Appendix F:
Hazards and Hazardous Materials Supporting Information

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F.1 - Phase II Environmental Site Assessment

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April 3, 2009
File Number: 101757

Mr. Paul Wade
City of Cloverdale
126 N. Cloverdale Blvd
Cloverdale, CA 95425

SUBJECT: Final Phase II Environmental Site Assessment
Thyme Square Property
337 S. Cloverdale Blvd
Cloverdale, California

Dear Mr. Wade:

This report documents the analytical results of soil and groundwater samples collected from seven borings at the Thyme Square Property, 337 S. Cloverdale Boulevard in Cloverdale, California.

This project was based on our workplan, dated February 6, 2009, data from past uses of the site provided by the City of Cloverdale, a Phase I Environmental Site Assessment (Phase I ESA) conducted by Kleinfelder, dated March 13, 2009, and our proposal, dated January 29, 2009.

The following presents a description of the key findings from a Phase I Environmental Site Assessment, site investigation methods, and results. A summary and conclusions are presented at the end of this document

SITE BACKGROUND

The site is currently undeveloped, but is occupied by a large soil pile, several areas of asphalt pavement, two concrete foundations, various debris piles, and an abandoned vehicle.

Kleinfelder conducted a Phase I environmental site assessment for the property (separate report dated March 13, 2009) to identify the historical uses of the property and adjacent properties, and to ascertain whether there were any 'recognized environmental conditions' as defined in the ASTM 1527-05 standard for Phase I environmental site assessments. The assessment revealed that the site was formerly occupied by a Gasco gasoline station, which operated on the northwest corner of Cloverdale Blvd and Healdsburg Avenue. The Gasco station had three 10,000-gallon USTs that stored leaded gasoline, unleaded gasoline, and

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diesel fuel. A leak was discovered in 1985, the tanks were removed in 1994, and soil was excavated and treated in 1998 and again in 2000. During remedial activities, 20 monitoring wells were installed and several of them operated as vapor extraction wells. In addition, numerous borings were advanced to collect soil and groundwater samples. In July 2001, Sonoma County Environmental Health Department closed the case and issued a letter requiring no further action. According to the closure report, however, residual petroleum hydrocarbons (gasoline, diesel, motor oil, and fuel additives) were allowed to remain in place in the soil at concentrations of 45 ppm TPH-gasoline, 940 ppm TPH-diesel, 9.5 ppm TPH-motor oil, 4.380 ppm toluene, 0.083 ppm xylenes, and 0.27 ppm ethylbenzene. Benzene and methyl tertiary butyl ether (MTBE) were below laboratory reporting limits. Heavy metals, such as lead, were not analyzed in soil prior to closure. No petroleum hydrocarbons or fuel additives were detected above the laboratory reporting limits in groundwater. Due to the residual petroleum hydrocarbons left in the soil, the closure report required "contingency planning is needed if excavating within the areas of residual contamination." However, no areas of residual contamination were identified on maps or attachments to the closure report. At the time of the initial case closure letter, 13 of the 20 monitoring wells had been abandoned, the remaining 7 wells were abandoned in August 2001. The final closure ("no further action") letter was issued in October 2001.

Based on this information and data provided by the City of Cloverdale, there was sufficient evidence indicating that there may be residual petroleum hydrocarbons and pesticide contamination in soil or groundwater in spite of previous investigations, remediation, monitoring, and subsequent site closure by Sonoma County Environmental Health Division. The residual petroleum hydrocarbons are related to the site's former operations as a gasoline service station, whereas the potential pesticides are related to its former agricultural use as a vineyard. There is no evidence of former commercial or industrial uses that may have released toxic metals (such as plating shops), solvents (such as dry cleaners), PCBs (such as transformers in electrical relay yards), and other hazardous contaminants.

PURPOSE

Kleinfelder understands that the City of Cloverdale is considering purchasing the site, and wishes to proactively assess potential liability related to past property uses. As a result, Kleinfelder designed a soil and groundwater investigation to meet three objectives based on the Phase I ESA:

1. Investigate and confirm the levels of petroleum hydrocarbons in soil and groundwater that were reported at the time of the closure report.

2. Analyze for metals that may be associated with petroleum releases.

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3. Assess whether residual pesticides from past agricultural use are present in shallow soils.

SITE INVESTIGATION

Kleinfelder's assessment included pre-field activities, fieldwork, and laboratory analysis. Each of these elements is discussed below.

Pre-field Activities:

Kleinfelder marked the boring locations at the subject site in white paint for underground utility clearance, notified Underground Service Alert (USA) 48-hours prior to job site mobilization, and obtained a soil boring permit from Sonoma County and paid the associated fees.

Fieldwork:

A total of seven soil borings were advanced using Geoprobe direct push technology. Borings were located at areas that would, based on the historical data, have the highest potential for residual contamination.

Kleinfelder retained the services of Vannucci Technologies to advance seven borings on February 10, 2009, using a track-mounted Geoprobe rig. Each soil boring was logged in the field following the Unified Soil Classification System under the direction of a California Professional Geologist. Copies of the boring logs are included in Appendix A.

Relatively undisturbed soil samples were collected within two-inch diameter plastic sleeves and secured with Teflon sheets and plastic end caps, labeled, and placed in an iced cooler. Soil and groundwater samples collected for analytical testing were subsequently delivered to McCampbell Analytical, Inc. (McCampbell) in Pittsburg, California following chain-of-custody protocol.

A grab groundwater sample was collected in each borehole location, with the exception of boring B-7, in which groundwater was not encountered. Groundwater samples were collected in laboratory-provided glass containers, labeled, and placed in an iced cooler with the soil samples.

Quality assurance/quality control (QA/QC) procedures performed during the field exploration activities included pressure washing of drilling equipment, cleansing/rinsing of the sampling equipment between soil sampling intervals, and providing chain-of custody documentation for each soil and groundwater sample submitted to the laboratory.

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Each boring was cement-grouted using a tremie pipe, per Sonoma County regulations.

Investigation-derived waste has been temporarily stored on site in a 5-gallon bucket, pending disposal by the City of Cloverdale. Kleinfelder will coordinate this activity with a waste hauler. A copy of the waste disposal manifest will be included under separate cover.

Laboratory Analysis:

Twenty-two soil samples, six groundwater samples, and a trip blank were transported under chain-of-custody documentation to McCampbell Laboratories, which is certified by the State of California Environmental Laboratory Accreditation Program to perform the requested analyses. The samples were analyzed for the following compounds:

- Total petroleum hydrocarbons (TPH) as gasoline (TPH-g), benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tert-butyl ether (MTBE) by EPA Method 8015B;
- Total petroleum hydrocarbons as diesel (TPH-d) and total petroleum hydrocarbons as motor oil (TPH-mo) by EPA Method 8015B; and
- LUFT 5 Metals by EPA Method 6010C (200.8 for total metals in water).

In addition, four soil samples (B-1 at 0.5, B-1 at 4.5 feet, B-2 at 0.5, and B-2 at 4.5 feet bgs) were analyzed for the presence of pesticides, due to former use of these areas for agricultural purposes by:

- Organochlorine pesticides (OCP) by EPA Method 8081A.

RESULTS

Borings were advanced as follows. Samples were collected at the depths described below. Boring logs are included in Appendix A.

- B-1 was drilled to 10 feet below ground surface (bgs). Soil samples were collected at intervals of 0.5, 4.5, and 9.5 feet bgs. Groundwater was encountered within a moist layer at 8 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 10 minutes. No petroleum hydrocarbon odors or petroleum hydrocarbon staining were observed.

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- B-2 was drilled to 10 feet bgs. Soil samples were collected at intervals of 0.5, 4.5, and 9.5 feet bgs. Groundwater was encountered within a moist layer at 7.5 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 10 minutes. No petroleum hydrocarbon odors or petroleum hydrocarbon staining were observed.

- B-3 was drilled to 10.5 feet bgs. Soil samples were collected at intervals of 1.5, 5, and 9.5 feet bgs. Groundwater was encountered within a moist layer at 9.5 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 5 minutes. No petroleum hydrocarbon odors or petroleum hydrocarbon staining were observed.

- B-4 was drilled to 15 feet bgs. Soil samples were collected from 4.5, 9.5, and 14.5 feet bgs. Groundwater was encountered within a moist layer at 12 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 15 minutes. At approximately 13 feet bgs, a greenish-gray petroleum hydrocarbon stain was observed and a moderate petroleum hydrocarbon odor was detected. This staining extended to approximately 15 feet bgs.

- B-5 was drilled to 10 feet bgs. Soil samples were collected from 1, 4.5, and 9.5 feet bgs. Groundwater was encountered within a moist layer at 6.5 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 5 minutes. No petroleum hydrocarbon odors or petroleum hydrocarbon staining was observed. At approximately 9 feet bgs, a grayish stain was observed. This staining extended to approximately 10 feet bgs.

- B-6 was drilled to 10 feet bgs. Soil samples were collected from 0.5, 4.5, and 9.5 feet bgs. Groundwater was encountered within a moist layer at 7 feet bgs. A grab groundwater sample was collected after groundwater was allowed to collect within temporary slotted casing, after the borehole was kept open for approximately 20 minutes. A slight petroleum hydrocarbon odor and gray petroleum hydrocarbon staining were detected from approximately 9 to 10 feet bgs.

- B-7 was drilled to 14 feet bgs. Soil samples were collected from 0.5, 4.5, 9.5, and 13.5 feet bgs. Groundwater was not encountered in this borehole and no groundwater collected within the temporary casing, which was left open for 2 hours after the

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borehole was drilled. No petroleum hydrocarbon odors or petroleum hydrocarbon staining was observed.

- The soil within each boring was typically clay with interbedded silty clay and clayey sand, fine to medium grained.

Soil Analytical Results:

Soil analytical results are presented in Table 1. Copies of analytical laboratory reports and chain-of-custody forms are included in Appendix D. Soil analytical results are summarized as follows:

- Organochlorine pesticides were not detected above reporting limits in the four samples analyzed (B-1 at 0.5 feet and 4.5 feet bgs; B-2 at 0.5 and 4.5 feet bgs).
- TPH-d was encountered within the soil in the following borings:
    - B-6 at 4.5 feet bgs at a concentration of 1.6 mg/kg;
    - B-6 at 9.5 feet bgs at a concentration of 2.0 mg/kg; and
    - B-7 at 4.5 feet bgs at a concentration of 2.9 mg/kg.
- TPH-mo was encountered within the soil in the following borings:
    - B-6 at 4.5 feet bgs at a concentration of 7.5 mg/kg;
    - B-6 at 9.5 feet bgs at a concentration of 8.3 mg/kg; and
    - B-7 at 4.5 feet bgs at a concentration of 6.1 mg/kg.
- Total Xylenes were detected in B-7 at 0.5 feet bgs at a concentration of 0.017 mg/kg.
- TPH-g, MTBE, Benzene, Ethylbenzene, and Toluene were not detected above laboratory reporting limits in the samples analyzed.
- Four of the five metals analyzed (Chromium, Lead, Nickel, and Zinc) were detected in the soil. Cadmium was not detected above laboratory reporting limits. Table 1 presents the concentrations of metals, as reported by the laboratory.

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Groundwater Analytical Results:

Water analytical results are presented in Table 2. Copies of analytical laboratory reports and chain-of-custody forms are included in Appendix C. Groundwater analytical results are as follows:

- TPH-d was encountered within groundwater in the following borings (at the following concentrations):
    - B-1 (94 ug/L);
    - B-2 (240 ug/L);
    - B-3 (250 ug/L);
    - B-4 (280 ug/L);
    - B-5 (580 ug/L); and
    - B-6 (220 ug/L).

- TPH-mo was encountered within groundwater in the following borings (at the following concentrations):
    - B-2 (400 ug/L);
    - B-3 (480 ug/L);
    - B-4 (1,100 ug/L);
    - B-5 (900 ug/L); and
    - B-6 (290 ug/L).

- Cadmium, Chromium, Lead, Nickel, and Zinc were detected within all six groundwater samples. Table 2 presents the concentrations of metals within the groundwater samples.

- TPH-g, MTBE, Benzene, Toluene, Ethylbenzene, and Total Xylenes were not detected within the groundwater samples.

FINDINGS

This section presents findings and data gaps identified during the soil and groundwater investigation.

Groundwater samples collected within B-1, B-2, B-3, B-4, B-5, and B-6 contained elevated TPH-d and TPH-mo concentrations. Note that samples collected from B-2 and B-3 can be considered upgradient groundwater samples as compared to the former gasoline station

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source that was the subject of the LUST investigation on the southeast corner of the site from the 1980's until 2001. Kleinfelder assumes that groundwater flow is toward the southeast, based on data collected at nearby open LUST cases. Concentrations of TPH-d and TPH-mo on B-2 and B-3 were higher than concentrations reported in B-1 and B-6, but lower than concentrations reported in B-4 and B-5.

Kleinfelder compared the soil and groundwater samples to the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) for human health risk assessment purposes. Although not adopted by the NCRWQB, the ESLs provide a first-order screen to ascertain the relative magnitude of the potential risk and remediation requirements at the site. It should be noted that each site within the North Coast Regional Water Quality Control Board area is considered on a case by case basis.

Kleinfelder also compared the soil results to the EPA Regional Screening Levels (RSLs), which were formerly known as Preliminary Remediation Goals and were revised in September 2008. Groundwater results were compared to California Maximum Contamination Levels (MCLs) for drinking water.

According to a discussion with the City of Cloverdale, future plans for development of this site, if obtained by the City, would be commercial retail center and mixed-use. Single family residential development and/or construction of a subsurface parking garage are not planned for this site. Therefore, Kleinfelder compared soil and groundwater concentrations at the site to the SFRWQCB ESL for "commercial/industrial shallow soils where groundwater is a potential source for drinking water", EPA RSLs for commercial or industrial soil, and California MCLs for drinking water.

- Nickel concentrations exceeded the soil threshold in boring B-7 at 0.5 and 4.5 feet bgs; however, these concentrations were below the RSL for nickel.
- Chromium, Lead, Nickel, and Zinc concentrations exceeded the ESL and MCL in each of the borings that a groundwater sample was obtained: B-1, B-2, B-3, B-4, B-5, and B-6.
- Cadmium concentrations in groundwater from B-1, B-2, B-3, B-4, and B-6 exceeded the ESL but not the MCL for drinking water.
- Cadmium concentrations in groundwater from B-5 exceeded both the ESL and MCL.
- TPH-d concentrations exceeded the ESL in borings B-2, B-3, B-4, B-5, and B-6. There is not a published MCL for TPH-d.

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- TPH-mo concentrations exceeded the ESL in borings B-2, B-3, B-4, B-5, and B-6. There is not a published MCL for TPH-mo.

SUMMARY AND CONCLUSIONS

Kleinfelder conducted a limited soil and groundwater investigation at the subject site to verify site conditions as reported in a 2001 closure report, and to assess additional potential environmental concerns based on Kleinfelder's Phase I Environmental Site Assessment. The purpose of the investigation was to assist the City of Cloverdale to proactively assess potential environmental liability as part of its pre-acquisition due diligence.

The Phase I ESA revealed that the site was formerly occupied by a gas station, and extensive investigations and remediation of soil and groundwater occurred following the 1994 removal of a leaking underground storage tank. The site was closed in 2001 with residual petroleum hydrocarbons up to 940 mg/kg of diesel fuel remaining in soil. Petroleum hydrocarbons in groundwater were not reported at concentrations above the laboratory reporting limits at the time of site closure.

Soil

Based on the site historical records, Kleinfelder sited borings at locations having the highest potential for residual hydrocarbons and pesticides. The highest concentrations of petroleum hydrocarbons in soil were substantially lower than reported in 2001. The highest concentration of diesel fuel and motor oil measured in soil was 2.9 mg/kg and 8.3 mg/kg, respectively. Pesticides, gasoline, and fuel additives, including benzene, were not detected above the laboratory limits.

The residual levels of petroleum hydrocarbons are considered to be relatively low. For comparison, risk-based environmental screening levels (ESLs) used by the San Francisco Regional Water Quality Control Board to help determine a response action is 83 mg/kg and 2,500 mg/kg for diesel and motor oil, respectively. Metals in soil are generally consistent with background except possibly in two locations. Chromium concentrations were found to be a maximum of 110 mg/kg in boring B-6 and 190 mg/kg in B-7. While these levels are well below the Chromium III ESL of 750 mg/kg, they are elevated with respect to background concentrations considered normal in soil derived from common rock formations. However, it should be noted that rocks underlying the site and within the vicinity are comprised of the Franciscan Formation, a mélange of various rock including serpentinites. Serpentinite is notable for containing unusually high concentrations of certain heavy metals, particularly chromium (often derived from chromite, a naturally occurring chromium oxide mineral). Therefore, the local and apparently elevated chromium in soil is possibly naturally occurring considering the local geology and absence of any known site use that could release

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significant quantities of metals. One other possibility is that the apparently elevated chromium is derived from a release of waste oil from the former gas station; however, this scenario is unlikely because high chromium would be associated with very high levels of motor oil, and this was not observed.

If these results reflect the conditions of the site as a whole, the data indicate that there is a low risk to human health and safety at the site (from exposure to soil) and a significant soil-to-groundwater source of contamination is not present at the site.

Groundwater

Groundwater was generally encountered at shallow depths between 6.5 feet and 12.0 feet below ground surface. The data does not allow a detailed characterization of the water bearing units, but it appears that the groundwater is derived from one or more shallow perched zones or a series of thin interconnected permeable zones within an impermeable clayey matrix.

Neither the data collected during the Phase I ESA nor the information derived from this limited investigation allows accurate determination of the groundwater flow direction or gradient at this site. However, based on records from LUST investigations that are in progress northeast and southeast of the property, as well as topographic considerations, the estimated flow direction is toward the east or southeast.

Levels of petroleum hydrocarbons are higher than those measured at site closure in 2001. Total petroleum hydrocarbon concentrations measured as diesel ranged from 94 ug/l and 580 ug/l. Motor oil was present in concentrations up to 1,100 ug/l. The source of this apparent increase was not identified by this investigation.

Metals in groundwater samples also appear elevated. There are several possible explanations; however, the data collected from this investigation does not allow a definitive determination whether the metals are naturally occurring, the result of a release, or an artifact due to the sample preparation protocol.

It is possible that the high metals are naturally occurring derived from serpentinite rocks and soils.

It is possible that the metals are derived from an on-site or off-site release. However, the site does not have a history of industrial use that generated waste that contain a high metals content; metals in soil are relatively low (except for chromium as described above), and no

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release of metals-containing waste or site uses on adjacent properties that would generate such wastes were identified in the Phase I ESA.

Grab groundwater samples were collected in polyethylene bottles with nitric acid preservative and analyzed for Total Metals. In addition, samples were not filtered by the laboratory. It is possible that the high metals content is a result of the leaching of metals from suspended sediment or of metals from particulate material itself.

In any case, the presence of petroleum hydrocarbons and metals in shallow groundwater do not likely represent a health risk to those occupying the site. Heavy-end petroleum hydrocarbons are not highly volatile, and therefore will not cause exposure from soil vapor as may occur with dissolved solvents. Exposure to metals is not likely because shallow groundwater will not be used as a drinking water source.

RECOMMENDATIONS

Kleinfelder recommends the following regarding the presence of impacted soil and groundwater at the site:

- If dissolved metals in shallow groundwater are of concern to human health and safety, Kleinfelder recommends that groundwater at the site be resampled and analyzed for dissolved metal concentrations in at least one upgradient location (northwest corner of the site) and two to three downgradient locations (southeast corner of the site). To eliminate the possibility that metals are derived by leaching from suspended sediments, groundwater samples should be field-filtered using a 0.45 micron filter prior to preservation.
- Kleinfelder recommends that this report be submitted to Sonoma County Environmental Health Division, in accordance with local drilling permit requirements. In addition the report should be provided to the North Coast Regional Water Quality Control Board for their opinion on further actions, as necessary.

LIMITATIONS

This report was prepared in general accordance with accepted standards of care that exist in Sonoma County, California at the time the investigation was performed. Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be

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eliminated, more-detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that the City of Cloverdale has reviewed the document and determined that it does not need or want a greater level of service than provided.

During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage or treatment of hazardous materials within the meaning of any governmental statute, regulation or order. The City of Cloverdale is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. The City of Cloverdale is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This report may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The work performed was based on project information provided by the City of Cloverdale. If the City of Cloverdale does not retain Kleinfelder to review any plans and specifications, including any revisions or modifications to the plans and specifications, Kleinfelder assumes no responsibility for the suitability of our recommendations. In addition, if there are any

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changes in the field to the plans and specifications, the City of Cloverdale must obtain written approval from Kleinfelder's engineer that such changes do not affect our recommendations. Failure to do so will vitiate Kleinfelder's recommendations.

Please feel free to contact us if you have any questions.

Sincerely,

KLEINFELDER WEST, INC.

Sarah Kalika, PG #8592 (ex. 8-31-2009)
Project Geologist

Bradley Erskine, Ph.D., P.G. #5631 (ex. 2-29-2010), CEG, CHG
Area Manager

TABLES

Table 1 – Soil Analytical Results
Table 2 – Grab Groundwater Analytical Results

PLATES

Plate 1 – Boring Locations
Plate 2 – TPH-d Concentrations in Grab Groundwater Samples
Plate 3 – TPH-mo Concentrations in Grab Groundwater Samples

APPENDICES

A Kleinfelder Boring Logs
B Sonoma County Soil Boring Permit
C Laboratory Analytical Report and Chain-of-Custody Form

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS (mg/kg unless otherwise noted)

Boring	Feet Below Ground Surface	Sample Date	TPH-g	TPH-d	TPH-mo	MTBE	Benzene	Toluene	Ethyl benzene	Total Xylenes	Cadmium	Chromium	Lead	Nickel	Zinc	OCPs
B-1	0.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	28	33	27	53	ND All
	4.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	38	11	32	38	ND All
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	47	13	59	41	NA
B-2	0.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	45	12	41	46	ND All
	4.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	12	51	59	ND All
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	48	12	50	39	NA
B-3	1.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	32	11	32	38	NA
	5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	11	33	37	NA
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	7	25	26	NA
B-4	4.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	43	15	40	44	NA
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	54	13	53	51	NA
	14.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	48	6.1	33	30	NA
B-5	1	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	67	8.8	65	48	NA
	4.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	47	13	52	57	NA
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	57	11	45	45	NA
B-6	0.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	99	10	130	57	NA
	4.5	2/10/2009	ND	1.6	7.5	ND	ND	ND	ND	ND	ND	110	11	140	63	NA
	9.5	2/10/2009	ND	2	8.3	ND	ND	ND	ND	ND	ND	110	12	140	59	NA
B-7	0.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	0.017	ND	150	12	**180**	69	NA
	4.5	2/10/2009	ND	2.9	6.1	ND	ND	ND	ND	ND	ND	190	13	**200**	64	NA
	9.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	41	11	44	28	NA
	13.5	2/10/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	71	11	57	41	NA
		ESLs	83.0	83.0	2500.0	0.023	0.044	2.9	3.3	2.3	74.0	450.0[1]	750.0	150.0	600.0	various
		RSLs	NL	NL	NL	190	5.6	46000.0	29.0	2600.0	810.0	1400.00	800[3]	20000[2]	310000.0	various

ESLs = Environmental Screening Levels (SFBRWQCB) in commercial/industrial shallow soils where groundwater is a potential source for drinking water (May 2008)

RSL = EPA Regional Screening Levels for industrial soil, September 2008

[1] = no listed ESL for total chromium, 450 is EPA Region 9 Regional Screening Level for industrial soil with direct exposure, 750 is ESL for Chrom III

[2] = Nickel soluble salts

[3] = Lead and compounds

ND = Not detected at or above laboratory reporting limits NA = Not analyzed by the laboratory for this constituent NL = No listing for this compound

TABLE 2
GRAB GROUNDWATER ANALYTICAL RESULTS (ug/L unless otherwise noted)

Boring	Sample Date	TPH-g	TPH-d	TPH-mo	MTBE	Benzene	Toluene	Ethyl benzene	Total Xylenes	Cadmium*	Chromium*	Lead*	Nickel*	Zinc*	OCPs
B-1	2/10/2009	ND	94	ND	ND	ND	ND	ND	ND	**2.3**	**1700**	**360**	**2300**	**2200**	NA
B-2	2/10/2009	ND	**240**	**400**	ND	ND	ND	ND	ND	**1.8**	**1500**	**260**	**1700**	**1600**	NA
B-3	2/10/2009	ND	**250**	**480**	ND	ND	ND	ND	ND	**0.89**	**950**	**200**	**910**	**1200**	NA
B-4	2/10/2009	ND	**280**	**1100**	ND	ND	ND	ND	ND	**0.78**	**1300**	**130**	**750**	**830**	NA
B-5	2/10/2009	ND	**580**	**900**	ND	ND	ND	ND	ND	**18**	**4700**	**1100**	**10000**	**5100**	NA
B-6	2/10/2009	ND	**220**	**290**	ND	ND	ND	ND	ND	**3**	**2500**	**240**	**3600**	**1500**	NA
B-7	not sampled, no water encountered														
	ESLs	100.0	100.0	100.0	5.0	1.0	40.0	30.0	20.0	0.25	50.0	2.5	8.2	81.0	various
	MCLs	NL	NL	NL	13.0	5.0	150.0	300.0	1750.0	5.0	50.0	15[1]	100.0	5[2]	various

ESLs = Environmental Screening Levels (SFBRWQCB) where groundwater is a potential source for drinking water (May 2008)

MCLs = California Maximum Contamination Limits for drinking water; converted to ug/L, normally reported in milligrams/L (February 9, 2009)

[1] = Action Level for Lead

[2] = Federal MCL for Zinc, no listed California MCL for Zinc

BOLD = levels above ESLs

ND = Not detected at or above laboratory reporting limits

NL = No Listing for compound

NA = Not analyzed by the laboratory

* = Analyzed for Total Metals, due to limited hold time for dissolved metals analysis

PLATES

APPROXIMATE SCALE:
1 INCH = 125 FEET

0 feet 125

● APPROXIMATE SAMPLE LOCATIONS 2/10/09

KLEINFELDER
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Proj. No: 101757	
Graphic By: S. Kalika	
Graphic Date: 2/12/09	
Checked By: S. Kalika	
File Name: siteplan.fh11	

BORING LOCATIONS
FEBRUARY 10, 2009

THYME SQUARE PROPERTY
337 S. CLOVERDALE BLVD
CLOVERDALE, CA

Plate
1

APPROXIMATE SCALE:
1 INCH = 125 FEET

0 feet 125

● APPROXIMATE SAMPLE LOCATIONS 2/10/09

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Proj. No: 101757	
Graphic By: S. Kalika	
Graphic Date: 2/12/09	
Checked By: S. Kalika	
File Name: siteplan.fh11	

TPH-d CONCENTRATIONS
GRAB GROUNDWATER SAMPLES
FEBRUARY 10, 2009

THYME SQUARE PROPERTY
337 S. CLOVERDALE BLVD
CLOVERDALE, CA

Plate
2

APPROXIMATE SCALE:
1 INCH = 125 FEET

0 feet 125

● APPROXIMATE SAMPLE LOCATIONS 2/10/09

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Proj. No: 101757	
Graphic By: S. Kalika	
Graphic Date: 2/12/09	
Checked By: S. Kalika	
File Name: siteplan.fh11	

TPH-mo CONCENTRATIONS
GRAB GROUNDWATER SAMPLES
FEBRUARY 10, 2009

THYME SQUARE PROPERTY
337 S. CLOVERDALE BLVD
CLOVERDALE, CA

Plate
3

APPENDIX A

KLEINFELDER BORING LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				DESCRIPTIVE NAMES
COARSE GRAINED SOILS 50% is greater than #200 sieve	GRAVEL % GRAVEL > % SAND	CLEAN GRAVEL WITH LITTLE OR NO FINES (<=5%)	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES
		GRAVEL WITH > 12% FINES	GM	SILTY GRAVEL, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVEL, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SAND % SAND > % GRAVEL	CLEAN SAND WITH LITTLE OR NO FINES (<=5%)	SW	WELL GRADED SAND, GRAVELLY SAND
			SP	POORLY GRADED SAND, GRAVELLY SAND
		SAND WITH > 12% FINES	SM	SILTY SAND, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SAND, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS 50% passes #200 sieve	SILT AND CLAY LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILT AND VERY FINE SAND, ROCK FLOUR, SILTY OR CLAYEY FINE SAND, OR CLAYEY SILT WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY
			OL	ORGANIC CLAY AND ORGANIC SILTY CLAY OF LOW PLASTICITY
	SILT AND CLAY LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
			CH	INORGANIC CLAY OF HIGH PLASTICITY, FAT CLAY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILT
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

FIELD SAMPLING

- CALIFORNIA SAMPLE 2.5" I.D.
- MODIFIED CALIFORNIA SAMPLE 2" I.D.
- DISTURBED, BAG OR BULK SAMPLE
- STANDARD PENETRATION TEST
- SHELBY TUBE SAMPLE
- 3.5" I.D. CONTINUOUS CORE SAMPLE
- UNRETAINED PORTION OF SAMPLE
- HAND SAMPLER
- WATER LEVEL OBSERVED IN BORING (at given post-drilling time)
- WATER LEVEL OBSERVED IN BORING (at time of drilling)

LABORATORY TESTS

LL	LIQUID LIMIT
PI	PLASTICITY INDEX
SA	SIEVE ANALYSIS
#200	PERCENT PASSING #200 SIEVE
RV	RESISTANCE VALUE
EI	EXPANSION INDEX
DS	DIRECT SHEAR
Tx/UU	TRIAXIAL SHEAR-UNCONSOLIDATED UNDRAINED
UC	UNCONFINED COMPRESSION
SG	SPECIFIC GRAVITY
PP	POCKET PENETROMETER SHEAR STRENGTH (tsf)

NOTES: Blow counts represent the number of blows of a 140-pound hammer falling 30-inches required to drive a sampler the last 12-inches of an 18-inch penetration. Field blow counts (not-converted).

The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil strata and groundwater observed at the boring location on the date of drilling only.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER **101757** DATE **3/5/2009**

BORING LOG EXPLANATION

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-1**

Data Template: LEGEND BORING (2007) - KLEINFELDER SANTA ROSA 5-8-08.GDT - 3/5/09 13:41 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
					0			*Grass*
B-1-0.5'		1147	N/A	X	1			**LEAN CLAY**, dark brown, moist, soft, minor rust colored fine sand, no petroleum hydrocarbon odor (PHO), no petroleum hydrocarbon stain (PHS) *<5' run from 0-5', 3' recovery>*
					2			
					3			
					4		CL	-moist to saturated, fine gravel layer, 4-4.5'
B-1-4.5'		1150	N/A	X	5			
					6			-medium brown, with rust colored fine sand, no PHO, minor dark brown/black PHS, 5.5-6'
					7			
					8			▽
					9		GP	**POORLY GRADED GRAVEL**, medium brown, moist to saturated, with clay and rust colored fine sand
B-1-9.5'		1155	N/A	X	10			**NOTES:** 1. Boring terminated at approximately 10 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 8 feet at 11:54. 4. B-1-W collected at 12:05.
					11			
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **10.0 feet**
GROUNDWATER DEPTH: ▽ **8.0 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-1

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-2**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:14 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
					0			*Grass*
B-2-0.5'		1240	N/A		1		CL	**LEAN CLAY**, dark brown, moist, stiff, streaks of rust colored fine sand, no PHO, no PHS *<5' run from 0-5', 4.5' recovery>*
					2			
					3			
					4			-approx. 25% rust colored fine sand, 3.5-4.5'
B-2-4.5'		1242	N/A		5			-light brown, soft, with coarse sand and fine to medium gravel, no PHO, no PHS, 4.5-6.5' *<5' run from 5-10', 3' recovery>*
					6			
					7		SP	**POORLY GRADED SAND**, medium brown, medium to coarse sand, with fine gravel, no PHO, no PHS, approx. 1.5' thick saturated layer
					8			
					9		SC	**CLAYEY SAND**, moist, medium brown, fine to medium sand, with angular fine gravel and coarse sand
B-2-9.5'		1245	N/A		10			**NOTES:** 1. Boring terminated at approximately 10 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 7.5 feet at 12:43. 4. B-2-W collected at 12:55.
					11			
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **10.0 feet**
GROUNDWATER DEPTH: ▽ **7.5 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-2

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-3**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:14 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

FIELD					Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample				
								8" concrete, fill rocks
B-3-1.5'		1306	N/A		1 2 3 4		CL	**LEAN CLAY**, dark brown, moist, medium stiff, with minor rounded fine gravel, no PHO, no PHS *<5' run from 0.5-5.5', 2.5' recovery>*
B-3-5'		1308	N/A		5 6 7 8 9		SC	**CLAYEY SAND**, medium to dark brown, moist, fine sand, with minor rust colored fine sand, no PHO, no PHS *<5' run from 5.5-10.5', 5' recovery>*
B-3-9.5'		1314	N/A		10			▽ -light brown, saturated, fine sand, approx. 25% fine gravel and coarse sand, no PHO, no PHS
					11 12 13 14 15 16 17 18 19 20			**NOTES:** 1. Boring terminated at approximately 10.5 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 9.5 feet at 13:12. 4. B-3-W collected at 13:20.

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **10.5 feet**
GROUNDWATER DEPTH: ▽ **9.5 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-3

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-4**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:15 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
					0			*3" asphalt, coarse sand and fine gravel fill*
					1			**CLAYEY SAND**, dark brown, moist, fine sand, with soft clay, minor coarse sand, no PHO, no PHS
					2			*<5' run from 0-5', 3' recovery>*
					3			
					4		SC	
B-4-4.5'		900	N/A		5			*<5' run from 5-10', 3' recovery>*
					6			-dark gray, moist to wet, fine gravel lense, with clay interbeds
					7			
					8			-3" dark red gravel and medium sand, moist, 7.5-8'
					9		CL	**LEAN CLAY**, greenish gray, moist, soft, no PHO, no PHS
					10			**CLAYEY GRAVEL**, light tan, medium brown and dark brown, with medium sand, dark red (rust color)
B-4-9.5'		903	N/A		11		GC	*<5' run from 10-15', 3' recovery>*
					12			▽
					13			**LEAN CLAY**, medium brown, moist, soft
					14		CL	-greenish gray, 13-14.5'
B-4-14.5'		906	N/A		15			
					16			**NOTES:** 1. Boring terminated at approximately 15 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 12 feet at 09:05. 4. B-4-W collected at 09:30.
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **15.0 feet**
GROUNDWATER DEPTH: ▽ **12.0 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-4

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-5**

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:15 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
					0			*Grass, fill material*
							SP	**POORLY GRADED SAND**, coarse sand, with fine angular gravel
B-5-1'		933	N/A		1			**CLAYEY SAND**, dark brown, moist, with minor fine gravel, no PHO, no PHS
					2			
					3		SC	
					4			
B-5-4.5'		935	N/A		5			**CLAYEY GRAVEL**, dark brown, moist, no PHO, no PHS
					6			-very moist to saturated, fine gravel lense with medium to dark brown clay interbeds, 6-7.5'
					7		GC	
					8			-approx. 15% dark gray clay, 8.5-9'
					9			**SANDY LEAN CLAY**, dark gray, moist, no PHO, gray PHS
B-5-9.5'		938	N/A		10		CL	**NOTES:** 1. Boring terminated at approximately 10 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 6.5 feet at 09:36. 4. B-5-W collected at 09:45.
					11			
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **10.0 feet**
GROUNDWATER DEPTH: ▽ **6.5 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-5

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-6**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:15 - C:\DOCUMENTS AND SETTINGS\RYUEN\MY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
					0			*Grass*
B-6-0.5'		1010	N/A		1		CL	**LEAN CLAY**, dark brown, moist, minor medium dark brown sand, no PHO, no PHS *<5' run from 0-5', 3.5' recovery>*
					2			
					3			
					4			
B-6-4.5'		1012	N/A		5			*<5' run from 5-10', 3.5' recovery>*
					6			
					7			**LEAN CLAY**, dark gray, moist, slight PHO, gray PHS
					8		CL	
					9			
B-6-9.5'		1018	N/A		10			**NOTES:** 1. Boring terminated at approximately 10 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth encountered at approximately 7 feet at 10:13. 4. B-6-W collected at 10:40.
					11			
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **10.0 feet**
GROUNDWATER DEPTH: ▽ **7.0 feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
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PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-6

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-7**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:15 - C:\DOCUMENTS AND SETTINGS\RYUENMY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

Sample ID	PID (ppm)	Sample Time	Blows/ft. *	Sample	Depth (feet)	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION
								Grass
B-7-0.5'	10	1100	N/A		1			**CLAYEY GRAVEL**, medium brown fine gravel and greenish gray clay, moist, moderate PHO, gray PHS *<5' run from 0-5', 3' recovery>*
					2			
					3		GC	-faint PHO, 2.5-4.5' -with 4" medium brown sand layer at 3'
					4			
B-7-4.5'		1103	N/A		5			-no PHO, gray PHS, 4.5-5.25'
					6			**LEAN CLAY**, medium brown with streaks of greenish gray and rust, dry to moist, hard, minor fine gravel, no PHO, no PHS
					7		CL	
					8			
					9		GP	**POORLY GRADED GRAVEL**, dry to moist, angular fine to medium gravel, no PHO, no PHS
B-7-9.5'		1107	N/A		10		SC	**CLAYEY SAND**, light brown with streaks of medium brown and dark brown, moist, fine to medium sand, with approx. 20% greenish gray clay, no PHO, no PHS
					11			**POORLY GRADED SAND with CLAY (SP-SC)**, light tan, medium sand, with clay, no PHO, no PHS
					12		SP-SC	
					13			
B-7-13.5'		1110	N/A		14			-faint PHO, black PHS, approx. 6-8" thick at 13.5'
					15			**NOTES:** 1. Boring terminated at approximately 14 feet below ground surface. 2. Boring backfilled with cement grout. 3. Groundwater depth not encountered. 4. No water sample collected, no water collected within temporary casing.
					16			
					17			
					18			
					19			
					20			

SURFACE ELEVATION: **unknown, not surveyed ****
TOTAL DEPTH: **14.0 feet**
GROUNDWATER DEPTH: ▽ **feet at time of drilling**
▼ **feet after drilling**

LOGGED BY: **S. Kalika**
EQUIPMENT: **Geoprobe 7720 DT, Vannucci Technologies**
DIAMETER of BORING: **2 inches**
DATE DRILLED: **2-10-09**

* Converted to equivalent standard penetration blow counts. ** Existing ground surface at time of drilling.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NUMBER **101757** DATE **3/17/2009**

LOG OF EXPLORATION BORING B-7

Thyme Square - Phase II
337 S. Cloverdale Blvd
Cloverdale, CA

PLATE **A-8**

1 of 1

Data Template: SANTA ROSA ENV - KLEINFELDER SANTA ROSA 5-8-08 .GDT - 3/17/09 16:15 - C:\DOCUMENTS AND SETTINGS\RYUENMY DOCUMENTS\101757 THYME SQUARE\THYME SQUARE - PHASE II.GPJ

APPENDIX B

SONOMA COUNTY SOIL BORING PERMIT

COUNTY OF SONOMA — DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH DIVISION
475 Aviation Blvd., Suite 220, Santa Rosa, CA 95403
Phone (707) 565-6565 Fax (707) 565-6525 www.sonoma-county.org

APPLICATION FOR DRILLING PERMIT
for Regional Board Lead/Environmental Assessment / LOP Lead

For Office Use Only
Amount paid ~~$765~~ $514
Receipt number
Payment date 2-4-09 Rev. code 1348
Site ID# FA0003240
Permit # SR0003051

Well type: [ ] Monitoring well [ ] Recovery extraction well [X] Boring [ ] Injection well [ ] Destruct [X] Environmental assessment
[ ] Soil gas survey [ ] Direct push [ ] Air sparging/venting [ ] Remediation well [ ] Other

Well depth N/A Boring depth 15'

On-site ~~well~~/boring 7 ID # K-1 through K-7 # Off-site well/boring ID

COPY

Submit legal right-of-entry/off-site well address/encroachment permit

On-site Address 337 S. Cloverdale Blvd AP#

Facility Name former Gasco

On-site Owner Thyme Square, LLC / MLB Homes Phone 707-829-8521

Street 6934 Burnett Street City Sebastopol State CA Zip 95472

Responsible Party Seghesio Farms, Inc / Desert Petroleum Phone

Street 14730 Grove Street, Healdsburg, CA 95448 / P.O. Box 1601 Oxnard, CA 93032 City State Zip

Consultant Kleinfelder Phone 510-628-9000

Street 1970 Broadway, Suite 710 City Oakland State CA Zip 94612

License #/Type

Drilling Contractor Vannucci Technologies Phone 530-219-2641

Street P.O. Box 791 City Woodland State CA Zip 95776

C-57 License # 814760

Type of work: [ ] Initial investigation # Wells [X] Subsequent investigation 7 # ~~Wells~~ Borehole [ ] Destruct # Wells

Groundwater investigation due to: [ ] Underground tank [ ] Surface impoundment [X] Environmental assessment
[ ] Surface disposal practice—specify involved industry
[ ] Other

Perforated Intervals N/A Chemical constituents TPH-g, TPH-d/mo, LUFT 5 Metals

Disposal method for soil cuttings Drum Disposal method for development water N/A

Drilling method Geoprobe direct-push Method of drill equip. rinsate containment N/A

If destroying a well, abandonment method N/A

Submit plot plan of wells in relation to all sewer or septic lines.

Is well to be constructed within: 100 feet of a septic tank or leachfield? [ ] Yes [X] No
50 feet of any sanitary sewer line? [ ] Yes [X] No
25 feet of any private sanitary sewer line? [ ] Yes [X] No

DEPT. OF HEALTH SVCS
FEB 04 2009
ENVIRONMENTAL HEALTH DIVISION

In addition, all monitoring wells must include ***identification system*** affixed to interior surface:

1) Well identification 2) Well type 3) Well depth 4) Well casing diameter 5) Perforated Intervals

Well identification number and well type shall be ***affixed*** to the ***exterior surface*** security structure.

For Office Use Only

Address 337 S. Cloverdale

Site ID# FA0003240

Permit # SR0008051

I hereby agree to comply with all laws and regulations of the County of Sonoma and State of California pertaining to water well construction. I will telephone (707) 565-6565, 48 hours in advance, to notify the Environmental Health Specialist when completing or destroying a well. I will furnish the Director of Health Services and the owner a legible copy of the State Water Well Driller's Report within 15 days; and a copy of the Summary Report, including sample results, should be received by this Department within 90 days in order to obtain final approval on this well permit. I acknowledge that the application will become a permit ***only*** after site approval and payment of fee. I understand that this permit is not transferable and expires one year from date of issuance.

William Vann Date 1/29/2009

Signature of Well Driller—***no proxies***

Insurance Carrier STATE Funds Insurance Expiration Date _____

Once all wells/borings are installed, submit a Well Driller's Log and/or Summary Report to complete permit process.

Indicate on attached plot plan the exact location of well(s) with respect to the following items: property lines, water bodies or water courses drainage pattern, roads, existing wells, sewer main and laterals and private sewage disposal systems or other sources of contamination or pollution. INCLUDE DIMENSIONS. The validity of this permit depends upon the accuracy of the information provided by the applicant.

Conditions of permit:

FOR OFFICE USE ONLY – ENVIRONMENTAL HEALTH DIVISION

Permit approved by _____ Date 2.6.09

Constr. approved by _____ Observed? [ ] Yes [ ] No Well # _____ Date ___/___/___

RWQCB / LOP approval _____ Date ___/___/___

drilling permit.doc (Revised August 2006) Copies: White—File Yellow—Driller Pink—Consultant Gold—Owner/Resp. Party

APPENDIX C

LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY FORM

0902253

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

RUSH

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH (X) 24 HR (X) 48 HR ☐ 72 HR ☐ 5 DAY ☐

GeoTracker EDF ☐ PDF (X) Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Sarah Kalika
Company: Kleinfelder
1970 Broadway, Suite 710
Oakland, CA 94612
Tele: (510) 628-9000
Project #: 101353
Project Location: Cloverdale
Sampler Signature: Sarah Kalika

Bill To:
E-Mail: skalika@kleinfelder.com
Fax: (510) 628-9009
Project Name: Thyme Square PH II

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: ICE	HCL	HNO_3	Other
B-1-0.5'		2/10/09	1147	1	Plastic		X				X			
B-1-4.5'			1150	1	Sleeve		X				X			
B-1-9.5'			1155	1			X				X			
+30 B-1-W			1205	5	40ml Soil Poly	X					X	X		X
B-2-0.5'			1240	1			X				X			
B-2-4.5'			1242	1			X				X			
B-2-9.5'			1245	1			X				X			
+20 B-2-W			1255	5		X					X	X		X
B-3-1.5'			1306	1			X				X			
B-3-5'			1308	1			X				X			
B-3-9.5'			1314	1			X				X			
+20 B-3-W			1320	5		X					X	X		X
B-4-4.5'			0900	1			X				X			
B-4-9.5'		↓	0903	1			X				X			

Analysis Request

BTEX & TPH as Gas (602 / 8021 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other	Comments
	TPH-mo					OCPs											Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
Sarah Kalika	2/10/09	1630	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/T 4.6c
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

PRESERVATION: VOAS ✓ O&G pH<2 METALS OTHER

COMMENTS:

Pg 1 of 3

• actually labelled B-1-6

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☒ RUSH ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

GeoTracker EDF ☐ **PDF** ☒ **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Sarah Kalika
Company: Kleinfelder
1970 Broadway, Suite 710
Oakland, CA 94612
Tele: ( ) Fax: ( )
E-Mail: skalika@kleinfelder.com
Project #: Project Name: Thyme Square-PH II
Project Location: Cloverdale
Sampler Signature: Sarah Kalika

Bill To:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
B-4-14.5		2/10/09	0906	1			X				X			
B-4-W			0930	5		X					X	X		X
B-5-1.0'			0933	1			X				X			
B-5-4.5'			0935	1			X				X			
B-5-9.5'			0938	1			X				X			
B-5-W			0945	5		X					X	X		X
B-6-0.5'			1010	1			X				X			
B-6-4.5'			1012	1			X				X			
B-6-9.5'			1018	1			X				X			
B-6-W			1040	5		X					X	X		X
B-7-0.5'			1100	1			X				X			
B-7-4.5'			1103	1			X				X			
B-7-9.5'			1107	1			X				X			
B-7-13.5'			1110	5		X					X	X		X

Analysis Request

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides) OCP	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other	Other	Other	Comments
	TPH mo																		Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
Sarah Kalika	2/10/09	1630	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° _____
GOOD CONDITION ____
HEAD SPACE ABSENT ____
DECHLORINATED IN LAB ____
APPROPRIATE CONTAINERS ____
PRESERVED IN LAB ____

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

COMMENTS:

pg 2 of 3

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME RUSH (X) 24 HR (X) 48 HR ☐ 72 HR ☐ 5 DAY ☐

GeoTracker EDF ☐ **PDF** (X) **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Sarah Kalika
Company: Kleinfelder
1970 Broadway, Suite 710
Oakland, CA 94612
Tele: ( ) Fax: ( )
E-Mail: skalika@kleinfelder.com
Project #: Project Name: Wayne Square Ph II
Project Location: Clarendale
Sampler Signature: Sarah Kalika

Bill To:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other	Comments
B-7-W		2/10/09	1125	5	VOA amber poly	X					X	X		X	X	X													X				
TB															X																		

Relinquished By:	Date:	Time:	Received By:
Sarah Kalika	2/10/09	1630	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/T _____
GOOD CONDITION _____
HEAD SPACE ABSENT _____
DECHLORINATED IN LAB _____
APPROPRIATE CONTAINERS _____
PRESERVED IN LAB _____

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

COMMENTS:

pg 3 of 3

• not received

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0902253 **ClientCode: KFO**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Sarah Kalika
Kleinfelder, Inc.
1970 Broadway Ste. 710
Oakland, CA 94612
(510) 628-9000 FAX (510) 628-9009

Email: skalika@kleinfelder.com
cc:
PO:
ProjectNo: #101353; Thyme Square-PH II

Bill to:
Emily Steinkamp
Kleinfelder Inc.
1970 Broadway #710
Oakland, CA 94612
SEND HARDCOPY

Requested TAT: 1 day

Date Received: 02/10/2009
Date Printed: 02/10/2009

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0902253-001	B-1-0.5'	Soil	2/10/2009 11:47	☐	A	A		A		A						
0902253-002	B-1-4.5'	Soil	2/10/2009 11:50	☐	A	A		A		A						
0902253-003	B-1-9.5'	Soil	2/10/2009 11:55	☐		A		A		A						
0902253-004	B-1-W	Water	2/10/2009 12:05	☐			A		C		B					
0902253-005	B-2-0.5'	Soil	2/10/2009 12:40	☐	A	A		A		A						
0902253-006	B-2-4.5'	Soil	2/10/2009 12:42	☐	A	A		A		A						
0902253-007	B-2-9.5'	Soil	2/10/2009 12:45	☐		A		A		A						
0902253-008	B-2-W	Water	2/10/2009 12:55	☐			A		C		B					
0902253-009	B-3-1.5'	Soil	2/10/2009 13:06	☐		A		A		A						
0902253-010	B-3-5'	Soil	2/10/2009 13:08	☐		A		A		A						
0902253-011	B-3-9.5'	Soil	2/10/2009 13:14	☐		A		A		A						
0902253-012	B-3-W	Water	2/10/2009 13:20	☐			A		C		B					
0902253-013	B-4-4.5'	Soil	2/10/2009 9:00	☐		A		A		A						
0902253-014	B-4-9.5'	Soil	2/10/2009 9:03	☐		A		A		A						

Test Legend:

1	8081_S	2	G-MBTEX_S	3	G-MBTEX_W	4	LUFT_S	5	LUFTMS_W
6	TPH(DMO)_S	7	TPH(DMO)_W	8		9		10	
11		12							

Prepared by: Melissa Valles

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0902253 **ClientCode: KFO**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Sarah Kalika
Kleinfelder, Inc.
1970 Broadway Ste. 710
Oakland, CA 94612
(510) 628-9000 FAX (510) 628-9009

Email: skalika@kleinfelder.com
cc:
PO:
ProjectNo: #101353; Thyme Square-PH II

Bill to:
Emily Steinkamp
Kleinfelder Inc.
1970 Broadway #710
Oakland, CA 94612
SEND HARDCOPY

Requested TAT: 1 day

Date Received: **02/10/2009**
Date Printed: **02/10/2009**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0902253-015	B4-14.5'	Soil	2/10/2009 9:06	☐		A		A		A						
0902253-016	B-4-W	Water	2/10/2009 9:30	☐			A		C		B					
0902253-017	B-5-1.0'	Soil	2/10/2009 9:33	☐		A		A		A						
0902253-018	B-5-4.5'	Soil	2/10/2009 9:35	☐		A		A		A						
0902253-019	B-5-9.5'	Soil	2/10/2009 9:38	☐		A		A		A						
0902253-020	B-5-W	Water	2/10/2009 9:45	☐			A		C		B					
0902253-021	B-6-0.5'	Soil	2/10/2009 10:10	☐		A		A		A						
0902253-022	B-6-4.5'	Soil	2/10/2009 10:12	☐		A		A		A						
0902253-023	B-6-9.5'	Soil	2/10/2009 10:18	☐		A		A		A						
0902253-024	B-6-W	Water	2/10/2009 10:40	☐			A		C		B					
0902253-025	B-7-0.5'	Soil	2/10/2009 11:00	☐		A		A		A						
0902253-026	B-7-4.5'	Soil	2/10/2009 11:03	☐		A		A		A						
0902253-027	B-7-9.5'	Soil	2/10/2009 11:07	☐		A		A		A						
0902253-028	B-7-13.5'	Soil	2/10/2009 11:10	☐		A		A		A						

Test Legend:

1	8081_S	2	G-MBTEX_S	3	G-MBTEX_W	4	LUFT_S	5	LUFTMS_W
6	TPH(DMO)_S	7	TPH(DMO)_W	8		9		10	
11		12							

Prepared by: Melissa Valles

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0902253 **ClientCode: KFO**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Sarah Kalika
Kleinfelder, Inc.
1970 Broadway Ste. 710
Oakland, CA 94612
(510) 628-9000 FAX (510) 628-9009

Email: skalika@kleinfelder.com
cc:
PO:
ProjectNo: #101353; Thyme Square-PH II

Bill to:
Emily Steinkamp
Kleinfelder Inc.
1970 Broadway #710
Oakland, CA 94612
SEND HARDCOPY

Requested TAT: 1 day

Date Received: 02/10/2009
Date Printed: 02/10/2009

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0902253-030	Trip Blank	Water	2/10/2009	☐			A									

Test Legend:

1	8081_S	2	G-MBTEX_S	3	G-MBTEX_W	4	LUFT_S	5	LUFTMS_W
6	TPH(DMO)_S	7	TPH(DMO)_W	8		9		10	
11		12							

Prepared by: Melissa Valles

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: **Kleinfelder, Inc.** Date and Time Received: **2/10/09 4:47:13 PM**

Project Name: **#101353; Thyme Square-PH II** Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **0902253** Matrix Soil/Water Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☐	No ☑
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 4.6°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☑	NA ☐
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		

** NOTE: If the "No" box is checked, see comments below.*

Client contacted: Date contacted: Contacted by:

Comments: All samples for metals had pH<2 except for B-5-W. That sample was preserved and had to sit for 16hrs prior to extracting and analyzing. All samples labelled correctly except for B-1-0.5'. The actual tube was labelled B-1-6.

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Kleinfelder, Inc.	Client Project ID: #101353; Thyme Square-PH II	Date Sampled:	02/10/09
		Date Received:	02/10/09
1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted:	02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed:	02/11/09

Organochlorine Pesticides by GC-ECD (8080 Basic Target List)*

Extraction Method: SW3550C Analytical Method: SW8081A Work Order: 0902253

Lab ID	0902253-001A	0902253-002A	0902253-005A	0902253-006A	Reporting Limit for DF =1	
Client ID	B-1-0.5'	B-1-4.5'	B-2-0.5'	B-2-4.5'		
Matrix	S	S	S	S	S	W
DF	20	1	1	1		
Compound	**Concentration**				mg/kg	µg/L
Aldrin	ND<0.020	ND	ND	ND	0.001	NA
a-BHC	ND<0.020	ND	ND	ND	0.001	NA
b-BHC	ND<0.020	ND	ND	ND	0.001	NA
d-BHC	ND<0.020	ND	ND	ND	0.001	NA
g-BHC	ND<0.020	ND	ND	ND	0.001	NA
Chlordane (Technical)	ND<0.50	ND	ND	ND	0.025	NA
a-Chlordane	ND<0.020	ND	ND	ND	0.001	NA
g-Chlordane	ND<0.020	ND	ND	ND	0.001	NA
p,p-DDD	ND<0.020	ND	ND	ND	0.001	NA
p,p-DDE	ND<0.020	ND	ND	ND	0.001	NA
p,p-DDT	ND<0.020	ND	ND	ND	0.001	NA
Dieldrin	ND<0.020	ND	ND	ND	0.001	NA
Endosulfan I	ND<0.020	ND	ND	ND	0.001	NA
Endosulfan II	ND<0.020	ND	ND	ND	0.001	NA
Endosulfan sulfate	ND<0.020	ND	ND	ND	0.001	NA
Endrin	ND<0.020	ND	ND	ND	0.001	NA
Endrin aldehyde	ND<0.020	ND	ND	ND	0.001	NA
Heptachlor	ND<0.020	ND	ND	ND	0.001	NA
Heptachlor epoxide	ND<0.020	ND	ND	ND	0.001	NA
Hexachlorobenzene	ND<0.20	ND	ND	ND	0.01	NA
Hexachlorocyclopentadiene	ND<0.40	ND	ND	ND	0.02	NA
Methoxychlor	ND<0.020	ND	ND	ND	0.001	NA
Toxaphene	ND<1.0	ND	ND	ND	0.05	NA
Surrogate Recoveries (%)						
%SS:	80	81	84	84		
Comments	a3					

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak/sample contains surrogate.

a3) sample diluted due to high organic content / matrix interference.

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Angela Rydelius, Lab Manager

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Kleinfelder, Inc.	Client Project ID: #101353; Thyme Square-PH II	Date Sampled: 02/10/09
		Date Received: 02/10/09
1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09-02/11/09
Oakland, CA 94612	Client P.O.:	Date Analyzed 02/10/09-02/11/09

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 0902253

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	B-1-0.5'	S	ND	ND	ND	ND	ND	ND	1	88
002A	B-1-4.5'	S	ND	ND	ND	ND	ND	ND	1	96
003A	B-1-9.5'	S	ND	ND	ND	ND	ND	ND	1	88
004A	B-1-W	W	ND,b1	ND	ND	ND	ND	ND	1	98
005A	B-2-0.5'	S	ND	ND	ND	ND	ND	ND	1	87
006A	B-2-4.5'	S	ND	ND	ND	ND	ND	ND	1	86
007A	B-2-9.5'	S	ND	ND	ND	ND	ND	ND	1	82
008A	B-2-W	W	ND,b1	ND	ND	ND	ND	ND	1	97
009A	B-3-1.5'	S	ND	ND	ND	ND	ND	ND	1	88
010A	B-3-5'	S	ND	ND	ND	ND	ND	ND	1	86
011A	B-3-9.5'	S	ND	ND	ND	ND	ND	ND	1	89
012A	B-3-W	W	ND,b1	ND	ND	ND	ND	ND	1	101
013A	B-4-4.5'	S	ND	ND	ND	ND	ND	ND	1	88
014A	B-4-9.5'	S	ND	ND	ND	ND	ND	ND	1	89
015A	B4-14.5'	S	ND	ND	ND	ND	ND	ND	1	86
016A	B-4-W	W	ND,b1	ND	ND	ND	ND	ND	1	98
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5	0.5	0.5	0.5	0.5	µg/L	
		S	1	0.05	0.005	0.005	0.005	0.005	mg/Kg	

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment

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Oakland, CA 94612	Client P.O.:	Date Analyzed 02/10/09-02/11/09

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 0902253

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
017A	B-5-1.0'	S	ND	ND	ND	ND	ND	ND	1	85
018A	B-5-4.5'	S	ND	ND	ND	ND	ND	ND	1	96
019A	B-5-9.5'	S	ND	ND	ND	ND	ND	ND	1	98
020A	B-5-W	W	ND,b1	ND	ND	ND	ND	ND	1	99
021A	B-6-0.5'	S	ND	ND	ND	ND	ND	ND	1	80
022A	B-6-4.5'	S	ND	ND	ND	ND	ND	ND	1	101
023A	B-6-9.5'	S	ND	ND	ND	ND	ND	ND	1	91
024A	B-6-W	W	ND,b1	ND	ND	ND	ND	ND	1	100
025A	B-7-0.5'	S	ND	ND	ND	ND	ND	0.017	1	82
026A	B-7-4.5'	S	ND	ND	ND	ND	ND	ND	1	103
027A	B-7-9.5'	S	ND	ND	ND	ND	ND	ND	1	98
028A	B-7-13.5'	S	ND	ND	ND	ND	ND	ND	1	94
030A	Trip Blank	W	ND	ND	ND	ND	ND	ND	1	98

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5	0.5	0.5	0.5	0.5	µg/L
	S	1	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment

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1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed: 02/11/09

LUFT 5 Metals*

Extraction method: SW3050B Analytical methods: 6010C Work Order: 0902253

Lab ID	Client ID	Matrix	Extraction Type	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
001A	B-1-0.5'	S	TOTAL	ND	28	33	27	53	1	107
002A	B-1-4.5'	S	TOTAL	ND	38	11	32	38	1	118
003A	B-1-9.5'	S	TOTAL	ND	47	13	59	41	1	120
005A	B-2-0.5'	S	TOTAL	ND	45	12	41	46	1	112
006A	B-2-4.5'	S	TOTAL	ND	60	12	51	59	1	113
007A	B-2-9.5'	S	TOTAL	ND	48	12	50	39	1	112
009A	B-3-1.5'	S	TOTAL	ND	32	11	32	38	1	112
010A	B-3-5'	S	TOTAL	ND	36	11	33	37	1	111
011A	B-3-9.5'	S	TOTAL	ND	50	7.0	25	26	1	110
013A	B-4-4.5'	S	TOTAL	ND	43	15	40	44	1	112
014A	B-4-9.5'	S	TOTAL	ND	54	13	53	51	1	111
015A	B4-14.5'	S	TOTAL	ND	48	6.1	33	30	1	113
017A	B-5-1.0'	S	TOTAL	ND	67	8.8	65	48	1	111
018A	B-5-4.5'	S	TOTAL	ND	47	13	52	57	1	111
019A	B-5-9.5'	S	TOTAL	ND	57	11	45	45	1	108

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	NA	NA	NA	NA	NA	NA
	S	TOTAL	1.5	1.5	5.0	1.5	5.0	mg/Kg

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.
WET = Waste Extraction Test (STLC).
DI WET = Waste Extraction Test using de-ionized water.

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1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed: 02/11/09

LUFT 5 Metals*

Extraction method: SW3050B Analytical methods: 6010C Work Order: 0902253

Lab ID	Client ID	Matrix	Extraction Type	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
021A	B-6-0.5'	S	TOTAL	ND	99	10	130	57	1	108
022A	B-6-4.5'	S	TOTAL	ND	110	11	140	63	1	113
023A	B-6-9.5'	S	TOTAL	ND	110	12	140	59	1	118
025A	B-7-0.5'	S	TOTAL	ND	150	12	180	69	1	119
026A	B-7-4.5'	S	TOTAL	ND	190	13	200	64	1	124
027A	B-7-9.5'	S	TOTAL	ND	41	11	44	28	1	112
028A	B-7-13.5'	S	TOTAL	ND	71	11	57	41	1	115

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	NA	NA	NA	NA	NA	NA
	S	TOTAL	1.5	1.5	5.0	1.5	5.0	mg/Kg

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.
WET = Waste Extraction Test (STLC).
DI WET = Waste Extraction Test using de-ionized water.

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1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed: 02/11/09

LUFT 5 Metals*

Extraction method E200.8 Analytical methods E200.8 Work Order: 0902253

Lab ID	Client ID	Matrix	Extraction Type	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
004C	B-1-W	W	TOTAL	2.3,b1	1700	360	2300	2200	1	111
008C	B-2-W	W	TOTAL	1.8,b1	1500	260	1700	1600	1	110
012C	B-3-W	W	TOTAL	0.89,b1	950	200	910	1200	1	110
016C	B-4-W	W	TOTAL	0.78,b1	1300	130	750	830	1	106
020C	B-5-W	W	TOTAL	18,b1	4700	1100	10,000	5100	50	104
024C	B-6-W	W	TOTAL	3.0,b1	2500	240	3600	1500	1	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	0.25	0.5	0.5	0.5	5.0	µg/L
	S	TOTAL	NA	NA	NA	NA	NA	NA

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.
WET = Waste Extraction Test (STLC).
DI WET = Waste Extraction Test using de-ionized water.

b1) aqueous sample that contains greater than ~1 vol. % sediment

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1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed: 02/10/09-02/11/09

Total Extractable Petroleum Hydrocarbons*

Extraction method: SW3510C/SW3550C Analytical methods: SW8015B Work Order: 0902253

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS
0902253-001A	B-1-0.5'	S	ND	ND	1	105
0902253-002A	B-1-4.5'	S	ND	ND	1	104
0902253-003A	B-1-9.5'	S	ND	ND	1	103
0902253-004B	B-1-W	W	94,e2,b1	ND	1	99
0902253-005A	B-2-0.5'	S	ND	ND	1	104
0902253-006A	B-2-4.5'	S	ND	ND	1	104
0902253-007A	B-2-9.5'	S	ND	ND	1	102
0902253-008B	B-2-W	W	240,e7,e2,b1	400	1	104
0902253-009A	B-3-1.5'	S	ND	ND	1	103
0902253-010A	B-3-5'	S	ND	ND	1	102
0902253-011A	B-3-9.5'	S	ND	ND	1	103
0902253-012B	B-3-W	W	250,e7,e2,b1	480	1	103
0902253-013A	B-4-4.5'	S	ND	ND	1	102
0902253-014A	B-4-9.5'	S	ND	ND	1	100
0902253-015A	B4-14.5'	S	ND	ND	1	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	1.0	5.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment
e2) diesel range compounds are significant; no recognizable pattern
e7) oil range compounds are significant

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1970 Broadway Ste. 710	Client Contact: Sarah Kalika	Date Extracted: 02/10/09
Oakland, CA 94612	Client P.O.:	Date Analyzed: 02/10/09-02/11/09

Total Extractable Petroleum Hydrocarbons*

Extraction method: SW3510C/SW3550C Analytical methods: SW8015B Work Order: 0902253

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS
0902253-016B	B-4-W	W	280,e7,e2,b1	1100	1	104
0902253-017A	B-5-1.0'	S	ND	ND	1	101
0902253-018A	B-5-4.5'	S	ND	ND	1	101
0902253-019A	B-5-9.5'	S	ND	ND	1	102
0902253-020B	B-5-W	W	580,e7,e2,b1	900	1	103
0902253-021A	B-6-0.5'	S	ND	ND	1	102
0902253-022A	B-6-4.5'	S	1.6,e7,e2	7.5	1	101
0902253-023A	B-6-9.5'	S	2.0,e7,e2	8.3	1	101
0902253-024B	B-6-W	W	220,e7,e2,b1	290	1	102
0902253-025A	B-7-0.5'	S	ND	ND	1	100
0902253-026A	B-7-4.5'	S	2.9,e7,e2	6.1	1	104
0902253-027A	B-7-9.5'	S	ND	ND	1	105
0902253-028A	B-7-13.5'	S	ND	ND	1	105

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	1.0	5.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment
e2) diesel range compounds are significant; no recognizable pattern
e7) oil range compounds are significant

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Angela Rydelius, Lab Manager

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January 29, 2009
File No. 41-YP8-415

Mr. Paul Wade
City of Cloverdale
126 N. Cloverdale Blvd
Cloverdale, CA 95425

SUBJECT: Proposal for Phase II Environmental Site Assessment
Thyme Square Property
337 S. Cloverdale Blvd
Cloverdale, California

Dear Mr. Wade:

Kleinfelder is pleased to provide this proposal to perform a Phase II Environmental Site Assessment, which will consist of collection and analysis of soil and groundwater samples in the vicinity of the former Gasco service station at the above referenced site.

Kleinfelder currently is preparing a Phase I ESA on the site. Based on research to date, as well as information provided by the City of Cloverdale, Kleinfelder has designed this Phase II investigation to address concerns related to the possibility of residual petroleum hydrocarbons that may be encountered within soil and groundwater during future development of the site. Kleinfelder understands that the City is concerned about the site's former operations as a gasoline service station, former presence of leaking underground storage tanks, approximately fifteen years of investigation and cleanup of soil and groundwater, and former agricultural use as a vineyard.

PROPOSED SCOPE OF WORK

Task 1 Soil And Groundwater Investigation Workplan/ H&S Plan

Kleinfelder will prepare a site specific workplan for this investigation. The workplan will include the installation of seven soil borings and the collection of soil and groundwater

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samples in the vicinity of the former gasoline station on the southeastern corner of the site. During Kleinfelder's site visit on January 27, 2009, a large soil pile was observed across the southern portion of the site, located adjacent and east of the easternmost former pump island. As a result, several soil borings originally located east of the former pump island on our preliminary proposal will be moved north and west to the opposite side of the pile.

It is Kleinfelder's understanding that the soil pile was generated off-site, and is being stored until decisions for its disposition are finalized. This soil pile is, therefore, not related to the subject property, and not included in this scope of work.

As an attachment to our workplan, Kleinfelder will prepare a health and safety plan (HSP) to provide guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the proposed field activities.

Task 2 Pre-Field Activites

Kleinfelder will conduct the following pre-field activities at the subject site.

- Mark the boring locations in white paint for underground utility clearance.
- Obtain soil boring permit from Sonoma County and pay fees.
- Notification to Underground Service Alert (USA) 48-hours prior to job site mobilization.

TASK 3 BORING INSTALLATION

At this time, Kleinfelder proposes to advance seven borings to 15 feet and collect soil samples at the following intervals: 0.5-1.0 feet, 4.5-5.0 feet, 9.5-10 feet, and 14.5-15 feet. If additional intervals of soil containing petroleum hydrocarbons are identified, the depths will be modified as necessary. In addition, a grab groundwater sample will be collected in each borehole location.

Two of the seven boreholes will be located in areas previously used as vineyards. Soil samples in these locations will be analyzed for the presence of organochlorine pesticides within the top 5 feet.

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Each boring will be drilled using Geoprobe direct-push by Vannucci Technologies, on Tuesday, February 10, 2009. The drilling apparatus is track-mounted and is suitable for unpaved terrain.

Relatively undisturbed soil samples will be collected within two-inch diameter plastic sleeves and secured with Teflon sheets and plastic end caps, labeled, and placed in an iced cooler for subsequent delivery to the analytical laboratory following chain-of-custody protocol. Groundwater samples will be collected in laboratory-provided glass containers, labeled, and placed in an iced cooler with the soil samples.

Each soil boring will be logged in the field following the Unified Soil Classification System under the direction of a California Professional Geologist. Copies of the boring logs will be included in the report. Soil samples will be field screened with a photo-ionization detector (PID) to obtain representative qualitative indicators of the presence of volatile organic vapors in the pore space of the soil samples collected. The PID readings recorded in the field will be presented on the boring logs and included in the report.

Quality assurance/quality control (QA/QC) procedures will be performed during the field exploration activities. These procedures will include pressure washing drilling equipment, cleansing/rinsing of the sampling equipment between soil sampling intervals, and providing chain-of custody documentation for each soil and groundwater sample submitted to the laboratory. The soil and groundwater sampling equipment will be cleansed between each sampling point by washing the equipment with a Liquinox solution followed by a double rinse with potable and distilled water. The augers and other down-hole drilling equipment used in advancing the boring will be high pressure washed before and after each boring.

Excess soil remaining from the field activities will be temporarily stored on site in a Department of Transportation (DOT) approved, 5-gallon bucket pending analytical results. The waste will be left onsite for subsequent disposal by the City of Cloverdale. Kleinfelder will coordinate this activity with the waste hauler.

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TASK 4 LABORATORY ANALYSIS

The soil and groundwater samples collected will be submitted under chain-of-custody to an analytical laboratory certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). The samples will be analyzed for:

- Total Petroleum Hydrocarbons as gasoline (TPH-g), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), and methyl tert-butyl ether (MTBE) by EPA Method 8015C;
- Total Petroleum Hydrocarbons as diesel (TPH-d), Total Petroleum Hydrocarbons as motor oil (TPH-mo) by EPA Method 8015C; and
- LUFT 5 Metals: Cadmium, Chromium, Lead, Nickel, Zinc.

In addition, a total of four samples (collected from the top 5 feet within two borings) located in the former vineyard area will be analyzed for:

- Organochlorine pesticides (OCP) by EPA Method 8081B.

The samples will be analyzed on an expedited 24-hour turnaround schedule. The laboratory courier will pick up the samples at Kleinfelder's Santa Rosa office on Wednesday, February 11, 2009. Sample results should be available by the end of Thursday, February 12, 2009 or early Friday, February 13, 2009.

QA/QC measures will be performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. QA/QC measures will include the following:

- One method blank for every batch of samples and type of matrix (conducted at the laboratory).
- One spiked sample for every 20 samples, batch of samples or type of matrix, whichever is more frequent, with spike made at ten times the detection limit or at the analyte level (conducted at the laboratory).
- One travel blank per cooler of groundwater samples collected (collected in the field).

2240 Northpoint Parkway
Santa Rosa, CA
95407-5009

p| 707.571.1883
f| 707.571.7813

kleinfelder.com

TASK 5 INVESTIGATIVE REPORT

The report will be prepared to present the findings and conclusions of the investigation. The reports will include but not be limited to the following:

- Investigative summary.
- Project description.
- Investigative methods.
- Investigative results and field observations.
- Data evaluation and discussion.
- Conclusions and recommendations.
- Appendices including boring logs, permits, laboratory reports, and chain-of-custody reports.

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FEE AND SCHEDULE

The project will be billed on a time and materials basis according to the 2009 Kleinfelder fee schedule.

The estimated cost of performing the tasks described above is:

Task 1: Workplan, Health & Safety Plan Prep

Report writing, CADD, word processing	$2,200

Task 2: Pre-field Activities

Mark boring locations, call USA	$1,500
Sonoma County Permit	$850

Task 3: Field Activities

Drilling subcontractor	$3,500
Concrete coring subcontractor	$500
Field work (includes travel, miles, PID)	$2,750

Task 4: Laboratory Analytical 24-hour turn

36 Samples for TPH-g/MTBE/BTEX, TPH-d, TPH-mo, LUFT 5 Metals (5 per boring [4 soil, 1 water] plus 1 trip blank)	$12,200
4 Samples for OCP (4 soil from two vineyard borings)	$375

Task 5: Report Writing

Report writing, admin, review, word processing, CADD, 2 meetings	$5,500
Total	**$29,375**

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Kleinfelder anticipates completion of this project by the end of February 2009, with preliminary analytical results on February 13, 2009.

If additional investigative efforts or sampling and analysis are recommended based upon our research, a separate scope of work, schedule, and budget will be submitted for your approval.

ASSUMPTIONS AND CLIENT RESPONSIBILITIES

The proposed scope of services and estimated budget are based on the following:

- The client will provide Kleinfelder with the authorization to access the site.
- The client and property owner will provide a written right-of-entry authorization, if requested.
- The site will be freely accessible with no impediments to sampling activities.
- Two copies of each report will be delivered to the client.
- No more than 2 client meetings are included in the budget estimate. Additional meetings, as necessary, can be provided on a time and expense basis at the client's request.
- All investigation derived waste (IDW) will be placed in a 5-gallon bucket and stored onsite pending the analytical results. Upon receipt of analytical results, disposal will be the responsibility of the current property owner.

LIMITATIONS

Kleinfelder prepared this proposal in accordance with generally accepted standards of care that exist in Sonoma County at this time. This proposal may be used only by City of Cloverdale and only for the purposes stated, within a reasonable time from its issuance, but in no event later than one (1) year from the date of the proposal. All information gathered by Kleinfelder is considered confidential and will be released only upon written authorization of City of Cloverdale or as required by law. Non-compliance with any of these requirements by the City of Cloverdale or anyone else, unless specifically agreed to in advance by Kleinfelder in writing, will release Kleinfelder from any liability resulting from the use of this proposal by any unauthorized party and City of

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Cloverdale agrees to defend, indemnify, and hold harmless Kleinfelder from any claim or liability associated with such unauthorized use or non-compliance.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. Although risk can never be eliminated, more-detailed and extensive investigations yield more information, which may help understand and manage the level of risk. Since detailed investigation and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface investigations or field tests, may be performed to reduce uncertainties. Acceptance of this proposal will indicate that the City of Cloverdale has reviewed the document and determined that it does not need or want a greater level of service than provided. Any exceptions should be noted and may result in higher fees.

During the course of the performance of Kleinfelder's services, hazardous materials may be discovered. Kleinfelder will assume no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this proposal should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, generator, or person who arranges for disposal, transport, storage or treatment of hazardous materials within the meaning of any governmental statute, regulation or order. The City of Cloverdale will be solely responsible for notifying all governmental agencies, and the public-at-large, of the existence, release, treatment, or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. The City of Cloverdale will be responsible for all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

Regulations and professional standards applicable to Kleinfelder's services are continually evolving. Techniques are, by necessity, often new and relatively untried. Different professionals may reasonably adopt different approaches to similar problems.

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As such, our services are intended to provide the City of Cloverdale with a source of professional advice, opinions and recommendations. Our professional opinions and recommendations will be based on our limited number of field observations and tests, collected and performed in accordance with the generally accepted engineering practice that exists at the time and may depend on, and be qualified by, information gathered previously by others and provided to Kleinfelder by the City of Cloverdale. Consequently, no warranty or guarantee, expressed or implied, is intended or made.

AUTHORIZATION

If this Proposal meets with the approval of the City of Cloverdale, we request a written authorization to proceed.

Kleinfelder appreciates the opportunity to be of service on this project. If there are any questions or if we may be of further assistance, please do not hesitate to contact us at 707-571-1883.

Respectfully submitted,

KLEINFELDER WEST, INC.

Sarah Kalika, PG
Project Geologist

Bradley Erskine, PhD, PG, CEG, CHG
Area Manager

SEK\jkd

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F.2 - Peer Review of Phase II Environmental Site Assessment

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Environmental Assessment Specialists, Inc.

71 San Marino Avenue Ventura CA 93003
Office (818) 898-4866 Fax (805) 650-8054 www.easenv.com

May 31, 2019

Attention: Mr. Spencer Pignotti
Environmental Services Analyst
FirstCarbon Solutions

Subject: Peer Review of Final Phase II Environmental Site Assessment dated April 3, 2009.
Thyme Square Property
337 South Cloverdale Boulevard, Cloverdale, California

Environmental Assessment Specialists, Inc. (EAS) is pleased to submit this peer review of the Final Phase II Environmental Site Assessment (ESA) report prepared by Kleinfelder West, Inc. (Kleinfelder) on April 3, 2009 for the property referred to as "*Thyme Square*."

Based on the review described herein, EAS concludes that an additional site investigation should be conducted to help explain the detection of petroleum hydrocarbons in groundwater 10 years after site closure was issued. The presence of relatively high concentrations of metals in groundwater should be addressed, as well as the potential hazardous concentrations of Chromium plus Nickel in soil.

Background

According to the Kleinfelder report, in 2009 the site was undeveloped, but was "*occupied by a large soil pile, several areas of asphalt pavement, two concrete foundations, various debris piles, and an abandoned vehicle*." A review of Google maps indicated that the site is still undeveloped in 2019.

According to a Phase I ESA prepared by Kleinfelder on March 13, 2009, "*the site was formerly occupied by a Gasco gasoline station*" and was also formerly used for agricultural purposes as a vineyard. The dates for these activities were not provided. The plates/figures prepared by Kleinfelder show an area called "*former vineyard*" on the northern portion of the subject property. Plate 1 is included in this report review.

The service station had Underground Storage Tanks (USTs) for leaded gasoline, unleaded gasoline, and diesel fuel. According to Kleinfelder, "*a leak was discovered in 1985, the tanks were removed in 1994, and soil was excavated and treated in 1998 and again in 2000.*" Previous work involved the installation of 20 monitoring wells and sampling of "*numerous borings.*" "*In July 2001, Sonoma County Environmental Health Department closed the case and issued a letter requiring no further action.*" "*According to the closure report, however, residual petroleum hydrocarbons (gasoline, diesel, motor oil, and fuel additives) were allowed to remain in place in the soil at* (low) *concentrations.*" "*Due to the residual petroleum hydrocarbons left in the soil, the closure report required 'contingency planning is needed if excavating within the areas of residual contamination.'" However, no areas of residual contamination were identified on maps or attachments to the closure report.*"

No other documents were referenced regarding previous work conducted at the site. The Geotracker online database maintained by the California Regional Water Quality Control Boards did not have documents pertaining to the subject property.

It appears that the Phase II ESA was prepared as part of a property transaction because there was potential for "*residual petroleum hydrocarbons and pesticide contamination in soil or groundwater*."

Plate 1 of the Kleinfelder Phase II ESA report.

Report Review

On February 10, 2009 seven (7) borings were advanced to collect soil and groundwater samples at the subject property. The boring locations are shown on the plates prepared by Kleinfelder. The locations of former pump islands and USTs are delineated on the plates, but there are no figures such as aerial photographs that would corroborate the placement of the borings with respect to former on-site structures.

The locations of two (2) soil stockpiles are shown on the plates. According to the Kleinfelder proposal dated January 29, 2009, "*it is Kleinfelder's understanding that the soil pile was generated off-site, and is being stored until decisions for its disposition are finalized. This soil pile is, therefore, not related to the subject property, and not included in this scope of work*." EAS disagrees with this statement. The stockpiled soil had an unknown origin, and it should have been sampled and analyzed for at least petroleum hydrocarbons and related compounds, plus metals and pesticides.

The proposal mentioned that a health and safety plan (HSP) would be prepared "*to provide guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the proposed field activities*." The HSP was not included in the report. At the very least, a signature page showing all field personnel attendance during the HSP presentation should have been part of the report.

The proposal also indicated that the borings would be advanced to a depth of 15 feet below ground surface (bgs). However, only boring B-4 reached the maximum proposed sampling depth. It is not clear why five (5) of the seven (7) borings only reached a sampling depth of approximately 10 feet bgs, unless the decision was made in the field based on the depth to groundwater at each boring location.

The report did not describe the local geology or hydrogeology. The groundwater flow direction was estimated by Kleinfelder to be towards the east or southeast based on information from nearby sites. The groundwater flow direction within the subject property should have been firmly established by the 20 groundwater monitoring wells that were previously installed at the site. It is not clear that Kleinfelder reviewed previous site investigations or site-specific documents to obtain this information.

The report indicates that "*quality assurance/quality control (QA/QC) procedures performed during the field exploration activities included pressure washing of drilling equipment*, (and) *cleansing/rinsing of the sampling equipment between soil sampling intervals*." Kleinfelder managed to contain the considerable volume of investigation-derived waste in a 5-gallon bucket. According to the proposal, "*excess soil remaining from the field activities will be temporarily stored on site in a Department of Transportation (DOT) approved, 5~gallon bucket pending analytical results*". EAS is not aware that DOT approves buckets for waste storage. Normally, investigation-derived waste is stored in DOT-approved 55-gallon drums. It is not clear if the bucket used by Kleinfelder was covered with a lid or labeled. The ultimate disposal of the bucket contents is unknown.

According to the report, the soil and groundwater "*samples were analyzed for Total petroleum hydrocarbons (TPH) as gasoline (TPH-g), benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tert-butyl ether (MTBE) by EPA Method 8015B*." According to the laboratory report, Method SW8021B was actually used for the BTEX and MTBE analyses.

The report indicates that "*four soil samples (B-1 at 0.5, B-1 at 4.5 feet, B-2 at 0.5, and B-2 at 4.5 feet bgs) were analyzed for the presence of pesticides*." Compounds using Arsenic and Lead were used as pesticides prior to the invention of Organochlorine Pesticides. Arsenic was not included in the metals that were analyzed. It is worth noting that the highest Lead concentration (33 parts-per-million, ppm) was detected in the soil sample collected at 0.5 feet bgs in boring B-1. Pesticides adhere to shallow soils, and normally are not encountered at depths greater than three (3) feet bgs. Based on prior experience working on this type of agricultural sites, it is the opinion of EAS that sampling for pesticides at depths greater than three (3) feet bgs is not warranted unless these compounds have already been detected at shallower depths.

Hydrocarbon staining and/or odors were encountered in borings B-1 (at 5.5–6 feet bgs), B-4 (at 13–15 feet bgs), B-5 (at 9–10 feet bgs), B-6 (at 9–10 feet), and B-7 (at 13.5 feet bgs). On page 6 of the report it is mentioned that "*no petroleum hydrocarbon odors or petroleum hydrocarbon staining was observed*" in boring B-7. However, the log for this boring says "*faint PHO, black PHS, approx 6-8" thick at 13.5'*." It is assumed that "*PHO*" refers to Petroleum Hydrocarbon Odor and "*PHS*" is Petroleum Hydrocarbon Stain.

A Photo-Ionization Detector (PID) is an instrument commonly used to determine the presence of Volatile Organic Compounds (VOCs), including BTEX. The use of a PID was mentioned in the proposal. However, a PID was not used in the investigation to quantify the petroleum hydrocarbon odors that were encountered.

Except for boring B-1, all the stained soils were encountered below the top of groundwater. Although borings B-4, B-5, B-6, and B-7 were in a downgradient position with respect to the expected groundwater flow direction, they were the first borings to be sampled. It is always advisable to sample upgradient locations before downgradient locations to reduce the possibility of cross-contamination.

EAS agrees with the Kleinfelder conclusion that "*the highest concentrations of petroleum hydrocarbons in soil were substantially lower than reported in 2001*." Additionally, BTEX compounds were not detected in 2009, except for Xylenes,

In 2009 Chromium was detected at concentrations of 50 ppm or higher in 11 of the 22 soil samples that were analyzed. The highest reported concentration of Chromium (190 ppm) was detected in the soil sample collected at a depth of 4.5 feet bgs in boring B-7. Nickel was also detected at similar concentrations in 12 of the soil samples. The highest reported concentration of Nickel (200 ppm) was detected in the same soil sample. It is the opinion of EAS that at least a couple of soil samples should have been submitted for Soluble Threshold Limit Concentration (STLC) and Toxicity Characteristic Leaching Procedure (TCLP) analyses to determine if the soils were hazardous for Chromium and/or Nickel.

Kleinfelder addressed the relatively high concentrations of Chromium in soil, and related the figures to the presence of Chromium III. However, Environmental Protection Agency (EPA) Method 6010C detects total Chromium, and not particular oxidation states of this metal. Therefore, EAS disagrees with the Kleinfelder conclusion that "*the data indicate that there is a low risk to human health and safety at the site (from exposure to soil)*". STLC and TCLP analyses would have been conducted to confirm this statement.

Groundwater was encountered at depths ranging from seven (7) feet bgs in borings B-5 and B-6 to 12 feet bgs in boring B-4. The report mentions that groundwater was not encountered in boring B-7. However, the chain-of-custody document indicates that groundwater sample B-7-W was collected from this boring, but was not received by the laboratory.

Extractable Petroleum Hydrocarbons as Diesel Fuel (TPH-d) and Motor Oil (TPH-mo) were detected in the groundwater samples collected from borings B-2 and B-3, which were considered to be upgradient locations with respect to the location of the former USTs and pump islands. The data collected by Kleinfelder suggest that the groundwater flow direction is incorrect, or fluctuates, or perhaps there is an off-site component to the groundwater contamination that was detected.

According to the report, "*no petroleum hydrocarbons or fuel additives were detected above the laboratory reporting limits in groundwater*" in 2001 when the site closure was issued. Kleinfelder mentioned the possibility that an off-site source may have caused the high metal concentrations detected in groundwater, but quickly discarded the idea. EAS suggests that an off-site source may be the cause for the presence of petroleum hydrocarbons and metals that were detected in the groundwater samples collected for this investigation.

According to the report, "*groundwater samples collected within B-1, B-2, B-3, B-4, B-5, and B-6 contained elevated TPH-d and TPH-mo concentrations*." However, TPH-mo was not detected in groundwater sample B-1-W.

EAS disagrees with the Kleinfelder statement that "*the presence of petroleum hydrocarbons and metals in shallow groundwater do not likely represent a health risk to those occupying the site*." The detected concentrations of TPH-d, TPH-mo, and metals exceeded some of the Environmental Screening Levels for commercial/industrial shallow soils and the California Maximum Contamination Limits for drinking water. The screening levels for residential soils are much lower than the commercial/industrial guidelines.

EAS agrees with the Kleinfelder recommendation that additional groundwater sampling should be conducted at the site. EAS suggests that future soil and groundwater sampling should address the possibility that there is an off-site component to the contamination that was encountered in 2009. The soil and groundwater samples should be analyzed for petroleum hydrocarbons, VOCs, and more than just five (5) metals. Additionally, analytical work should include testing to determine if the on-site soils may be hazardous for metals, including Chromium and Nickel.

Additional shallow sampling may be required, as the property has been vacant for at least 10 years and there may have been dumping of hazardous materials. Any stockpiles of soil and debris should be sampled.

We appreciate your selection of EAS for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,

Rodrigo Proust
Registered Geologist

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F.3 - Report of Subsurface Investigation

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SCS ENGINEERS

Report of Subsurface Investigation

Former Desert Petroleum, Inc.
337 South Cloverdale Blvd.
Cloverdale, California

Presented to:

Ms. Leslye Choate
Sonoma County Environmental Health Division
475 Aviation Boulevard, Suite 220
Santa Rosa, CA 95403

Presented by:

SCS ENGINEERS
3843 Brickway Boulevard, Suite 208
Santa Rosa, CA 95403

April 29, 2009
File No. 01209013.00

Report of Subsurface Investigation

Prepared for the Property Owner:

Thyme Square LLC
3964 Burnett Street
Sebastopol, CA 95472

And

City of Cloverdale
Community Development Agency
126 North Cloverdale Blvd
Cloverdale, CA 95425

Prepared by:

SCS ENGINEERS
3843 Brickway Boulevard, Suite 208
Santa Rosa, CA 95403

April 29, 2009
File No. 01209013.00

LIMITATIONS AND DISCLAIMER

This report has been prepared on behalf of Thyme Square LLC (Thyme Square) and the City of Cloverdale with specific application to a limited subsurface investigation for the property located at 337 South Cloverdale Blvd., Cloverdale, California (Site). Field activities and sampling were conducted in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, either expressed or implied, is made as to the professional advice presented herein.

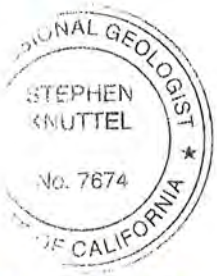
Access to the Site and the surrounding area may be limited by buildings, roadways, underground and above-ground utilities, other miscellaneous Site and Site vicinity features, and due diligence budget. Therefore, the field exploration and points of subsurface observation may have been somewhat restricted.

Changes in Site use and conditions may occur due to variations in rainfall, temperature, water usage, or other factors. Additional information that was not available to the consultant at the time of this report or changes that may have occurred on the Site or in the surrounding area may result in modification to the Site that would impact the summary presented herein. This report is not a legal opinion.

We look forward to continuing to work with you on this project and trust this report provides the information you require at this time. If you have any questions or need additional information, please call SCS at (707) 546-9461.

Linda Lavenue V.P. for:
Alex Tuveson, EIT
Staff Engineer

4-29-09
Date



Stephen Knuttel PG 7674
CA registration fees paid through 07/31/09

29. April, 2009
Date

Table of Contents

LIST OF ATTACHMENTS

Figure No.

Table No.

Appendices

LIST OF ACRONYMS AND ABBREVIATIONS

AS	Analytical Sciences
APN	Assessor's Parcel Number
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and total xylenes
CDPH	California Department of Public Health
CFR	Code of Federal Regulations
COC	chemicals of concerns
EPA	Environmental Protection Agency
LUFT	Leaking Underground Fuel Tank
LUFT-5 Metals	Wear metals, lead, cadmium, copper, nickel and zinc
mg/kg	milligrams per kilogram
MTBE	methyl tert-butyl ether
ND	non-detect
PMG	Passalacqua, Mazzoni, and Gladden
PNEG	Pacific Northwest EnviroNet Group
QA/QC	Quality Assurance/Quality Control
RDLs	reportable detection limits
SCDHS	Sonoma County Department of Health Services
SCS	SCS Engineers
Tide Water	Tide Water Associated Oil Company
TPH-d	total petroleum hydrocarbons in the diesel range
TPH-g	total petroleum hydrocarbons in the gasoline range
TPH-mo	total petroleum hydrocarbons in the motor oil range
UN/DOT	United Nations/Department of Transportation
USTs	Underground Storage Tanks
Western	Western Geo-Engineers

1 INTRODUCTION

SCS Engineers (SCS) is pleased to present this report of limited subsurface verification investigation conducted for Thyme Square LLC for the property located at 337 S. Cloverdale Boulevard, (Assessor's Parcel Number [APN] 001-440-002 and 001-440-003) in Cloverdale, California (Site). The location of the Site is shown on Figure 1. This investigation was conducted on behalf of the Site owner, Thyme Square LLC, and the City of Cloverdale Community Development Agency, and is being submitted to the Sonoma County Department of Health Services (SCDHS) to meet the requirements of the drilling permit which was obtained for the Site. The work for this subsurface investigation was conducted as proposed in the Workplan (SCS, 2009). Current Site features, Kleinfelder borings, SCS borings and the approximate location of historical monitoring wells are shown on Figure 2.

2 BACKGROUND

The Site is currently undeveloped. The former uses of the Site included a service station, restaurant, Citrus Fair events, and staging area for the Citrus Fair, and emergency fire services. The historical records document that underground storage tanks (USTs) were installed in 1952 by Tide Water Associated Oil Company (Tide Water). Tide Water installed three 10,000-gallon USTs. Tide Water completed construction of the service station on September 24, 1953. In August of 1966 Tide Water assigned all of its interest to Phillips Petroleum Company. In August 1976 Phillips Petroleum Company assigned all of its interest to Oil Shale Corporation, Lion Oil Company, A Delaware Corporation (commonly called Lion Oil Company, which was a subsidiary of TOSCO Corporation). In April 1979, TOSCO Corporation assigned its interest to Desert Petroleum, Inc. (Passalacqua, Mazzoni, and Gladden [PMG], 1992)

The Site has been under environmental investigation since 1985 and remedial actions were conducted between 1992 and 1998. In February 1985, diesel fuel was found ponded around the UST fill system. In a subsequent investigation, the three onsite 10,000-gallon USTs failed tightness tests. It was estimated that approximately 300 gallons of diesel fuel had leaked from the USTs fill port. A brief summary of previous investigations and remedial action from former reports by Pacific Northwest Environet Group, Inc. (PNEG, 1997, 1999, 2001a) are as follows:

- In March 1986 Groundwater Technology, Inc. installed groundwater monitoring wells MW-1 through MW-4.
- Wells were monitored on a quarterly basis from September 1988 to July 1992 by Western Geo-Engineers (Western).
- In May 1991, Western installed three additional wells off-site (MW-5, MW-6 and MW-7). The records indicate that Western operated an air sparging, vapor extraction system on the Site to remediate impacted soil and groundwater from May 1991 to July 1992 with the USTs still in the ground.
- On July 10, 1994, PNEG observed the removal of the three 10,000-gallon USTs. The USTs were removed by a Contra Costa County contractor. The USTs had been lined with

fiberglass. Excavated soils were returned to the excavation and covered with plastic sheeting.

- On July 23 and 24, 1996, PNEG oversaw the installation of 25 borings to assess the extent of the impact. The detections of petroleum hydrocarbons in the soil and grab groundwater samples occurred in locations downgradient of the known former USTs, the pump islands, and the associated piping. The groundwater gradient was determined to be southeast.

- A sensitive site receptor survey was conducted in February 1996.

- The former UST excavation was over excavated beginning on October 8, 1998 by Ghilotti Construction Company. Nine of the 14 confirmation samples from the bottom of the excavation were non-detect (ND) for all chemicals of concern (COCs), one sample had detections of 22 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPH-g) and 220 mg/kg TPH as diesel (TPH-d), with the remaining four samples less than 10 mg/kg for COCs. Sixteen of the 20 sidewall samples were ND for COCs. Three of the 20 sidewall samples had detections of COCs of less than 80 mg/kg and a fourth sample with a detection contained 940 mg/kg TPH-d; this fourth sample was located along the sidewall adjacent to the Cloverdale Boulevard sidewalk.

- The excavation was subsequently dewatered by Ghilotti Construction in 1998. Approximately 400 pounds of oxygen release compound was placed into the bottom of the excavation. The excavation water was pumped into two 20,000 tanks for later disposal to the City of Cloverdale sewer. The water was analyzed for petroleum hydrocarbons and a full range of metals. Elevated diesel and boron were detected. The water was treated for diesel and a one time variance was issued for the boron. No other elevated metals were detected. The excavation was reportedly backfilled with "clean" material from the Del Webb housing development and with "clean" fill from the Site on October 15 and 16, 1998.

- The groundwater wells were monitored until the first quarter of 2001 by PNEG and closure of the USTs was requested.

- The SCDHS recommended Case Closure on October 11, 2001 (SCDHS, 2001). The Site monitoring wells were decommissioned by PNEG (PNEG, 2001b). The off-site wells were assigned to another UST open case.

- On February 10, 2009, Kleinfelder advanced seven soil borings using Geoprobe direct push technology and soil and groundwater grab samples were collected. Soil samples were analyzed for TPH-g, benzene, toluene, ethylbenzene and total xylenes (BTEX), and methyl tert-butyl ether (MTBE). Four soil samples were also analyzed for organochlorine pesticides. The April 3, 2009 Kleinfelder's Phase II Investigation Report (Kleinfelder, 2009) indicates that grab groundwater samples were collected from the seven borings and analyzed for TPH-g, TPH-d, and TPH as motor oil (TPH-mo); BTEX, MTBE, and Leaking Underground Fuel Tank (LUFT) 5 Metals. Elevated metals, TPH-d, and TPH-mo were detected in these grab groundwater samples. Kleinfelder had determined that the elevated metals detected in the grab groundwater could be a result of the leaching of the metals from suspended sediment or of metals from particulate material itself. Kleinfelder recommended that the Site

groundwater be resampled and analyzed for dissolved metal concentrations to eliminate the possibility that metals were derived by leaching from suspended sediments.

A real estate transaction is pending. SCS was contracted to perform the supplemental Phase II Groundwater Investigation, which implements Kleinfelder's Phase II recommendations to resample the groundwater, using different collection methods for the LUFT 5 Metals. Based on the results of the Kleinfelder Report it was SCS's opinion that no additional soil analysis was warranted (SCS, 2009). SCS also recommended that the Site groundwater should be reanalyzed for TPH-d and TPH-mo.

3 SITE GEOLOGY

Based on previous documents (PNEG, 1997, 1999, 2001a) and the results of this investigation, the Site lithology is stratified with clay at the surface that is underlain by silt, sand, and gravel, to a depth of approximately 16 feet below ground surface (bgs). The layers of clay, silt, and, gravel are of variable thickness.

Historical groundwater flow direction has been consistently east to southeast toward the Russian River. Recent data documented groundwater at 9.5 to 12 feet bgs (Kleinfelder, 2009); these data are consistence with results from the resent borings which indicated first encountered groundwater between approximately 5 and 14 feet bgs.

4 SUBSURFACE INVESTIGATION, DRILLING AND SAMPLING

Five soil borings (TW-01 through TW-05) were drilled at the approximate locations shown on Figure 2 on March 22, 2009. The temporary wells were installed in locations either adjacent to or between the borings completed by Klienfelder in the previous investigation (Figure 2). The locations of the temporary wells in relation to the Klienfelder investigation are:

- TW-1, the location of Kleinfelder's B-2 boring;
- TW-2, the location of Kleinfelder's B-1 boring;
- TW-3, this boring is located between the former UST and pump island; and in the approximate center of Kleinfelder's B-5, B-7, and B-6 locations;
- TW-4, the location of Kleinfelder's B-4 boring; and
- TW-5, in the parking area of the former Wheel Café and at Kleinfelder's B-3 location.

The borings were drilled using 8-inch diameter hollow stem augers to a maximum depth of 16.5 feet bgs. Soil samples were collected using a split-spoon sampler for lithologic descriptions only. Soil samples were not collected for laboratory analysis. Samples were collected and

examined for lithology from each of the borings beginning at an approximate depth of 2.5 feet and approximately every 2.5 feet thereafter to the maximum depth of 16.5 feet bgs.

Temporary casings were then installed at each boring location. The temporary casings were comprised of 2-inch diameter PVC pre-packed screens with #1C sand and stainless steel mesh. Each casing was also completed with a threaded end cap and sufficient blank PVC casing to bring the temporary casing above grade. The remaining annular space around the screen was then backfilled with #2/12 sand to approximately 1 foot above the screened interval and the remaining hole was backfilled with bentonite. Boring logs for TW-01 through TW-05 are presented in Appendix A[1].

After installation of the temporary casings, the boring was then purged using a submersible pump. Temperature, pH, conductivity, turbidity, and dissolved oxygen readings were measured during purging to help demonstrate that groundwater representative of aquifer conditions was entering the casing prior to sampling. Information obtained during sampling was recorded on a groundwater field sampling form and used to generate a Well Purge Record (Appendix B). The casing was allowed to recover to 80 percent of static levels, which was up to approximately 1 hour in some borings, prior to sampling. The groundwater sample was collected using a separate disposable bailer for each boring and transferred into the appropriate laboratory supplied container for analysis.

Groundwater samples were labeled, stored under refrigerated conditions, and transported under Chain-of-Custody to the Analytical Sciences (AS) laboratory in Petaluma, California for analysis. AS is a California Department of Public Health (CDPH) certified laboratory for the analysis requested. Copies of the current certifications for AS have been reviewed and are on file with SCS. Groundwater samples were collected following SCS Standard Sampling Procedures and Quality Assurance/Quality Control (QA/QC) Protocol.

The augers were pressure washed, and the small sampling equipment was washed in a detergent solution and rinsed between borings. The drill cuttings were placed on and covered with plastic, pending disposal. Water generated by decontamination, and sampling was stored at the Site in 55 gallon United Nations/Department of Transportation (UN/DOT) approved drums, pending disposal. The drummed water will be used as dust control on site, based on the results of the investigation.

The well casings and all backfill material are scheduled to be removed on May 8, 2009. The temporary wells will be decommissioned in accordance with state and local regulations. The temporary wells will be decommissioned by over drilling the borehole and removing the entire PVC well casings. All materials including the seal and filter pack will be drilled out to the entire depth of the wells, which are approximately 12 to 16 feet bgs. The boreholes will then be backfilled from the bottom up with a low permeable material (bentonite slurry) by the licensed C-57 well driller and in accordance with California Well Standards, Bulletin 74-90. After these

[1] Boring logs are presented as drafts in Appendix A as the temporary casing have not yet been removed and the holes have not been backfilled. Final boring logs will be presented with a separate letter report after the casings are removed and the holes are backfilled.

materials are removed, the soil borings will be covered with native material to match existing grade to the extent feasible.

5 LABORATORY ANALYSIS

Groundwater samples were analyzed for the following constituents:

- LUFT 5 Metals by Environmental Protection Agency (EPA) Method 6010 or equivalent (filter and fixed by laboratory);
- TPH-d and TPH-mo by EPA Method 8015M (with silica gel cleanup);
- MTBE by EPA Method 8260B in TW-3 only.

6 GROUNDWATER ANALYTICAL RESULTS

No Site COCs were detected above the laboratory reporting detection limits (RDLs) in any of the groundwater samples collected from borings TW-01 through TW-05. Analytical results for groundwater samples collected from TW-01 through TW-05 are presented in Table 1. A copy of the laboratory report is included as Appendix C.

7 DISCUSSION

Based on the results of this investigation, groundwater at the Site is not impacted with the previously identified COCs. SCS's findings support the SCDHS recommended Case Closure dated October 11, 2001. No additional environmental investigation is recommended for this Site.

8 REFERENCES CITED

Kleinfelder, 2009. Phase II Environmental Site Assessment, Thyme Square Property 337 S. Cloverdale Blvd., Cloverdale, California 94952, January 20.

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PNEG, 1999. Report on Remediation of Petroleum Hydrocarbons In the Soil and Groundwater at 337 South Cloverdale, California. (SCDHS-EHD Site #00001519, NCRWQCB Site #1TSO003; SWRCB File No. 11462), February 8.

PNEG, 2001a. Results of the 1st Quarter 2001 Quarterly Groundwater Monitoring Event and Request for Case Closure – 337 South Cloverdale Boulevard, Cloverdale, California (SCDHS-EHD Site #00001519; NRWQCB Site #1TSO003; SWRCB File No. 11462), March 29.

PNEG, 2001b. Report of Monitoring Well Destruction, Closure – 337 South Cloverdale Boulevard, Cloverdale, California, September 24.

PMG, 1992. Passalacqua, Mazzoni & Gladden, Remedial Investigation Letter to SCDHS, September 23.

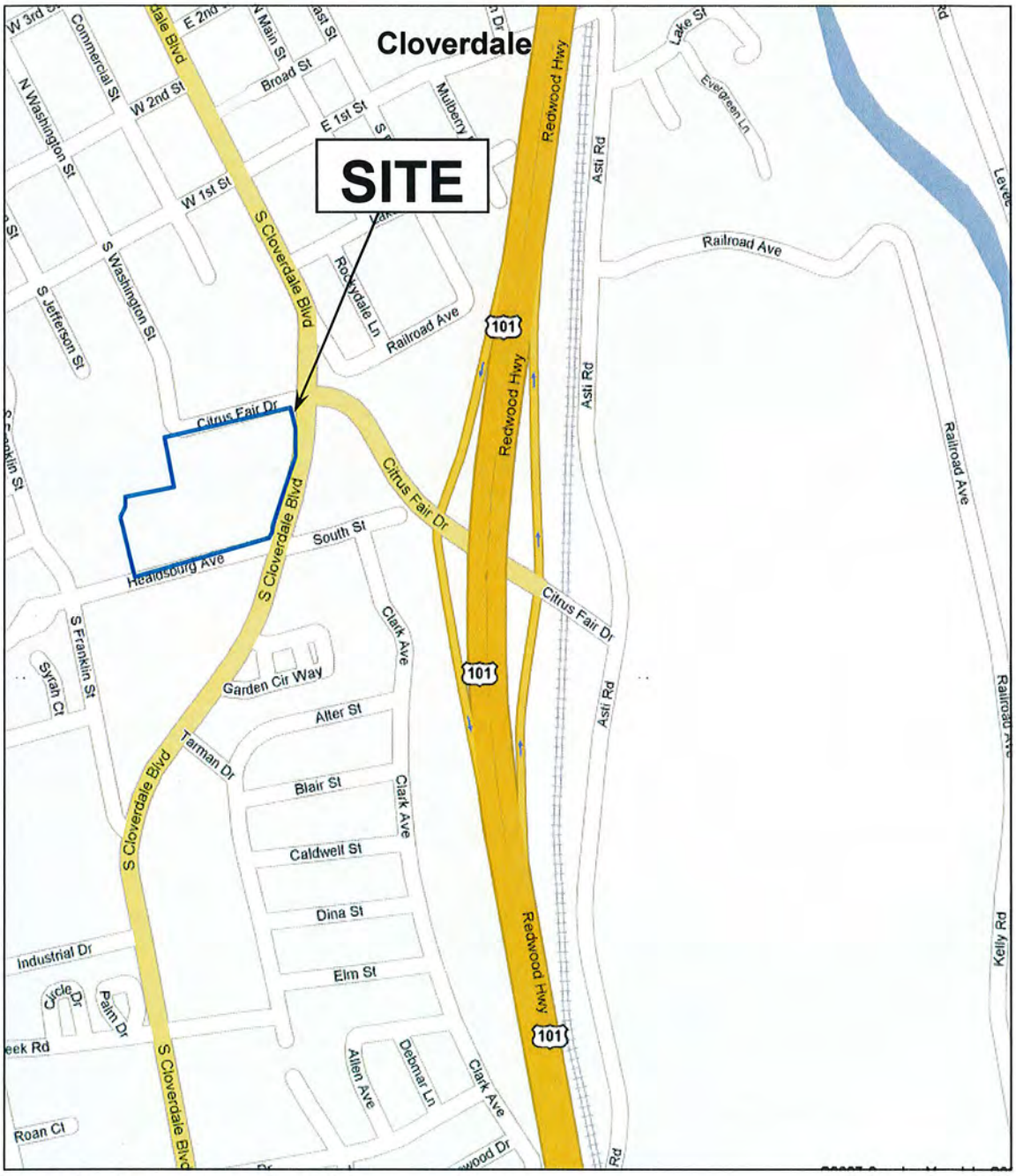
SCDHS, 2001. Recommendation for Case Closure, October 11.

SCS, 2009. Workplan for Due Diligence Environmental Investigation, 337 South Cloverdale Blvd., Cloverdale, California, April 14.

9 DISTRIBUTION LIST

Dave Evans/Jan Goebel
North Coast Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Figures



Source of Base Map: GOOGLE PRO 2007®

N
W E
S

SCS ENGINEERS ENVIRONMENTAL CONSULTANTS AND CONTRACTORS 3843 BRICKWAY BOULEVARD SUITE 208 SANTA ROSA, CA 95403 PH. (707) 546-9461 FAX (707) 544-5769	SITE LOCATION MAP	APPROX. SCALE (MILES) 0 .1 .2
PROJ. NO: 01209013.00 / SOURCE: GooglePro 2007 / FILE: 9013.00 SiteLocMap DATE: 4/13/09 / CREATED BY: JJM / APP. BY: JJM	THYME SQUARE PROPERTIES 337 S. CLOVERDALE BOULEVARD CLOVERDALE, CALIFORNIA (APNs 001-440-002 & APNs 001-440-003)	FIGURE: 1

RESIDENTIAL
TOWNHOMES

LEGEND

TW-1 — BORING LOCATION
(SCS, 4/22/2009).

MW-1 — MONITORING WELL LOCATION
(INSTALLED IN MARCH, 1986, PNEG 11/1996).

B-1 — SAMPLE LOCATION
[1](FEBRUARY 10, 2009 KLEINFELDER)

APPROXIMATE PARCEL BOUNDARY

ALL LOCATIONS ARE APPROXIMATE, NOT A PRODUCT OF SURVEY

FORMER GAS STATION AND UST FEATURES APPROXIMATED FROM SITE PLAN, PNEG 11/19/96 AND UPDATED BY KLEINFELDER, 2009.

[1]*FORMER MONITORING WELL LOCATIONS APPROXIMATED FROM SITE PLAN, PNEG 11/19/96.*

[2]*SAMPLE LOCATIONS APPROXIMATED FROM BORING LOCATIONS MAP, KLEINFELDER, 2009.*

[3]*APPROXIMATE EXCAVATION AREA APPROXIMATED FROM SITE PLAN, PNEG, 2000.*

SOURCE OF BASE AERIAL RASTER PHOTOGRAPH AND SONOMA COUNTY PARCEL LAYERS:
SOURCE OF BASE MAP: GOOGLE PROFESSIONAL AERIAL PHOTOGRAPH IMAGE; AUGUST 16, 2006.
PARCEL LAYER MODIFIED FROM DATA OBTAINED WITH PERMISSIONS FROM THE COUNTY OF SONOMA, PERMIT AND RESOURCE MANAGEMENT DEPARTMENT (PRMD), ARCMAP SHAPEFILES, 2008.

N

GRAPHIC SCALE
100 0 100 200
(IN FEET)
1" = 100 Ft.

PLAN WITH BORING LOCATIONS

THYME SQUARE PROPERTIES
337 S. CLOVERDALE BOULEVARD
CLOVERDALE, CALIFORNIA
001-440-002 & APN'S 001-440-003

SCALE:
(AS SHOWN)

FIGURE NO.
2

Table

Table 1: Groundwater Analytical Results

337 South Cloverdale Blvd., Cloverdale, CA

Sample	Date	TPH-d	TPH-mo	MTBE	Cd	Cr	Pb	Ni	Zn
		µg/L			mg/L				
TW-01 @ W	4/22/2009	<50	<200	NA	<0.010	<0.010	<0.050	<0.050	<0.050
TW-02 @ W	4/22/2009	<50	<200	NA	<0.010	<0.010	<0.050	<0.050	<0.050
TW-03 @ W	4/22/2009	<50	<200	<1.0	<0.010	<0.010	<0.050	<0.050	<0.050
TW-04 @ W	4/22/2009	<50	<200	NA	<0.010	<0.010	<0.050	<0.050	<0.050
TW-05 @ W	4/22/2009	<50	<200	NA	<0.010	<0.010	<0.050	<0.050	<0.050

NA - Not Analyzed

Appendices

Appendix A

Unified Soil Classification System Chart
and Boring Log Legend
Boring Logs for TW-01 through TW-05

GENERAL SOIL CATEGORIES			SYMBOLS GRAPHIC	SYMBOLS LETTER	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than no. 200 sieve	**Gravel** More than half of coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines		GW	Well Graded Gravels, Gravel - Sand mixtures
				GP	Poorly Graded Gravels, Gravel - Sand mixtures
		Gravel with more than 15% fines		GM	Silty Gravels, Poorly Graded; Gravel - Sand - Silt Mixtures
				GC	Clayey Gravels, Poorly Graded; Gravel - Sand - Clay Mixtures
	Sand More than half of coarse fraction is smaller than No. 4 sieve size	Clean Sand with little or no fines		SW	Well Graded Sands, Gravelly Sands
				SP	Poorly Graded Sands, Gravelly Sands
		Sand with more than 15% fines		SM	Silty Sands, Poorly Graded; Sand - Silt Mixtures
				SC	Clayey Sands, Poorly Graded; Sand - Clay Mixtures
FINE GRAINED SOILS More than half is smaller than no. 200 sieve	**Silt and Clay** Liquid Limit Less than 50%			ML	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
				CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
				OL	Organic Silts and Organic Silty Clays of Low Plasticity
	Silt and Clay Liquid Limit Greater than 50%			MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts
				CH	Inorganic Clays of High Plasticity, Fat Clays
				OH	Organic Clays of Medium to High Plasticity
Highly Organic Soils				PT	Peat and Other Highly Organic Soils
Bedrock				BR	Bedrock
Aggregate Base				B	Mixed Fill
Asphalt				A	Asphalt
Concrete				C	Concrete

■ Soil sample submitted for chemical analysis

☒ Soil sample examined for soil classification

Sampler Type
- CBS = Continuous Barrel Sampler
- CMSS = CA Modified Split Spoon
- DP = Direct Push Sampler
- GRAB = Grab Sample
- HA = Hand Auger
- HP = Hydropunch
- SPT = Standard Penetration Test

▼ Initial Static Water Level

▽ First Identified Free Water

n.a. = not applicable
n.r. = not recorded

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UNIFIED SOIL CLASSIFICATION SYSTEM CHART and BORING LOG LEGEND

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure:
Appendix A
A-1
1 of 1

Date (start, end): 4/22/09
Drilling Time (start, end) 07:50
Logged By: Stephen Knüttel
Checked By: **DRAFT**

Boring No. **TW-01**

Boring Location: North west area of property see site plan.

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.
Driller's Name: Rick Schneider
Drilling Method: 8-in. Hollow-Stem Auger
Sampling Method: SPT
Hammer weight / fall: 140 lbs / 30 inch

MW Installed: Y ☐ N ☒ if no, boring backfilled with:
Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐
Auger Depth, ft: 12.0 Total Depth, ft: 12.0
Temp. Screen (interval/dia./slot): 1.5-11.5 ft. / 2 in. / 0.01 in.

Notes: Temporary casing installed with prepack screen of 1C sand and stainless steel mesh.

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								340.0							
								339.6							**TOPSOIL**.
															SILT (ML): dark brown, clayey, minor very fine grained sand, moist.
															Increased sand content, fine to medium grained sand.
								336.0							**GRAVELLY SILT** (ML): brown mottled with gray, fine gravel, fine to coarse grained sand, moist to wet, minor clay.
	6	7	SPT	▽		No	No		5		25	20	40	15	
	6	12									25	20	40	15	
	6	13									25	20	40	15	
	6	15	SPT								30	20	40	10	
	6	27									30	20	40	10	
	6	28									30	20	40	10	
								330.5							**SILT** (ML): brown mottled with gray, clayey, minor very fine grained sand, moist to wet.
	6	20	SPT						10			10	50	40	
	6	26										10	50	40	
	6	35										10	50	40	
								328.0							TOTAL DEPTH = 12.0 FEET
									15						

SCS-SANTA ROSA BORING LOG 012099013.00.GPJ SCS-SANTA ROSA.GDT 04/28/09

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BORING LOG TW-01

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure:
TW-01
1 of 1

Date (start, end): 4/22/09
Drilling Time (start, end) 12:55
Logged By: Stephen Knüttel
Checked By: **DRAFT**

Boring No. **TW-02**

Boring Location: East side of property, center.

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.
Driller's Name: Rick Schneider
Drilling Method: 8-in. Hollow-Stem Auger
Sampling Method: SPT
Hammer weight / fall: 140 lbs / 30 inch

MW Installed: Y ☐ N ☒ if no, boring backfilled with:
Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐
Auger Depth, ft: 12.5 Total Depth, ft: 14.0
Temp. Screen (interval/dia./slot): 2.5 -12.5 ft. / 2 in. / 0.01 in.

Notes: Temporary casing installed with prepack screen of 1C sand and stainless steel mesh.

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								340.0							**GRAVEL BASE**.
								339.0							**SILT** (ML): brown, clayey, minor very fine to medium grained sand, moist. Minor fine gravel.
								335.5	5						
☒	6	5	SPT	▽		No	No				15	15	50	20	**SILT with Gravel** (ML): brown, fine gravel and fine to coarse grained sand, clayey, moist to wet.
☒	6	5									15	15	50	20	
☒	6	6									15	15	50	20	
								333.0							**SILTY GRAVEL** (GM): brown mottled with gray, fine and coarse gravel and fine to coarse grained sand, minor clay, wet.
☒	0	16	SPT								40	20	30	10	
☒	6	18									40	20	30	10	
☒	6	14													
									10						
☒	6	22	SPT					329.5			20	20	30	30	**GRAVELLY CLAY** (CL): brown mottled with light gray and reddish brown, fine and coarse gravel, moist to wet.
☒	6	30									20	20	30	30	
☒	6	50													
								328.0							**CLAY** (CL): gray mottled with brown, silty, trace fine to coarse grained sand, rounded, moist.
☒	6	15	SPT									T	50	50	
☒	6	15										T	50	50	
☒	6	20										T	50	50	
								326.0							TOTAL DEPTH = 14.0 FEET
									15						

SCS-SANTA ROSA BORING LOG 012099013.00.GPJ SCS-SANTA ROSA.GDT 04/28/09

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BORING LOG TW-02

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure:
TW-02
1 of 1

Date (start, end): 4/22/09
Drilling Time (start, end) 14:15
Logged By: Stephen Knüttel
Checked By: **DRAFT**

Boring No. **TW-03**

Boring Location: East side of property ~44 north of south side.

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.
Driller's Name: Rick Schneider
Drilling Method: 8-in. Hollow-Stem Auger
Sampling Method: SPT
Hammer weight / fall: 140 lbs / 30 inch

MW Installed: Y ☐ N ☒ if no, boring backfilled with:
Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐
Auger Depth, ft: 15.0 Total Depth, ft: 16.5
Temp. Screen (interval/dia./slot): 10-15 ft. / 2 in. / 0.01 in.

Notes: Temporary casing installed with prepack screen of 1C sand and stainless steel mesh.

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								340.0							
								339.7							**TOPSOIL**.
															SILT (ML): brown, clayey, minor very fine to medium grained sand, moist (FILL).
															Gray mottled with brown.
X	6	6	SPT						5			10	50	40	
X	6	7										10	50	40	
X	6	10										10	50	40	
								332.5							**CLAY with Gravel** (CL): dark gray, fine gravel, minor fine to medium grained sand, moist to wet, silty (FILL).
						No	No								
X	0	3	SPT						10		15	10	25	50	
X	6	3									15	10	25	50	
X	6	4													
X	0	6	SPT	▽											
X	0	20													
X	6	27						326.5			15	25	30	30	**CLAY with Sand** (CL): brown mottled with gray and reddish brown, very fine to medium grained sand, fine gravel, moist to wet.
								325.5							**CLAYEY GRAVEL** (GC): brown, fine and coarse gravel and fine to coarse grained sand, silty, wet.
X	6	9	SPT						15		40	15	15	30	
X	6	17						324.5				10	30	60	**CLAY** (CL): gray mottled with brown and reddish brown, silty, minor very fine to fine grained sand, moist.
X	6	20						323.5				10	30	60	
															TOTAL DEPTH = 16.5 FEET

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BORING LOG TW-03

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure: TW-03
1 of 1

SCS-SANTA ROSA BORING LOG 012099013.00.GPJ SCS-SANTA ROSA.GDT 04/28/09

Date (start, end): 4/22/09
Drilling Time (start, end) 10:55
Logged By: Stephen Knüttel
Checked By: **DRAFT**

Boring No. **TW-04**

Boring Location: South east corner of property.

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.
Driller's Name: Rick Schneider
Drilling Method: 8-in. Hollow-Stem Auger
Sampling Method: SPT
Hammer weight / fall: 140 lbs / 30 inch

MW Installed: Y ☐ N ☒ if no, boring backfilled with:
Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐
Auger Depth, ft: 12.5 Total Depth, ft: 14.0
Temp. Screen (interval/dia./slot): 2.2-12.2 ft. / 2 in. / 0.01 in.

Notes: Temporary casing installed with prepack screen of 1C sand and stainless steel mesh.

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								340.0							
								339.5							**ASPHALT**: over base rock.
								338.5							**SILT** (ML): brown, minor very fine grained sand, moist.
								336.0							**CLAY** (CL): dark gray with dark brown, minor very fine to coarse grained sand and fine gravel, moist to wet.
☒	6	3	SPT	▽		No	No		5		5	5	30	60	
☒	6	5									5	5	30	60	
☒	6	9									10	10	40	40	
								333.5							**SILTY GRAVEL** (GM): brown, fine gravel and fine to coarse grained sand, clayey, wet.
☒	0	12	SPT												
☒	0	13													
☒	6	16									40	20	30	10	
									10						
☒	6	18	SPT								40	20	30	10	
☒	6	20									40	20	30	10	
☒	6	22									40	20	30	10	
								327.2							**SILT** (ML): brown mottled with gray, clayey, minor very fine grained sand, moist to wet.
☒	6	18	SPT									10	50	40	
☒	6	20										10	50	40	
☒	6	25						326.0							TOTAL DEPTH = 14.0 FEET
									15						

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BORING LOG TW-04

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure: TW-04 1 of 1

SCS-SANTA ROSA BORING LOG 01209013.00.GPJ SCS-SANTA ROSA.GDT 04/28/09

Date (start, end): 4/22/09
Drilling Time (start, end) 09:25
Logged By: Stephen Knüttel
Checked By: **DRAFT**

Boring No. **TW-05**

Boring Location: East of former building.

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.
Driller's Name: Rick Schneider
Drilling Method: 8-in. Hollow-Stem Auger
Sampling Method: SPT
Hammer weight / fall: 140 lbs / 30 inch

MW Installed: Y ☐ N ☒ if no, boring backfilled with:
Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐
Auger Depth, ft: 12.5 Total Depth, ft: 14.0
Temp. Screen (interval/dia./slot): 2.0-12 ft. / 2 in. / 0.01 in.

Notes: Temporary casing installed with prepack screen of 1C sand and stainless steel mesh.

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								340.0							**GRAVEL BASE**.
								339.0							**SILT** (ML): dark brown, clayey, minor very fine to fine grained sand, moist.
								335.5	5						**GRAVELLY SILT** (ML): brown, very fine to medium grained sand, fine gravel, wet, clayey.
☒	0	5	SPT	▽		No	No				30	20	40	10	
☒	1	4													
☒	6	3													
☒	6	10	SPT								30	30	30	10	
☒	6	32						332.0			40	20	20	20	**SILTY GRAVEL** (GM): brown, fine gravel and fine to coarse grained sand, clayey, wet.
☒	6	35									40	20	20	20	
☒	6	7	SPT						10		40	20	20	20	
☒	6	8									40	20	20	20	
☒	6	17						329.0				10	60	30	**SILT** (ML): brown mottled with gray, clayey, very fine grained sand, moist to wet.
☒	6	15	SPT								5	10	60	25	
☒	6	20						327.0				30	50	20	**SANDY SILT** (ML): brown, very fine to fine grained sand, clayey, moist to wet.
☒	6	22						326.0				30	50	20	
									15						TOTAL DEPTH = 14.0 FEET

SCS-SANTA ROSA BORING LOG 01209013.00.GPJ SCS-SANTA ROSA.GDT 04/28/09

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BORING LOG TW-05

Thyme Square LLC.
337 S. Cloverdale Blvd.
Cloverdale, California 95425
Job Number: 01209013.00

Figure:
TW-05
1 of 1

Appendix B

Temporary Well Purge Records

SCS ENGINEERS

TEMPORARY WELL PURGE RECORD

Water Sampling at Time of Drilling

WELL NUMBER: **TW-01**

PROJECT: **Thyme Square LLC.**

JOB NUMBER: **01209013.00**

SITE: **337 S. Cloverdale Blvd.**

RECORDED BY: **Bruce Taverner**

	PURGING METHOD	*SAMPLING METHOD*
HAND PUMP		
SUBMERSIBLE PUMP	X	
BAILER		X
OTHER		

PURGING CRITERIA **Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized (±10%), or until dry.**

REMARKS

*** Oil/water interface probe used to check for NAPLs; MLE = Meter Limit Exceeded, i.e. >999 NTU's)**

CASING DIAMETER (D_c): 2.0

DEPTH TO:

WATER (h): 4.99

NAPL: n.a.*

NAPL THICKNESS: n.a.*

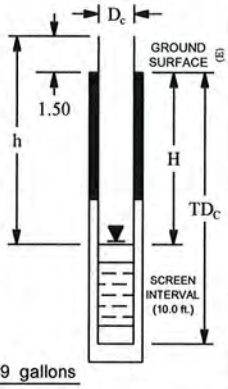
SCREEN DEPTH:

TOP: 1.5

BOTTOM: 11.5

TOTAL DEPTH (TD_c): 12.0

Diameters in (inches) : Depths in (feet)



ONE CASING VOLUME:
$[TD_c - H] [3.14 (D_c / 24)^2] [7.48 gal/ft^3]$: 1.39 gallons

DATE OF SAMPLING:	4/22/2009
WEATHER:	Sunny and warm
TAGGED WATER LEVELS FROM TOC:	4.99 / 5.00
TAGGED WELL DEPTH FROM TOC:	12.8
PURGE VOLUME (3 CASING VOLUMES):	4.2 gallons
DEPTH TO WATER FOR 80% RECHARGE:	6.69 ft. below TOC
TIME OF SAMPLING:	11:30
DEPTH TO WATER AT TIME OF SAMPLING:	Not recorded
APPEARANCE OF SAMPLE:	Clear
LABORATORY:	Analytical Sciences

SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.

PURGING DATA				CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS
DATE	TIME BEGIN	TIME FINISH	WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)	DISSOLVED OXYGEN (ppm)	
4/22/09	10:00	10:03	5	5	3.60	6.62	0.693	*MLE	19.2	4.84	
4/22/09	10:03	10:06	5	10	7.20	6.67	0.522	*MLE	17.7	3.27	
4/22/09	10:06	10:11	5	15	10.80	6.53	0.38	922	17.3	2.77	
4/22/09	10:11	10:14	5	20	14.40	6.48	0.347	451	17.1	1.91	
4/22/09	10:14	10:17	5	25	18.00	6.45	0.328	266	17.1	2.05	
4/22/09	10:17	10:20	5	30	21.60	6.42	0.319	187	17.0	2.16	
4/22/09	10:20	10:23	5	35	25.20	6.44	0.304	121	17.0	2.04	
4/22/09	10:23	10:26	5	40	28.80	6.38	0.302	92	16.9	2.44	
											QA/QC by: MN

Report Form: WELL PURGE RECORD 2 Project ID: 012099013.00.GPJ Date: 4/28/2009

SCS ENGINEERS

TEMPORARY WELL PURGE RECORD

Water Sampling at Time of Drilling

WELL NUMBER	
TW-02	

PROJECT	JOB NUMBER	SITE	RECORDED BY
Thyme Square LLC.	01209013.00	337 S. Cloverdale Blvd.	Bruce Taverner

	PURGING METHOD	SAMPLING METHOD
HAND PUMP		
SUBMERSIBLE PUMP	X	
BAILER		X
OTHER		

PURGING CRITERIA **Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized (±10%), or until dry.**

REMARKS

*** Oil/water interface probe used to check for NAPLs; MLE = Meter Limit Exceeded, i.e. >999 NTU's).**

CASING DIAMETER (D_C): 2.0

DEPTH TO:

WATER (h): 4.00

NAPL: n.a.*

NAPL THICKNESS: n.a.*

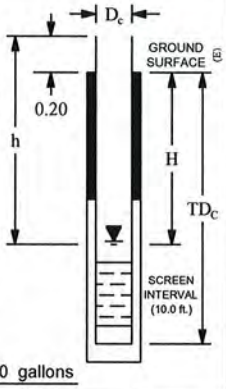
SCREEN DEPTH:

TOP: 2.5

BOTTOM: 12.5

TOTAL DEPTH (TD_C): 13.0

Diameters in (inches) : Depths in (feet)



ONE CASING VOLUME:
$[TD_C - H] [3.14 (D_c / 24)^2] [7.48 gal/ft^3]$: 1.50 gallons

DATE OF SAMPLING:	4/22/2009
WEATHER:	Sunny and warm
TAGGED WATER LEVELS FROM TOC:	4.00 / 4.00
TAGGED WELL DEPTH FROM TOC:	12.4
PURGE VOLUME (3 CASING VOLUMES):	4.5 gallons
DEPTH TO WATER FOR 80% RECHARGE:	5.84 ft. below TOC
TIME OF SAMPLING:	15:25
DEPTH TO WATER AT TIME OF SAMPLING:	Not recorded
APPEARANCE OF SAMPLE:	Clear
LABORATORY:	Analytical Sciences

SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.

PURGING DATA				CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS
DATE	TIME BEGIN	TIME FINISH	WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)	DISSOLVED OXYGEN (ppm)	
4/22/09	14:10	14:11	1	1	0.67	n.r.	n.r.	n.r.	n.r.	n.r.	Well went dry
4/22/09	14:11	14:20	0	1	0.67	n.a.	n.a.	n.a.	n.a.	n.a.	Recharge
4/22/09	14:20	14:21	1	2	1.33	n.r.	n.r.	n.r.	n.r.	n.r.	Well went dry
4/22/09	14:21	14:31	0	2	1.33	n.r.	n.r.	n.r.	n.r.	n.r.	Recharge
4/22/09	14:31	14:32	1	3	2.00	6.53	0.416	900	21.7	5.92	Well went dry
4/22/09	14:32	14:40	0	3	2.00	n.r.	n.r.	n.r.	n.r.	n.r.	Recharge
4/22/09	14:40	14:42	1	4	2.66	7.16	0.396	*MLE	21.2	5.57	Well went dry
											QA/QC by: MN

Report Form: WELL PURGE RECORD 2 Project ID: 012099013.00.GPJ Date: 4/28/2009

SCS ENGINEERS

TEMPORARY WELL PURGE RECORD

Water Sampling at Time of Drilling

WELL NUMBER	
TW-03	

PROJECT	JOB NUMBER	SITE	RECORDED BY
Thyme Square LLC.	01209013.00	337 S. Cloverdale Blvd.	Bruce Taverner

	PURGING METHOD	SAMPLING METHOD
HAND PUMP		
SUBMERSIBLE PUMP	x	
BAILER		x
OTHER		

PURGING CRITERIA **Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized (±10%), or until dry.**

REMARKS

*** Oil/water interface probe used to check for NAPLs; MLE = Meter Limit Exceeded, i.e. >999 NTU's)**

CASING DIAMETER (D_C): 2.0

DEPTH TO:

WATER (h): 5.98

NAPL: n.a.*

NAPL THICKNESS: n.a.*

SCREEN DEPTH:

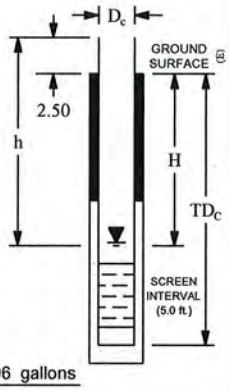
TOP: 10.0

BOTTOM: 15.0

TOTAL DEPTH (TD_C): 15.5

Diameters in (inches) : Depths in (feet)

ONE CASING VOLUME:
[TD_C - H] [3.14 (D_C / 24)^2] [7.48 gal/ft^3]: 1.96 gallons



DATE OF SAMPLING:	4/22/2009
WEATHER:	Sunny and warm
TAGGED WATER LEVELS FROM TOC:	5.98 / 5.98
TAGGED WELL DEPTH FROM TOC:	17.3
PURGE VOLUME (3 CASING VOLUMES):	5.9 gallons
DEPTH TO WATER FOR 80% RECHARGE:	8.38 ft. below TOC
TIME OF SAMPLING:	16:10
DEPTH TO WATER AT TIME OF SAMPLING:	Not recorded
APPEARANCE OF SAMPLE:	Clear
LABORATORY:	Analytical Sciences

SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.

PURGING DATA				CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS
DATE	TIME BEGIN	TIME FINISH	WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)	DISSOLVED OXYGEN (ppm)	
4/22/09	03:49	15:52	5	25	12.75	6.54	0.51	*MLE	19.2	1.96	
4/22/09	15:37	15:40	5	5	2.55	6.60	0.684	*MLE	20.5	2.85	
4/22/09	15:40	15:43	5	10	5.10	6.53	0.468	*MLE	19.3	2.32	
4/22/09	15:43	15:46	5	15	7.65	6.53	0.416	*MLE	19.1	2.34	
4/22/09	15:46	15:49	5	20	10.20	6.51	0.379	*MLE	18.9	2.37	
4/22/09	15:52	15:55	5	30	15.29	6.59	0.335	*MLE	18.8	2.01	
4/22/09	15:55	16:01	10	40	20.39	6.57	0.411	995	19.0	2.62	
											QA/QC by: MN

Report Form: WELL PURGE RECORD 2 Project ID: 012099013.00.GPJ Date: 4/28/2009

SCS ENGINEERS

TEMPORARY WELL PURGE RECORD

Water Sampling at Time of Drilling

WELL NUMBER: **TW-04**

PROJECT	*JOB NUMBER*	*SITE*	*RECORDED BY*
Thyme Square LLC.	**01209013.00**	**337 S. Cloverdale Blvd.**	**Bruce Taverner**

	PURGING METHOD	*SAMPLING METHOD*
HAND PUMP		
SUBMERSIBLE PUMP	X	
BAILER		X
OTHER		

PURGING CRITERIA **Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized (±10%), or until dry.**

REMARKS

*** Oil/water interface probe used to check for NAPLs; MLE = Meter Limit Exceeded, i.e. >999 NTU's)**

CASING DIAMETER (D_C): 2.0

DEPTH TO:

WATER (h): 5.05

NAPL: n.a.*

NAPL THICKNESS: n.a.*

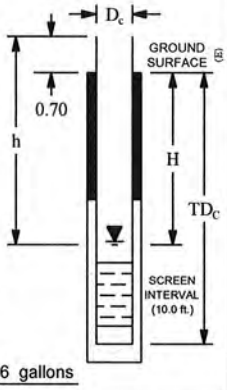
SCREEN DEPTH:

TOP: 2.2

BOTTOM: 12.2

TOTAL DEPTH (TD_C): 12.7

Diameters in (inches) : Depths in (feet)



ONE CASING VOLUME:
$[TD_C - H] [3.14 (D_C / 24)^2] [7.48 gal/ft^3]$: 1.36 gallons

DATE OF SAMPLING:	4/22/2009
WEATHER:	Sunny and warm
TAGGED WATER LEVELS FROM TOC:	5.05 / 5.05
TAGGED WELL DEPTH FROM TOC:	12.1
PURGE VOLUME (3 CASING VOLUMES):	4.1 gallons
DEPTH TO WATER FOR 80% RECHARGE:	6.72 ft. below TOC
TIME OF SAMPLING:	13:40
DEPTH TO WATER AT TIME OF SAMPLING:	Not recorded
APPEARANCE OF SAMPLE:	Clear
LABORATORY:	Analytical Sciences

SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.

PURGING DATA				CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS
DATE	TIME BEGIN	TIME FINISH	WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)	DISSOLVED OXYGEN (ppm)	
4/22/09	12:50	13:00	5	5	3.67	6.87	0.285	*MLE	21.2	2.90	
4/22/09	13:00	13:07	5	10	7.34	6.48	0.26	478	18.7	1.98	
4/22/09	13:07	13:10	5	15	11.01	6.39	0.264	335	18.4	1.74	
4/22/09	13:10	13:15	5	20	14.68	6.43	0.264	239	18.4	2.51	
4/22/09	13:15	13:20	5	25	18.35	6.46	0.264	141	18.3	2.92	
4/22/09	13:20	13:25	5	30	22.02	6.46	0.262	110	18.3	2.46	
4/22/09	13:25	13:30	5	35	25.69	6.44	0.262	88	18.2	2.79	
4/22/09	13:30	13:35	5	40	29.36	6.46	0.263	70	18.2	3.03	
											QA/QC by: MN

Report Form: WELL PURGE RECORD 2 Project ID: 012099013.00.GPJ Date: 4/28/2009

SCS ENGINEERS

TEMPORARY WELL PURGE RECORD

Water Sampling at Time of Drilling

WELL NUMBER: **TW-05**

PROJECT	*JOB NUMBER*	*SITE*	*RECORDED BY*
Thyme Square LLC.	**01209013.00**	**337 S. Cloverdale Blvd.**	**Bruce Taverner**

	PURGING METHOD	*SAMPLING METHOD*
HAND PUMP		
SUBMERSIBLE PUMP	x	
BAILER		x
OTHER		

PURGING CRITERIA **Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized (±10%), or until dry.**

REMARKS

*** Oil/water interface probe used to check for NAPLs; MLE = Meter Limit Exceeded, i.e. >999 NTU's)**

CASING DIAMETER (D_c): 2.0

DEPTH TO:

- WATER (h): 4.02
- NAPL: n.a.*

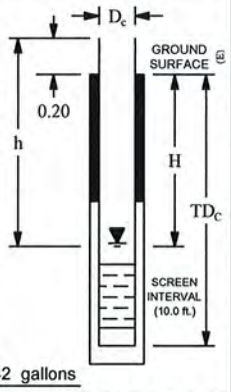
NAPL THICKNESS: n.a.*

SCREEN DEPTH:

- TOP: 2.0
- BOTTOM: 12.0

TOTAL DEPTH (TD_c): 12.5

Diameters in (inches) : Depths in (feet)



ONE CASING VOLUME:
$[TD_c - H] [3.14 (D_c / 24)^2] [7.48 gal/ft^3]$: 1.42 gallons

DATE OF SAMPLING:	4/22/2009
WEATHER:	Sunny and warm
TAGGED WATER LEVELS FROM TOC:	4.02 / 4.02
TAGGED WELL DEPTH FROM TOC:	11.8
PURGE VOLUME (3 CASING VOLUMES):	4.2 gallons
DEPTH TO WATER FOR 80% RECHARGE:	5.76 ft. below TOC
TIME OF SAMPLING:	12:00
DEPTH TO WATER AT TIME OF SAMPLING:	Not recorded
APPEARANCE OF SAMPLE:	Clear
LABORATORY:	Analytical Sciences

SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.

PURGING DATA				CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS
DATE	TIME BEGIN	TIME FINISH	WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)	DISSOLVED OXYGEN (ppm)	
4/22/09	10:56	11:05	5	5	3.53	7.04	0.725	*MLE	22.6	6.41	
4/22/09	11:05	11:15	5	10	7.06	6.85	0.634	*MLE	20.6	5.82	
4/22/09	11:15	11:27	5	15	10.59	6.60	0.524	497	19.9	4.45	
4/22/09	11:27	11:40	5	20	14.12	6.66	0.501	612	22.5	5.11	
4/22/09	11:40	11:48	5	25	17.65	6.96	0.492	*MLE	19.8	6.40	
4/22/09	11:48	11:52	5	30	21.18	6.92	0.496	498	19.8	4.50	
											QA/QC by: MN

Report Form: WELL PURGE RECORD 2 Project ID: 012099013.00.GPJ Date: 4/28/2009

Appendix C

Analytical Sciences Report #9042301

Dated April 24, 2009

Analytical Sciences

April 24, 2009

Stephen Knuttel
SCS Engineers
3843 Brickway Blvd., Suite 208
Santa Rosa, CA 95403

Dear Stephen,

Enclosed you will find Analytical Sciences' final report 9042301 for your Thyme Square project. An invoice for this work is enclosed.

Should you or your client have any questions regarding this report please contact me at your convenience. We appreciate you selecting Analytical Sciences for this work and look forward to serving your analytical chemistry needs on projects in the future.

Sincerely,

Analytical Sciences

Mark A. Valentini

Mark A. Valentini, Ph.D.

Laboratory Director

P.O. Box 750336
Petaluma, CA 94975-0336
Telephone: (707) 769-3128

110 Liberty Street
Petaluma, CA 94952

Analytical Sciences

Report Date: April 24, 2009

Laboratory Report

Stephen Knuttel
SCS Engineers
3843 Brickway Blvd., Suite 208
Santa Rosa, CA 95403

Project Name: **Thyme Square** **01209013.00**

Lab Project: **9042301**

This 9 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini

Mark A. Valentini, Ph.D.
Laboratory Director

P.O. Box 750336
Petaluma, CA 94975-0336
Telephone: (707) 769-3128

110 Liberty Street
Petaluma, CA 94952

MTBE by GC/MS in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-03	**TW-03@W**	Methyl tert-Butyl Ether (MTBE)	ND	1.0

Surrogates	Result (µg/L)	% Recovery	Acceptance Range (%)
Dibromofluoromethane	18.5	93	70-130
Toluene-d8	19.6	98	70-130
4-Bromofluorobenzene	18.6	93	70-130

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005762
Date Received:	04/22/09	Method:	EPA 8260B	

TPH Diesel & Motor Oil in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-01	**TW-01@W**	Diesel	ND	50
		Motor Oil	ND	200

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005804
Date Received:	04/22/09	Method:	EPA 8015 Silica Gel	

TPH Diesel & Motor Oil in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-02	**TW-02@W**	Diesel	ND	50
		Motor Oil	ND	200

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005804
Date Received:	04/22/09	Method:	EPA 8015 Silica Gel	

TPH Diesel & Motor Oil in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-03	**TW-03@W**	Diesel	ND	50
		Motor Oil	ND	200

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005804
Date Received:	04/22/09	Method:	EPA 8015 Silica Gel	

TPH Diesel & Motor Oil in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-04	**TW-04@W**	Diesel	ND	50
		Motor Oil	ND	200

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005804
Date Received:	04/22/09	Method:	EPA 8015 Silica Gel	

TPH Diesel & Motor Oil in Water

Lab#	Sample ID	Compound Name	Result (µg/L)	RDL (µg/L)
9042301-05	**TW-05@W**	Diesel	ND	50
		Motor Oil	ND	200

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005804
Date Received:	04/22/09	Method:	EPA 8015 Silica Gel	

Dissolved Metals in Water

Lab#	Sample ID	Compound Name	Result (mg/L)	RDL (mg/L)
9042301-01	**TW-01@W**	Cadmium (Cd)	ND	0.010
		Chromium (Cr)	ND	0.010
		Lead (Pb)	ND	0.050
		Nickel (Ni)	ND	0.050
		Zinc (Zn)	ND	0.050

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005800
Date Received:	04/22/09	Method:	EPA 6010B	

Dissolved Metals in Water

Lab#	Sample ID	Compound Name	Result (mg/L)	RDL (mg/L)
9042301-02	**TW-02@W**	Cadmium (Cd)	ND	0.010
		Chromium (Cr)	ND	0.010
		Lead (Pb)	ND	0.050
		Nickel (Ni)	ND	0.050
		Zinc (Zn)	ND	0.050

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005800
Date Received:	04/22/09	Method:	EPA 6010B	

Dissolved Metals in Water

Lab#	Sample ID	Compound Name	Result (mg/L)	RDL (mg/L)
9042301-03	**TW-03@W**	Cadmium (Cd)	ND	0.010
		Chromium (Cr)	ND	0.010
		Lead (Pb)	ND	0.050
		Nickel (Ni)	ND	0.050
		Zinc (Zn)	ND	0.050

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005800
Date Received:	04/22/09	Method:	EPA 6010B	

Dissolved Metals in Water

Lab#	Sample ID	Compound Name	Result (mg/L)	RDL (mg/L)
9042301-04	**TW-04@W**	Cadmium (Cd)	ND	0.010
		Chromium (Cr)	ND	0.010
		Lead (Pb)	ND	0.050
		Nickel (Ni)	ND	0.050
		Zinc (Zn)	ND	0.050

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005800
Date Received:	04/22/09	Method:	EPA 6010B	

Dissolved Metals in Water

Lab#	Sample ID	Compound Name	Result (mg/L)	RDL (mg/L)
9042301-05	**TW-05@W**	Cadmium (Cd)	ND	0.010
		Chromium (Cr)	ND	0.010
		Lead (Pb)	ND	0.050
		Nickel (Ni)	ND	0.050
		Zinc (Zn)	ND	0.050

Date Sampled:	04/22/09	Date Analyzed:	04/23/09	QC Batch: B005800
Date Received:	04/22/09	Method:	EPA 6010B	

Quality Assurance Report

MTBE by GC/MS in Water

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B005762 - EPA 5030 GC/MS										
Blank (B005762-BLK1)				Prepared: 04/10/09 Analyzed: 04/23/09						
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Surrogate: Dibromofluoromethane	*22.1*		*µg/L*	*20.0*		*111*	*70-130*			
Surrogate: Toluene-d8	*21.6*		*µg/L*	*20.0*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*20.9*		*µg/L*	*20.0*		*105*	*70-130*			
Matrix Spike (B005762-MS1)		**Source: 9041012-07**		Prepared: 04/10/09 Analyzed: 04/23/09						
1,1-Dichloroethene (1,1-DCE)	20.4	1.0	µg/L	25.0	ND	82	70-130			
Benzene	21.4	1.0	µg/L	25.0	ND	85	70-130			
Trichloroethene (TCE)	20.7	1.0	µg/L	25.0	ND	83	70-130			
Toluene	21.3	1.0	µg/L	25.0	ND	85	70-130			
Chlorobenzene	20.6	1.0	µg/L	25.0	ND	83	70-130			
Surrogate: Dibromofluoromethane	*18.9*		*µg/L*	*20.0*		*94*	*70-130*			
Surrogate: Toluene-d8	*20.0*		*µg/L*	*20.0*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*19.0*		*µg/L*	*20.0*		*95*	*70-130*			
Matrix Spike Dup (B005762-MSD1)		**Source: 9041012-07**		Prepared: 04/10/09 Analyzed: 04/23/09						
1,1-Dichloroethene (1,1-DCE)	20.3	1.0	µg/L	25.0	ND	81	70-130	0.3	20	
Benzene	22.1	1.0	µg/L	25.0	ND	89	70-130	4	20	
Trichloroethene (TCE)	21.7	1.0	µg/L	25.0	ND	87	70-130	4	20	
Toluene	20.7	1.0	µg/L	25.0	ND	83	70-130	2	20	
Chlorobenzene	20.4	1.0	µg/L	25.0	ND	82	70-130	0.9	20	
Surrogate: Dibromofluoromethane	*19.4*		*µg/L*	*20.0*		*97*	*70-130*			
Surrogate: Toluene-d8	*19.8*		*µg/L*	*20.0*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*18.9*		*µg/L*	*20.0*		*95*	*70-130*			

TPH Diesel & Motor Oil in Water

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B005804 - EPA 3510C										
Blank (B005804-BLK1)				Prepared & Analyzed: 04/23/09						
Diesel	ND	50	µg/L							
Motor Oil	ND	200	µg/L							
LCS (B005804-BS1)				Prepared & Analyzed: 04/23/09						
Diesel	2650	50	µg/L	2490		107	65-135			
LCS Dup (B005804-BSD1)				Prepared & Analyzed: 04/23/09						
Diesel	3000	50	µg/L	2490		121	65-135	12	30	

Dissolved Metals in Water

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B005800 - EPA 3010A										
Blank (B005800-BLK1)				Prepared: 04/22/09 Analyzed: 04/23/09						
Cadmium (Cd)	ND	0.010	mg/L							
Chromium (Cr)	ND	0.010	mg/L							
Lead (Pb)	ND	0.050	mg/L							
Nickel (Ni)	ND	0.050	mg/L							
Zinc (Zn)	ND	0.050	mg/L							
Matrix Spike (B005800-MS1)		**Source: 9042119-01**		Prepared: 04/22/09 Analyzed: 04/23/09						
Cadmium (Cd)	0.507	0.010	mg/L	0.500	ND	101	70-130			
Chromium (Cr)	0.532	0.010	mg/L	0.500	ND	106	70-130			
Lead (Pb)	0.512	0.050	mg/L	0.500	ND	102	70-130			
Nickel (Ni)	0.500	0.050	mg/L	0.500	ND	100	70-130			
Zinc (Zn)	0.532	0.050	mg/L	0.500	ND	106	70-130			
Matrix Spike Dup (B005800-MSD1)		**Source: 9042119-01**		Prepared: 04/22/09 Analyzed: 04/23/09						
Cadmium (Cd)	0.534	0.010	mg/L	0.500	ND	107	70-130	5	20	
Chromium (Cr)	0.485	0.010	mg/L	0.500	ND	97	70-130	9	20	
Lead (Pb)	0.467	0.050	mg/L	0.500	ND	93	70-130	9	20	
Nickel (Ni)	0.451	0.050	mg/L	0.500	ND	90	70-130	10	20	
Zinc (Zn)	0.559	0.050	mg/L	0.500	ND	112	70-130	5	20	

Notes and Definitions

RDL	Reporting Detection Limit
ND	Analyte NOT DETECTED at or above the reporting detection limit (RDL)
RPD	Relative Percent Difference
NR	Not Reported

P.O. Box 750336
Petaluma, CA 94975-0336
Telephone: (707) 769-3128

Analytical Sciences
P.O. Box 750336, Petaluma, CA 94975-0336
110 Liberty Street, Petaluma, CA 94952
(707) 769-3128

CHAIN OF CUSTODY

LAB PROJECT NUMBER: 9042301

SCS ENGINEERS PROJECT NAME: Thyme Square

SCS ENGINEERS PROJECT NUMBER: 01209013.00

CLIENT INFORMATION		BILLING INFORMATION	
COMPANY NAME:	SCS ENGINEERS	CONTACT:	Stephen Knuttel
ADDRESS:	3843 BRICKWAY BLVD. SUITE 208	COMPANY NAME:	SCS Engineers
	SANTA ROSA, CA 95403	ADDRESS:	3843 Brickway Blvd., Suite 208
CONTACT:	Stephen Knuttel		Santa Rosa, CA 95403
PHONE #:	(707) 546-9461	PHONE #:	(707) 546-9461
FAX #:	(707) 544-5769	FAX #:	(707) 544-5769

TURNAROUND TIME (CHECK ONE)

MOBILE LAB _____
SAME DAY _____ 24 HOURS _____
48 HOURS X 72 HOURS _____
5 DAYS _____ NORMAL

GEOTRACKER EDF: __ Y __ N
GLOBAL ID: _____

COOLER TEMPERATUR
ICED · °C

COC

PAGE 1 OF 1

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	ANALYSIS: MTBE EPA 8260B	ANALYSIS: TPH-dmo EPA 8015M (w/ silica gel)	ANALYSIS: LUFT METALS EPA Method 6010 (Fix & Filter)	COMMENTS	LAB SAMPLE #
1	TW-01 @ W	4/22/09	1130	LIQ	4	Y/N		X	X	9042301	01
2	TW-02 @ W	4/22/09	225	LIQ	4	Y/N		X	X		02
3	TW-03 @ W	4/22/09	410	LIQ	6	Y/N	X	X	X		03
4	TW-04 @ W	4/22/09	140	LIQ	4	Y/N		X	X		04
5	TW-05 @ W	4/22/09	1200	LIQ	4	Y/N		X	X		05
6											
7											
8											
9											
10											
11											

SIGNATURES

RELINQUISHED BY: _____ DATE: 4-22-09 TIME: 1615
RECEIVEDED BY: S _____ DATE: 4-22-09 TIME: 1615
RELINQUISHED BY: S _____ DATE: 4-22-09 TIME: 1750
RECEIVEDED BY: _____ DATE: _____ TIME: _____

RECEIVED BY LABORATORY: _____ 4/22/09 1750 MRV
SIGNATURE DATE TIME

110 Liberty Street
Petaluma, CA 94952

F.4 - Peer Review of Report of Subsurface Investigation

Environmental Assessment Specialists, Inc.

71 San Marino Avenue Ventura CA 93003
Office (818) 898-4866 Fax (805) 650-8054 www.easenv.com

August 26, 2019

Attention: Mr. Spencer Pignotti
Environmental Services Analyst
FirstCarbon Solutions

Subject: Peer Review of Report of Subsurface Investigation dated April 29, 2009.
337 South Cloverdale Boulevard, Cloverdale, California

Environmental Assessment Specialists, Inc. (EAS) is pleased to submit this peer review of the Report of Subsurface Investigation prepared by SCS Engineers (SCS) on April 29, 2009 for the property referred to as "*Former Desert Petroleum, Inc.*"

Based on the review described herein, EAS concludes that as of April 2009 groundwater within the subject site was not affected by metals normally associated with Underground Storage Tanks (USTs). The data suggest that groundwater at the subject site may be confined. SCS did not collect soil samples. Based on a previous Kleinfelder investigation, the concentrations of Chromium and Nickel in soil may be hazardous. In contradiction to the Kleinfelder report, SCS did not observe Petroleum Hydrocarbon Staining in soil and the Petroleum Hydrocarbons were not detected in the groundwater samples collected by SCS

Background

According to the SCS report, in 2009 the site was undeveloped. A review of Google maps indicated that the site remains undeveloped in 2019. Three (3) 10,000 gallons USTs were installed in 1952, and a service station commenced operations in 1953. The report indicates that in February 1985 "*300 gallons of diesel fuel had leaked from the USTs fill port.*"

The SCS report summarizes "*previous investigations and remedial action from former reports by Pacific Northwest Environet Group, Inc.,*" such as the installation and monitoring of at least seven (7) groundwater monitoring wells. These wells were installed in 1986 and 1991. Unfortunately, the figures provided by SCS do not show the locations of the wells, and the Geotracker online database maintained by the California Regional Water Quality Control Boards does not have documents pertaining to the subject site.

The USTs were removed on July 10, 1994. In July 1996 a total of 25 borings were advanced to determine the boundaries of the contamination that was encountered during the UST removal. Petroleum hydrocarbons were detected in soil and grab groundwater samples collected at downgradient locations of the "*former USTs, pump islands, and associated piping. The groundwater gradient was determined to be southeast.*"

The former UST location was over excavated in 1998. Total Petroleum Hydrocarbons as gasoline (TPH-g) and Extractable Petroleum Hydrocarbons as Diesel Fuel (TPH-d) were detected in confirmations samples collected from the bottom and sides of the excavation. The bottom of the excavation was treated with an oxygen release compound, but TPH-d contamination remained in the water that accumulated in the excavation. Except for "*elevated*" concentrations of Boron, "*no other elevated metals were detected*."

The Sonoma County Department of Health Services (SCDHS) "*recommended Case Closure on October 11, 2011*." "*On February 10, 2009, Kleinfelder advanced seven soil borings using Geoprobe direct push technology and soil and groundwater grab samples were collected*." The Final Phase II Environmental Site Assessment Kleinfelder report dated April 3, 2009 was already reviewed by EAS on May 31, 2019.

According to the SCS review of the Kleinfelder report, "*elevated metals, TPH-d, and TPH-mo were detected in these grab groundwater samples. Kleinfelder had determined that the elevated metals detected in the grab groundwater could be the result of the leaching of the metals from suspended sediment or of metals from particulate material itself. Kleinfelder recommended that the Site groundwater be resampled and analyzed for dissolved metal concentrations to eliminate the possibility that metals were derived by leaching from suspended sediments.*" TPH-mo refers to Extractable Petroleum Hydrocarbons as Motor Oil.

SCS conducted the site assessment described herein as a follow up groundwater investigation to implement the Kleinfelder recommendations. SCS decided "*that no additional soil analysis was warranted.*" As discussed below, EAS completely disagrees with this decision based on the analytical data collected by Kleinfelder 41 days earlier.

Report Review

On March 22, 2009 five (5) borings were advanced to collect groundwater samples at the subject property. The boring locations were shown by SCS on Figure 2 of their report, but they are not clearly seen in the version provided to EAS. Fortunately, SCS described the locations of their borings TW-1 through TW-5 using the locations of the borings previously advanced by Kleinfelder. Thus, this report review uses the site map previously prepared by Kleinfelder (Plate 1).

SCS installed temporary groundwater monitoring wells, which apparently remained in place until May 8, 2009, when they were scheduled to be removed. Since the well abandonment operations were conducted after the report was prepared, it is assumed that the procedures were approved and supervised by SCDHS. It is unknown if the wells were completed at ground surface with locked caps to prevent tampering during the period that the wells remained on site.

According to the SCS report, soil cuttings "*were placed on and covered with plastic, pending disposal. Water generated by decontamination, and sampling was stored at the Site in 55 gallon United Nations/Department of Transportation (UN/DOT) approved drums, pending disposal. The drummed water will be used as dust control on site, based on the results of the investigation.*" There is no record of the ultimate disposal of the soil cuttings or waste water.

The SCS boring logs are dated "4/22/09" instead of "3/22/09." The start time of the drilling of each boring was noted, but not the end time. As described below, there are wide differences in the soil descriptions and depths to groundwater provided by SCS and Kleinfelder:

- SCS boring TW-1 corresponds to Kleinfelder boring B-2. In general, SCS classified the soils as silt and gravelly silt, while Kleinfelder described them as lean clay, poorly graded sand, and clayey sand. The groundwater depths measured by SCS and Kleinfelder at these boring locations were rather similar at 7 and 7.5 feet below ground surface (bgs), respectively.
- SCS boring TW-2 corresponds to Kleinfelder boring B-1. The Petroleum Hydrocarbon Staining observed by Kleinfelder in boring B-1 was not noted by SCS in boring TW-2. SCS measured groundwater at a depth of approximately 6.5 feet bgs, while the depth measured by Kleinfelder was 8 feet bgs.
- SCS boring TW-3 was placed "*in the approximate center of Kleinfelder's B-5, B-7, and B-6 locations.*" The gray and black Petroleum Hydrocarbon Staining observed by Kleinfelder in those three (3) borings was not noted by SCE in boring TW-3. While depth to groundwater in Kleinfelder borings B-5 and B-6 were 6.5 and 7 feet bgs, respectively, SCE measured groundwater at a depth of approximately 14 feet bgs. Kleinfelder did not find groundwater in boring B-7.

Plate 1 of the Kleinfelder Phase II ESA report.

- SCS boring TW-4 corresponds to Kleinfelder boring B-4. SCS did not observe the greenish gray staining mentioned by Kleinfelder. At these boring locations the SCS and Kleinfelder groundwater depth measurements were approximately 6.5 and 12 feet bgs, respectively.
- SCS boring TW-5 corresponds to Kleinfelder boring B-3. SCS measured groundwater at a depth of approximately 5 feet bgs, while the depth measured by Kleinfelder was 9.5 feet bgs.

Kleinfelder stopped advancing the borings within a few feet after encountering groundwater. It is not clear why SCS continued drilling between five (5) and almost nine (9) feet deeper than the first encountered depth to groundwater, especially since soil samples were not collected. The temporary groundwater well construction details are included in the purge records. These records indicate that groundwater may be confined, as the static water levels in the wells were shallower than the depth to first-encountered groundwater mentioned in the boring logs.

The well installed at location TW-2 went dry repeatedly during the purging process. There were no groundwater recovery issues at the other four (4) sampling locations. The lithology described by SCS at location TW-2 is similar to the other four (4) locations. There is a discrepancy with the sampling time of well TW-2: It is listed as 15:25 hours in the purging records, but the time appears as 2:25 in the laboratory chain-of-custody form.

A Photo-Ionization Detector (PID) is an instrument commonly used to determine the presence of Volatile Organic Compounds (VOCs). A PID was not used in the SCS investigation, even though petroleum hydrocarbon odors were associated with the Petroleum Hydrocarbon Staining that Kleinfelder identified previously. It is worth mentioning that a PID was not used by Kleinfelder either.

It is unclear why TPH-d and TPH-mo were detected in the groundwater samples collected by Kleinfelder from borings B-2 and B-3, but Petroleum Hydrocarbons were not detected in the groundwater samples collected by SCS from the corresponding borings TW-1 and TW-5.

There is no evidence that a Health and Safety Plan was prepared for this project. The upgradient locations TW-1 and TW-5 were the first to be sampled, which is always a good procedure to reduce the possibility of cross-contamination.

EAS disagrees with the SCS decision to not collect soil samples, for the following reasons:

- Petroleum Hydrocarbon soil staining and Petroleum Hydrocarbon odors were previously observed by Kleinfelder in several borings.
- The concentrations of Chromium and Nickel in the soil samples collected by Kleinfelder were higher than 50 parts-per-million (ppm), which suggests that soils could be hazardous for those metals.

Conclusions

The Kleinfelder and SCS investigations were conducted within 41 days of each other, and four (4) of the SCS borings were placed within roughly the same locations as the Kleinfelder borings. The difference in groundwater depths measured by both consultants is drastically different in borings TW-4/B-4, TW-5/B-3, and TW-3/B-5, B-6. Depth to groundwater may be affected by the clay that was described in most of the borings by both consultants. It is likely that the aquifer is confined. It is not clear why the aquifer went dry during the purging operations conducted in boring TW-2.

Metals were detected by the laboratory in the unfiltered groundwater samples collected by Kleinfelder in February 2009. The SCS groundwater samples collected in April 2009 were filtered prior to analysis, and the laboratory did not find metals dissolved in groundwater. The Kleinfelder and SCS investigations only

analyzed groundwater for five (5) metals normally associated with UST spills and leaks. The analytical data indicates that as of 2009 these metals had not affected groundwater.

High concentrations of Chromium and Nickel were present in the soil samples collected by Kleinfelder. EAS suggests that SCS should have collected soil samples to determine if the previously reported concentrations could have been hazardous.

We appreciate your selection of EAS for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,

Rodrigo Proust
Registered Geologist