P & D ENVIRONMENTAL
A Division of Paul H. King, Inc.
4020 Panama Court
Oakland, CA 94611
(510) 658-6916

February 29, 2000
Report 0221.R1

Mr. Wilson Chiu
Ms. Meranda Chang
441 Ralston Street
San Francisco, CA 94132

SUBJECT: SUBSURFACE INVESTIGATION REPORT
Former Cottage Bakery Site
2497-2507 Grove Way
Castro Valley, CA

Dear Mr. Chiu and Ms. Chang:

P&D Environmental, a division of Paul H. King, Inc. (P&D) is pleased to present this report documenting the drilling of twelve exploratory borings, designated B1 through B12, and the additional drilling of two exploratory borings, designated B13 and B14, at the subject site. All of the borings were drilled for the collection of soil and groundwater grab samples in the vicinity of the subject site. This work was performed on December 9 and 10, 1999, and February 14, 2000, in accordance with P&D's Subsurface Investigation Work Plans (Work Plans 0221.W1 and 0221.W2, dated November 18, 1999 and February 7, 2000, respectively). A Site Location Map (Figure 1) and a Site Plan (Figure 2) showing the boring locations are attached with this report.

All work was performed under the direct supervision of an appropriately registered professional. This report is prepared in accordance with guidelines set forth in the document "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" dated August 10, 1990 and "Appendix A - Workplan for Initial Subsurface Investigation" dated August 20, 1991.

BACKGROUND

Based upon site history summaries prepared by others, it is P&D's understanding that from 1955 to 1985, the subject site was occupied by Cottage Bakery. Records indicate that one 10,000 gallon capacity underground storage tank (UST) was installed at the site in 1955. The property was acquired by Cliff Sherwood and subsequently subdivided. Records show that the UST was removed in 1986. Eventually, the western portion of the property was purchased by Tony Marquez, and the eastern portion of the property was purchased by Mr. Wilson Chiu and Ms. Meranda Chang. Review of maps for the site indicate that the UST and dispenser were located in the immediate vicinity of the new property line, with the UST located on the western portion and the dispenser located on the eastern portion.

The eastern portion of the property where boreholes B3, B6, B9, B12, B13 and B14 were drilled is approximately one foot higher in elevation than the adjacent property to the west where the remaining boreholes were drilled.

FIELD ACTIVITIES

On December 9 and 10, 1999, P&D personnel oversaw the drilling of twelve boreholes at the subject site, designated as borings B1 through B12. Each boring was drilled to a depth of between 25.5 and 26.5 feet below grade by Vironex, Inc. of Hayward, California. The boreholes were all drilled and soil and groundwater grab samples were collected from the boreholes using Geoprobe push technology. A total of twelve soil samples and twelve groundwater grab samples were collected from the boreholes and analyzed. Following sample collection, the boreholes were backfilled with neat cement grout by Vironex. The locations of boreholes B1 through B12 are shown in the attached Site Plan, Figure 2.

Based on the sample results obtained from boreholes B1 through B12, P&D personnel returned to the site on February 14, 2000 and oversaw the drilling of two additional boreholes, designated as B13 and B14. The two borings were each drilled to a total depth of 26 feet below grade by Vironex using Geoprobe push technology. A total of two soil samples and two groundwater grab samples were collected from the boreholes and analyzed. Following sample collection, the boreholes were backfilled with neat cement grout by Vironex. The locations of boreholes B13 and B14 are shown in the attached Site Plan, Figure 2.

Prior to performing each set of field work, permits were obtained from the Alameda County Department of Public Works (ACDPW), notification was provided to the Alameda County Department of Environmental Health (ACDEH) of the scheduled field date, Underground Safety Alert was notified for buried utility location, and a site health and safety plan was prepared.

Soil Boring

The boreholes were drilled using truck-mounted 1.5-inch outside diameter Geoprobe push technology. Soil samples were collected from the boreholes at five-foot intervals to the total depth explored of 25.5 feet in boreholes B1, B2, B4, B5, B7, B8, B10, and B11, the total depth explored of 26.0 feet in boreholes B13 and B14, and to the total depth explored of 26.5 feet in boreholes B3, B6, B9, and B12. Groundwater was encountered in boreholes B1, B2, B4, B5, B7, B8, B10, and B11 at a depth of approximately 19 feet below grade, in boreholes B3, B6, B9, B12, and B13 at a depth of approximately 20 feet below grade, and in borehole B14 at approximately 22 feet below grade. It is important to note that boreholes B3, B6, B9, B12, B13, and B14 were all drilled on the eastern property, which is approximately one foot in elevation higher than the adjacent property to the west where the remaining boreholes were drilled. Copies of the boring logs for all of the boreholes are attached with this report.

The drilling and soil sample collection equipment were cleaned with an Alconox solution wash followed by a clean water rinse prior to each use. Excess soil samples from the boreholes were placed into a DOT-approved 55-gallon drum at the subject site, and water generated during drilling activities was placed into a separate DOT-approved 55-gallon drum and stored onsite pending appropriate disposal.

Soil and Groundwater Grab Sample Collection

Soil samples were collected from the boreholes at five foot intervals using a Geoprobe core sampler lined with cellulose acetate tubes. The soil samples were classified lithologically in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. Subsurface conditions observed in the soil samples were recorded on boring logs. In addition, the soil samples were evaluated in the field using a Model 580B OVM Photoionization Detector (PID) equipped with a 10.0 eV bulb and calibrated against a 100 ppm isobutylene standard.

Organic vapors were not detected with the PID in any of the soil samples with the exception of borehole B6 at a depth of 15.5 feet below grade, where a PID value of 20 ppm was detected. A strong odor of petroleum hydrocarbons was noted from this sample. In addition, the soil in borehole B5 at a depth of 15.5 feet was noted to have a mild petroleum hydrocarbon odor (possibly of old gasoline) and noted to be green in color, though no organic vapors were detected with the PID. Petroleum hydrocarbon odors were also noted from the soil in borehole B13 between the depths of 14 and approximately 17.5 feet below grade. No organic vapors were detected with the PID from this borehole. No detectable concentrations of organic vapors were detected with the PID, and no odors, staining, discoloration, or other evidence of petroleum hydrocarbons were detected in the soil or groundwater samples from any of the other boreholes.

The soil samples which were collected at a depth of approximately 16.0 feet (in boreholes B3, B6, B9, and B12) and 15.0 feet (the remaining boreholes) were retained in their cellulose acetate tubes for laboratory analysis in the following manner. The soil samples were designated samples B1-15.0, B2-15.0, B3-16.0, B4-15.0, B5-15.0, B6-16.0, B7-15.0, B8-15.0, B9-16.0, B10-15.0, B11-15.0, B12-16.0, B13-15.0, and B14-15.0. After collection of the sample into the acetate tube in the Geoprobe soil sampler, the ends of the acetate tubes were wrapped with Teflon sheets, covered with plastic endcaps, labeled, and placed into ziplock baggies. The capped tubes were then placed into a cooler with ice, pending delivery to McCampbell Analytical Laboratory in Pacheco, California. McCampbell Analytical Laboratory is a state-certified hazardous waste testing laboratory. Chain of custody procedures were followed for all sample handling.

One groundwater grab sample was collected from each borehole using a stainless steel bailer. The samples were designated samples B1-Water, B2-Water, B3-Water, B4-Water, B5-Water, B6-Water, B7-Water, B8-Water, B9-Water, B10-Water, B11-Water, B12-Water, B13-Water, and B14-Water. The water in the bailer was transferred to 40-milliliter VOA vials and one-Liter amber bottles, which were sealed with Teflon-lined caps. The VOAs were overturned and tapped to ensure that air bubbles were not present. The VOAs and amber bottles were labeled, the VOAs were placed in a ziplock baggie, and then placed into a cooler with ice pending delivery to McCampbell Analytical Laboratory in Pacheco, California. Chain of custody procedures were followed for all sample handling.

GEOLOGY AND HYDROGEOLOGY

Based on review of regional geologic maps from U.S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E.J. Helley and K.R. Lajoie, 1979 the subject site is underlain by Late Pleistocene alluvium (Qpa). The alluvium is described as typically consisting of weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand and gravel and is considered to overlie bedrock on the alluvial plain marginal to San Francisco Bay. A creek is located immediately to the southwest of the site.

The subsurface materials encountered in the boreholes drilled on December 9 and 10, 1999 consisted primarily of light brown, brown, or dark brown sandy or clayey silt, sand, silty or clayey sand, and silty or sandy clay. A predominantly clayey sand or sandy layer was encountered between the depths of approximately 22 to 25 feet. Soil moisture varied from moist to saturated, and soil density varied from loose to hard.

The subsurface materials encountered in the boreholes drilled on February 14, 2000 consisted primarily of light brown, orange-brown, gray-brown, brown, and dark brown clayey or sandy silt, silt, clayey sand, sand, sandy clay, and clay. Soil moisture varied from dry to saturated, and soil density varied from loose to dense.

On December 9 and 10, 1000, groundwater was encountered in boreholes B1, B2, B4, B5, B7, B8, B10, and B11 at a depth of approximately 19 feet below grade, and in boreholes B3, B6, B9, and B12 at a depth of approximately 20 feet below grade. On February 14, 2000, groundwater was encountered in boreholes B13 and B14 at depths of approximately 20 and 22 feet below grade, respectively. The groundwater flow direction at the subject site is not known, but is suspected to be toward the creek to the southwest of the site.

LABORATORY ANALYTICAL RESULTS

The soil and groundwater grab samples from boreholes B1 through B14 were analyzed for the following constituents: Total Petroleum Hydrocarbons as Gasoline (TPH-G) using EPA Method 5030 and Modified EPA Method 8015; Total Petroleum

Hydrocarbons as Diesel (TPH-D) using Modified EPA Method 8015 and EPA Methods 3550 or 3510; and for methyl tert-butyl ether (MTBE) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Methods 5030 and 8020. Additionally, at the request of Ms. Evelyn Hubel of Public Storage, Inc., soil and groundwater grab samples from boreholes B13 and B14 were also analyzed for lead by EPA Method 6010.

The laboratory analytical results of the soil samples collected from boreholes B1 through B14 did not show any detectable concentrations of any of the analytes except for boreholes B6, B13 and B14. MTBE was not detected in any of the samples. In sample B6-16.0, TPH-G was detected at a concentration of 1000 ppm, TPH-D was detected at a concentration of 190 ppm, and benzene was detected at a concentration of 4.9 ppm. Review of the laboratory analytical report indicates that gasoline-range compounds are significant in the TPH-D result for this sample.

In sample B13-15.0, TPH-G was detected at a concentration of 42 ppm; TPH-D was detected at a concentration of 14 ppm; and benzene was detected at a concentration of 0.053 ppm. In sample B14-15.0 only benzene and xylenes were detected at concentrations of 0.041 and 0.013 ppm, respectively. Lead was detected in samples B13-15.0 and B14-15.0 at concentrations of 6.1 and 6.9 ppm, respectively. The laboratory results for the soil samples from boreholes B1 through B14 are summarized in Table 1.

The laboratory analytical results of the groundwater grab samples collected from boreholes B1 through B14 show that TPH-G and BTEX were not detected with the exception of boreholes B3, B5, B6, B13, and B14. TPH-G was detected at concentrations of 0.056, 0.08, 120, 2.2, and 0.078 ppm, respectively. Benzene was detected in boreholes B6, B13 and B14 at concentrations of 6, 0.0092, and 0.0063 ppm, respectively. MTBE was not detected in any of the boreholes.

TPH-D was detected in all of the boreholes except for boreholes B4, B9, B11, B12 and B14. TPH-D concentrations ranged from 0.053 to 0.83 ppm with the exception of borehole B6, where TPH-D was detected at a concentration of 88 ppm. Review of the laboratory analytical reports shows that the laboratory identified the TPH-D results as oil-range compounds for all of the samples except for the sample from borehole B6, where the laboratory identified the results as gasoline-range compounds. Based upon discussions with the laboratory, the detected TPH-D results are considered to be a possible artifact of the sediment in the water samples with the exception of the results for sample B6, which are gasoline-range compounds. The laboratory analytical results for the groundwater grab samples are summarized in Table 2.

Copies of the laboratory analytical reports and chain of custody documentation for the soil and groundwater grab samples are attached with this report.

DISCUSSION AND RECOMMENDATIONS

A total of 14 soil borings were drilled at the subject site to evaluate the extent of petroleum hydrocarbons in soil and groundwater in the vicinity of a former UST system. One soil sample and one groundwater grab sample were collected from each borehole. TPH-G, BTEX and TPH-D were detected in some of the boreholes. Although TPH-D was detected, review of the laboratory analytical results shows that the TPH-D results are either gasoline-range compounds or suspected to be an artifact of sediments in the water samples. MTBE was not detected in any of the samples. The lead detected in soil samples from boreholes B13 and B14 is considered to be at naturally occurring concentrations.

The subsurface materials at the site consist of predominantly silt, silty and clayey sand or sand. A predominantly clayey sand or sandy layer was

encountered between the depths of approximately 22 to 25 feet below grade. Groundwater is encountered at a depth of approximately 19 feet below grade. The groundwater flow direction at the site is unknown, but is assumed to be towards the creek located to the southwest of the site.

The highest concentrations of petroleum hydrocarbons were detected in borehole B6, where TPH-G and benzene were detected at concentrations of 120 and 6 ppm, respectively. The extent of petroleum hydrocarbons in groundwater appears to be defined with boreholes B3, B5, B9, B13 and B14, and appears to be limited to the immediate vicinity of borehole B6, with concentrations decreasing significantly in the direction of boreholes B13 and B14. Similarly, the extent of petroleum hydrocarbons exceeding concentrations of 100 ppm in soil at a depth of approximately 15 feet appears to be limited to the immediate vicinity of borehole B6.

Based on review of the sample results and discussions with the ACDEH, P&D recommends that a deed notification be attached to the property and that case closure be requested from the regulatory agencies, or that the detected petroleum hydrocarbons in soil and water be remediated using Oxygen Releasing Compound (ORC) and that case closure be requested from the regulatory agencies.

DISTRIBUTION

Copies of this report should be distributed to Mr. Scott Seery at the ACDEH, and to Mr. Chuck Headlee at the San Francisco Regional Water Quality Control Board. Copies of the report should be accompanied by a transmittal letter signed by one or both of the owners of the subject site.

LIMITATIONS

This report was prepared solely for the use of Mr. Wilson Chiu and Ms. Meranda Chang. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgement based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly-revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgement based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental

Paul H. King
Hydrogeologist

Don R. Braun
Certified Engineering Geologist
Registration No. : 1310
Expiration Date: 6/30/00

Attachments:
Tables 1 & 2
Site Location Map (Figure 1)
Site Plan (Figure 2)
Boring Logs
Laboratory Analytical Reports
Chain of Custody Documentation

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TABLE 1
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES
(Samples Collected on December 9 and 10, 1999, and February 14, 2000)

Sample No.	TPH-G	TPH-D	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
B1-15.0	ND	ND	ND	ND	ND	ND	ND
B2-15.0	ND	ND	ND	ND	ND	ND	ND
B3-16.0	ND	ND	ND	ND	ND	ND	ND
B4-15.0	ND	ND	ND	ND	ND	ND	ND
B5-15.0	ND	ND	ND	ND	ND	ND	ND
B6-16.0	1000	190*	ND	4.9	18	15	90
B7-15.0	ND	ND	ND	ND	ND	ND	ND
B8-15.0	ND	ND	ND	ND	ND	ND	ND
B9-16.0	ND	ND	ND	ND	ND	ND	ND
B10-15.0	ND	ND	ND	ND	ND	ND	ND
B11-15.0	ND	ND	ND	ND	ND	ND	ND
B12-16.0	ND	ND	ND	ND	ND	ND	ND
B13-15.0**	42	14	ND	0.053	0.48	0.38	2.7
B14-15.0**	ND	ND	ND	0.041	ND	ND	0.013

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-D = Total Petroleum Hydrocarbons as Diesel.
MTBE = Methyl tert-Butyl Ether.
ND = Not Detected.
* = Laboratory Analytical Report note: Gasoline range compounds are significant.
** = Samples B13-15.0 and B14-15.0 were also analyzed for lead using EPA Method 6010; results found lead at a concentration of 6.1 ppm in sample B13-15.0 and lead at 6.9 ppm in sample B14-15.0.
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUNDWATER GRAB SAMPLES *
(Samples Collected on December 9 and 10, 1999, and February 14, 2000)

Sample No.	TPH-G	TPH-D	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
B1-Water	ND	0.08***	ND	ND	ND	ND	ND
B2-Water	ND	0.12***	ND	ND	ND	ND	ND
B3-Water	0.056@	0.073***	ND	ND	ND	ND	ND
B4-Water	ND	ND	ND	ND	ND	ND	ND
B5-Water	0.080	0.16***	ND	ND	ND	ND	ND
B6-Water	120@@	88@@@	ND	6	22	4	21
B7-Water	ND	0.058***	ND	ND	ND	ND	ND
B8-Water	ND	0.16***	ND	ND	ND	ND	ND
B9-Water	ND	ND	ND	ND	ND	ND	ND
B10-Water	ND	0.068***	ND	ND	ND	ND	ND
B11-Water	ND	ND	ND	ND	ND	ND	ND
B12-Water	ND	ND	ND	ND	ND	ND	ND
B13-Water**	2.2	0.83	ND	0.0092	0.082	0.05	0.29
B14-Water**	0.078	ND	ND	0.0063	ND	0.0028	0.0050

* SAMPLES COLLECTED FROM GW ENCOUNTERED BETWEEN ~19-20' BG

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-D = Total Petroleum Hydrocarbons as Diesel.
MTBE = Methyl tert-Butyl Ether.
ND = Not Detected.
** = Samples B13-Water and B14-Water were also analyzed for lead using EPA Method 6010; lead was not detected in either sample.
*** = Laboratory Analytical Report note: Oil range compounds are significant.
@ = Laboratory Analytical Report note: No recognizable pattern.
@@ = Laboratory Analytical Report note: Lighter than water immiscible sheen is present.
@@@ = Laboratory Analytical Report note: Gasoline range compounds are significant.
Results are in parts per million (ppm), unless otherwise indicated.

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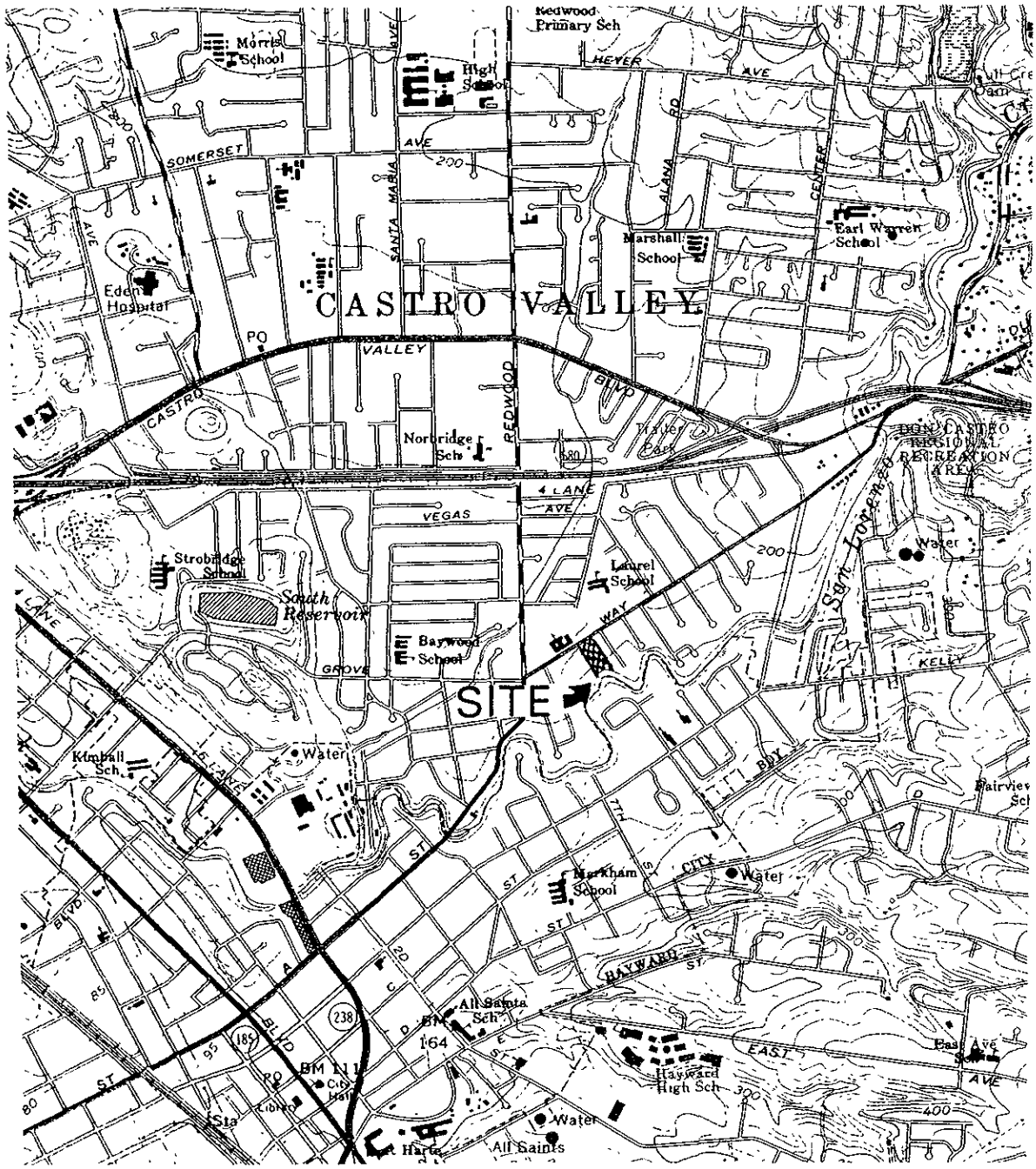

Base Map From:
U.S. Geological Survey
Hayward, Calif.
7.5 Minute Quadrangle
Photorevised 1980

Figure 1
SITE LOCATION MAP
Lands of Chiu and Chang
2497-2507 Grove Way
Castro Valley, California

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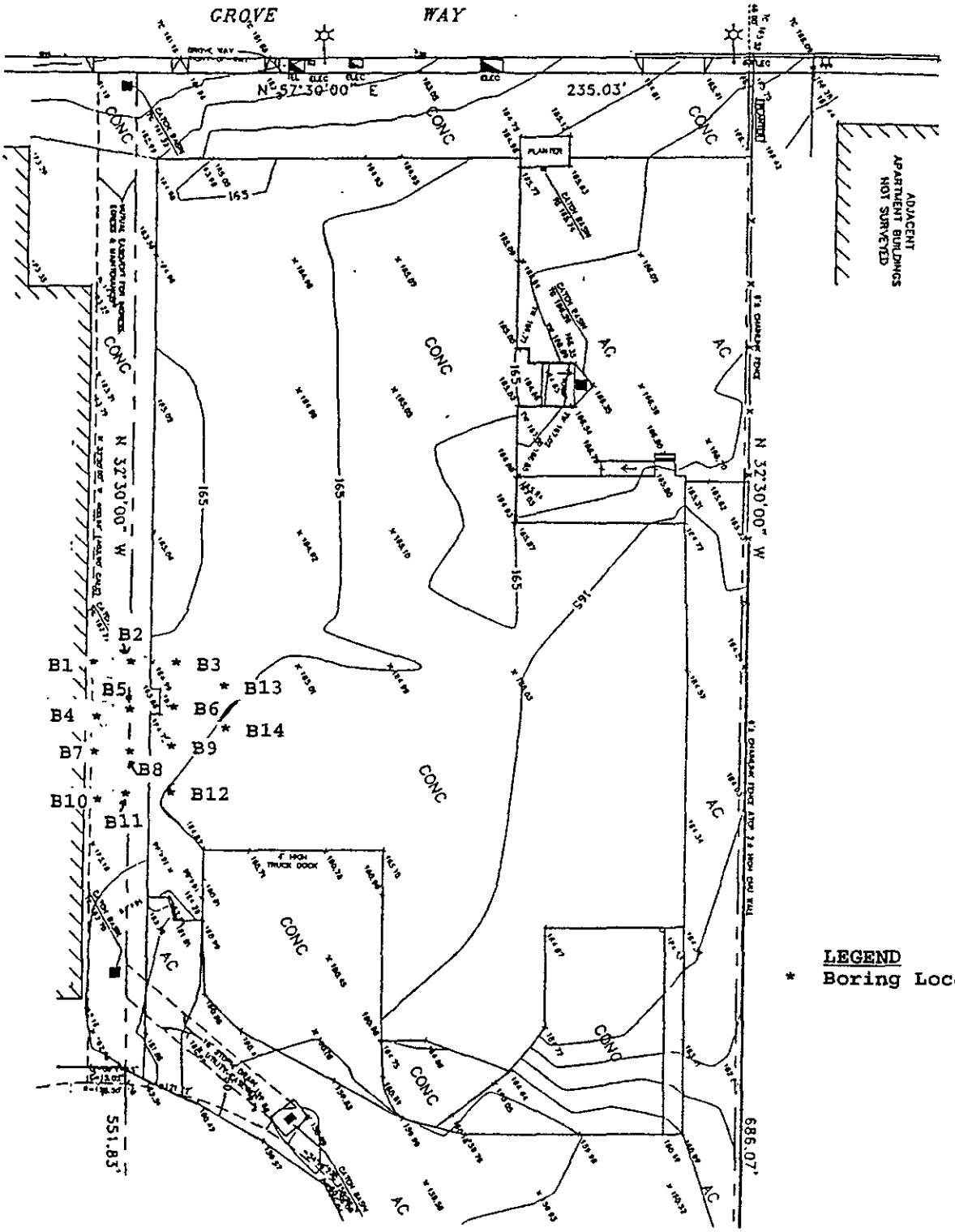

Base Map From:
Center Line Land Surveyors
Livermore, California
August, 1999 Land Title Survey

Scale in Feet

North

Figure 2
SITE PLAN
Lands of Chiu and Chang
2497-2507 Grove Way
Castro Valley, California

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BORING NO.: B1	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99 8:30 AM	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed.			
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15	Brown silty clay (CL), gray mottling, moist, hard, no PHC odor	CL			0	Soil sample collected, designated sample B1-15 0
20	Brown silty clay (CL), abundant fine sand, saturated, hard, no PHC odor	▽			0	19 feet = wet Groundwater grab sample collected, designated sample B1-Water
25	Brown clayey sand (SC), fine to coarse sand, gravel (up to 1/2" in diameter), saturated, dense, no PHC odor	SC			0	
						Borehole terminated at 25 5 feet below ground surface
30						

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BORING NO.: B2	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	8" concrete		No well constructed			
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15	Brown silty clay (CL), gray mottling, moist, hard, no PHC odor	CL			0	Soil sample collected, designated sample B2-15 0
		▽				19 feet = wet
20	Brown silty clay (CL), abundant fine sand, saturated, hard, no PHC odor				0	Groundwater grab sample collected, designated sample B2-Water
25	Brown clayey sand (SC), fine to coarse sand, gravel (up to 1/2" in diameter), saturated, dense, no PHC odor	SC			0	
						Borehole terminated at 25 5 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B3	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 26.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" concrete 6" fill 2" concrete		No well constructed			Sample intervals are one foot deeper because B3, B6, B9, and B12 are on a concrete pad which is approximately one foot higher than the adjacent driveway where the other borings are located
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15					0	Soil sample collected, designated sample B3-16 0.
20	Green fine sand (SW), loose, wet, no PHC odor	SW			0	20 feet = wet Groundwater grab sample collected, designated sample B3-Water
25	Brown silty clay (CL), hard, wet, no PHC odor	CL			0	
30						Borehole terminated at 26 5 feet below ground surface

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BORING NO.: B4	PROJECT NO.: 0221	PROJECT NAME. FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED. 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
0	3" concrete		No well constructed			
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15	Brown silty clay (CL), gray mottling, moist, hard, no PHC odor	CL			0	Soil sample collected, designated sample B4-15 0
20	Brown silty fine sand (SM), saturated hard, no PHC odor	▽ SM			0	19 feet = wet Groundwater grab sample collected, designated sample B4-Water
25	Brown clayey sand (SC), fine to coarse sand, gravel (up to 1/2" in diameter), saturated, dense, no PHC odor	SC			0	
30						Borehole terminated at 25 5 feet below ground surface

P & D ENVIRONMENTAL

BORING NO.: B5	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	8" concrete		No well constructed			
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15	Green silty clay (CL), gray mottling, moist, hard, mild PHC odor	CL			0	Soil sample collected, designated sample B5-15 0
20	Brown silty fine sand (SM), saturated, hard, no PHC odor	▽ SM			0	19 feet = wet Groundwater grab sample collected, designated sample B5-Water
25	Brown clayey sand (SC), fine to coarse sand, gravel (up to 1/2" in diameter), saturated, dense, no PHC odor	SC			0	
						Borehole terminated at 25 5 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B6	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 26.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" concrete 6" fill 2" concrete		No well constructed			Sample intervals are one foot deeper because B3, B6, B9, and B12 are on a concrete pad which is approximately one foot higher than the adjacent driveway where the other borings are located.
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10					0	
15	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diamemter), moist, dense, strong PHC odor.	SC			20	Soil sample collected, designated sample B6-16 0
20	Green fine sand (SW), loose, wet, no PHC odor	SW			0	20 feet = wet Groundwater grab sample collected, designated sample B6-Water Sample is noted as having a strong PHC odor
25	Brown silty fine sand (SM), loose, wet, no PHC odor	SM			0	
						Borehole terminated at 26 5 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B7	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/9/99	DATE & TIME FINISHED: 12/9/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed			
5	Brown clayey sand (SC), fine to coarse sand, minor gravel (1/4" in diameter), moist, dense, no Petroleum Hydrocarbon (PHC) odor	SC			0	
10	Brown sandy clay (CL), gray mottling, moist, hard, no PHC odor	CL			0	
15	Brown clayey sand (SC), fine sand gravel (up to 1/2" in diameter), saturated, dense, no PHC odor	SC			0	Soil sample collected, designated sample B7-15 0
20	Brown silty clay (CL), abundant fine sand, saturated, hard, no PHC odor	▽ CL			0	19 feet = wet Groundwater grab sample collected, designated sample B7-Water
25					0	Borehole terminated at 25 5 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B8	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/10/99 8 AM	DATE & TIME FINISHED: 12/10/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH. 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed			
5	Dark brown sandy clay (CL), fine to coarse sand, minor gravel (1/4" in diameter), moist, hard, no Petroleum Hydrocarbon (PHC) odor	CL			0	
10	Brown clayey sand (SC), fine to coarse sand, gravel (1 5" in diameter), moist, dense, no PHC odor	SC			0	
15	Light brown sandy silt (ML), very fine sand, moist, hard, no PHC odor	ML			0	Soil sample collected, designated sample B8-15 0
		▽				19 feet = wet
20	changing to saturated				0	Groundwater grab sample collected, designated sample B8-Water
25	Brown clayey sand (SC), fine to medium sand, minor coarse sand, saturated, loose, no PHC odor	SC			0	
						Borehole terminated at 25 5 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B9	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/10/99	DATE & TIME FINISHED: 12/10/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 26.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY.
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" concrete 6" fill 2" concrete		No well constructed			Sample intervals are one foot deeper because B3, B6, B9, and B12 are on a concrete pad which is approximately one foot higher than the adjacent driveway where the other borings are located
5	Brown sandy clay (CL), fine to coarse sand, gravel (1 5" in diameter), moist hard, no Petroleum Hydrocarbon (PHC) odor	CL			0	
10					0	
15					0	Soil sample collected, designated sample B9-16 0
20	Brown silty fine sand (SM), minor medium and coarse sand, moist, loose, no PHC odor	▽ SM			0	20 feet = wet
25	Brown clayey sand (SC), fine to coarse sand, gravel (1/4 to 1/2" in diameter), saturated, stiff, no PHC odor	SC			0	Groundwater grab sample collected, designated sample B9-Water
30						Borehole terminated at 26 5 feet below ground surface

P & D ENVIRONMENTAL

BORING NO.: B10	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION. SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY. VIRONEX	DRILLER· MIKE	DATE & TIME STARTED: 12/10/99	DATE & TIME FINISHED. 12/10/99
DRILLING EQUIPMENT: GEOPROBE 2''			
COMPLETION DEPTH· 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed			
5	Brown sandy clay (CL), fine to coarse sand, gravel (1" in diameter), moist, hard no Petroleum Hydrocarbon (PHC) odor	CL			0	
10					0	
15	Brown clayey silt (ML), minor fine sand, moist, hard, no PHC odor	ML			0	Soil sample collected, designated sample B10-15 0
20	Brown silty fine sand (SM), light brown mottling, wet to saturated, loose, no PHC odor	▽ SM			0	19 feet = wet. Groundwater grab sample collected, designated sample B10-Water
25	Brown fine sand (SP), minor silt, saturated, loose, no PHC odor	SP			0	
30						Borehole terminated at 25 5 feet below ground surface

P & D ENVIRONMENTAL

BORING NO.: B11	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/10/99	DATE & TIME FINISHED: 12/10/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 25.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed			
5	Brown sandy clay (CL), fine to coarse sand, moist, hard, no Petroleum Hydrocarbon (PHC) odor	CL			0	
10					0	
15	Brown clayey silt (ML), minor fine sand, moist, hard, no PHC odor	ML			0	Soil sample collected, designated sample B11-15 0
20	Brown silty fine sand (SM), light brown mottling, wet to saturated, loose, no PHC odor	▽ SM			0	19 feet = wet Groundwater grab sample collected, designated sample B11-Water
25	Brown fine sand (SP), minor silt, saturated, loose, no PHC odor	SP			0	
30						Borehole terminated at 25 5 feet below ground surface

P & D ENVIRONMENTAL

BORING NO.: B12	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: MIKE	DATE & TIME STARTED: 12/10/99	DATE & TIME FINISHED: 12/10/99
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 26.5 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: PHK	CHECKED BY:
FIRST WATER DEPTH: 19 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" concrete 6" fill 2" concrete		No well constructed			Sample intervals are one foot deeper because B3, B6, B9, and B12 are on a concrete pad which is approximately one foot higher than the adjacent driveway where the other borings are located.
5	Brown sandy clay (CL), fine to coarse sand, moist, hard, no Petroleum Hydrocarbon (PHC) odor	CL			0	
10					0	
15	Brown clayey silt (ML), fine sand, moist, hard, no PHC odor	ML			0	Soil sample collected, designated sample B12-16 0
20	Brown silty fine sand (SM), light brown mottling, wet to saturated, loose, no PHC odor	▽ SM			0	20 feet = wet
25	Brown fine sand (SP), minor faint gray mottling, minor silt, saturated, loose, no PHC odor	SP			0	Groundwater grab sample collected, designated sample B12-Water
30						Borehole terminated at 26 5 feet below ground surface

P & D ENVIRONMENTAL

BORING NO.: B13	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 2/14/00 9:30 AM	DATE & TIME FINISHED: 2/14/00 11 AM
DRILLING EQUIPMENT GEOPROBE 2"			
COMPLETION DEPTH: 26.0 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: GMB	CHECKED BY:
FIRST WATER DEPTH: 20 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete		No well constructed			
	Brown clayey silt (ML), minor sand, dry, stiff, no Petroleum Hydrocarbon odor (PHC)	ML				
5					0	
	Orange & brown clayey sand (SC), dry, stiff, no PHC odor	SC			0	
	Brown clay (CL), dry stiff, no PHC odor	CL				
	Dark brown silt (ML), damp, loose, no PHC odor	ML			0	
10	Orange-brown sandy clay (CL), dry, stiff no PHC odor	CL			0	
						Moderate PHC odor noted beginning at approximately 14.0 feet
15	Brown silt (ML), damp, stiff, moderate PHC odor	ML			0	Soil sample collected, designated sample B13-15 0
					0	
						No further PHC odor noted at 17.5 feet
20		▽			0	Groundwater encountered at 20 0 feet; Groundwater grab sample collected, designated sample B13-Water
	Brown sand (SP), wet, stiff, no PHC odor	SP			0	
	Brown sandy silt (ML), minor gravel (1/2" in diameter), saturated, stiff, no PHC odor	ML			0	
25					0	
						Borehole terminated at 26 0 feet below ground surface
30						

P & D ENVIRONMENTAL

BORING NO.: B14	PROJECT NO.: 0221	PROJECT NAME: FORMER COTTAGE BAKERY	
BORING LOCATION: SEE MAP		ELEVATION AND DATUM:	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 2/14/00 11:45 AM	DATE & TIME FINISHED: 2/14/00 1 30 PM
DRILLING EQUIPMENT: GEOPROBE 2"			
COMPLETION DEPTH: 26.0 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: GMB	CHECKED BY:
FIRST WATER DEPTH: APPROX. 22 FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	3" concrete Gray-brown clay (CL), dry, dense, no PHC odor	CL	No well constructed		0	
5	Orange-brown sandy clay (CL), some gravel (1/2" in diameter), dry, dense, no PHC odor	CL				
	Gray-brown clay (CL), dry, dense, orange mottling, no PHC odor	CL			0	
10	Orange-brown sandy clay (CL), minor gravel (1/2" in diameter), dry, dense, no PHC odor	CL			0 0	
15	Brown silt (ML), dry, somewhat dense, no PHC odor	ML			0	Soil sample collected, designated sample B14-15 0
20	Light brown sand (SP), damp, somewhat dense, no PHC odor	SP			0	Soil becomes damp at 18 0 feet
	Becoming clayey sand (SC).	SC			0	Groundwater encountered at 22.0 feet; Groundwater grab sample collected, designated sample B14-Water
25					0 0	
						Borehole terminated at 26 0 feet below ground surface
30						

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Chang & Chin Site-Castro Valley	Date Sampled: 12/09-12/10/99
		Date Received: 12/10/99
	Client Contact: Paul King	Date Extracted: 12/10/99
	Client P.O:	Date Analyzed: 12/11/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602, California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
27187	B1-15.0	S	ND	ND	ND	ND	ND	ND	104
27188	B2-15.0	S	ND	ND	ND	ND	ND	ND	108
27189	B3-16.0	S	ND	ND	ND	ND	ND	ND	106
27190	B4-15.0	S	ND	ND	ND	ND	ND	ND	103
27191	B5-15.0	S	ND	ND	ND	ND	ND	ND	116
27192	B6-16.0	S	1000,a	ND<0.4	4.9	18	15	90	---[#]
27193	B7-15.0	S	ND	ND	ND	ND	ND	ND	106
27194	B8-15.0	S	ND	ND	ND	ND	ND	ND	101
27195	B9-16.0	S	ND	ND	ND	ND	ND	ND	106
27196	B10-15.0	S	ND	ND	ND	ND	ND	ND	102
27197	B11-15.0	S	ND	ND	ND	ND	ND	ND	114
27198	B12-16.0	S	ND	ND	ND	ND	ND	ND	111
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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 a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment, j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Chang & Chin Site-Castro Valley	Date Sampled: 12/09-12/10/99
		Date Received: 12/10/99
	Client Contact: Paul King	Date Extracted: 12/10/99
	Client P.O:	Date Analyzed: 12/11-12/15/99

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
27187	B1-15.0	S	ND	102
27188	B2-15.0	S	ND	98
27189	B3-16.0	S	ND	103
27190	B4-15.0	S	ND	103
27191	B5-15.0	S	ND	104
27192	B6-16.0	S	190,d,b	99
27193	B7-15.0	S	ND	101
27194	B8-15.0	S	ND	99
27195	B9-16.0	S	ND	101
27196	B10-15.0	S	ND	98
27197	B11-15.0	S	ND	97
27198	B12-16.0	S	ND	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC REPORT

Date: 12/10/99-12/11/99 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 19644					Instrument: GC-7		
Xylenes	0.000	330.0	326.0	300.00	110	109	1.2
Ethyl Benzene	0.000	103.0	104.0	100.00	103	104	1.0
Toluene	0.000	107.0	105.0	100.00	107	105	1.9
Benzene	0.000	100.0	98.0	100.00	100	98	2.0
MTBE	0.000	91.0	83.0	100.00	91	83	9.2
GAS	0.000	975.4	997.3	1000.00	98	100	2.2
SampleID: 19801					Instrument: GC-2 A		
TPH (diesel)	0.000	267.0	263.0	300.00	89	88	1.5
SampleID: 19793					Instrument: IR-1		
TRPH	0.000	23.4	24.0	20.80	113	115	2.5

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

P & D ENVIRONMENTAL
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Oakland, CA 94611
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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER:	PROJECT NAME:
0221	Chang & Chiu Site - Castro Valley

SAMPLED BY: (PRINTED AND SIGNATURE)
Paul H. King Paul H. King

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): 1 TPH-D	TPH-Gas/BTEX/MTBE	PRESERVATIVE	REMARKS	
B1-15.0	12/9/99		Soil	Borehole B1	1	X	X	ICE	Normal Turn Around	
B2-15.0	"		"	" B2	1	X	X	"	" "	
B3-16.0	"		"	" B3	1	X	X	"	" "	27187
B4-15.0	"		"	" B4	1	X	X	"	" "	27188
B5-15.0	"		"	" B5	1	X	X	"	" "	
B6-16.0	"		"	" B6	1	X	X	"	" "	27189
B7-15.0	"		"	" B7	1	X	X	"	" "	
B8-15.0	12/10/99		"	" B8	1	X	X	"	" "	27190
B9-16.0	"		"	" B9	1	X	X	"	" "	27191
B10-15.0	"		"	" B10	1	X	X	"	" "	
B11-15.0	"		"	" B11	1	X	X	"	" "	27192
B12-16.0	"		"	" B12	1	X	X	"	" "	27193
										27194
				ICE/● ✓		PRESERVATION	VOAs	O&G	METALS	OTHER
				GOOD CONDITION ✓		APPROPRIATE				27195
				HEAD SPACE ABSENT ✓		CONTAINERS ✓				

RELINQUISHED BY: (SIGNATURE) Paul H. King	DATE 12/10/99	TIME 705	RECEIVED BY: (SIGNATURE) Roger Hall	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	12	LABORATORY: McCampbell Analytical	27196
RELINQUISHED BY: (SIGNATURE) Roger Hall	DATE 12/10	TIME 752 pm	RECEIVED BY: (SIGNATURE) RETURN DOWN	TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	12		
				LABORATORY CONTACT: Ed Hamilton		LABORATORY PHONE NUMBER: (925) 798-1620	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO			27197
			REMARKS:				27198

TR MV

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/14/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602, California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
31116	B13-15.0	S	42,b	ND<0.10	0.053	0.48	0.38	2.7	98
31117	B14-15.0	S	ND	ND	0.041	ND	ND	0.013	101
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L.

[+] cluttered chromatogram; sample peak coelutes with surrogate peak

[1]The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?, e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/15-02/16/00

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510, California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
31116	B13-15.0	S	14,e	102
31117	B14-15.0	S	ND	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern, c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (kerosene?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/15/00

Lead*

EPA analytical methods 6010/200.7, 239.2+

Lab ID	Client ID	Matrix	Extraction °	Lead*	% Recovery Surrogate
31116	B13-15.0	S	TTLC	6.1	112
31117	B14-15.0	S	TTLC	6.9	109
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		S	TTLC	3 0 mg/kg	
		W	TTLC	0.005 mg/L	
		---	STLC,TCLP	0.2 mg/L	

* soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L

+Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

° EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

^ surrogate diluted out of range, N/A means surrogate not applicable to this analysis

& reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

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QC REPORT

Date: 02/13/00-02/14/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 25117					Instrument: GC-7		
Surrogate1	0.000	100.0	101.0	100.00	100	101	1.0
Xylenes	0.000	326.0	286.0	300.00	109	95	13.1
Ethyl Benzene	0.000	94.0	90.0	100.00	94	90	4.3
Toluene	0.000	115.0	91.0	100.00	115	91	23.3
Benzene	0.000	87.0	87.0	100.00	87	87	0.0
MTBE	0.000	80.0	82.0	100.00	80	82	2.5
GAS	0.000	1014.6	929.5	1000.00	101	93	8.8
SampleID: 16710					Instrument: GC-11 B		
Surrogate1	0.000	106.0	106.0	100.00	106	106	0.0
TPH (diesel)	0.000	324.0	319.0	300.00	108	106	1.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

Date: 02/15/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 25117					Instrument: GC-7		
Surrogate1	0.000	104.0	107.0	100.00	104	107	2.8
Xylenes	0.000	307.0	297.0	300.00	102	99	3.3
Ethyl Benzene	0.000	99.0	95.0	100.00	99	95	4.1
Toluene	0.000	99.0	96.0	100.00	99	96	3.1
Benzene	0.000	96.0	93.0	100.00	96	93	3.2
MTBE	0.000	95.0	91.0	100.00	95	91	4.3
GAS	0.000	1002.0	957.4	1000.00	100	96	4.6
SampleID: 21500					Instrument: MB-1		
Oil & Grease	0.000	24.0	23.9	20.00	120	120	0.4
SampleID: 16710					Instrument: GC-11 B		
Surrogate1	0.000	103.0	106.0	100.00	103	106	2.9
TPH (diesel)	0.000	317.0	320.0	300.00	106	107	0.9
SampleID: 19802					Instrument: IR-1		
Surrogate1	0.000	94.5	91.2	100.00	95	91	3.6
TRPH	0.000	23.6	24.6	20.80	113	118	4.1

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2\,100$$

RPD means Relative Percent Deviation

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QC REPORT

Lead

Date: 02/15/00-02/16/00 Matrix: Soil

Extraction: TTLC

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21500					Instrument: GFAA-1		
Lead	0.000	4.9	4.9	5.00	98	97	0.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{Amount Spiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER:	PROJECT NAME:
01221	LANDS OF CHIU & CHANG

SAMPLED BY: (PRINTED AND SIGNATURE)
GREG BROWN

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH-G/BTEX/MTBE	TPH-D	EPA 6010 (LEAD)			PRESERVATIVE	REMARKS
B13-15.0	2/14/00		SOIL	BORING B13	1	X	X	X			ICE	NORMAL TURN AROUND
B14-15.0	"		"	" B14	1	X	X	X			"	" " "
												31116
												31117

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓

	VOAS	O&G	METALS	OTHER
	1			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
	2/14/00	310	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
	2/14	3:50	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)

REMARKS:

TOTAL NO. OF SAMPLES (THIS SHIPMENT)	2
TOTAL NO. OF CONTAINERS (THIS SHIPMENT)	2

LABORATORY: McCAMPBELL ANALYTICAL INC.
LABORATORY CONTACT: ED HAMILTON
LABORATORY PHONE NUMBER: (925) 798-1620
SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO

TB

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http://www.mccampbell.com E-mail: main@mccampbell.com

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Chang & Chin Site-Castro Valley	Date Sampled: 12/09-12/10/99
		Date Received: 12/10/99
	Client Contact: Paul King	Date Extracted: 12/10/99
	Client P.O:	Date Analyzed: 12/10/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
27199	B1-Water	W	ND,i	ND	ND	ND	ND	ND	100
27200	B2-Water	W	ND,i	ND	ND	ND	ND	ND	99
27201	B3-Water	W	56,j	ND	ND	ND	ND	ND	101
27202	B4-Water	W	ND,i	ND	ND	ND	ND	ND	98
27203	B5-Water	W	80,a,i	ND	0.20	0 84	0.81	1.9	100
27204	B6-Water	W	120,000,a,h,i	ND<200	6000	22,000	4000	21,000	99
27205	B7-Water	W	ND,i	ND	ND	ND	ND	ND	100
27206	B8-Water	W	ND,i	ND	ND	ND	ND	ND	101
27207	B9-Water	W	ND,i	ND	ND	ND	ND	ND	102
27208	B10-Water	W	ND,i	ND	ND	ND	ND	ND	101
27209	B11-Water	W	ND,i	ND	ND	ND	ND	ND	103
27210	B12-Water	W	ND,i	ND	ND	ND	ND	ND	102
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0 05	0.005	0.005	0 005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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. a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?), c) lighter gasoline range compounds (the most mobile fraction) are significant, d) gasoline range compounds having broad chromatographic peaks are significant, biologically altered gasoline?, e) TPH pattern that does not appear to be derived from gasoline (?), f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant, h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Chang & Chin Site-Castro Valley	Date Sampled: 12/09-12/10/99
		Date Received: 12/10/99
	Client Contact: Paul King	Date Extracted: 12/10-12/15/99
	Client P.O:	Date Analyzed: 12/13-12/19/99

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510, California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
27199	B1-Water	W	80,g,b,i	99
27200	B2-Water	W	120,g,i	100
27201	B3-Water	W	73,g,b	113
27202	B4-Water	W	ND,i	103
27203	B5-Water	W	160,g,b,i	100
27204	B6-Water	W	88,000,d,b,i	104
27205	B7-Water	W	58,g,b,i	99
27206	B8-Water	W	160,g,b,i	113
27207	B9-Water	W	ND,i	100
27208	B10-Water	W	68,g,b,i	97
27209	B11-Water	W	ND,i	95
27210	B12-Water	W	ND,i	106
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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: a) unmodified or weakly modified diesel is significant, b) diesel range compounds are significant, no recognizable pattern, c) aged diesel" is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?), f) one to a few isolated peaks present; g) oil range compounds are significant, h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol % sediment

DHS Certification No. 1644

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QC REPORT

Date: 12/10/99-12/11/99 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 26128					Instrument: GC-3		
Xylenes	0.000	328.0	332.0	300.00	109	111	1.2
Ethyl Benzene	0.000	109.0	110.0	100.00	109	110	0.9
Toluene	0.000	108.0	110.0	100.00	108	110	1.8
Benzene	0.000	109.0	111.0	100.00	109	111	1.8
MTBE	0.000	110.0	98.0	100.00	110	98	11.5
GAS	0.000	1604.0	1588.0	1000.00	160	159	1.0
SampleID: 121099					Instrument: GC-2 B		
TPH (diesel)	0.000	274.0	278.0	300.00	91	93	1.4
SampleID: 121099					Instrument: IR-1		
TRPH	0.000	26.0	23.9	23.70	110	101	8.4

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

Date: 12/12/99-12/13/99 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 26128					Instrument: GC-3		
Xylenes	0.000	343.0	335.0	300.00	114	112	2.4
Ethyl Benzene	0.000	116.0	111.0	100.00	116	111	4.4
Toluene	0.000	114.0	110.0	100.00	114	110	3.6
Benzene	0.000	112.0	111.0	100.00	112	111	0.9
MTBE	0.000	107.0	119.0	100.00	107	119	10.6
GAS	0.000	1634.0	1542.0	1000.00	163	154	5.8
SampleID: 121399					Instrument: GC-2 A		
TPH (diesel)	0.000	277.0	318.0	300.00	92	106	13.8

$$\%\ \text{Re covery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 0221

PROJECT NAME: Chang & Chin Site - Castro Valley

SAMPLED BY: (PRINTED AND SIGNATURE) Paul H. King Paul H. King

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH-D	TPH-Gas/BTEX/MTBE	PRESERVATIVE	REMARKS	
B1 - Water	12/9/99		Water	Borehole B1	3	X	X	ICE	Normal Turn Around	27199
B2 - Water	"		"	" B2	3	X	X	"	"	27200
B3 - Water	"		"	" B3	3	X	X	"	"	27201
B4 - Water	"		"	" B4	3	X	X	"	"	27202
B5 - Water	"		"	" B5	3	X	X	"	"	27203
B6 - Water	"		"	" B6	3	X	X	"	"	27204
B7 - Water	"		"	" B7	3	X	X	"	"	27205
B8 - Water	12/10/99		"	" B8	3	X	X	"	"	27206
B9 - Water	"		"	" B9	3	X	X	"	"	27207
B10 - Water	"		"	" B10	3	X	X	"	"	27208
B11 - Water	"		"	" B11	3	X	X	"	"	27209
B12 - Water	"		"	" B12	3	X	X	"	"	27210

ICE ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓
VOA'S ✓ O&G | METALS | OTHER

RELINQUISHED BY: (SIGNATURE) Paul H. King	DATE 12/10	TIME 700	RECEIVED BY: (SIGNATURE) Roger Hall
RELINQUISHED BY: (SIGNATURE) Roger Hall	DATE 12/10	TIME 532 pm	RECEIVED BY: (SIGNATURE) Pittonerson
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)
			REMARKS:

TOTAL NO. OF SAMPLES (THIS SHIPMENT): 12
TOTAL NO. OF CONTAINERS (THIS SHIPMENT): 36
LABORATORY CONTACT: Ed Hamilton
LABORATORY: McCampbell Analytical
LABORATORY PHONE NUMBER: (925) 798-1620
SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/14/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
31114	B13-Water	W	2200,a,i	ND	9.2	82	50	290	97
31115	B14-Water	W	78,a,i	ND	6.3	ND	2.8	5.0	99
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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 a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?, e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/15/00

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
31114	B13-Water	W	830,e,g,i	100
31115	B14-Water	W	ND,i	96
Reporting Limit unless otherwise stated. ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern, c) aged diesel" is significant); d) gasoline range compounds are significant, e) medium boiling point pattern that does not match diesel (kerosene?), f) one to a few isolated peaks present, g) oil range compounds are significant; h) lighter than water immiscible sheen is present, i) liquid sample that contains greater than ~5 vol % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0221; Lands of Chiu & Chang	Date Sampled: 02/14/00
		Date Received: 02/14/00
	Client Contact: Paul King	Date Extracted: 02/14/00
	Client P.O:	Date Analyzed: 02/15/00

Lead*

EPA analytical methods 6010/200 7, 239.2+

Lab ID	Client ID	Matrix	Extraction °	Lead*	% Recovery Surrogate
31114	B13-Water	W	TTLC	ND,i	N/A
31115	B14-Water	W	TTLC	ND,i	N/A
Reporting Limit unless otherwise stated, ND means not detected above the reporting limit		S	TTLC	3.0 mg/kg	
		W	TTLC	0 005 mg/L	
		---	STLC,TCLP	0.2 mg/L	

* soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L

+Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

° EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC), STLC - CA Title 22

* surrogate diluted out of range: N/A means surrogate not applicable to this analysis

^ reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
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QC REPORT

Date: 02/13/00-02/14/00 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21400					Instrument: GC-3		
Surrogate1	0.000	102.0	101.0	100.00	102	101	1.0
Xylenes	0.000	292.0	293.0	300.00	97	98	0.3
Ethyl Benzene	0.000	97.0	97.0	100.00	97	97	0.0
Toluene	0.000	101.0	100.0	100.00	101	100	1.0
Benzene	0.000	107.0	105.0	100.00	107	105	1.9
MTBE	0.000	88.0	88.0	100.00	88	88	0.0
GAS	0.000	912.0	935.7	1000.00	91	94	2.6
SampleID: 21400					Instrument: MB-1		
Oil & Grease	0.000	23.2	23.7	20.00	116	119	2.2
SampleID: 21600					Instrument: GC-11 A		
Surrogate1	0.000	114.0	112.0	100.00	114	112	1.8
TPH (diesel)	0.000	323.0	300.0	300.00	108	100	7.4

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} 2\,100$$

RPD means Relative Percent Deviation

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QC REPORT

Date: 02/15/00 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21500					Instrument: GC-3		
Surrogate1	0.000	100.0	103.0	100.00	100	103	3.0
Xylenes	0.000	302.0	302.0	300.00	101	101	0.0
Ethyl Benzene	0.000	100.0	101.0	100.00	100	101	1.0
Toluene	0.000	102.0	104.0	100.00	102	104	1.9
Benzene	0.000	108.0	111.0	100.00	108	111	2.7
MTBE	0.000	94.0	83.0	100.00	94	83	12.4
GAS	0.000	956.9	961.0	1000.00	96	96	0.4
SampleID: 21500					Instrument: MB-1		
Oil & Grease	0.000	24.0	24.1	20.00	120	120	0.4
SampleID: 21600					Instrument: GC-11 A		
Surrogate1	0.000	112.0	114.0	100.00	112	114	1.8
TPH (diesel)	0.000	340.0	355.0	300.00	113	118	4.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

LUFT

Date: 02/14/00-02/15/00 Matrix: Water

Extraction: TTLC

Compound	Concentration: mg/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21400				Instrument: ICP-1			
Surrogate1	0.000	103.0	103.7	100.00	103	104	0.7
Copper	0.000	5.1	5.1	5.00	102	102	0.6
Zinc	0.000	5.3	5.2	5.00	105	104	1.2
Lead	0.000	5.1	5.0	5.00	101	100	0.7
Nickel	0.000	5.3	5.3	5.00	105	106	1.2
Chromium	0.000	5.3	5.2	5.00	107	105	1.6
Cadmium	0.000	5.6	5.4	5.00	112	108	2.8

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{Amount Spiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2\,100$$

RPD means Relative Percent Deviation

P & D ENVIRONMENTAL
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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 0221

PROJECT NAME: LANDS OF CHIU & CHENG

SAMPLED BY: (PRINTED AND SIGNATURE) GREG BROWN

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH-G/BTEX/MTBE	TPH-D	EPA 6010 (4 ANS)			PRESERVATIVE	REMARKS
B13-WATER	2/14/00		WATER	BORING B13	7	X	X	X			ICE	NORMAL TURN AROUND
B14-WATER	2/14/00		"	" B14	7	X	X	X			"	" " "

31114

31115

ICE/T ✓ PRESERVATION VOAS ✓ | O&G | METALS | OTHER

GOOD CONDITION ✓ APPROPRIATE ✓

HEAD SPACE ABSENT ✓ CONTAINERS

RELINQUISHED BY: (SIGNATURE)	DATE 2/14/00	TIME 3:12	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT) 2	LABORATORY: McCAMPBELL ANALYTICAL, INC
RELINQUISHED BY: (SIGNATURE)	DATE 2/14	TIME 3:50	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 14	LABORATORY CONTACT: ED HAMILTON
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO	LABORATORY PHONE NUMBER: (925)798-1620

REMARKS:

TR 14 ✓