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Re 334

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July 19, 2001

Mr. Barney Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 9502

Clayton Project No. : 70-97066.00

Subject: Workplan to Destroy Three (3) Existing and Install Three (3) New Groundwater Monitoring Wells the former Lemoine Sausage Factory at 630 29th Avenue, Oakland, California

Dear Mr. Chan:

Clayton Group Services Inc. (Clayton) has this workplan that outlines the methods to destroy three existing monitoring wells and install three new groundwater monitoring wells at 630 29th Avenue in Oakland, California, Figure 1. The workplan is submitted at the request of the Alameda County Health Care Services letter dated June 19, 2001.

This workplan outlines a scope of work, and work methods for the destruction of three existing groundwater monitoring wells, and the installation, surveying, development and initial groundwater sampling of three new monitoring wells. The installation of monitoring wells will be subject to workplan approval by the ACHCS and permit issuance by the Alameda County Public Works Agency (ACPWA).

BACKGROUND

A one 1,000-gallon gasoline UST and associated fueling dispenser and were formerly located east of the facility building. The UST was located beneath the sidewalk adjacent to 7th Street and supplied the dispenser located in a "cubby hole" near the building's roll-up door. The UST and associated piping were removed on November 21, 1996 and confirmation soil samples indicated that petroleum hydrocarbon as gasoline had been historically released from the UST system.

Further site characterization investigations were performed and groundwater was found to be impacted with both petroleum hydrocarbons and chlorinated solvents. The source of chlorinated solvents with the exception of 1,2- Dichloroethane has not been discerned at this time. To date eight (8) monitoring wells have been installed and are monitored on a quarterly basis.

Due to restrictive site access conditions five of the initial monitoring wells (MW-1 through MW-5) were installed as 3/4-inch diameter wells. However, due to site conditions, three of the monitoring wells (MW-3, MW-4, and MW-5) have a history of producing occasional anomalous groundwater elevation and water quality results. As such, these monitoring wells will be destroyed and replaced by a single 2-inch monitoring well.

Furthermore to address ACHCS concerns with the present definition of the hydrocarbon plume, one additional upgradient monitoring well and one downgradient monitoring well will be installed. The location of the new monitoring well was agreed, at a meeting between Clayton and the ACHCS on April 24, 2001. The locations of the monitoring wells to be destroyed and the monitoring wells to be installed are shown in Figure 1.

SCOPE OF WORK

To monitor groundwater conditions at the subject property, three groundwater monitoring wells will be installed and sampled. Clayton will conduct the following specific tasks:

- Prefield Activities
- Destroy Three Existing Monitoring Wells
- Install Three New Groundwater Monitoring Wells
- Groundwater Monitoring Well Development
- Monitoring Well Surveying
- Collect Groundwater Samples
- Laboratory Analysis
- Project Management and Report Preparation

Task 1: Prefield Activities

Clayton will prepare a site specific Health and Safety Plan (HASP) for the work proposed at the site in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). A copy of the health and safety plan was kept onsite during field activities. The HASP will detail the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and onsite personnel responsible for managing emergency situations.

Clayton will obtain three monitoring well installation permits from the ACPWA, and schedule a C-57 licensed drilling contractor to install the monitoring wells. Clayton will mark the site's property with white paint and notify Underground Service Alert (USA) with at least 48 hours prior to drilling, as required by law. Clayton will also contract a

professional utility locating service to attempt to identify the location of underground utilities in the vicinity of proposed boring locations. Clayton will not advance a boring within three feet from a known underground utility.

In addition, two of the new monitoring wells will be located with the City of Oakland right-of-way, Clayton will need to prepare the necessary encroachment and excavation permits, and obtain access agreements from all affected parties.

Task 2a: Destroy Three Small Diameter Monitoring Wells

Existing 3/4-inch diameter monitoring wells MW-3, MW-4, and MW-5 will be destroyed. These wells will be destroyed by pouring grout into the well casing and applying up to 20 pounds per square inch (psi) pressure to the sealed/airtight wellhead. The applied pressure will cause the grout to flow through the well filter pack materials and out into the surrounding formation. Grout will be continually added to the well casing until the applied pressure can no longer force grout into the surrounding formation. The well casing and well box will then be backfilled to match existing grade.

Task 2b: Monitoring Well Installation

A limited access drill rig equipped with eight-inch diameter hollow stem augers will be used to drill boreholes for monitoring well installation. While drilling boreholes, an 18-inch long California modified split spoon sampler lined with three two-inch diameter, six-inch long brass sleeves will be used to collect soil samples from boreholes. One sample drive will be performed every five-foot of borehole penetration. Based on the historical depth to water measurements, Clayton anticipates that groundwater will be encountered at depths of approximately 5 to 10 feet below ground surface.

Soil cores will be logged for lithological content by the Unified Soil Classification System (USCS), color using a Munsell color chart, relative moisture content, competency, blow counts, and other observable distinguishing characteristics (for example, rootlets or odor). A photo-ionization detector (PID) will be used to field screen soil for the presence of VOCs. Lithological details and other field observations will be entered onto exploratory boring log sheets.

All hollow stem auger drill stems and downhole sampling equipment will be steam cleaned after each use. The soil cuttings and decontamination water will be containerized in separate United States Department of Transport (DOT) approved 55-gallon drums. The drums will be sealed, labeled with content information and generation date, and stored onsite pending future disposal.

Task 2c: Groundwater Monitoring Well Construction

Three groundwater monitoring wells will be constructed within the eight-inch diameter boreholes. The well screen section will be constructed with two-inch diameter schedule 40 poly-vinyl chloride (PVC) casing perforated with 0.010-inch slots and fitted with a PVC end cap. The well screen casing will be flush threaded to the necessary length of two-inch diameter schedule 40 PVC blank pipe to complete the well casing to surface. The monitoring well screen casing will be set from approximately five feet below first encountered water to five feet above first encountered.

The well screen filter pack will be constructed by pouring Lonestar number 2/12 graded sand from the bottom of the borehole annular space to two feet above the top of the well screen casing. A two-foot interval of 3/8-inch bentonite pellets will be placed in the annular space above the top of the sand filter pack. The bentonite will be hydrated and allowed to swell. The remaining annular space to approximately one-foot below ground surface will be filled with a neat cement grout containing approximately five percent bentonite powder. A traffic rated Christy box will be placed around the top of each well casing and secured in place with concrete. A lockable expanding well cap will be used to secure each wellhead. A V-notch will be placed on the top of the north facing rim of each monitoring well casing for use as a surveying and depth to water measurement reference point. Well construction details will be recorded onto well construction field logs.

Task 2d: Groundwater Monitoring Well Development

The annular grout seals will be allowed to set for three days prior to well development. Well development will be performed to remove sediment that has accumulated in the well casing and filter pack sand during well construction, and also to help stabilize the filter pack sand and aquifer material surrounding the well screen intake area.

The depths to groundwater and total length of the monitoring well casing will be measured to determine the quantity of water column within each well casing. A monitoring well development rig equipped with a two-inch surge block will be used to agitate water and well construction materials prior to and during well development. A submersible pump or bailer will be used to purge groundwater and sediment from well casings. Well development will be continued until water quality parameters (pH, temperature, specific conductivity, and turbidity) have stabilized. A minimum of 10 well casing volumes of water will be purged from monitoring wells during development. Purge water will be stored onsite in sealed, labeled, DOT approved 55-gallon drums pending future disposal. Groundwater quality parameters will be recorded onto well development field logs.

Task 2e: Monitoring Well Surveying

A State of California Licensed Land Surveyor will survey the location and elevation of each monitoring well. The survey will include the top of well casing elevation (north face) and top of Christy box rim elevation; the elevation data will be surveyed to 0.01 foot accuracy. The northing and easting co-ordinates will be surveyed to 0.1-foot accuracy and referenced to a recognized survey monument. In addition, to comply with the newly mandate State of California Assembly Bill 2886, Clayton will have the surveyor re-survey existing monitoring well locations and report their lateral co-ordinates in required decimal degree format.

Task 3: Groundwater Monitoring Well Sampling

Approximately four well casing volumes of water will be purged from each monitoring well prior to sampling. A submersible pump will be used to purge groundwater from each monitoring well. Water quality parameters (pH, specific conductivity, temperature and visual turbidity) will be recorded onto groundwater sampling field logs. Water quality parameters will be measured at; the initial standing water column in the well casing prior to purging, and following the removal of each subsequent well casing volume of water.

Upon purging sufficient water from the monitoring wells, groundwater for laboratory analysis will be retrieved using a disposable bailer and transferred into laboratory supplied sample containers. The sample container size and sample preservative will correspond to requested analytical method. Sample containers will be sealed, labeled with identifying information, logged onto the chain-of-custody, and temporarily stored in a chilled ice-chest while awaiting transportation to the laboratory. Groundwater purged from monitoring wells for sampling purposes will be stored onsite in sealed, labeled, DOT approved 55-gallon drums pending future disposal.

Task 4: Laboratory Analysis

Groundwater samples will be submitted for one or more of the following analytical methods:

- USEPA Method 8015M for total petroleum hydrocarbons as gasoline (TPHG)
- USEPA Method 8020 for aromatic hydrocarbons; benzene, toluene, ethylbenzene and total xylenes (BTEX).
- USEPA Method 8010 for halogenated organic compounds

Samples will be submitted to a State of California certified laboratory for analysis on standard ten day turn-round time basis.

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Task 5: Project Management and Report Preparation

Upon completion of the laboratory analysis, Clayton will prepare a report documenting groundwater monitoring well installation, development, and sampling field methods. The report will include a description of the site, geological and well construction logs, copies of well development and sampling field logs, laboratory analytical data sheets, a tabulation of laboratory analytical results and depth to water measurements, figures delineating monitoring well locations and groundwater flow direction, and conclusions and recommendations.

SCHEDULE

Clayton will begin to initiate the tasks outlined in this workplan upon receiving ACHCS authorization to proceed. Field activities will be scheduled based on subcontractor availability and the ability to obtain all necessary permits and access agreements. Clayton anticipates that field activities will take approximately 4 days (2-days for monitoring well destruction and installation, 1-day for monitoring well development, and 1-day for groundwater sampling) to complete. Regulatory specifications require that for newly constructed monitoring wells the annular seal be allowed 72-hours (3-days) to cure before well development may take place. A further 24-hour (1-day) stabilization period is required following well development prior to groundwater sampling.

Groundwater samples will be submitted on a standard ten-day turnaround time. The total time to complete field activities, submit samples and receive laboratory analytical results is estimated at three weeks. Overall, project completion will be dependent on response time provided by the ACHCS and the ability to obtain permits and access agreements.

Please contact the undersigned at (925) 426-2600 if you have questions or require additional information.

Sincerely,



Warren B. Chamberlain, R.G., C.H.G., P.E.
Project Manager
Environmental Services

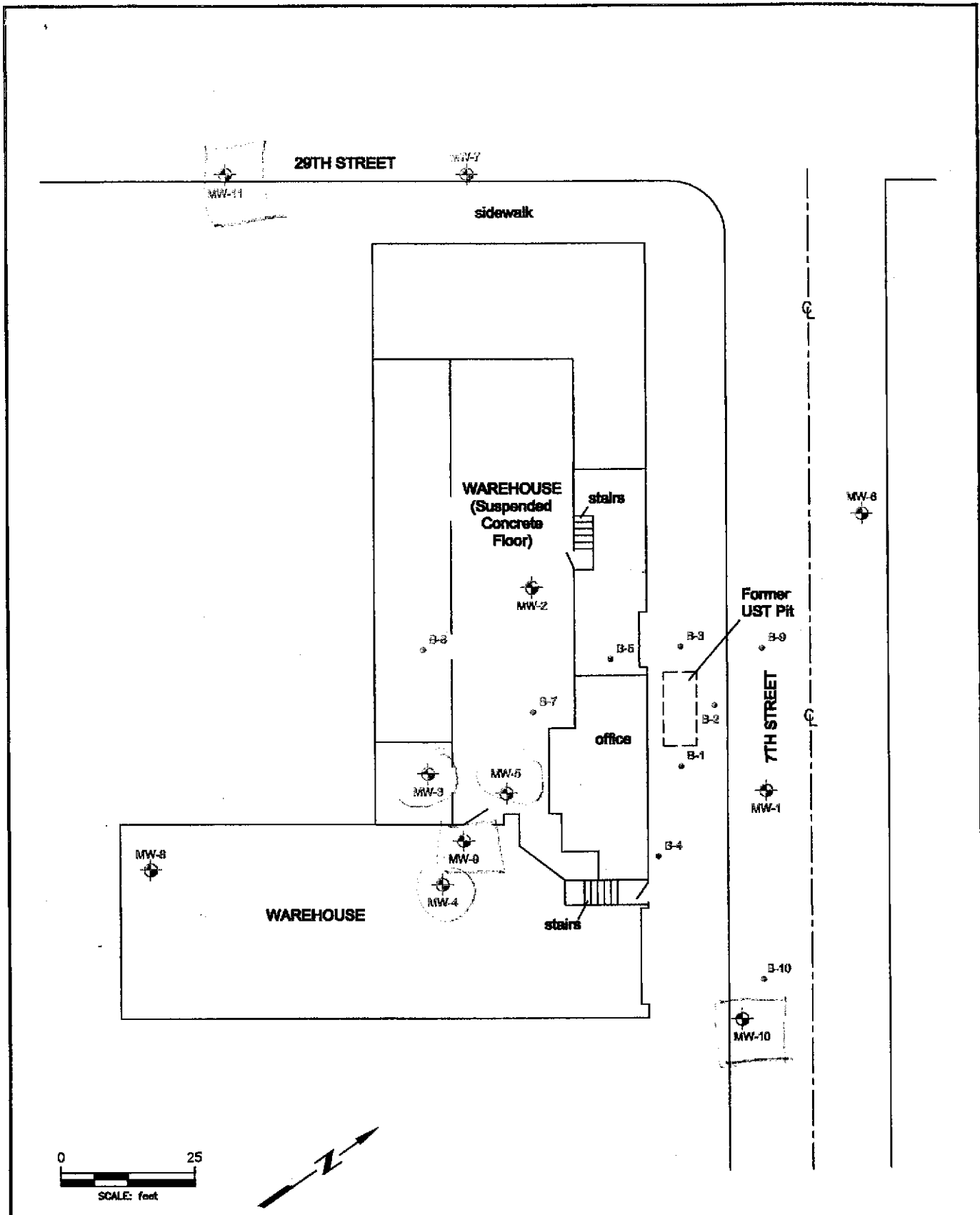


Jon A. Rosso, P.E.
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WBC/wbc
Attachments

cc: Donna Profitt Bank of America
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LEGEND		Site Plan showing Existing and Proposed Monitoring Well Locations FORMER LEMOINE SAUSAGE FACTORY 630 29TH AVENUE OAKLAND, CALIFORNIA Clayton Project No. 70-97066.00	Figure	Clayton ENVIRONMENTAL CONSULTANTS
MW-1	Existing Monitoring Well Location		1	
B-1	Soil Boring/Temporary Monitoring Well Location		7/17/01 MVV_workplan.dwg	
MW-9	Proposed New Monitoring Well Location			