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Alameda County Environmental Health

Mr. Jerry Wickham Alameda County Health Care Services Agency Environmental Health Services Environmental Protection 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Subject: Additional Site Assessment Workplan, Learner Investment Company Property, 768 46th Avenue, Oakland, California SLIC Case RO0002478; Geotracker Global ID SLT2O150156

Dear Mr. Wickham:

LFR Inc. (LFR) is pleased to submit to the Alameda County Environmental Health (ACEH) this workplan to conduct an additional site assessment of the Learner property located at 768 46th Avenue, Oakland, California ("the Site"; Figure 1). This workplan is being submitted in response to the letter from the ACEH to Mr. Richard Neu dated July 11, 2007. The objective of this program is to collect soil and groundwater data to further evaluate the extent of constituents of concern detected at the Site through prior investigations.

The approximately 2.8-acre Site includes a long, narrow drive that extends to 50th Avenue. The majority of the Site is vacant and is used by the nearby businesses for parking of automobiles. The southern portion of the Site, including the narrow drive, has been leased to Westside/Alta Building Materials (Alta) and is currently used for an access road and storage area by Alta. The portion of the Site leased to Alta has been referred to in prior reports as the Flag Lot. The Site is bounded to the south and west by industrial and commercial facilities including J.E. Bobo's Scrap Metal, Bostrom-Bergen Metal Products, former Superior Plaster Castings, PG&E Gas Construction, and Alta property (Figure 2). The Site is bordered to the north and east by railroad tracks, followed by the Vulcan Foundry Studios, Chevron USA-Oakland Asphalt Plant, Hayes Furniture Company, NL Chemicals warehouse, California Steel Processing and American Electro-finishing Company, and Vittorias Body Shop.

Background

Regulatory Criteria

Since there is no Region 9 Preliminary Remediation Goal (PRG) for total petroleum hydrocarbons (TPH), the applicable screening level for TPH was derived from Table B of the Regional Water

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Quality Control Board (RWQCB) document entitled "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final," dated July 2003 (RWQCB 2003). Based on Table B (RWQCB 2003), the ESL for residual fuel is 1,000 milligrams per kilogram (mg/kg). However, because a portion of the Site is capped by either concrete or asphalt, and it is anticipated that future development will result in capping the remainder of the Site, thereby reducing the risk of human exposure, the leaching of chemicals to groundwater, and ecological impacts from the discharge from direct rainfall runoff, the default screening value for residual fuels derived from Table B-2 (RWQCB 2003) of 5,800 mg/kg will be applied, instead of the value in Table B.

Analytes in the volatile organic compound (VOC), metals, and polychlorinated biphenyl (PCB) analysis will be compared to their unique Region 9 PRGs (2004), which are the most recent regulatory screening levels that are applicable to the Site. The PRGs for select metals and PCBs applicable to the Site are summarized below.

| Chemical | PRG Industrial Soil (mg/kg) | |
|----------------|--------------------------------|--|
| PCBs | 0.74 | |
| Cadmium | 450 | |
| Total Chromium | 450 | |
| Lead | 800 | |
| Nickel | 2,000 | |
| Zinc | 100,000 | |

Historical

An asphalt batch plant operated on the Site prior to Learner acquiring the property. Learner purchased the property in the 1960s and operated a scrap metal bailing yard until October 1982, when operations ceased. The yard received scrap metal materials such as old appliances, industrial machinery, motors, empty drums, and other scrap metal light enough to be hydraulically compressed. The scrap was loaded into a hydraulic bailer via an electric crane and compressed into bails. Prior to 1971, automobiles were also bailed at the Site. After bailing, the scrap metal was resold to steel mills (Dames & Moore 1988a).

After the yard was closed in 1982, Learner ceased onsite activities until January 1988. At that time, with the intention of developing the Site into an office and warehouse complex, Learner began to disassemble and remove the bailer and associated equipment including a large hopper, electric crane, and a pumphouse with aboveground tank and piping containing hydraulic fluid for the bailer (Figure 2). A set of railroad tracks along the northeastern property boundary was also removed (Dames & Moore 1988a).



Excavations and piles of soil were observed by Dames and Moore during their site inspection where activities had recently occurred to remove the railroad tracks and disassemble the bailing equipment. Two large piles of soil (6 to 8 feet high) were located about 50 feet north of the bailing area and were formed following removal of the railroad bed material. The piles consisted primarily of soil with some gravel, small wood pieces, and metal scrap. Several other large piles (8 to 10 feet high) located south of the bailer consist of soil and metal scrap that had accumulated from material over the years from onsite operations. Another pile about 12 feet high and 15 feet in diameter, consisting of metal cables with some piping and scrap metal, was also observed in the area (Dames & Moore 1988a).

In May 1988, Dames & Moore observed dark-stained soils in a large area around the former bailer location (Figure 2). Brass valves from the former aboveground storage tank (AST) and associated piping had apparently been stolen, and their removal caused a release of Tellus 68 hydraulic fluid onto the ground in the vicinity of the bailer. The amount of hydraulic fluid released was unknown, although it may have been as much as 500 gallons. In January 1988, the ACEH inspected the Site and collected a soil and ponded-surface water sample from an area that was visibly contaminated with oil. Both the soil and water were reported to contain 10% by volume of oil and grease (Dames & Moore 1988a).

In July 1988, Dames & Moore performed field investigation activities at three areas of concern: the former bailing area, the soil pile areas, and the narrow drive area. In the former bailing area, nine test pits were excavated with a backhoe to approximately 6 feet below ground surface (bgs). Some discontinuous dark staining was observed in the upper few inches of soil adjacent to the bailer and pumphouse concrete pads. Elevated concentrations of TPH (detected by EPA Methods 3550/418.1) were generally limited to the shallow soil samples collected at a depth of 2.5 feet bgs directly north and east of the former bailer. The highest reported TPH concentration from this area was 3,770 mg/kg. Southeast of the crane concrete pad, a TPH concentration of 2,860 mg/kg was detected. TPH concentrations in all soil samples collected at a depth of 4.5 feet bgs were below the laboratory detection limit of 5 mg/kg, except for one sample where a concentration of 7.2 mg/kg was detected. PCBs were not detected at concentrations above the laboratory detection limit in any of the soil samples from the bailer area (Dames and Moore 1988b). All the TPH detections were below the ESL for the Site.

Composite soil samples were collected from three sections of the narrow drive area. The highest TPH concentration was detected at 1,830 mg/kg at a depth of 18 to 24 inches bgs. TPH was detected in the other two composite samples at concentrations of 247 mg/kg and 645 mg/kg. PCBs were detected in two of the three composite samples at concentrations of 0.06 mg/kg and 0.57 mg/kg (Dames and Moore 1988b). The PCB detections were below the ESL for this Site of 0.74 mg/kg.

A composite soil sample was collected both soil pile areas and analyzed for TPH and PCBs. TPH was detected at concentrations of 3,610 mg/kg and 3,920 mg/kg in the two composite samples. PCBs were detected in both samples at concentrations of 25.2 mg/kg and 19.9 mg/kg. It is



unknown if this soil pile still remains at the Site. Part of this program will be to determine if this soil pile has been removed.

The Dames & Moore sample locations and analytical results are shown on Figure 2.

In June 1988, a 700-gallon diesel fuel underground storage tank (UST) was removed from the Site. Two soil samples were collected from the native soil beneath each end of the tank at a depth of 8 feet bgs. The samples were analyzed for TPH as gasoline and diesel (TPH-g and TPH-d), benzene, toluene, xylenes, and ethylbenzene (BTEX constituents), and total lead. TPH and BTEX were not detectable in one of the samples. In the other sample, TPH and xylene were detected at concentrations of 4.9 mg/kg and 0.16 mg/kg, respectively. Total lead was detected at concentrations of 3.0 mg/kg and 6.5 mg/kg (Kaprealian Engineering, Inc. 1988). Detections of all these constituents were below their respective ESLs for the Site.

The Kaprealian Engineering tank removal sample locations and analytical results are shown on Figure 3.

In June 1989, Kleinfelder, Inc. collected 11 surface samples (4 from the former bailing area, 4 from the soil pile, and 3 from the narrow access drive area.). Most samples contained debris including metal scraps, glass, and wood. All samples were analyzed for TPH (by EPA Method 418.1), lead, chromium, cadmium, nickel and zinc, corrosivity, reactivity, ignitability, and aquatic toxicity; one sample was also analyzed for the 17 California Code of Regulations (CCR) Title 22 metals; and three samples were also analyzed using the Waste Extraction Test (WET) procedure (Weiss Associates 1991).

Two samples from the former bailing area (B-7 and B-9) contained TPH concentrations above 1,000 mg/kg. The average concentration of the four samples was 1,130 mg/kg. Lead concentrations in the four soil samples (B-7 through B-10) collected from the former bailing area ranged from 209 mg/kg in sample B-8 to 551 mg/kg in sample B-10. Soluble lead was detected at a concentration of 9.6 milligrams per liter (mg/l) in sample B-8. Concentrations of cadmium ranging from 3.8 mg/kg in B-8 to 16 mg/kg in B-10 were detected in three of the four samples. Concentrations of chromium ranging from 50 mg/kg in B-8 to 88 mg/kg in B-10 were detected in three of the four samples.

TPH concentrations from all three samples collected along the paved access drive were greater than 1,000 mg/kg, with concentrations ranging from 3,500 mg/kg to 28,000 mg/kg. Lead concentrations in the three soil samples (B-2 through B-4) collected from the drive ranged from 322 mg/kg in sample B-2 to 5,150 mg/kg in sample B-3. Zinc concentrations ranged from 849 mg/kg in sample B-2 to 3,900 mg/kg in B-3. Concentrations of cadmium ranged from 4.7 mg/kg in B-02 to 19 mg/kg in B-3. Concentrations of chromium ranged from 39 mg/kg in B-2 to 218 mg/kg in B-3. Concentrations of nickel ranged from 44 mg/kg in B-2 to 698 mg/kg in B-3 (Weiss Associates 1991).



TPH concentrations detected in all four samples collected from the soil piles were greater than 1,000 mg/kg, with concentrations ranging from 5,400 mg/kg to 25,000 mg/kg. Lead concentrations in the four soil samples (B-5, B-6, B-11, and B-12) collected from the soil piles ranged from 1,810 mg/kg in sample B-6 to 5,230 mg/kg in sample B-11. Soluble lead was detected at concentrations of 83.5 mg/l and 102 mg/l in samples B-11 and B-12, respectively (Weiss Associates 1991).

Zinc concentrations ranged from 2,090 mg/kg in sample B-12 to 8,180 mg/kg in B-11. Soluble zinc was detected at concentrations of 240 mg/l and 379 mg/l in samples B-12 and B-11, respectively. Concentrations of cadmium ranged from 16 mg/kg in B-12 to 43 mg/kg in B-6. Concentrations of chromium ranged from 75 mg/kg in B-5 to 238 mg/kg in B-12. Concentrations of nickel ranged from 129 mg/kg in B-12 to 265 mg/kg in B-6 (Weiss Associates 1991).

In June 1990, both soil piles were consolidated into a single pile (Weiss Associates 1991).

In a letter dated April 7, 1993, the ACEH responded to the Investigation Workplan dated February 16, 1993 prepared by Weiss Associates. The workplan specified the installation of eight soil borings, four to be placed around the former bailing area and four in the drive area. Additionally, three monitoring wells were to be installed based on grab groundwater sampling results. The workplan was approved with some modifications. The ACEH required consideration of all previous contamination data. Data to be considered where levels exceed the allowable California Code of Regulations, Title 22 total threshold limit concentration (TTLC) and the soluble threshold limit concentration (STLC). The ACEH further stated that both the TTLC and the STLC levels were exceeded in stockpile samples B-11 and B-12 for lead and zinc as reported in the August 21, 1991 report. Also, TTLC values in B-3, B-10, B-11, and B-12 were exceeded for cadmium, chromium, and nickel. In B-8 and B-9, TTLC values were exceeded for chromium. All samples contained levels of lead that exceeded 10 times the STLC (Smith 1993).

The Kleinfelder sample locations and analytical results are shown on Figure 3. There is no known groundwater assessment data from beneath the Site.

Following re-grading of the Flag Lot portion of the Site in 2002, LFR collected three soil samples from the Flag Lot (Flag-1, Flag-2, and Flag-3) at depths of 0.5 feet bgs and analyzed for metals. These confirmation soil samples were collected to verify that previously detected concentrations of metals had been reduced to acceptable levels. None of the metals detected were above the criteria for the Site. LFR sample locations and analytical results are shown on Figure 3 (LFR 2004).

Offsite – Chemicals of Concern in Groundwater

According to Woodward-Clyde Consultants (WWC 1993), grab groundwater samples collected during a Phase II investigation by Simon-EEI in 1991 indicated elevated concentrations of arsenic, chromium, lead, and mercury from four locations on the adjacent Superior Plaster property at 4800 Coliseum Way. Subsequently, WWC installed a groundwater monitoring well on the Superior Plaster property and sampled for RCRA metals. The groundwater sample was filtered in



the field and submitted to a laboratory resulting in metal concentrations below their respective California maximum contaminant levels. WWC concluded that the elevated metals concentrations reported by Simon-EEI were invalid due to collection from improperly constructed wells and analysis of unfiltered samples.

Geology and Hydrology

The Site is located just north of the San Leandro Bay inlet of San Francisco Bay and is underlain by Bay Mud and fluvial deposits. According to WWC, the Bay Mud ranges in thickness from less than 1 foot to more than 120 feet and is characterized by its saturation with salt water and low permeability. The groundwater quality has been described as brackish and of no practical use. The first 6 feet of soils beneath the Site include fining layers of gravel, sand, silt, and clay, according to a Dames & Moore description documented during test pit excavations in 1988. Based on previous investigations from neighboring properties, depth to groundwater is 7 to 8 feet bgs and the groundwater flow direction is to the southwest.

Workplan for Additional Site Characterization

Pre-Field Activities

Prior to the field activities, LFR will coordinate field activities with the Site owner and the ACEH.

LFR will prepare a site-specific Health and Safety Plan (HSP) for all LFR personnel and subcontractors in accordance with applicable federal and state regulations (29 CFR 1910.120 and 8 CCR 5192, respectively), which will be reviewed and approved by an LFR Certified Health Professional. The HSP, included as Attachment A, will address the potential for exposure to hazardous constituents, and delineate the general safety procedures required for the safe operation of mechanical equipment to be used while conducting field operations at the site. All proposed sampling locations will be marked as required by Underground Service Alert (USA). LFR will contact USA at least three days before commencement of the field work to obtain a utility clearance ticket number. LFR may also subcontract with a subsurface utility locator to screen the proposed sampling locations.

Soil Sampling

Using a direct-push drill-rig, a total of 12 borings will be advanced to a depth of 4 feet bgs. Five borings (LP-1 through LP-3, LP-11, and LP-12) will be advanced in the vicinity of select previous borings (B-3, and B-7 through B-10) that resulted in elevated concentrations of metals. Two borings will be advanced in the vicinity of the former hydraulic press (LP-4) and the former storage building (LP-5) as represented on the 1952 Sanborn map. Four borings (LP-6 through LP-8, and LP-10) will be advanced in the northwestern portion of the property, since soil samples have not been collected from this area during previous investigations. One boring (LP-9) will be advanced in the vicinity of a former soil stockpile. The presence of the soil piles will be confirmed



during the site assessment. If the soil piles are still in place, prior sampling data will be used for characterization. Based on those data, the piles are not suitable for use on the Site and thus would require off-site disposal. At the time the soil is removed, appropriate profiling samples will be collected, with confirmation samples collected beneath the soil pile footprint(s) to confirm that all the soil impacted above the criteria have been removed.

The soil assessment will focus on metals, TPH, VOCs, and PCBs, based on historical site activities and results of previous investigations. Proposed boring locations are shown on Figure 4. The following table describes proposed boring locations, analysis, and sampling rationale.

| Proposed Sampling | | | | | | |
|-------------------|---------------------------|---------------------------|---------------------------|------|--|--|
| Boring | Analysis | | | | Pationalo | |
| Doning | TPH | VOCs | Metals | PCBs | Raiionale | |
| LP-1 | Soil & Water sample | Soil & Water sample | Soil & Water sample | Soil | In the vicinity of B-3 which resulted in elevated concentrations of metals and PCBs | |
| LP-2 | Soil & Water sample | Soil & Water sample | Soil & Water sample | Soil | In the vicinity of stained/impacted soil near former bailer | |
| LP-3 | Soil & Water sample | Soil & Water sample | Soil & Water sample | Soil | | |
| LP-4 | Soil & Water sample | Soil & Water sample | Soil & Water sample | Soil | In the vicinity of the former hydraulic press | |
| LP-5 | Soil | Soil | Soil | - | In the vicinity of the former storage | |
| LP-6 | Soil & Water sample | Soil & Water sample | Soil & Water sample | - | Areas that have not been investigated | |
| LP-7 | Soil | Soil | Soil | - | | |
| LP-8 | Soil | Soil | Soil | - | | |
| LP-9 | Soil | Soil | Soil | - | In the vicinity of former soil piles | |
| LP-10 | Soil | Soil | Soil | Soil | Area that has not been investigated | |
| LP-11 | Soil | Soil | Soil | - | In the vicinity of previous borings that resulted in elevated | |
| LP-12 | Soil | Soil | Soil | - | concentrations of metals and TPH | |

Soil will be lithologically described and classified using the Unified Soil Classification System (USCS) under the direction of an LFR California Professional Geologist. Three soil samples will



be collected from each of the borings at depths of 1, 2, and 4 feet bgs to assess the vertical extent of potentially impacted soil. Soil samples collected at 2 and 4 feet bgs will be placed on hold at the laboratory pending analytical results of the 1-foot samples, unless obvious staining or metal scraps are observed at 2 and 4 feet bgs during the field investigation.

Samples will be analyzed by a state-certified laboratory for TPH by EPA Method 8015M, VOCs by EPA Method 8260B, Title 22/CAM 17 metals by EPA Method 6010/7470, and PCBs by EPA Method 8082.

To reduce the potential for cross contamination between borings, downhole drilling tools and sampling equipment will be cleaned prior to use at each drilling location. The soil samples will be sealed and placed in a cooled chest for chain-of-custody transport to a fixed laboratory for analysis.

Groundwater Sampling

Based on previous investigations from adjacent properties, groundwater is anticipated to be found at a depth of 7 to 8 feet bgs. Upon reaching groundwater, a groundwater sample will be collected from four of the borings (LP-1 through LP-4) by either the hydropunch method or by installing a temporary well. If a temporary well is installed, a PVC casing will be lowered into the borehole. A bailer will be lowered into the well and a groundwater sample will be collected.

The groundwater samples collected from each of the boreholes will be analyzed by a state-certified laboratory for TPH, VOCs, and Title 22/CAM 17 metals. Groundwater samples will be filtered at the laboratory prior to analysis.

To reduce the potential for cross contamination between borings, downhole drilling tools and sampling equipment will be cleaned prior to use at each drilling location. The samples will be properly sealed and placed in a cooled chest for chain-of-custody transport to a fixed laboratory for analysis.

All soil and groundwater samples will be analyzed by a California certified laboratory. Soil cuttings and any other investigative derived wastes will be containerized in labeled 55-gallon drums pending laboratory analytical results. The contents of the drums will be disposed of at an approved disposal facility.

Flag Lot Sampling

Four soil borings (DCB-P1 through DCB-P4) are planned as part of an investigation being conducted on the Flag Lot portion of the Learner Property (workplan submitted under separate cover) to evaluate the distribution of VOCs in the portion of the Site that borders the Alta Property and the former Superior Plaster Castings Property. Soil and groundwater samples collected from these borings will be analyzed for metals and VOCs. The results of that investigation will be



included in the reporting for this investigation and used to characterize the extent of impacts to the Site.

Two steel structures with concrete bottoms were discovered during the development of the Alta Property and a portion of the Learner Property referred to as the Flag Lot (developed as part of the Alta Property through a lease agreement). These structures were removed under the UST regulations in September and October 2003. The USTs were part of a prior asphalt batch plant. The northernmost UST was the larger of the two; it has been referred to as "the Large UST" and numbered as UST-L. A portion of UST-L extended onto the Flag Lot. The other UST has been referred to as "the Small UST" and numbered as UST-S. The soil in and around the USTs was impacted with various petroleum hydrocarbons. Approximately 2,960 tons of hydrocarbon-affected soil was excavated from around and under the USTs and adjoining areas and disposed of offsite in a permitted landfill. Figures 2 through 4 show the approximate locations of the UST excavations, and the approximate extent and depth of the adjoining areas around the USTs and the adjoining soil areas were analyzed for VOCs.

After the UST excavations were completed, the depth of the excavations extended below the water table. Groundwater collected in the excavation pits, and free hydrocarbon product was observed on the water. Water was pumped from the pits until the free hydrocarbon product no longer appeared and to dewater the pits for backfill. A total of approximately 65,000 gallons of water was pumped from the tank pits and disposed of offsite. After the pumping was completed, a sample of the groundwater from each pit was collected and analyzed for VOCs.

Reporting

LFR will submit a report to the ACEH summarizing the investigation and the results of the laboratory analysis. All work will be performed under the supervision of a Professional Geologist registered in California who will sign the report.

If you have any questions, please contact either of the undersigned at (714) 444-0111.

Sincerely,

Thomas C. Chandler Principal Engineer

Tony Marino, P.G Senior Associate Geologist California Professional Geologist No. 8304

cc: Dick Peckham – Westside Building Materials Corporation Jack Krause – Westside Building Materials Corporation Marcella Harrison – GVA Kidder Mathews





Attachments: Figure 1 – Vicinity Map

- Figure 2 Site Map Showing Previous Dames & Moore Sample Locations and Analytical Results
- Figure 3 Site Map Showing Previous Kaprealian, Kleinfelder & LFR Sample Locations and Analytical Results
- Figure 4 Site Map Showing Proposed Soil and Groundwater Sampling Locations

References

- California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). 2001. Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater. Interim Final. December.
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- LFR Inc. (LFR). 2004, Residual Soil Management Plan, Former AAA Equipment Company Site, 745 50th Avenue, Oakland, California, prepared for Alta Properties, LLC, April 27.
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