic conditions beneath the investigation area, delineate the lateral extent of impacts to soil and groundwater northwest, northeast, and east of the former UST excavation area, assess potential vapor intrusion to existing buildings, and assess potential impacts to ecological receptors in the tidal channel located approximately 300 feet south of the former USTs.

Results of the April 2015 investigation were presented in the *Additional Soil and Groundwater Investigation Report* prepared by Geocon, dated June 10, 2015. Conclusions presented in the report were that impacts to soil and groundwater at several locations throughout the investigation area would require active remediation to meet the closure guidelines presented in the 2012 LTCP. We also

concluded that petroleum hydrocarbons released from the former Caltrans USTs do not pose a threat to aquatic habitat in the tidal channel located approximately 300 feet south of the former USTs. The HSA concurred that active remediation would be necessary to meet the closure guidelines of the 2012 LTCP; however, they disagreed that the assessment to the adjacent tidal wetland was complete. In a letter dated June 13, 2016, the HSA directed that an *Interim Remedial Action Workplan* and an *Ecological Risk Evaluation Workplan* be prepared to further move this case towards closure.

1.2 Proposed Sample Rationale

The concern the HSA had with the tidal wetland area south of the former Caltrans site was that one of the groundwater samples collected from boring SB-25 (see Figure 2) was reported to contain total petroleum hydrocarbons as diesel (TPHd) at a concentration exceeding the San Francisco Bay Regional Water Quality Control Board (RWQCB) aquatic habitat environmental screening level (ESL) of 640 ug/l.

TPHd was reported in the groundwater sample collected from SB-25 at a concentration of 620 micrograms per liter (ug/l) using silica gel cleanup (SGC) and 1,300 ug/l without using SGC. Since the RWQCB does not recognize sample results using the SGC process and the only valid sample result of 1,300 ug/l exceeds the aquatic habitat ESL of 640 ug/l, the HSA requested that additional assessment be conducted to demonstrate that the unauthorized release of gasoline and diesel fuel from the former Caltrans USTs will not negatively impact aquatic habitat in the tidal channel located south of the site.

The source of the TPHd reported in the SB-25 groundwater sample is not known; however, the former UST storage and dispensing system does not appear a likely source given the distance between the site and boring SB-25 as well as the absence of TPHd in groundwater samples collected from borings SB-23 and SB-24. More likely sources of TPHd in groundwater near SB-25 would be potential fill soils in this area and/or surface water originating from the tidal channel itself.

To investigate the ecological risk to aquatic habitat in the tidal channel posed by the unauthorized release at the Former Caltrans site, we propose collecting soil and grab groundwater samples from eight temporary boring locations, as shown on Figure 2.

Borings SB-23A, SB-24A, and SB-25A will be placed adjacent to former borings SB-23, SB-24, and SB-25. The purpose of these borings will be to assess whether the TPHd reported in the groundwater sample collected from boring SB-25 in April 2015 was anomalous.

The groundwater sample collected from boring SB-25 was collected using a temporary well casing placed inside an open borehole advanced to a depth of 16 feet, while the groundwater samples

collected from borings SB-23 and SB-24 were retrieved between the depths of 16 and 20 feet using a Hydropunch sampler. The SB-25 borehole was continuously logged to a depth of 16 feet where groundwater was initially encountered. Once groundwater was encountered, it quickly rose to within seven feet of ground surface where it may have come into contact with overlying TPHd-containing soils. The groundwater samples collected from SB-23 and SB-24 did not come into contact with overlying soils because groundwater rose inside the Hydropunch sampler drive-rods and through an open borehole. Therefore, it is possible the reason that TPHd was reported in the SB-25 groundwater sample was the result of a differing sample collection method.

To assess whether the presence of TPHd in the SB-25 groundwater sample and the absence of TPHd in the SB-23 and SB-24 groundwater samples was the result of differing sample collection methods, we propose advancing borings (SB-23A, SB-24A, and SB-25A) adjacent to the former SB-23, SB-24, and SB-25 boring locations and collecting soil and groundwater samples for laboratory analysis. The collection of soil samples will help assess whether fill soils overlying groundwater south of the Former Caltrans Maintenance Station site maybe a source of TPHd reported in the SB-25 groundwater.

Boring SB-26, SB-27, and SB-28 will be advanced approximately 75 feet north of borings SB-23A, SB-24A, and SB-25A. Presumably, if the unauthorized release at the Former Caltrans Maintenance Station is the source of TPHd reported in groundwater south of the site, it will be detected at concentrations at least equal to those reported in borings SB-23A, SB-24A, and SB-25A, if TPHd is present at these locations.

Borings SB-29 and SB-30 will be advanced along the south side of the tidal channel. Soil and groundwater data collected from these borings should provide further information on the likely source of groundwater impacts near the tidal channel depending on the sample results.

2.0 TEMPORARY BORING ADVANCEMENT

Each boring will be continuously logged from ground surface to first encountered groundwater. Based on the soil and groundwater conditions observed during the April 2015 investigation, groundwater south of the Former Caltrans Maintenance Station site is expected to be encountered under confined conditions at depths between 16 and 20 feet. Groundwater will rise to within seven feet of ground surface once encountered.

To further assess the source of TPHd reported in boring SB-25 during the April 2015 investigation, we propose collecting soil samples at each boring location for laboratory analysis at depths of 5, 10 and 15 feet (if groundwater is not encountered first). Additionally, to assess whether the groundwater sample methodology was the likely reason for the differing TPHd groundwater sample results obtained

from borings SB-23, SB-24, and SB-25 in 2015, we will collect groundwater samples at each boring location in an open borehole and using a Hydropunch sampler.

Each boring location will be sampled by continuously coring the borehole using a Macrocore sampler. Soil samples will be collected during the advancement of the borehole and a grab groundwater sample will be collected once groundwater is encountered by placing a temporary ¾-inch-diameter PVC well casing into each open borehole.

After a grab groundwater sample is collected from the open borehole the boring will be backfilled with Portland cement and another boring will be advanced within 2 feet for the purpose of collecting a grab groundwater sample using a Hydropunch sampler. Depth to first encountered groundwater at each boring location will be known after the first borehole is completed so the Hydropunch sampler can be driven directly to the target sample depth.

2.1 Soil and Groundwater Sample Methodology

Temporary borings will be advanced using a Geoprobe direct-push sample rig. The Geoprobe sampler hydraulically advances an approximately two-inch-diameter by four-foot-long core barrel sampler lined with an acetate sample tube into undisturbed soil at four-foot intervals until the total depth of each borehole is reached. Soil samples will be collected by cutting an approximately six-inch-long section of the acetate tube from target sample depths, capping the ends with Teflon tape and plastic end caps, labeling the sample tubes with the sample location, date, depth, and time, and then placing the sample in a chest cooled with ice.

Grab groundwater samples will be collected from each boring location by first installing a temporary ¾-inch-diameter PVC well casing into each open borehole and extracting a groundwater sample through the casing using a peristaltic pump with disposable polyethylene tubing. An additional groundwater sample will be collected at each boring location using a Hydropunch sampler driven directly to the target sample depth. Once the Hydropunch sample screen is exposed at the targeted sample depth, a groundwater sample will be collected using a peristaltic pump with disposable polyethylene tubing.

Groundwater will be discharged at ground surface into an unpreserved amber 1-liter glass jar. The sample container will then be labeled with the sample location, date, and time, and placed in a chest cooled with ice for transport to the analytical laboratory.

Sampling equipment will be cleaned between sample locations using a non-phosphate detergent (Alconox™ or Liquinox™ solution) followed by a double rinse with deionized water.

When sample collection at each borehole has been completed, the borehole will be backfilled with Portland cement from the bottom of the boring to ground surface.

Soil cuttings and rinsate fluids generated during the field sampling will be containerized and transported back to Geocon's warehouse in Livermore, California, pending disposal arrangements.

2.2 Sample Analysis

Soil and grab groundwater samples will be submitted under chain-of-custody protocol to Advanced Technology Laboratories, a State of California-certified laboratory located in Signal Hill, California.

The soil and groundwater samples will be analyzed for TPHd and motor oil (TPHmo) following EPA Method 8015B. TPHmo will be analyzed in addition to TPHd as recommended in the *RWQCB 2016 ESL User's Guide* to capture petroleum degradates, even though TPHmo was reported as non-detect (<50 ug/l) in the SB-25 groundwater sample in April 2015.

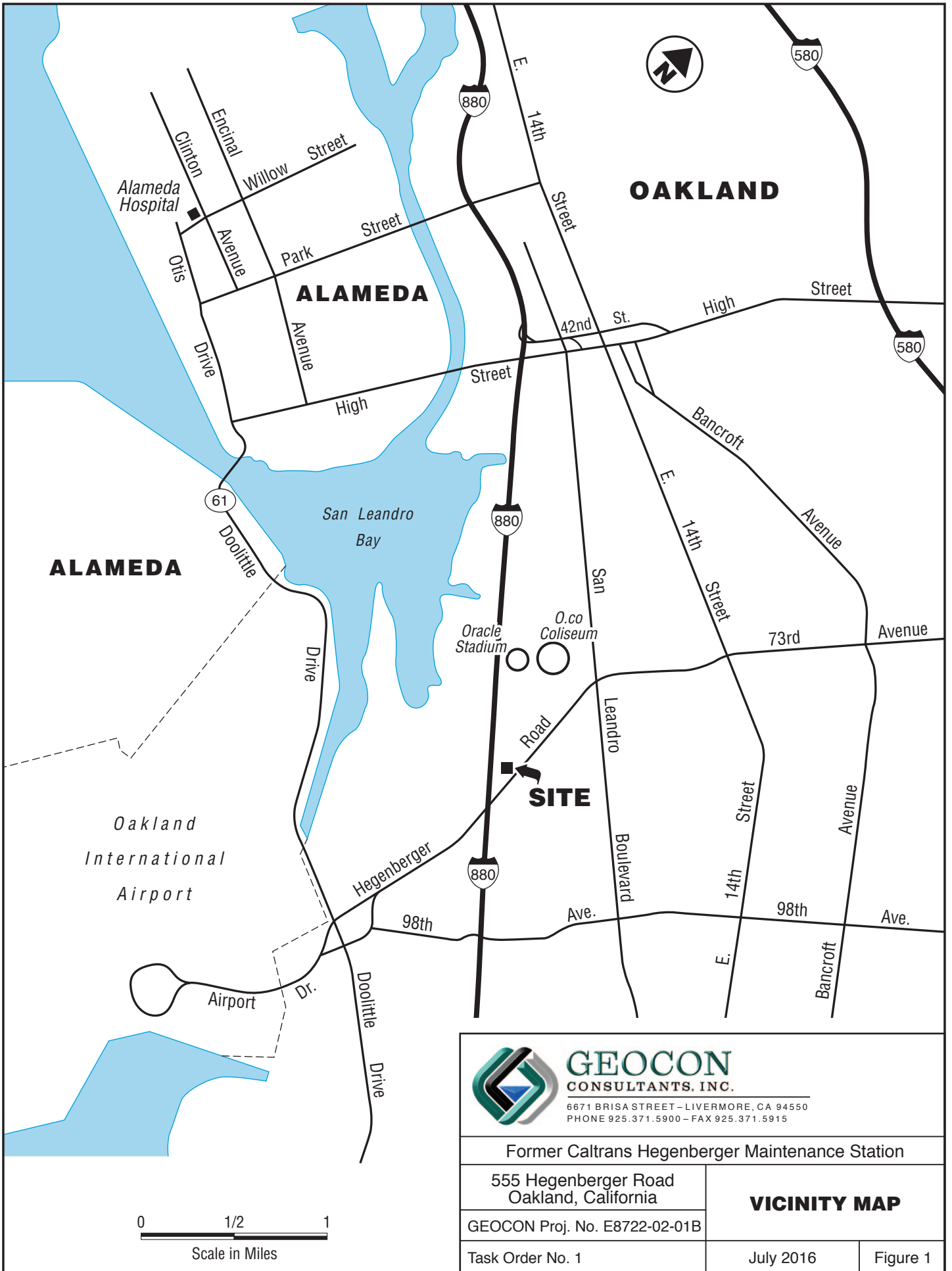
According to the RWQCB, the use of SGC where the concentrations are to be compared to screening criteria or in risk evaluations is not appropriate (RWQCB, 2016); therefore, SGC will not be utilized during this investigation.

3.0 REPORT PREPARATION

Once the soil and groundwater investigation has been completed, the results will be presented in a report to the HSA. The report will include the following:

- Observations noted during the field activities
- Investigative methods and procedures
- Copies of the analytical laboratory reports and chain-of-custody documentation
- An updated site conceptual model
- Laboratory results presented in tabular format
- Conclusions and recommendations

The report and associated analytical laboratory results and updated site map will be uploaded to the State Geotracker Database prior to submission to the HSA.



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6671 BRISA STREET - LIVERMORE, CA 94550
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Former Caltrans Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

VICINITY MAP

GEOCON Proj. No. E8722-02-01B

Task Order No. 1

July 2016

Figure 1



GEOCON
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6671 BRISA STREET, LIVERMORE, CA 94550; PHONE 925 371-5900 - FAX 925 371-5915

Former Caltrans Hegenberger Maintenance Station

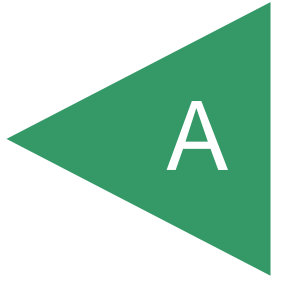
555 Hegenberger Road,
Oakland, California

**PROPOSED
SAMPLE
LOCATION MAP**

GEOCON Proj. No. E8722-02-01B July 2016 Figure 2

APPENDIX

A



June 15, 2015

Mr. Keith Nowell
Alameda County Health Care Services
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Reference: Ecologic Risk Evaluation Workplan
 Former Hegenberger Maintenance Station
 555 Hegenberger Road
 Oakland, California

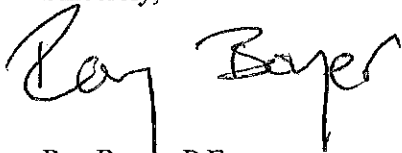
Dear Mr. Nowell:

Attached for your review is the *Ecologic Risk Evaluation Workplan* for the Former Hegenberger Maintenance Station located at 555 Hegenberger Road in Oakland, California. This workplan was prepared for the Alameda County Health Care Services Environmental Protection Division by Geocon Consultants, Inc.

I declare under penalty of perjury, that the information and/or recommendations contained in the referenced report is true and correct, to the best of my knowledge.

If you have any questions, please don't hesitate to contact me or Geocon project manager John Love at (925) 371-5900 extension 407.

Sincerely,

A handwritten signature in black ink that reads "Ray Boyer". The signature is written in a cursive style with a large, prominent "R" and "B".

Ray Boyer, P.E.
Office of Environmental Engineering
Division of Planning & Engineering
Caltrans District 4