Jurek, Anne, Env. Health

From: Shirley Lee <slee@CitadelEnvironmental.com>
Sent: Thursday, June 23, 2016 11:33 AM
To: Jurek, Anne, Env. Health
Cc: Mark Drollinger
Subject: Former Red Star - Work Plan
Attachments: 0849.1001.0_Phase_II_Subsurface_Investigation_Work_Plan-DRAFT_6.23.16.pdf; Figure 5 - Proposed Sampling Locations_6.23.16.pdf; Figure 6 - Proposed Sampling Locations_6.23.16.pdf

Hi Anne,

Please find attached the draft work plan and figures 5 and 6. Thank you.

Thanks,

Shirley Lee
Environmental Specialist

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CITADEL ENVIRONMENTAL SERVICES, INC.

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May 13, 2016

Mr. Michael L. Boettger
Vice President
MICHAELS DEVELOPMENT
2020 W. Kettleman Lane
P. O. Box 1570,
Lodi, California 95241

Re: CITADEL Project No. 0849.1001.0
Phase II Subsurface Investigation Work Plan - Draft
Former Red Star Senior Living Apartments Development
1396 Fifth Street
Oakland, California 94607
SLIC Case Number: R00002896

Dear Mr. Boettger:

Citadel Environmental Services, Inc. (Citadel) is pleased to submit this Draft Work Plan to perform a Phase II Subsurface Investigation at the above referenced location. The scope of Citadel's services is outlined on the following pages.

If you have any questions or require additional information, please telephone me at (818) 246-2707.

Sincerely,
CITADEL ENVIRONMENTAL SERVICES, INC.

Mark Drollinger, M. Eng., CSP, CHMM, EiT
Director, Environmental Geology and Engineering

Enclosures

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Phase II Subsurface Investigation Work Plan - Draft

May 13, 2016

Citadel Project Number 0849.1001.0

Former Red Star Senior Living Apartments Development
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FIGURES

APPENDICES

1.0 INTRODUCTION

Citadel Environmental Services, Inc. (Citadel) has prepared this Work Plan on behalf of Michaels Development (Client) to complete a Phase II Subsurface Investigation of the former Red Star Yeast property located at 1396 Fifth Street, Oakland, California, (Site). The Site is currently overseen by the Alameda County Department of Environmental Health (ACDEH) and has been assigned Spills, Leaks, Investigations and Cleanups (SLIC) Case ID RO0002896 and GeoTracker Global ID T06019794669.

ACDEH REPORT REVIEW

ACDEH reviewed Citadel's "*Soil Excavation Report*," dated August 21, 2012 and revised September 22, 2015[1]. The Revised Excavation Report presented results from excavation of shallow soil containing elevated concentrations of metals, confirmation sampling, and soil disposal conducted between August and September 2011. In a correspondence dated April 18, 2013, ACDEH provided technical comments in response to the Soil Excavation Report. ACDEH's correspondence identified items that required additional information, clarification, or correction.

The 2015 Revised Excavation Report addressed several of ACDEH's previous comments. However, the report did not address several major items that ACDEH believes are necessary to evaluate the case for closure. Specifically, the ACDEH comments were related to the following items:

1. **Fill Material:** Approximately 7,000 tons of imported segregate/sand mix was imported from Inner City Recycling (ICR); the quality control used for the imported fill appear to be unknown. ACDEH has requested that soil sampling be conducted for characterization of the fill material across the Site.

2. **Underground Storage Tanks:** Three underground storage tanks (USTs) were encountered under the sidewalk along Fifth Street in 2011. Two of these USTs have been removed and one was abandoned in-place with approval of the Oakland Fire Department (OFD)[2]. In order to assess current Site conditions in the areas around the USTs discovered at the Site, ACDEH has requested that groundwater samples be collected in the areas of each of the former USTs.

3. **Lead in Native Soil:** Based on conversations with ACDEH, additional soil sampling for lead is requested to confirm the presence of lead above the regulatory limit in previously excavated and unexcavated areas.

4. **Groundwater Sampling:** Citadel will collect a groundwater sample from the area near former groundwater monitoring well 5 (MW-5), and from a second location in the east portion of the Site, to assess groundwater conditions upgradient of the former USTs.

Citadel has prepared this Work Plan to address the outstanding items that the ACDEH considers necessary to evaluate the case for closure.

[1] Citadel Environmental Services, Inc., Soil Excavation Report, Former Red Star Yeast Company, 1396 5th Street, Oakland, California 94607, LOC Case Number: RO0002896, Global ID: T06019794669, August 21, 2012, Revised September 22, 2015.
[2] Citadel Environmental Services, Inc., Underground Storage Tank Removal Closure Report, Red Star Senior Living Apartments Development, 1396 Fifth Street, Oakland, California 94607, August 23, 2012, Revised September 23, 2015.

2.0 SITE DESCRIPTION

The Site is identified in the County of Alameda with Assessor's Parcel Number 004-69-004. The Site totals approximately 0.88 acres and is an irregular shaped parcel of land situated along the north side of Fifth Street, between Mandela Parkway to the east, and Kirkham Street to the west. An elevated BART track is situated along the northern boundary of the Site. An extensive fire occurred at the Site in 2012 significantly damaging the Site structure and surrounding properties. The remaining structure from the fire consisted of a concrete podium which was removed in April 2016. The Site is currently a dirt covered vacant lot. A Site Location Map and Site Map are included as Figures 1 and 2, respectively.

3.0 GEOLOGY/HYDROGEOLOGY

The City of Oakland has identified three Oakland-specific soil types that can be used for determining site specific target levels. These soil categories are Merritt Sands, Sandy Silts and Clayey Silts. Merritt sands are primarily located in flatlands to the west of Lake Merritt and consist of fine-grained silty sand with lenses of sandy clay and clay. Merritt Sands typically feature low moisture content and high permeability. Sandy Silts are generally found throughout the East Bay and consist of unconsolidated, moderately sorted sand, silt, and clay. These are considered moderate permeability deposits. Clayey Silts are found primarily along the bay and estuary and typically contain organic material, peat, and thin lenses of sand. Clayey Silts are typically low permeability deposits.

During the excavation of soil and removal of the USTs at the Site, Citadel encountered groundwater at approximately four feet below grade. Groundwater in the local area reportedly flows to the southwest and is part of the East Bay Sub Basin of the Santa Clara Valley Basin (Number 2-9.04). Existing beneficial uses include municipal, agricultural, and industrial process supply; however, it is probable that the groundwater is not suitable for these uses due to high total dissolved solid (TDS) content, reported to be as high as 2,400 micrograms per liter (µg/L).

4.0 BACKGROUND

The Site had been developed and occupied by yeast manufacturing, vinegar production, and various brewery operations from at least 1880. Environmental concerns identified at the Site have included above ground and underground fuel tanks, the use of various chemicals with several documented releases, and an unauthorized release of mercury to the sewer system with apparent impacts to the subsurface soil. An extensive fire occurred at the Site in 2012 significantly damaging the Site structure and surrounding properties. The remaining structure from the fire consisted of a concrete podium which was removed in April 2016. The Site is currently a dirt covered vacant lot.

Monitoring Well 5:

Groundwater samples were collected from five temporary monitoring wells (MW-1 through MW-5) installed across the Site during a subsurface investigation by Citadel in 2010; none of the samples had detectable levels of volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), or total petroleum hydrocarbons (TPH) in the gasoline range (TPHg), or diesel range (TPHd). TPH in the oil range (TPHo) were reported in the groundwater sample from MW-5 at a concentration of 2,400 µg/L, exceeding the San Francisco Regional Water Quality Control Board's

(SFRWQCB) Environmental Screening Level of 210 micrograms per liter µg/L[3]. Please refer to Figure 3 for a Site map showing the groundwater sampling locations and results.

Lead in Soil:

In mid-August 2011, Advent Companies (Advent), the general contractor for the project, contracted for the removal of contaminated soil. Upon removing the impacted soil, Citadel collected confirmation samples to evaluate residual metals contamination. Citadel's confirmation soil samples were collected using a grid consisting of 39 sampling nodes spaced about 25 feet apart across the excavation. In the final sampling intervals, the west side of the Site had been excavated to a depth of seven to 7 1/2 feet below grade and the east side had been excavated to approximately three feet below grade. The eastern margin of the Site was excavated to approximately four feet below grade. Results of the confirmation sampling indicated none of the final samples had detectable levels of cadmium or mercury. Low levels of oil-range hydrocarbons were detected in three samples, but did not exceed regulatory guidelines. Lead was detected in the majority of samples collected from native soil. All lead concentrations were below the Office of Environmental Health Hazard Assessment's (OEHHA) Soil Screening Level (SSL) of 80 milligrams per kilogram (mg/kg) for residential scenarios, except for soil sample S31-3 with a lead concentration of 93 mg/kg, collected at approximately three feet below grade from the east side. Please refer to Figure 4 for a Site map showing the confirmation soil sampling locations and results.

Fill Material:

Citadel collected samples of the soil that was to be imported; two samples identified as A and B, were analyzed for TPH and metals. TPHo was detected in samples A and B at concentrations of 39 to 55 mg/kg and rejected by Citadel. Inner City Recycling (ICR) was contracted to import fill material to the Site for backfilling the onsite excavation. Citadel was not provided with the source of the fill material. Advent did not share analytical data from the ICR report.

From 2011 to 2016, research was conducted by Salem Engineering Group, Inc. (Salem) in April 2016 in an attempt to identify the source and available analytical data for fill material imported to the Site during August and September 2011. The material was imported and placed over native soils to bring the Site up to grade and to provide a stable surface layer during deep foundation construction starting in September 2011. According to the memorandum prepared by Salem, daily field reports indicated that the source of the imported material was from ICR. However, correspondence with ICR indicated that Advent was on ICR's records as receiving materials from Advent for recycling rather than material purchased/delivered to Advent. Salem followed up and contacted ICR with a clarification that the likely client for the import material may be Sequoia Construction. No additional information was provided at this time. Due to the unknown chemistry of the import material, sampling of the in-place backfill will be performed as part of this Phase II Investigation to address this concern. A copy of Salem's memorandum of the source of the fill material is included in Appendix A.

USTs

On November 29, 2011, soils were excavated by Sequoia Construction and Development, Inc. (Sequoia), from above and along the sides of onsite USTs to expose their tops and walls in preparation for removal. The tops of the USTs were encountered at a depth of approximately 1.5 feet below ground surface (bgs). The volumes for the USTs were determined visually and were reportedly 250 gallons (UST No. 1), 2,500 gallons (UST No. 3) and 10,000 gallons (UST No. 4). UST No.

[3] Citadel Environmental Services, Inc., Subsurface Investigation Report, Former Red Star Yeast Company, 1396 5th Street, Oakland, California 94607, SLIC Case Number: RO0002896, Global ID: T06019794669, March 18, 2010.

1 was buried at a depth of approximately four feet bgs; UST No. 2 was buried at a depth of 6 1/2 feet bgs; and UST No. 4 was buried at a depth of approximately 10 feet bgs. Suspected UST No. 2 was found to be a disconnected standpipe. No associated structure for this standpipe was located. Please refer to Figure 5 for a schematic showing the UST locations.

Oily water and minor amounts of sludge was removed from each of the USTs with the mixture pumped into a vacuum truck and the waste disposed of off-site. UST Nos. 1 and 3 were removed and transported off-site for recycling. The condition of both USTs were fair with no observable holes, significant corrosion, or scaling evident. UST No. 4 was not removed due to the discovery of live utilities crossing the top of the UST and that excavation of the UST would likely cause a power pole and pedestrian crossing pole to collapse. UST No. 4 was filled with a concrete slurry and sealed prior to being closed in-place. Citadel collected four soil samples following abandonment/removal of the USTs; one sample (TK-4) from native soil approximately two feet beneath the base of UST No. 1 (six feet total depth); one sample (SP) from a small soil stockpile from the excavation of soil around USTs No. 1, 2, and 3; and two samples (TK-2 West and TK-2 Middle) from beneath UST No. 3 (nine feet total depth). Analysis of soil samples indicated TPH at concentrations of 9, 37, and 31 mg/kg, in soil samples collected in the vicinity of UST No. 1, UST No. 2, and UST No. 3, respectively.

On January 3, 2012, three soil borings were advanced around UST No. 4 by Vironex Environmental Field Services (Vironex) under Citadel's supervision to evaluate the soil and potential groundwater around the UST. The analytical results indicated that the constituents detected in the soil samples were below regulatory levels. No significant findings were reported for TPH and VOCs in the groundwater samples collected.

5.0 PROPOSED WORK PLAN

This Phase II Subsurface Investigation addresses the concerns of the ACDEH regarding 1) the nature of the material used to backfill the excavation in 2011; 2) groundwater conditions in the vicinity of the three USTs at the Site; 3) characterization of lead in native soil; and 4) groundwater conditions in the area of MW-5 and upgradient of the former USTs. Citadel will provide the following services to meet the objectives of the Scope of Work:

5.1 Health and Safety Plan

Citadel prepared a site-specific health and safety plan (HASP) identifying existing and potential hazards for workers at the Site during drilling and sample collection activities. A copy of the HASP is included in Appendix B.

5.2 Permitting and Demarcation of Underground Utilities

Citadel will obtain boring permits from the Alameda County Public Works Agency (ACPWA), Water Resources Section prior to on-site drilling activities. Permits are required for all work pertaining to wells and boreholes at any depth.

Citadel will contact Underground Service Alert (USA) to mark underground utilities prior to advancing soil/groundwater borings at the Site. Citadel will also review any existing plans, including online and paper substructure maps available from the Client, showing utilities and other subsurface structures at the Site.

5.3 Groundwater Sampling

Citadel will collect groundwater grab samples in the vicinity of the three former USTs. Further, to assess the groundwater condition across the Site, Citadel will collect one groundwater grab sample from the west portion of the Site along the north boundary, in the vicinity of former groundwater monitoring well MW-5. To evaluate the potential for an off-site source of groundwater contaminants, Citadel will collect a groundwater sample from GW-4, located upgradient of the former USTs.

Groundwater in each boring will be collected using a dedicated disposable bailer. The bailer will be lowered into the water column until the bailer is submerged. Samples will be collected in one liter amber glass bottles and Teflon septum-sealed 40 milliliter glass vials with hydrochloric acid as a preservative.

Approximate groundwater sample locations are included on Figure 5.

5.4 Soil Sampling

To evaluate the import material across the Site, Citadel will advance shallow soil borings using a Geoprobe© type hydraulic push drilling rig. Citadel will advance three shallow soil borings to approximately eight feet bgs in the western half of the Site to evaluate the soil for the presence of contaminants. The borings will be advanced into the native soil approximately one-foot. Soil samples will be collected at approximately one, three and five feet bgs at these locations, identified as B-1, B-2 and B-5.

Citadel will advance six borings in the eastern portion of the Site to assess the imported material. In the east half of the Site, the import material is shallow, to approximately four feet bgs. Borings in this import material will be advanced to approximately five feet bgs, including one foot into the native soil. Soil samples from these borings, identified as B-3, B-4, B-6, and B-9 through B-11, will be collected at approximately one and three feet bgs.

To evaluate the area of the Site that was not excavated, the native material along the east boundary of the Site will be collected at approximately one, three, five and seven feet bgs at B-7, B-8, B-12, and B-13.

Soil samples will be collected from borings advanced near the former UST areas. Soil samples will be collected at approximately five, 10 and 15 feet bgs.

The soil borings will be logged in the field and screened with a photo ionization detector (PID) for the presence of VOCs. Soil samples will be collected in acetate sleeves sealed with Teflon tape and airtight plastic caps. Citadel will collect continuous cores at two locations across the Site for geologic characterization of the fill and native material at the Site. The approximate boring locations are included on Figure 5.

5.5 Laboratory Analysis

Soil Samples

The soil samples will be placed in an ice-packed cooler and delivered to a state-certified laboratory for analysis.

Soil samples collected from the import material will be analyzed for polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH), and lead, in accordance with the New Jersey

Department of Environmental Protection (NJDEP) Soil and Hazardous Waste Management Program's (SHWMP) Guidance for Characterization of Concrete and Clean Material Certification for Recycling. A copy of the NJDEP guidance document is included in Appendix C.

Soil samples collected from native material will be analyzed for total petroleum hydrocarbons (TPH full range and for Title 22 CAM metals.

Soil samples collected near the former USTs will be analyzed for TPH full range, and volatile organic compounds (VOCs) and MTBE using EPA Test Method 8260B.

Groundwater Samples

Groundwater samples will be placed in an ice-packed cooler and delivered to a state-certified laboratory for analysis. Groundwater samples will be analyzed for TPH full range and VOCs by USEPA methods 8015 and 8260B, respectively.

5.6 Contingency Sampling

All soil samples will be field screened with a PID, visual observation and olfactory screening for the presence of VOCs. Any soil samples that indicated the potential presence of VOCs by one of these methods will be analyzed for VOCs and oxygenates by EPA method 8260B in addition to analyses that were discussed above.

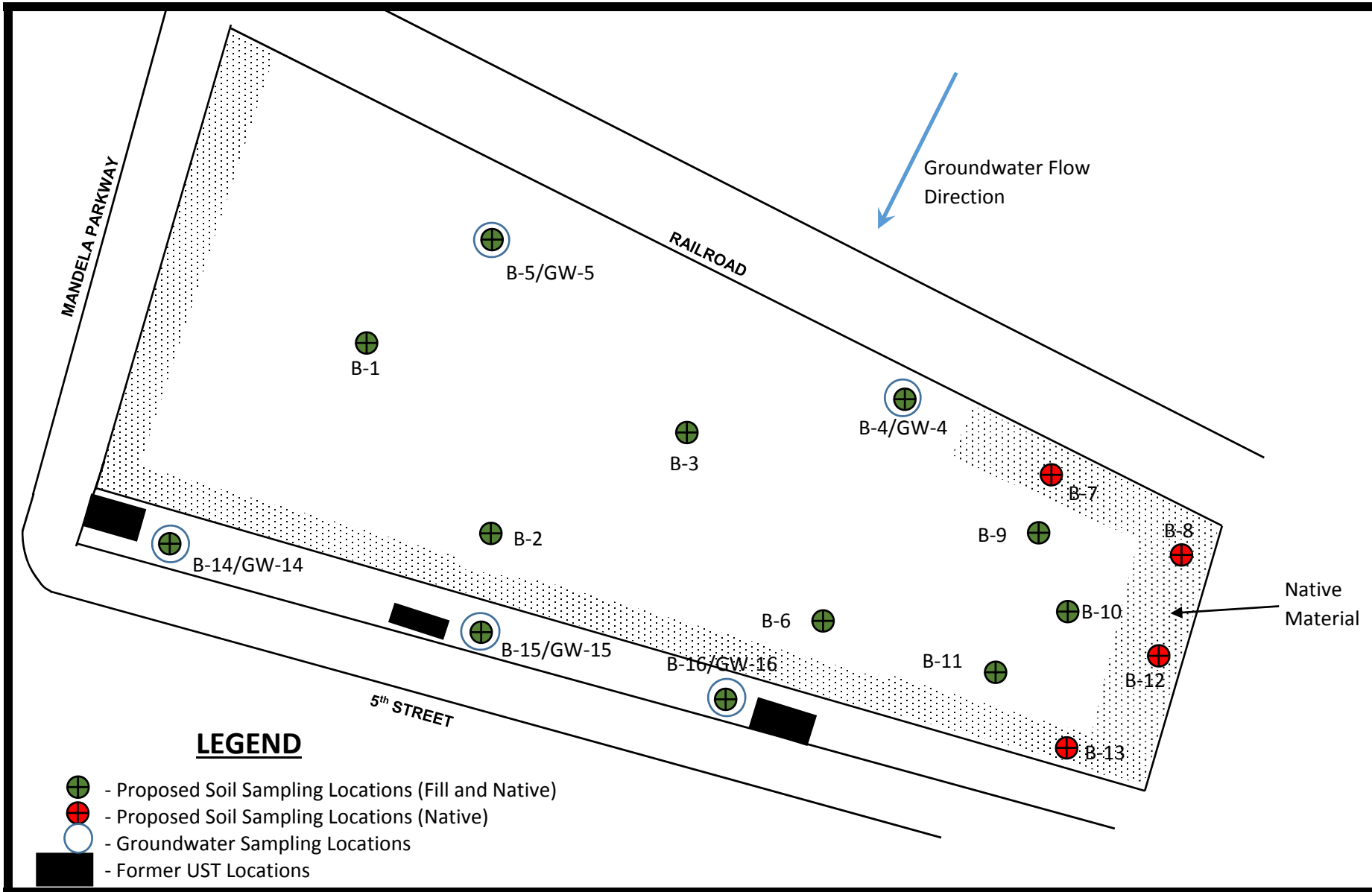
If visual observations and olfactory screening indicate that imported fill may have originated from multiple sources, additional sampling will be conducted based on DTSC advisory for clean imported fill material. The additional sampling points will infill the proposed sampling to create a sampling grid across the site.

The contingency borings will be advanced to five feet bgs with samples collected at one, three and five feet bgs in the areas that were previously excavated to seven feet and will be advanced to three feet bgs with samples collected at one and three feet in the areas that were previously excavated to 3-4 feet. Samples collected will be analyzed for VOCs by EPA Method 8260B, PAHs by EPA Method 8270, TPH full scan by EPA Method 8015, PCBs by EPA Method 8082, and CAM 17 metals by EPA Method 6010B. Borings B-1 to B-6 and B-9 to B-11 will have their analysis program expanded to match the analysis program for the infill boring locations.

If required, the approximate locations of all borings is shown on Figure 6.

5.7 Data Evaluation, Management, and Reporting

Upon completion of all on-site activities, a final report will be submitted documenting Citadel's methodologies, procedures, and laboratory analytical results. The report will provide a discussion of findings, conclusions and recommendations regarding the current environmental condition of the Site.



CITADEL ENVIRONMENTAL SERVICES, INC.

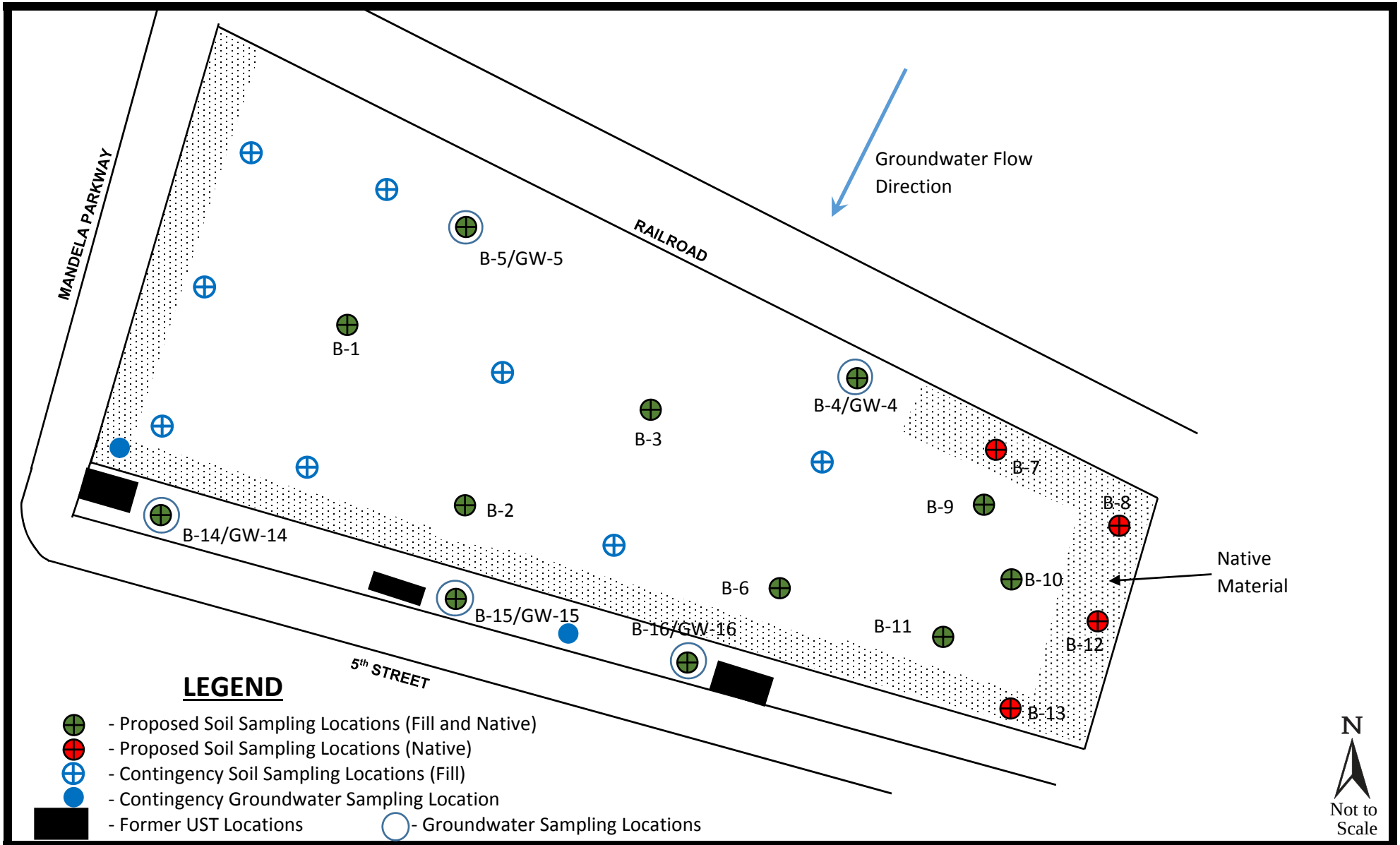
Former Red Star Yeast Company
1396 5th Street
Oakland, California

Figure 5

PROJECT NO: 0849.1001.0

DATE: JUNE 2016

Site Plan with Proposed Soil Boring and Groundwater Sampling Locations



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1396 5th Street
Oakland, California

Figure 6

PROJECT NO: 0849.1001.0

DATE: JUNE 2016

Site Plan with Proposed Soil Boring and Groundwater Sampling Locations