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Alameda County
JAN 14 2003
Environmental Health

January 3, 2003

Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Eva Chu

Subject: Report of Soil and Groundwater Investigation
Former Crystal Cleaners Facility
2006 Encinal Avenue, Alameda, California
GA Project No.: 219-01-01

Ladies and Gentlemen:

Gribi Associates is pleased to submit this report on behalf of Mr. Michael Yue for the site located at 2006 Encinal Avenue in Alameda, California. A topographic site location map and a detailed site plan are attached as Figures 1 and 2, respectively. This report details environmental investigation activities conducted at the site on November 22, 2002 to assess soil and groundwater conditions in the vicinity of the underground storage tank (UST) system formerly located at the site. The activities associated with the soil and groundwater investigation have been completed in accordance with the approved Gribi Associates workplan dated May 31, 2002.

SITE BACKGROUND

The site is located near the southern corner of the intersection of Encinal Avenue and Chestnut Street in a mixed residential and commercial area. The Crystal Cleaners facility formerly operated in the site building, and included seven USTs located on the east side of the site. The site is bordered by residential properties on the east and south.

In 1989, seven USTs were removed from a common excavation cavity on the southeast side of the site. The tanks ranged from 550 gallons to 2,000 gallons in size and contained gasoline, fuel oil, diesel, and cleaning solvents. During the removal of the USTs, several holes were noted in the 1,000 gallon fuel oil UST and the 2,000-gallon spent solvent UST. Laboratory results from the soil samples collected from the UST excavation cavity showed low to moderate levels of gasoline- and diesel-range hydrocarbons. Subsequent to the removal of the USTs, a groundwater monitoring well, MW-1, was installed immediately west from the backfilled UST excavation cavity in 1994. Laboratory results from the quarterly groundwater monitoring conducted at the site have indicated elevated levels of TPH-G, with low levels of benzene and some halogenated volatile organic compounds (HVOCs).

Based on previous soil and groundwater data, the Alameda County Environmental Health Services Department requested in November 2001 that additional investigation activities be conducted to

assess the extent of hydrocarbon impact to the soil and groundwater beneath the site. Accordingly, Gribi Associates submitted a workplan on May 31, 2002 proposing the drilling and sampling of three investigative borings at the site. This workplan was approved by the Alameda County Environmental Health Services Department on June 5, 2002 with the provision that two additional borings be drilled at the site.

DESCRIPTION OF FIELD ACTIVITIES

Drilling and sampling activities were conducted on Friday, November 22, 2002. All activities were conducted in accordance with the approved workplan and with applicable regulatory guidelines and protocols.

Prefixed Activities

Prior to implementing field activities, a soil boring installation permit was obtained from the Alameda County Public Works Department. A copy of this permit is contained in Appendix A. Also, Ms. Eva Chu of the Alameda County Environmental Health Services Department was notified at least 72 hours prior to conducting field activities.

Advancement and Sampling of Investigative Soil Borings

Gribi Associates personnel drilled and sampled five investigative borings, HA-1 through HA-5, at the former Crystal Cleaners facility on November 22, 2002. Ms. Eva Chu of the Alameda County Environmental Health Services Department was present during a portion of the investigation.

Borings HA-1, HA-2 and HA-3 were sited immediately north, northwest, and south, respectively, from the former UST excavation cavity. In addition, investigative boring HA-4 was sited approximately 25 feet west and investigative boring HA-5 was sited approximately 35 feet southwest in an expected downgradient direction from the former UST excavation cavity. Locations of the five soil borings, which were approved by Ms. Eva Chu of the Alameda County Environmental Health Services Department prior to advancement, are shown on Figure 2.

The five soil borings were advanced to a depth of approximately 12 feet below surface grade using hand auger coring equipment. Soils retrieved from the hand auger borings were examined and logged by a Gribi Associates geologist. Boring logs for the five borings are contained in Appendix B. A single soil sample was collected from each of the five soil borings at depths ranging from about six to eight feet below surface. Soil samples were collected from the hand auger borings as follows: (1) Representative soils were removed from the stainless steel hand auger bit and placed into a brass liner until the liner was completely full with no head space; (2) The filled brass liner was quickly sealed with Teflon sheets, capped with plastic end caps, labeled, and wrapped tightly with tape; and (3) The sealed soil sample was immediately placed in a cooler with crushed ice for transport to the analytical laboratory under formal chain-of-custody.

Following the advancement of hand auger borings HA-1 through HA-5, the borings were allowed to remain open for approximately one hour. Groundwater entered borings HA-1, HA-2, HA-4 and HA-5 and filled the open borings to an approximate depth of ten feet below surface grade. Measurable groundwater did not infiltrate boring HA-3, and a groundwater sample could not be collected from this boring. Once measurable groundwater infiltrated the borings, representative grab groundwater samples were collected by lowering a cleaned polyethylene bailer to the base of the boring. The bailer was then slowly lifted to the surface and the grab groundwater samples were collected as follows: (1) Laboratory-supplied containers were completely filled directly from the tubing with a minimum of agitation; (2) After making sure that no air bubbles were present, each container was then tightly sealed with a Teflon-lined septum; and (3) Each container was then labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody.

All coring and sampling equipment was thoroughly cleaned and decontaminated between each boring and sample collection by triple rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water. Following completion of the soil and water sampling activities, all borings locations were abandoned by filling each with a cement slurry.

Sampling of Groundwater Monitoring Well MW-1

Previously installed groundwater monitoring well MW-1 was also sampled on November 22, 2002. Well MW-1, which was installed immediately west from the backfilled UST excavation cavity in 1994 following UST removal activities, was purged of approximately three well volumes prior to sampling using a clean disposable PVC bailer. During purging, temperature, pH, conductivity, and visible clarity were monitored to ensure that a representative groundwater sample was collected. After purging parameters had stabilized, groundwater was poured directly into laboratory-supplied containers. Each container was then tightly sealed, making sure that no air bubbles were present. Each container was then labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody.

Laboratory Analysis of Soil and Groundwater Samples

Five soil samples and five groundwater samples were analyzed for the following parameters:

USEPA 8015M Total Extractable Petroleum Hydrocarbons (TPEH)
USEPA 8015M Total Petroleum Hydrocarbons as Gasoline (TPH-G)
USEPA 8020 Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
USEPA 8020 Methyl-t-Butyl Ether (MTBE)

In addition, the five groundwater samples were analyzed for the following parameters:

USEPA 8260 Halogenated Volatile Organic Compounds (HVOCs)

All laboratory analyses were conducted by SunStar Laboratories, Inc., a California-certified analytical laboratory with two-week turn around on lab results.

RESULTS OF INVESTIGATION

General Subsurface Conditions

Brown sands were encountered in the five hand auger borings from surface down to approximately seven feet in depth. Soils encountered below seven feet in depth consisted primarily of grey green to brown fine grained sands down to total depth. Bedrock or consolidated units were not encountered in any of the five borings. Groundwater was encountered in hand auger borings HA-1, HA-2, HA-4 and HA-5 at approximately ten feet in depth. Soils encountered in borings HA-1, HA-2, HA-3 and HA-5 exhibited significant hydrocarbon staining and odors from approximately seven in depth down to total depth.

Results of Laboratory Analysis

Laboratory analytical results from this investigation are summarized in Table 1, and soil TPH-D results are shown on Figure 3. The laboratory data report for these analyses is contained in Appendix C.

Table 1
SUMMARY OF SOIL AND GROUNDWATER LABORATORY ANALYTICAL RESULTS
Former Crystal Cleaners Facility

Sample ID	Sample Type	Sample Depth	Concentration (parts per million, ppm)								
			TPH-G	TPH-D	TPH-MO	B	T	E	X	VOCs	MTBE
HA-1-7.5'	Soil	7.5 ft	**22.0**	**730**	**180**	<0.005	<0.005	**0.042**	**0.130**	NA	<0.020
HA-1W	Water	NA	**0.640**	**1.2**	**1.6**	<0.0005	<0.0005	<0.0005	<0.001	<0.005[1]	<0.0005
HA-2-7.0'	Soil	7.0 ft	**30.0**	**2,900**	<10.0	<0.005	<0.005	**0.093**	**0.710**	NA	<0.020
HA-2W	Water	NA	**2.30**	**470**	**3.1**	<0.0005	<0.0005	**0.016**	**0.056**	<0.005[1]	<0.0005
HA-3-8.0'	Soil	8.0 ft	**250**	**2,500**	**200**	<0.005	<0.005	**0.390**	**3.60**	NA	<0.020
HA-4-6.5'	Soil	6.5 ft	**7.6**	<10.0	<10.0	<0.005	<0.005	<0.005	<0.010	NA	<0.020
HA-4W	Water	NA	**0.300**	**0.56**	<0.10	<0.0005	<0.0005	<0.0005	<0.001	**0.0097**[2]	<0.0005
HA-5-7.0'	Soil	7.0 ft	**250**	**6,400**	**150**	<0.005	<0.005	**0.440**	**2.80**	NA	<0.020
HA-5W	Water	NA	**16.0**	**90**	<0.10	**0.0023**	**0.018**	**0.060**	**0.271**	<0.005[1]	<0.0005
MW-1	Water	NA	**4.80**	**47**	<0.10	<0.0005	<0.0005	**0.027**	**0.038**	<0.005[1]	<0.0005

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
B = Benzene, T = Toluene, E = Ethylbenzene, X = Xylenes
VOCs - Volatile Organic Compounds
MTBE = Methyl-t-Butyl Ether
<1.0 = Not detected above the expressed detection level.

NA = Not Applicable/Not Analyzed
Bold font indicates compound exceeds laboratory detection limit
NA = Not applicable
1 = No detectable concentrations of 28 listed VOC compounds
2 = 0.0097 micrograms per liter of cis-1,2-Dichloroethene. No other VOCs detected

CONCLUSIONS AND RECOMMENDATIONS

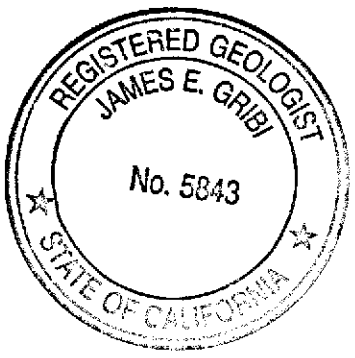
Both field observations and laboratory analytical results indicate the presence of diesel-range hydrocarbons in subsurface soils and groundwater immediately adjacent to the former UST excavation cavity and extending to the southwest in an expected downgradient groundwater flow direction from the former UST source area. Field observations during the advancement of the investigative borings indicated the presence of hydrocarbon odors, staining and sheen in hand auger borings HA-1, HA-2, and HA-3, advanced at respective locations to the north, west, and south from the former UST excavation cavity. Additionally, the presence of hydrocarbon odors and sheens were noted in soils and groundwater in investigative boring HA-5, located about 35 feet southwest in an expected downgradient groundwater flow direction near the southern project site property line. Laboratory analytical data from the soil samples collected from these borings confirms the presence of primarily diesel range hydrocarbons, with the highest concentration of Total Petroleum Hydrocarbons as Diesel (TPH-D) of 6,700 parts per million (ppm) in the soil sample collected at about seven feet in depth in boring HA-5, located near the southern property line. Grab groundwater samples from borings HA-1, HA-2, and HA-5 contained elevated levels of TPH-D, and the groundwater sample from immediately downgradient well MW-1 contained 47 ppm of TPH-D. Soil and groundwater samples contained no significant concentrations of BTEX constituents, and groundwater samples from the five borings contained no significant concentrations of HVOCs.

Although elevated concentrations of diesel range hydrocarbons are present in soil and groundwater in the former UST source area and in soil and groundwater southwest from the former UST source area, these diesel range hydrocarbons would not be expected to pose a significant environmental or human health risk. The diesel range hydrocarbons encountered beneath the site are not volatile, as evidenced by the lack of significant concentrations of VOCs in boring grab groundwater samples. Also, we would generally not expect there to be significant groundwater use in the immediate site area.

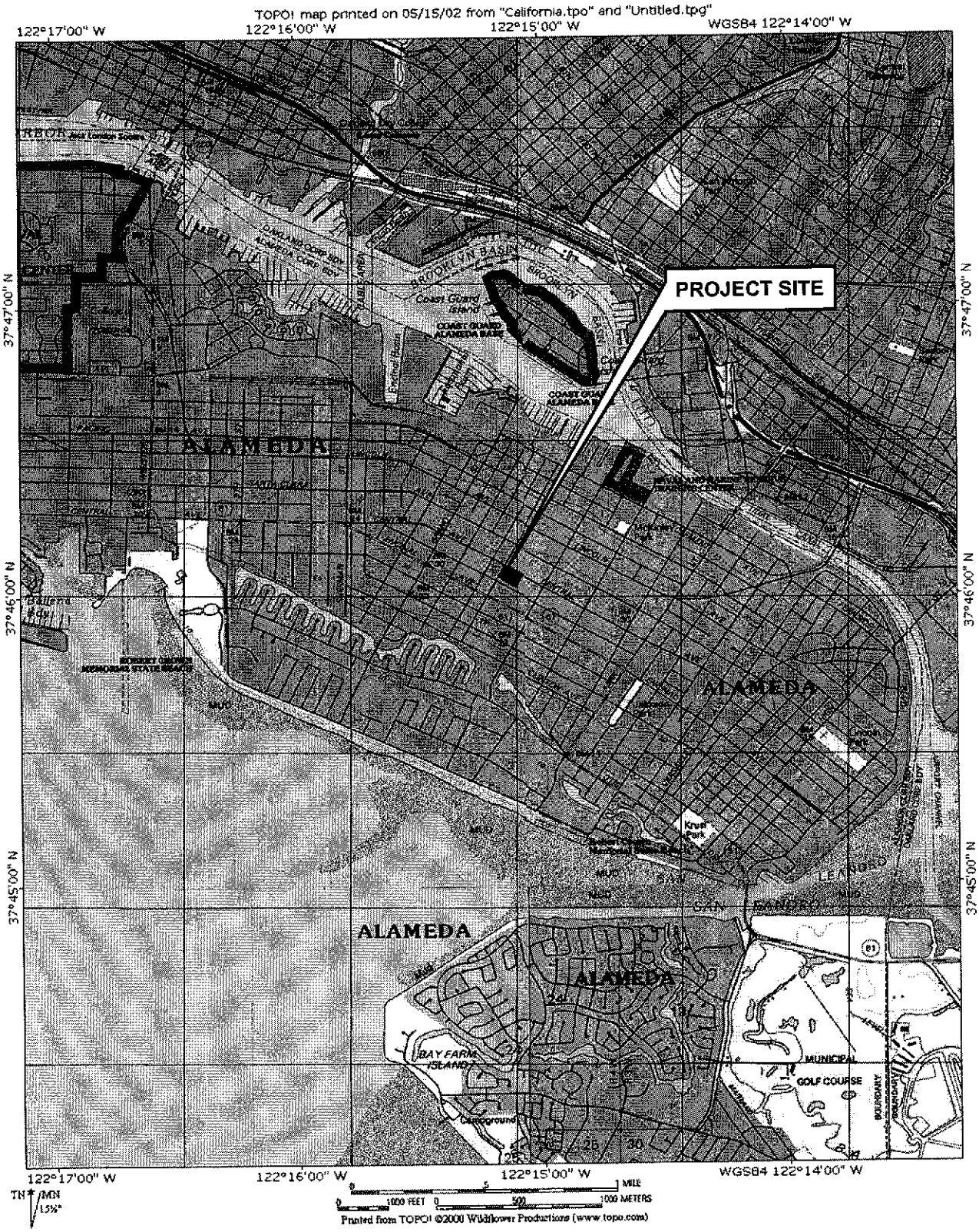
We appreciate this opportunity to provide this report for your review. Please contact us if there are questions or if additional information is required.

Very truly yours,

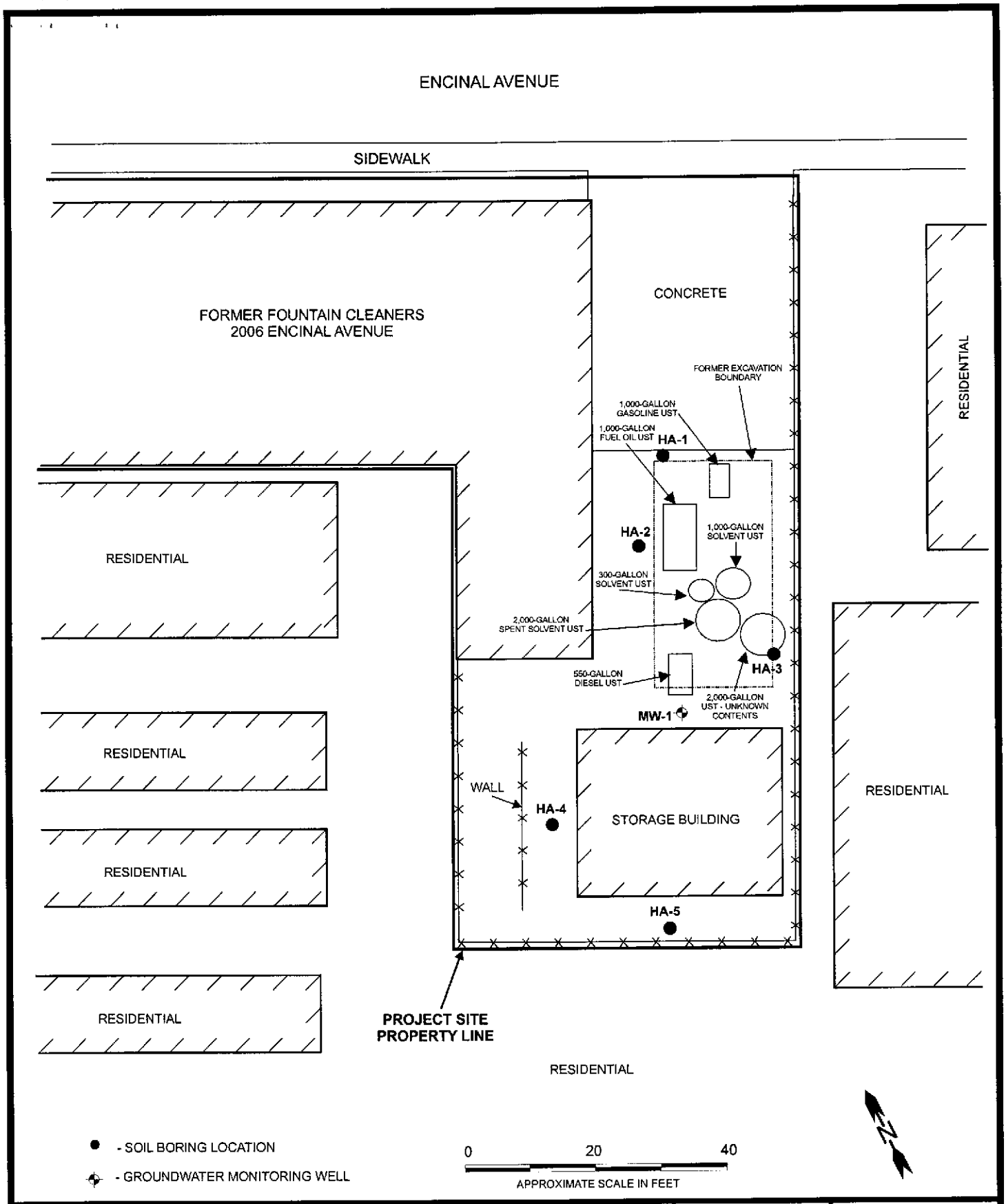
James E. Gribi
Registered Geologist
California No. 5843



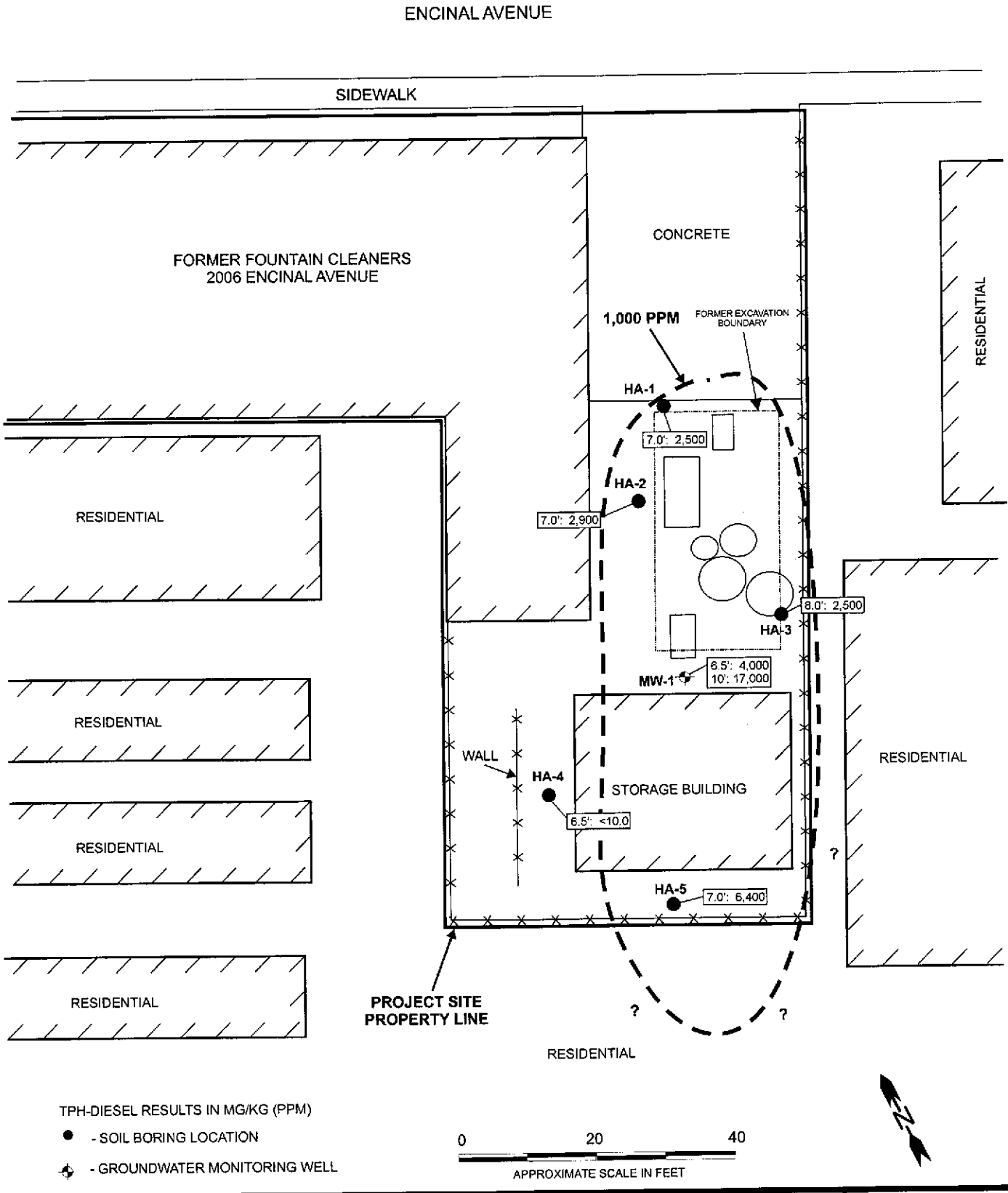
cc: Mr. Michael Yue



DESIGNED BY:	CHECKED BY:	**SITE VICINITY MAP**	DATE: 01/03/03 / FIGURE: 1
DRAWN BY: EGH	SCALE:	2006 ENCINAL AVENUE ALAMEDA, CALIFORNIA	**GRIBI Associates**
PROJECT NO: 219-01-01			



DESIGNED BY:	CHECKED BY:	**SITE PLAN**	DATE: 01/03/03	FIGURE: 3
DRAWN BY: JEG	SCALE:	FORMER FOUNTAIN CLEANERS 2006 ENCINAL AVENUE ALAMEDA, CALIFORNIA	**GRIBI Associates**	
PROJECT NO: 219-01-01				



DESIGNED BY:	CHECKED BY:	**SOIL TPH-DIESEL RESULTS**	DATE: 01/03/03 / FIGURE: 3
DRAWN BY: JEG	SCALE:	FORMER FOUNTAIN CLEANERS 2006 ENCINAL AVENUE ALAMEDA, CALIFORNIA	**GRIBI Associates**
PROJECT NO: 219-01-01			

APPENDIX A

DRILLING PERMIT

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5575 MARLON MAGALLANES/FRANK CODD (510) 670-5783
FAX (510)782-1939

James Yoo 510-670-6633

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT [illegible]
[illegible]
Alameda, CA

CLIENT
Name [illegible]
Address [illegible] Phone
City Hayward Zip 94541

APPLICANT
Name [illegible]
Fax (925) [illegible]
Address [illegible] Phone (925) [illegible]
City [illegible] Zip 94510

TYPE OF PROJECT
Well Construction — Geotechnical Investigation
Cathodic Protection — General
Water Supply — Contamination ☒
Monitoring — Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic — Replacement Domestic
Municipal — Irrigation
Industrial — Other

DRILLING METHOD:
Mud Rotary — Air Rotary — Auger
Cable — Other ☒ Hand auger

DRILLER'S LICENSE NO. n/a

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter ______ in. Depth 12 ft.
Surface Seal Depth ______ ft. Number 5

GEOTECHNICAL PROJECTS
Number of Borings ______ Maximum
Hole Diameter ______ in. Depth ______ ft.

ESTIMATED STARTING DATE 11/22/02
ESTIMATED COMPLETION DATE 11/22/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68

APPLICANT'S SIGNATURE [signature] DATE 11/14/02

PLEASE PRINT NAME [illegible]

Rev.4-4-00

FOR OFFICE USE

PERMIT NUMBER W02-1148
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources- Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(D.) GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) SPECIAL CONDITIONS [redacted]

APPROVED [signature] DATE 11-15-02

APPENDIX B

SOIL BORING LOGS

LOG OF BORING
GRIBI Associates

SHEET 1 OF 1

BORING NUMBER : **HA-1**

BORING LOCATION:
NORTH OF FORMER UST EXCAVATION

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
FORMER CRYSTAL CLEANERS FACILITY
2006 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

PROJECT NUMBER: 219-01-01

START DATE: 11/22/02

COMPLETION DATE: 11/22/02

DRILLING CONTRACTOR: NONE

DRILLING METHOD: HAND AUGER

BOREHOLE DIAMETER: 3.0 INCHES

COMPLETION METHOD: CEMENT SLURRY

BORING TOTAL DEPTH: 12.0 FEET

GROUNDWATER DEPTH: 10.0 FEET

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL (▽ - INITIAL, ▼ - FINAL)	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
0						0 - 1.0 ft. TOPSOIL/GRAVEL	
					SM	1.0 - 7.0 ft. Brown SAND with trace silt, fine grained, dry, no odors noted	
5							
	HA-1	7.5 FEET			SW	7.0 - 9.5 ft. Grey-Green SAND (stained) with trace gravel, fine grained, moist, strong hydrocarbon odor	
10				▽ ▼	SM	9.5 - 12.0 ft. Brown SAND with trace silt, water saturated at 10.0 feet, moderate hydrocarbon odor	
						TOTAL DEPTH: 12.0 ft. GROUNDWATER ENCOUNTERED AT 10.0 FEET	
15							
20							
25							

BORING NUMBER : **HA-2**

BORING LOCATION:
NORTH OF FORMER UST EXCAVATION

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
FORMER CRYSTAL CLEANERS FACILITY
2006 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

PROJECT NUMBER: 219-01-01

LOG OF BORING
GRIBI Associates

START DATE: 11/22/02

COMPLETION DATE: 11/22/02

DRILLING CONTRACTOR: NONE

DRILLING METHOD: HAND AUGER

BOREHOLE DIAMETER: 3.0 INCHES

COMPLETION METHOD: CEMENT SLURRY

BORING TOTAL DEPTH: 12.0 FEET

GROUNDWATER DEPTH: 10.0 FEET

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL (▽ - INITIAL, ▼ - FINAL)	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
5	HA-2	7.0 FEET		▽ ▼	SW	0 - 1.0 ft. TOPSOIL/GRAVEL 1.0 - 6.5 ft. Brown SAND with trace gravel, fine grained, dry, no odors noted	
10					SM	6.5 - 12.0 ft. Grey-Green SAND (stained), fine grained, moist, strong hydrocarbon odor TOTAL DEPTH: 12.0 ft. GROUNDWATER ENCOUNTERED AT 10.0 FEET	
15							
20							
25							

BORING NUMBER : **HA-3**

LOG OF BORING
GRIBI Associates

SHEET 1 OF 1

BORING LOCATION:
SOUTHEAST OF FORMER UST EXCAVATION

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
FORMER CRYSTAL CLEANERS FACILITY
2006 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

PROJECT NUMBER: 219-01-01

START DATE: 11/22/02

COMPLETION DATE: 11/22/02

DRILLING CONTRACTOR: NONE

DRILLING METHOD: HAND AUGER

BOREHOLE DIAMETER: 3.0 INCHES

COMPLETION METHOD: CEMENT SLURRY

BORING TOTAL DEPTH: 12.0 FEET

GROUNDWATER DEPTH: 10.0 FEET

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL (▽ - INITIAL, ▼ - FINAL)	USCS	LOG OF MATERIAL	PIEZOMETER\ WELL INSTALLATION
5						0 - 1.0 ft. TOPSOIL/GRAVEL	
					SW	1.0 - 6.5 ft. Brown SAND with trace gravel and concrete, fine grained, dry, no odors noted	
	HA-3	8.0 FEET					
10				▽ ▼	SM	6.5 - 12.0 ft. Grey-Green SAND (stained), fine grained, moist, strong hydrocarbon odor	
						TOTAL DEPTH: 12.0 ft. GROUNDWATER ENCOUNTERED AT 10.0 FEET	
15							
20							
25							

LOG OF BORING
GRIBI Associates

BORING NUMBER : **HA-4**

BORING LOCATION:
SOUTHWEST OF FORMER UST EXCAVATION

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
FORMER CRYSTAL CLEANERS FACILITY
2006 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

PROJECT NUMBER: 219-01-01

START DATE: 11/22/02

COMPLETION DATE: 11/22/02

DRILLING CONTRACTOR: NONE

DRILLING METHOD: HAND AUGER

BOREHOLE DIAMETER: 3.0 INCHES

COMPLETION METHOD: CEMENT SLURRY

BORING TOTAL DEPTH: 12.0 FEET

GROUNDWATER DEPTH: 10.0 FEET

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL (▽ - INITIAL, ▼ - FINAL)	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
0						0 - 1.0 ft. TOPSOIL/GRAVEL	
					SM	1.0 - 6.5 ft. Brown SAND, fine grained, dry, no odors noted	
5							
	HA-4	6.5 FEET			SM	6.5 - 12.0 ft. Tan SAND, fine grained, moist at 7.0 feet, no hydrocarbon odors noted	
10				▽ ▼			
						TOTAL DEPTH: 12.0 ft. GROUNDWATER ENCOUNTERED AT 10.0 FEET	
15							
20							
25							

LOG OF BORING
GRIBI Associates

SHEET 1 OF 1

BORING NUMBER : **HA-5**

BORING LOCATION:
SOUTH OF FORMER UST EXCAVATION

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
FORMER CRYSTAL CLEANERS FACILITY
2006 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

PROJECT NUMBER: 219-01-01

START DATE: 11/22/02

COMPLETION DATE: 11/22/02

DRILLING CONTRACTOR: NONE

DRILLING METHOD: HAND AUGER

BOREHOLE DIAMETER: 3.0 INCHES

COMPLETION METHOD: CEMENT SLURRY

BORING TOTAL DEPTH: 12.0 FEET

GROUNDWATER DEPTH: 10.0 FEET

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL (▽ - INITIAL, ▼ - FINAL)	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
0						0 - 1.0 ft. TOPSOIL/GRAVEL	
					SM	1.0 - 6.5 ft. Brown SAND with trace gravel, fine grained, dry, no odors noted	
5							
	HA-5	7.0 FEET					
					SM	6.5 - 12.0 ft. Grey-Green SAND (stained), fine grained, moist, strong hydrocarbon/solvent odor	
10				▽ ▼			
						TOTAL DEPTH: 12.0 ft. GROUNDWATER ENCOUNTERED AT 10.0 FEET	
15							
20							
25							

APPENDIX C

LABORATORY REPORT AND CHAIN-OF-CUSTODY RECORD

SunStar Laboratories, Inc.

06 December 2002

Eric Hetrick
Gribi Associates
1350 Hates St # C-14
Benicia, CA 94510

RE: Crystal Cleaner

Enclosed are the results of analyses for samples received by the laboratory on 11/26/02 12:21. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

John Shepler
Laboratory Director

3002 Dow Avenue, Suite 212, Tustin, CA 92780 Phone (714) 505-4010 Fax (714) 505-4028

SunStar Laboratories, Inc.
3002 Dow Ave., Ste. 212
Tustin, CA 92780
1-800-781-6777

Chain of Custody Record

T200902

Client: GRIBI ASSOCIATES
Address: 1350 HAMES STREET SUITE C-19
Phone: (707) 748-7743 Fax: (707) 748-7765
Project Manager: ERIC HERRICK

Date: 11/22/02 Page: 1 Of 1
Project Name: CRYSTAL CLEANERS
Collector: ERIC HERRICK Client Project #:
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260 - HVOCs	EPA 8270	EPA 418.1	EPA 8015M (gasoline) + BTEX	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TPHG	TPHD	MTBE	Laboratory ID #	Preservative	Comments	Total # of containers
HA-1-7.5	11/22/02	0930	SOIL	BRASS						X				X	X		01		PLEASE USE THE FOLLOWING REPORTING LIMITS: (ug/L)	1
HA-2-7.0		1030	SOIL	BRASS						X				X	X		02			1
HA-3-8.0		1115	SOIL	BRASS						X				X	X		03			1
HA-4-6.5		1200	SOIL	BRASS						X				X	X		04			1
HA-5-7.0		1300	SOIL	BRASS						X				X	X		05		TPHG: 50.0	1
MW-1		1330	WATER	VOA			X			X				X	X		06		TPH-D: 50.0	5
HA-1W		1400	WATER	VOA			X			X				X	X		07		BTEX: 0.50	5
HA-2W		1420	WATER	VOA			X			X				X	X		08		MTBE: 0.50	5
HA-4W		1440	WATER	VOA			X			X				X	X		09			5
HA-5W		1500	WATER	VOA			X			X				X	X		10			5

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	11/22/02	Bill Hannah	11/25/02 930AM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 30
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Turn around time: (N)

Notes
Chromatograms Included.

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

Gribi Associates 1350 Hates St # C-14 Benicia CA, 94510	Project: Crystal Cleaner Project Number: [none] Project Manager: Eric Hetrick	**Reported:** 12/6/02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA 1 - 7.5	T200902-01	Soil	11/22/02	11/26/02
HA 2 - 7.0	T200902-02	Soil	11/22/02	11/26/02
HA 3 - 8.0	T200902-03	Soil	11/22/02	11/26/02
HA 4 - 6.5	T200902-04	Soil	11/22/02	11/26/02
HA 5 - 7.0	T200902-05	Soil	11/22/02	11/26/02
MW-1	T200902-06	Water	11/22/02	11/26/02
HA-1W	T200902-07	Water	11/22/02	11/26/02
HA-2W	T200902-08	Water	11/22/02	11/26/02
HA-4W	T200902-09	Water	11/22/02	11/26/02
HA-5W	T200902-10	Water	11/22/02	11/26/02

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Extractable Petroleum Hydrocarbons by 8015

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA 1 - 7.5 (T200902-01) Soil	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**730**	10	mg/kg	1	2112608	11/26/02	11/28/02	EPA 8015B	
C28-C40	**180**	10	"	"	"	"	"	"	
HA 2 - 7.0 (T200902-02) Soil	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**2900**	10	mg/kg	1	2112608	11/26/02	11/28/02	EPA 8015B	
C28-C40	ND	10	"	"	"	"	"	"	
HA 3 - 8.0 (T200902-03) Soil	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**2500**	10	mg/kg	1	2112608	11/26/02	11/28/02	EPA 8015B	
C28-C40	**200**	10	"	"	"	"	"	"	
HA 4 - 6.5 (T200902-04) Soil	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	ND	10	mg/kg	1	2112608	11/26/02	11/28/02	EPA 8015B	
C28-C40	ND	10	"	"	"	"	"	"	
HA 5 - 7.0 (T200902-05) Soil	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**6400**	10	mg/kg	1	2112608	11/26/02	11/28/02	EPA 8015B	
C28-C40	**150**	10	"	"	"	"	"	"	
MW-1 (T200902-06) Water	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**47**	0.050	mg/l	1	2112609	11/26/02	11/27/02	EPA 8015b	
C28-C40	ND	0.10	"	"	"	"	"	"	
HA-1W (T200902-07) Water	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
C10-C28	**1.2**	0.050	mg/l	1	2112609	11/26/02	11/27/02	EPA 8015b	
C28-C40	**1.6**	0.10	"	"	"	"	"	"	

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Extractable Petroleum Hydrocarbons by 8015

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-2W (T200902-08) Water	**Sampled: 11/22/02 00:00 Received: 11/26/02 12:21**								
C10-C28	**470**	0.050	mg/l	1	2112609	11/26/02	11/27/02	EPA 8015b	
C28-C40	**3.1**	0.10	"	"	"	"	"	"	
HA-4W (T200902-09) Water	**Sampled: 11/22/02 00:00 Received: 11/26/02 12:21**								
C10-C28	**0.56**	0.050	mg/l	1	2112609	11/26/02	11/27/02	EPA 8015b	
C28-C40	ND	0.10	"	"	"	"	"	"	
HA-5W (T200902-10) Water	**Sampled: 11/22/02 00:00 Received: 11/26/02 12:21**								
C10-C28	**90**	0.050	mg/l	1	2112609	11/26/02	11/27/02	EPA 8015b	
C28-C40	ND	0.10	"	"	"	"	"	"	

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA 1 - 7.5 (T200902-01) Soil Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	20	ug/kg	1	2112612	11/26/02	12/02/02	EPA 8021B/8015B	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	**42**	5.0	"	"	"	"	"	"	
m,p-Xylene	**130**	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**22000**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*115 %*	*65-135*		"	"	"	"	
HA 2 - 7.0 (T200902-02) Soil Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	20	ug/kg	1	2112612	11/26/02	12/02/02	EPA 8021B/8015B	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	**93**	5.0	"	"	"	"	"	"	
m,p-Xylene	**340**	10	"	"	"	"	"	"	
o-Xylene	**370**	5.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**30000**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*141 %*	*65-135*		"	"	"	"	*S-04*
HA 3 - 8.0 (T200902-03) Soil Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	20	ug/kg	1	2112612	11/26/02	12/02/02	EPA 8021B/8015B	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	**390**	5.0	"	"	"	"	"	"	
m,p-Xylene	**1000**	10	"	"	"	"	"	"	
o-Xylene	**2600**	5.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**250000**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*114 %*	*65-135*		"	"	"	"	

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA 4 - 6.5 (T200902-04) Soil Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	20	ug/kg	1	2112612	11/26/02	12/02/02	EPA 8021B/8015B	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**7600**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*79.8 %*	*65-135*		"	"	"	"	
HA 5 - 7.0 (T200902-05) Soil Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	20	ug/kg	1	2112612	11/26/02	12/02/02	EPA 8021B/8015B	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	**440**	5.0	"	"	"	"	"	"	
m,p-Xylene	**1300**	10	"	"	"	"	"	"	
o-Xylene	**1500**	5.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**250000**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.8 %*	*65-135*		"	"	"	"	
MW-1 (T200902-06) Water Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	0.50	ug/l	1	2112610	11/26/02	11/27/02	EPA 8021B/8015B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**27**	0.50	"	"	"	"	"	"	
m,p-Xylene	**38**	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4800**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*132 %*	*65-135*		"	"	"	"	

Gribi Associates 1350 Hates St # C-14 Benicia CA, 94510	Project: Crystal Cleaner Project Number: [none] Project Manager: Eric Hetrick	**Reported:** 12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-1W (T200902-07) Water Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	0.50	ug/l	1	2112610	11/26/02	11/27/02	EPA 8021B/8015B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**640**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.2 %*	*65-135*		"	"	"	"	
HA-2W (T200902-08) Water Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	0.50	ug/l	1	2112610	11/26/02	11/27/02	EPA 8021B/8015B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**16**	0.50	"	"	"	"	"	"	
m,p-Xylene	**21**	1.0	"	"	"	"	"	"	
o-Xylene	**35**	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**2300**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*117 %*	*65-135*		"	"	"	"	
HA-4W (T200902-09) Water Sampled: 11/22/02 00:00 Received: 11/26/02 12:21									
Methyl tert-butyl ether	ND	0.50	ug/l	1	2112610	11/26/02	11/27/02	EPA 8021B/8015B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**300**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*	*65-135*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-5W (T200902-10) Water	**Sampled: 11/22/02 00:00**		**Received: 11/26/02 12:21**						
Methyl tert-butyl ether	ND	0.50	ug/l	1	2112610	11/26/02	11/27/02	EPA 8021B/8015B	
Benzene	**2.3**	0.50	"	"	"	"	"	"	
Toluene	**18**	0.50	"	"	"	"	"	"	
Ethylbenzene	**60**	0.50	"	"	"	"	"	"	
m,p-Xylene	**200**	1.0	"	"	"	"	"	"	
o-Xylene	**71**	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**16000**	50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*122 %*	*65-135*		"	"	"	"	

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (T200902-06) Water	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
Bromodichloromethane	ND	5.0	ug/l	1	2112611	11/26/02	11/27/02	EPA 8260B	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*86-115*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.0 %*		*86-115*	"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*		*86-118*	"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-1W (T200902-07) Water	**Sampled: 11/22/02 00:00**		**Received: 11/26/02 12:21**						
Bromodichloromethane	ND	5.0	ug/l	1	2112611	11/26/02	11/27/02	EPA 8260B	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-2W (T200902-08) Water	**Sampled: 11/22/02 00:00**		**Received: 11/26/02 12:21**						
Bromodichloromethane	ND	5.0	ug/l	1	2112611	11/26/02	11/27/02	EPA 8260B	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.0 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*86-118*		"	"	"	"	

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-4W (T200902-09) Water	**Sampled: 11/22/02 00:00**	**Received: 11/26/02 12:21**							
Bromodichloromethane	ND	5.0	ug/l	1	2112611	11/26/02	11/27/02	EPA 8260B	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**9.7**	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*86-115*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.8 %*		*86-115*	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*86-118*	"	"	"	"	

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-5W (T200902-10) Water	**Sampled: 11/22/02 00:00**		**Received: 11/26/02 12:21**						
Bromodichloromethane	ND	5.0	ug/l	1	2112611	11/26/02	11/27/02	EPA 8260B	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Surrogate: Toluene-d8		*91.2 %*	*86-115*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*86-115*		"	"	"	"	
Surrogate: Dibromofluoromethane		*97.5 %*	*86-118*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

Gribi Associates 1350 Hates St # C-14 Benicia CA, 94510	Project: Crystal Cleaner Project Number: [none] Project Manager: Eric Hetrick	**Reported:** 12/6/02

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2112608 - EPA 3550B Soil										
Blank (2112608-BLK1)				Prepared: 11/26/02 Analyzed: 11/28/02						
C10-C28	ND	10	mg/kg							
C28-C40	ND	10	"							
Matrix Spike (2112608-MS1)	**Source: T200902-05**			Prepared: 11/26/02 Analyzed: 11/28/02						
C10-C28	5500	10	mg/kg	500	6400	NR	75-125			QM-4X
Matrix Spike Dup (2112608-MSD1)	**Source: T200902-05**			Prepared: 11/26/02 Analyzed: 11/28/02						
C10-C28	8200	10	mg/kg	500	6400	360	75-125	39.4	20	QM-4X
Batch 2112609 - EPA 3510C H2O										
Blank (2112609-BLK1)				Prepared: 11/26/02 Analyzed: 11/27/02						
C10-C28	ND	0.10	mg/l							
C28-C40	ND	0.10	"							
Matrix Spike (2112609-MS1)	**Source: T200902-10**			Prepared: 11/26/02 Analyzed: 11/27/02						
C10-C28	130	0.10	mg/l	50.0	90	80.0	75-125			
Matrix Spike Dup (2112609-MSD1)	**Source: T200902-10**			Prepared: 11/26/02 Analyzed: 11/28/02						
C10-C28	132	0.10	mg/l	50.0	90	84.0	75-125	1.53	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2112610 - EPA 5030 Water GC										
Blank (2112610-BLK1)				Prepared: 11/26/02 Analyzed: 11/27/02						
Methyl tert-butyl ether	ND	4.0	ug/l							
Benzene	ND	1.0	"							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Gasoline Range Hydrocarbons	ND	500	"							
Surrogate: 4-Bromofluorobenzene	*38.2*		"	*50.0*		*76.4*	*65-135*			
LCS (2112610-BS1)				Prepared: 11/26/02 Analyzed: 11/27/02						
Benzene	59.7	1.0	ug/l	67.0		89.1	70-130			
Toluene	411	1.0	"	405		101	70-130			
Ethylbenzene	94.7	1.0	"	95.0		99.7	70-130			
m,p-Xylene	356	2.0	"	345		103	70-130			
o-Xylene	135	1.0	"	134		101	70-130			
Surrogate: 4-Bromofluorobenzene	*58.2*		"	*50.0*		*116*	*65-135*			
Matrix Spike (2112610-MS1)	**Source: T200902-07**			Prepared: 11/26/02 Analyzed: 11/27/02						
Benzene	67.2	1.0	ug/l	67.0	ND	100	70-130			
Toluene	397	1.0	"	405	ND	98.0	70-130			
Ethylbenzene	93.0	1.0	"	95.0	ND	97.9	70-130			
m,p-Xylene	346	2.0	"	345	ND	100	70-130			
o-Xylene	126	1.0	"	134	ND	94.0	70-130			
Surrogate: 4-Bromofluorobenzene	*57.1*		"	*50.0*		*114*	*65-135*			
Matrix Spike Dup (2112610-MSD1)	**Source: T200902-07**			Prepared: 11/26/02 Analyzed: 11/27/02						
Benzene	67.6	1.0	ug/l	67.0	ND	101	70-130	0.593	20	
Toluene	404	1.0	"	405	ND	99.8	70-130	1.75	20	
Ethylbenzene	94.7	1.0	"	95.0	ND	99.7	70-130	1.81	20	
m,p-Xylene	351	2.0	"	345	ND	102	70-130	1.43	20	
o-Xylene	129	1.0	"	134	ND	96.3	70-130	2.35	20	
Surrogate: 4-Bromofluorobenzene	*57.6*		"	*50.0*		*115*	*65-135*			

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Methods 8021B/8015M - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2112612 - EPA 5030 Soil GC										
Blank (2112612-BLK1)				Prepared: 11/26/02 Analyzed: 12/02/02						
Methyl tert-butyl ether	ND	20	ug/kg							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 4-Bromofluorobenzene	*83.3*		"	*125*		*66.6*	*65-135*			
LCS (2112612-BS1)				Prepared: 11/26/02 Analyzed: 12/02/02						
Benzene	160	5.0	ug/kg	168		95.2	70-130			
Toluene	767	5.0	"	1010		75.9	70-130			
Ethylbenzene	181	5.0	"	238		76.1	70-130			
m,p-Xylene	629	10	"	862		73.0	70-130			
o-Xylene	258	5.0	"	335		77.0	70-130			
Surrogate: 4-Bromofluorobenzene	*88.5*		"	*125*		*70.8*	*65-135*			
Matrix Spike (2112612-MS1)	**Source: T200902-04**			Prepared: 11/26/02 Analyzed: 12/02/02						
Benzene	151	5.0	ug/kg	168	ND	89.9	70-130			
Toluene	880	5.0	"	1010	ND	87.1	70-130			
Ethylbenzene	199	5.0	"	238	ND	83.6	70-130			
m,p-Xylene	755	10	"	862	ND	87.6	70-130			
o-Xylene	291	5.0	"	335	ND	86.9	70-130			
Surrogate: 4-Bromofluorobenzene	*107*		"	*125*		*85.6*	*65-135*			
Matrix Spike Dup (2112612-MSD1)	**Source: T200902-04**			Prepared: 11/26/02 Analyzed: 12/02/02						
Benzene	158	5.0	ug/kg	168	ND	94.0	70-130	4.53	20	
Toluene	924	5.0	"	1010	ND	91.5	70-130	4.88	20	
Ethylbenzene	209	5.0	"	238	ND	87.8	70-130	4.90	20	
m,p-Xylene	793	10	"	862	ND	92.0	70-130	4.91	20	
o-Xylene	301	5.0	"	335	ND	89.9	70-130	3.38	20	
Surrogate: 4-Bromofluorobenzene	*120*		"	*125*		*96.0*	*65-135*			

John Shepler, Laboratory Director

Gribi Associates	Project: Crystal Cleaner	
1350 Hates St # C-14	Project Number: [none]	**Reported:**
Benicia CA, 94510	Project Manager: Eric Hetrick	12/6/02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2112611 - EPA 5030 Water MS										
Blank (2112611-BLK1)				Prepared: 11/26/02 Analyzed: 11/27/02						
Bromodichloromethane	ND	5.0	ug/l							
Bromomethane	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	5.0	"							
Chloromethane	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Dibromomethane	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
1,1-Dichloroethene	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
cis-1,3-Dichloropropene	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Methylene chloride	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Surrogate: Toluene-d8	*40.0*		"	*40.0*		*100*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*39.0*		"	*40.0*		*97.5*	*86-115*			
Surrogate: Dibromofluoromethane	*42.5*		"	*40.0*		*106*	*86-118*			

Gribi Associates 1350 Hates St # C-14 Benicia CA, 94510	Project: Crystal Cleaner Project Number: [none] Project Manager: Eric Hetrick	**Reported:** 12/6/02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2112611 - EPA 5030 Water MS										
LCS (2112611-BS1)				Prepared: 11/26/02 Analyzed: 11/27/02						
Chlorobenzene	97.4	5.0	ug/l	100		97.4	75-125			
1,1-Dichloroethene	91.9	5.0	"	100		91.9	15-125			
Trichloroethene	116	5.0	"	100		116	75-125			
Surrogate: Toluene-d8	*39.7*		"	*40.0*		*99.2*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.5*		"	*40.0*		*96.2*	*86-115*			
Surrogate: Dibromofluoromethane	*38.0*		"	*40.0*		*95.0*	*86-118*			
Matrix Spike (2112611-MS1)	**Source: T200902-06**			Prepared: 11/26/02 Analyzed: 11/27/02						
Chlorobenzene	101	5.0	ug/l	100	ND	101	75-125			
1,1-Dichloroethene	88.2	5.0	"	100	ND	88.2	75-125			
Trichloroethene	121	5.0	"	100	ND	118	75-125			
Surrogate: Toluene-d8	*40.4*		"	*40.0*		*101*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.9*		"	*40.0*		*97.2*	*86-115*			
Surrogate: Dibromofluoromethane	*38.3*		"	*40.0*		*95.8*	*86-118*			
Matrix Spike Dup (2112611-MSD1)	**Source: T200902-06**			Prepared: 11/26/02 Analyzed: 11/27/02						
Chlorobenzene	101	5.0	ug/l	100	ND	101	75-125	0.00	20	
1,1-Dichloroethene	89.8	5.0	"	100	ND	89.8	75-125	1.80	20	
Trichloroethene	119	5.0	"	100	ND	116	75-125	1.67	20	
Surrogate: Toluene-d8	*39.5*		"	*40.0*		*98.8*	*86-115*			
Surrogate: 4-Bromofluorobenzene	*38.5*		"	*40.0*		*96.2*	*86-115*			
Surrogate: Dibromofluoromethane	*40.0*		"	*40.0*		*100*	*86-118*			

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference