AUGEAS

April 12, 2002

APR 17 2002

Ms. Eva Chu
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Site Investigation and Closure Documentation for Dublin Retail Center, 7900-7916 Dublin Boulevard, Dublin, California

Dear Ms. Chu:

On behalf of Mark Mason, and at the request of Alameda County Department of Environmental Health (ACDEH), Augeas Corporation (Augeas) has prepared this limited site investigation and closure documentation for the above-referenced property.

The following scope of work was conducted to verify the presence of petroleum hydrocarbons in soil and groundwater beneath the subject site:

- Obtained the necessary agency permits and provide notification of scheduled operations prior to commencement of the field work;
- Contacted Underground Service Alert (USA) and/or a private utility locator to identify the work area for underground municipal utilities;
- Performed a Sensitive Receptor Survey;
- Reviewed files regarding off-site sources of petroleum hydrocarbons;
- Advanced one soil boring (B-1) to a depth of approximately 15 feet below ground surface (bgs) using hand-held auger equipment;
- Advanced one soil boring (B-2) to a depth of approximately 30 feet bgs using Geoprobe® technology;
- Collected soil samples at five-foot intervals, changes in lithology, and at the soil/water interface;
- Collected one "grab" groundwater sample from soil boring B-2;
- Analyzed all samples for total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE); and
- Prepared this report presenting our findings, conclusions, and recommendations.

All work at the site was conducted in accordance with guidelines established by the California Regional Water Quality Control Board (RWQCB), Zone 7 Alameda County Flood Control and Water Conservation District, ACDEH, and Augeas Corporation's Standard Operating Procedures (SOPs) presented in Appendix A.

Site Location

The subject site is located at 7900-7916 Dublin Boulevard in Dublin, California (Figure 1). The property consists of one building with four units and an associated parking area. The existing building totals approximately 13,500 square feet in area. The property was formerly used as an ARCO service station from 1975 to 1984. Prior to the gas station, the property was vacant agricultural land. The locations of the building and other pertinent site features are shown on Figure 2.

Previous Work

Underground Storage Tank Removal

Local environmental agency records have no information regarding the removal of underground storage tanks (USTs), nor results from confirmatory soil sampling at the subject site. However, according to documents on file at the City of Dublin Building Department, the USTs and associated piping/fuel dispensers were removed in 1984 prior to the construction of the existing building. The only available field evidence suggesting excavation or over-excavation is a soils report prepared prior to the construction of the existing building (Cleary Consultants, Inc., 1984) stating that approximately 14 feet of fill material was imported to the site.

Phase I Environmental Assessment

In May 1998, Hillmann Environmental Company, Inc. (HECO) conducted a Phase I Environmental Assessment identifying possible areas of environmental concern and presenting recommendations for action at the subject property. The assessment included a site reconnaissance to identify sensitive receptors, existing physical structures, neighboring properties and their current usage, and any possible environmental liabilities. The assessment also included a complete file review, interviews with individuals familiar with site operations, and photographic documentation of current site and offsite conditions. HECO discovered groundwater beneath the site to be at a depth of approximately 25 feet below ground surface (bgs) and flowing toward the east-northeast. Environmental concerns noted by HECO included the lack of UST removal documentation pertaining to the former ARCO sevice station at the site. HECO also identified the Chevron service station located approximately 600 feet northwest and up-gradient of the subject property as having the potential to affect environmental conditions beneath the site. The Chevron service station is listed as an active LUST site with free phase product in groundwater. HECO recommended performing a limited phase II subsurface investigation to assess the absence or presence of residual petroleum hydrocarbons in soil and/or groundwater beneath the subject property as a result of previous site activities.

Site Investigation Activities

Pre-field Activities

Prior to commencement of field activities, Augeas acquired the necessary permits (permit #98144) and approvals for site work, and notified the appropriate agencies. Augeas notified Underground Services Alert (USA) 48-hours prior to site work to identify the work area for underground municipal utilities.

Sensitive Receptor Survey

In accordance with Section 2654(b)(2), Article 5, Chapter 16, Division 3, Title 23 of the California Code of Regulations, the location of all nearby water supply wells, as well as surface water sources and other sensitive receptors were identified.

File Review of Potential Off-Site Sources of Contamination

A review of agency files was conducted to identify potential off-site sources of petroleum hydrocarbons that may have impacted the subject site.

Borehole Advancement

On August 31, 1998, Augeas personnel advanced one soil boring (B-1) to approximately 15 feet bgs, in the vicinity of the former pump island, using hand-held auger equipment. On September 2, 1998, Augeas personnel advanced one soil boring (B-2) to approximately 30 feet bgs, down-gradient from boring B-1, using Geoprobe® technology. Drilling, sample collection, and boring log preparation were performed under the direction of a state of California registered geologist and in accordance with Augeas Corporation's SOPs presented in Appendix A.

Soil Sampling

Soil samples were collected at 5-foot intervals, changes in lithology, and the soil/water interface. Soil samples were described for lithology in accordance with the Unified Soil Classification System (Appendix B). All soil samples were transported under chain-of-custody documentation to a state-certified analytical laboratory for chemical testing (Appendix C). Soil sample handling and preservation protocols were performed in accordance with Augeas Corporation's SOPs presented in Appendix A.

Groundwater Sampling

During the advancement of soil boring B-2, one "grab" groundwater sample (GW-1) was collected in order to evaluate groundwater beneath the site for the presence of petroleum hydrocarbons. The groundwater sample was transported under chain-of-custody documentation to

a state-certified analytical laboratory for chemical testing (Appendix C). Groundwater sample handling and preservation protocols were performed in accordance with Augeas Corporation's SOPs presented in Appendix A.

Laboratory Analysis

All soil and groundwater samples were sent to McCampbell Analytical, Inc., a State of California certified analytical laboratory for chemical testing. Samples were analyzed for TPHg and TPHd by EPA Method 8015 modified, and BTEX and MTBE by EPA Method 8020. Copies of chain-of-custody documentation and certified analytical reports are presented in Appendix C.

Results of Site Investigation Activities

Site Geology and Hydrogeology

Soils encountered beneath the subject site were primarily mixtures of silts and clays with intermittent sand stringers (Appendix B). Groundwater was encountered at approximately 27 feet bgs. A site specific groundwater gradient and flow direction could not be determined because there are no groundwater monitoring wells at this site. However, groundwater data from the nearby Chevron station indicated an easterly flow direction with fluctuations from east-northeast to southeast.

Sensitive Receptors

A review of sensitive receptors in the site vicinity indicated only one water supply well located approximately 1/2 mile northwest (upgradient) of the subject property. The sensitive receptor survey also indicated that no surface water bodies were identified within a 1/4-mile radius of the subject site. Additionally, groundwater in the vicinity of this site has no beneficial use.

Off-Site Sources of Petroleum Hydrocarbons

A review of files from a Chevron Service Station (7007 San Ramon Valley Boulevard) located approximately 660 feet upgradient of the subject site, revealed free phase floating product on groundwater beneath this site and dissolved hydrocarbons including MTBE that extend off-site.

Soil Analytical Results

Concentrations of TPHg, TPHd, BTEX, and MTBE were not detected at or above laboratory detection limits in any of the soil samples analyzed (Appendix C).

Groundwater Analytical Results

Analytical results for the "grab" groundwater sample (GW-1) indicated concentrations of TPHg at 440 micrograms per liter (µg/L), TPHd at 1,000 µg/L, and MTBE at 160 µg/L. Concentrations of benzene were not detected at or above laboratory limits in sample GW-1 (Appendix D).

Conclusions

- Groundwater occurs in a mixture of clay and silt with sand stringers at a depth of approximately 27 feet bgs and appears to be unconfined;
- The sensitive receptor survey revealed the proximity of one water supply well approximately 1/2 mile upgradient of the subject property, no surface water bodies within a 1/4-mile radius of the subject site, and in the site vicinity, groundwater has little or no beneficial use;
- The potential that contaminant plumes originating from a Chevron station have impacted groundwater beneath the subject site is high;
- Petroleum hydrocarbons were not detected in the soil samples collected from the vicinity of the former dispensers; and
- Dissolved petroleum hydrocarbons (TPHg, TPHd, and MTBE) were detected in the groundwater sample collected downgradient of the former dispensers and UST complex (presumably). These petroleum hydrocarbons (including MTBE) are most likely the result of off-site migration of contaminant plumes originating from the nearby Chevron station located upgradient of the subject site. Historical use of MTBE (not widely used until the late 1980's and 1990's) and its high solubility in groundwater, suggest an off-site source of MTBE impacted groundwater beneath the subject site.

Recommendations

Because the fuel tanks and majority of soil contaminants were apparently removed from the site in 1984, the potential for further ground water degradation is considered minimal. As a result, natural biological activity in both soil and ground water has been in effect for over 17 years. The 1998 soil and ground water investigation at the site verified the natural degradation process, documenting that petroleum hydrocarbons were not present above the laboratory detection limits in the shallow soil, and ground water contained residual concentrations of petroleum compounds, including MTBE, most likely originated from the Chevron station contaminant plume located upgradient of the subject site. Additionally, the site is located in a commercial area of Dublin with no sensitive receptors within a half-mile and where groundwater has no beneficial use.

Based on limited soil and groundwater data, the subject site appears to be inconsequential in terms of soil contamination. No evidence has been detected or substantiated through soil and ground water analytical data to suggest that there is a need to conduct further work at this site. Therefore, based on the information supplied herein, Augeas Corporation requests that no further action be required at this site.

References

Diblee, T.W. Jr., 1980, Preliminary Geologic Map of the Diablo Quadrangle, Alameda and Contra Costa Counties, California, USGS OFR 80-546.

California Underground Storage Tank Regulations, May 5, 1994, Title 23, Division 3, Chapter 16.

Cleary Consultants, Inc., June 8, 1984, "Dublin Plaza Commercial Building, Dublin Boulevard and Regional Street, Dublin, California."

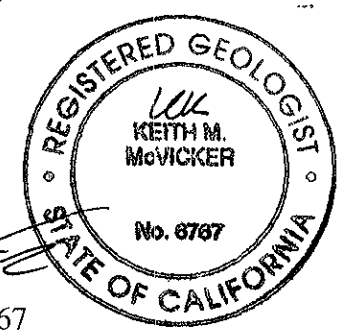
Hillman Environmental Company, Inc., June 3, 1998, "Phase I Environmental Site Assessment, Dublin Retail Center, 7900-7916 Dublin Boulevard, Dublin, California."

Assumptions and Limitations

All statements, conclusions, and recommendations in this report are based solely upon field observations and analytical test results related to work performed by Augeas Corporation. No investigation is ever thorough enough to perfectly characterize a potentially contaminated property, and Augeas makes no representations to this effect for this property. Site conditions and the application of environmental regulations are subject to change with time. Our conclusions result from the interpretation of present conditions and available site information. Future site conditions could affect the conclusions in this report.

Should you have any questions, please contact Augeas at (831) 425-8007 or (650) 726-7700.

Sincerely,
AUGEAS CORPORATION



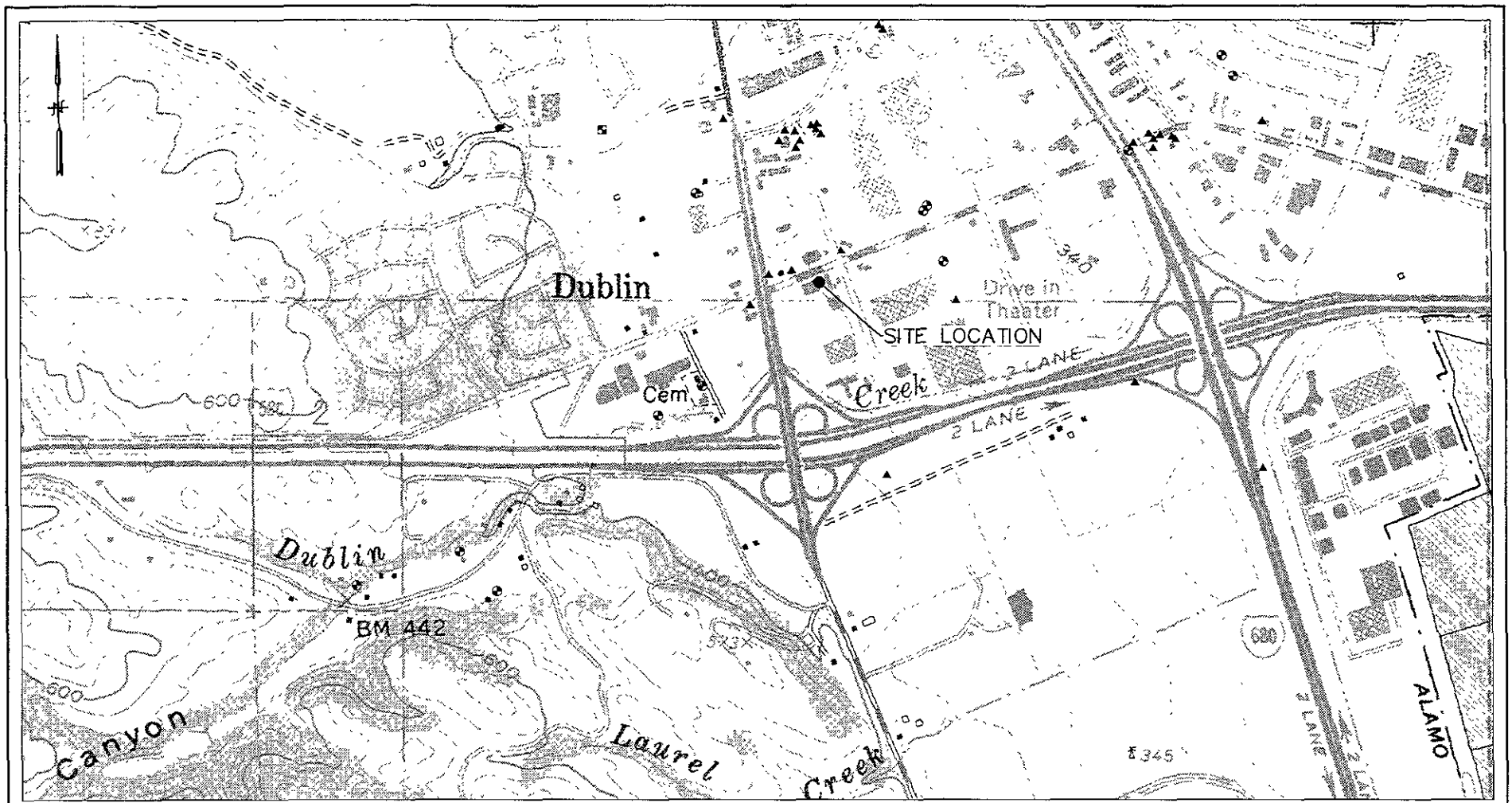
Joe Mangine
Staff Geologist

Keith M. McVicker, RG 6767
Vice President

enclosures: Figure 1: Site Location Map
Figure 2: Site and Boring Location Plan

Appendix A: Augeas Corporation's Standard Operating Procedures
Appendix B: Unified Soil Classification System, Soil Boring Logs
Appendix C: Chain of Custody and Certified Analytical Reports for Soil
Appendix D: Chain of Custody and Certified Analytical Reports for Groundwater

Figures



LEGEND

- ▲ MONITORING WELL LOCATION
- ⊕ UNKNOWN WELL LOCATION
- ▪ WATER SUPPLY WELL LOCATION

SCALE IN FEET
0 800 1600

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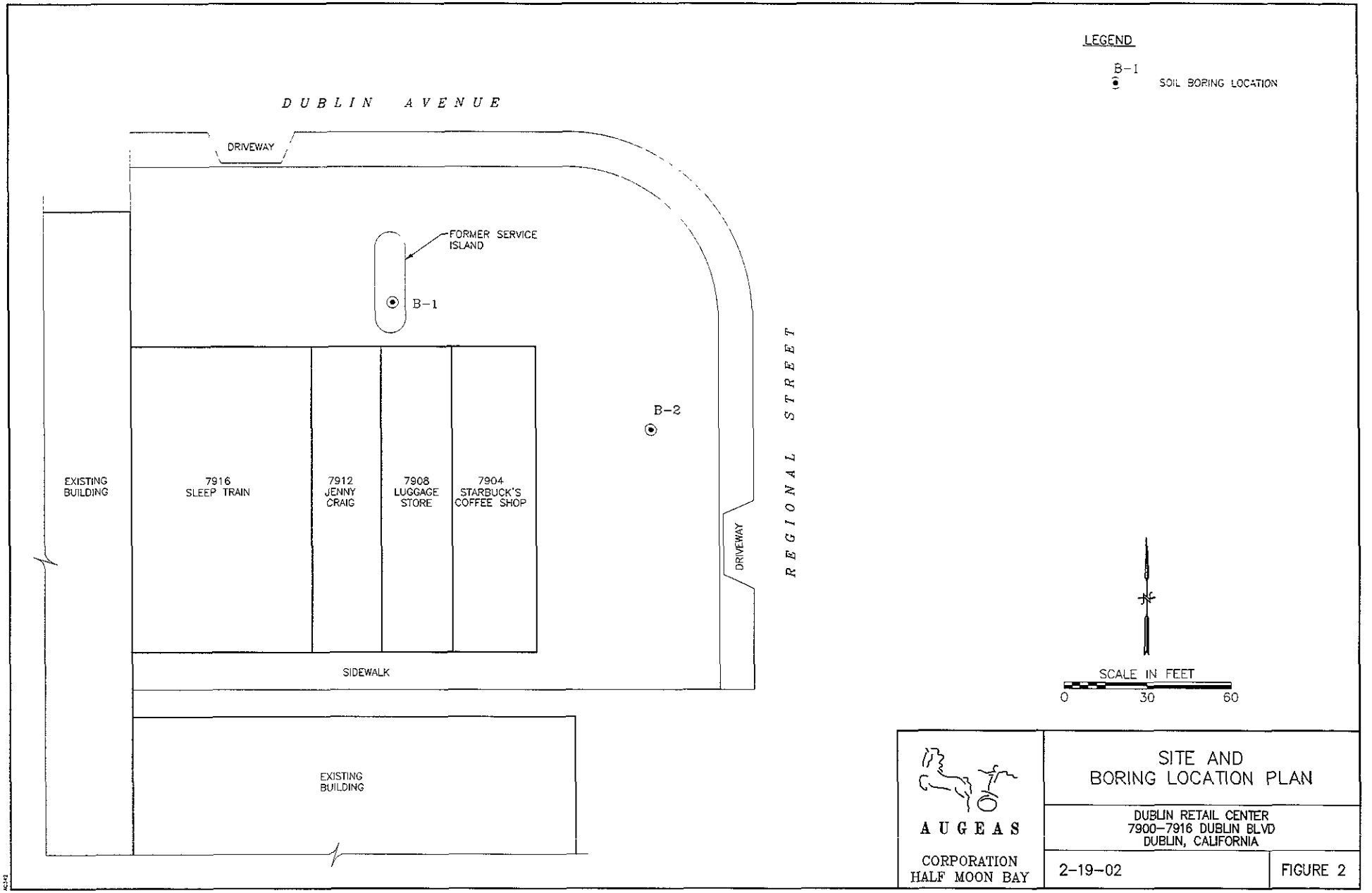
CORPORATION
HALF MOON BAY

SITE AND WELL LOCATION PLAN

DUBLIN RETAIL CENTER
7900–7916 DUBLIN BLVD
DUBLIN, CALIFORNIA

2–19–02

FIGURE 2



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CORPORATION
HALF MOON BAY

SITE AND BORING LOCATION PLAN

DUBLIN RETAIL CENTER
7900–7916 DUBLIN BLVD
DUBLIN, CALIFORNIA

2-19-02

FIGURE 2

Appendix A

Augeas Corporation's
Standard Operating Procedures

AUGEAS CORPORATION'S
STANDARD OPERATING PROCEDURES

SOIL BORING SAMPLING

During drilling, soil samples are collected in 2-inch by 6-inch long brass tubes. Three brass tubes are placed in an 18-inch long split-barrel (spoon) sampler of the appropriate inside-diameter. The split-barrel sampler is driven its entire length, either hydraulically or using a 140-pound hammer, or until refusal is encountered. The sampler is extracted from the borehole and the brass tubes are immediately trimmed and capped with Teflon® sheets and plastic caps. The samples are then sealed, labeled, and placed in chilled storage (refrigerated) for delivery, under chain of custody to the state-certified analytical laboratory. These procedures minimize the potential for cross contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

One soil sample collected at each sampling interval is analyzed in the field using either a portable photo-ionization detector (PID), flame ionization detector, organic vapor analyzer, catalytic gas detector, or an explosimeter. The purpose of the field screening is to qualitatively determine the presence or absence of chemical organic compounds in order to select the samples to be analyzed at the laboratory. The soil sample is sealed in either a brass tube, glass jar, or plastic bag to allow for some volatilization of VOCs. The PID is then used to measure the relative concentrations of VOCs within the container's headspace. The data is recorded on both field notes and the boring logs at the depth corresponding to the sampling point.

Other soil samples are collected to document the soil and/or stratigraphic profile beneath the project site, and estimate the relative permeability of the subsurface materials. All drilling and sampling equipment are decontaminated prior to use; all equipment is either steam cleaned or washed in solution and rinsed twice in de-ionized water prior to use at each site and between boreholes to minimize the potential for cross-contamination.

In the event the soil samples cannot be submitted to the analytical laboratory on the same day of collection, the samples will be temporarily stored in a chilled ice cooler, or in a refrigerator at Augeas Corporation's office.

SOIL CLASSIFICATION

Soil samples are classified according to the Unified Soil Classification System. Representative portions of the samples may be submitted under chain of custody to a state-certified analytical laboratory for further examination and verification of the in-field classification and analysis of soil mechanical and/or physical properties. The soil types are indicated on logs of either excavations or borings together with depths corresponding to the sampling points and other pertinent information.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES

Sample identification and chain-of-custody procedures ensure sample integrity as well as document sample possession from time of collection to ultimate disposal. Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on-site personnel, and any other pertinent field observations also recorded on the field excavation or boring log.

Chain-of-custody forms are used to record possession of the sample from time of collection to arrival at the laboratory. During shipment, the person with custody or the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time. The sample control officer at the laboratory will verity sample integrity, correct preservation, confirm collection in the proper container(s), and ensure adequate volume for analysis.

When these conditions are met, the samples will be assigned unique laboratory log number(s) for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in the legally-required log book maintained in the laboratory. The sample description, date received, clients name, and fly other relevant information will also be recorded

Sample Handling and Labeling

To avoid any possible chemical or physical change in a sample during collection and transport, the sample containers will consist of non-reactive materials and be lab-certified clean prior to sampling activities. Sample containers to be used for laboratory analysis will consist of 40-milliliter (ml) glass vials and/or 1-liter amber bottles depending upon requested chemical analysis. Samples will be collected until each container is completely full in order to maintain anaerobic conditions. Samples collected for analysis will be carefully placed into the 40-ml glass vials having Teflon®® septum lids. The liter bottles will be filled to prevent any air bubbles from being present in each vial after sealing the septum lid. Confirmation of the lack of air bubbles will be verified by inverting each vial.

Sample bottles will be labeled with the project name (site location), well number, time and date of sampling, and sampler's initials. All samples will be immediately placed into an insulated chilled ice cooler for temporary storage and transport to the laboratory. The ice chests will contain sufficient packing material which will protect the integrity of the samples for transportation. Samples will be handled in accordance with appropriate chain-of-custody procedures, as discussed herein.

Sample Preservation and Acidification

Sample preservation will be utilized in order to retard the physical and chemical alternations of unstable constituents within the sample medium. Preservation is usually limited to pH control, chemical addition, filtration, refrigeration, and freezing. Sample preservation methods are limited and are generally intended to perform the following functions:

- Retard biological action;
- Retard hydrolysis of chemical compounds and complexes;
- Reduce volatility of constituents;
- Reduce absorption effects.

The glass vials and bottles used for the collection of groundwater samples for laboratory analyses will be acidified by the analytical laboratory prior to shipment of the sample bottles to the site. The glass vials will typically contain hydrochloric acid (HCL) for aromatic volatile organic compounds, or other perservative depending on contaminant, to act as a bacterial inhibitor for the chemical compound analyzed. Problems associated with sample preservation will be documented, as appropriate.

Temperature Control

Groundwater samples submitted for laboratory analyses will be sealed in proper sample containers, and then temporarily stored in an insulated ice chest containing crushed ice for transport to the analytical laboratory. Placement of the groundwater samples into a chilled ice chest inhibits bacterial growth in the samples and also slows the chemical and biological changes of a sample exposed to an oxidizing atmosphere. A thermometer indicating maximum temperature variances will be inserted into the ice chest(s) for documentation purposes during inspection at the time of delivery at the analytical laboratory.

Chain-of-Custody Documentation

Chain-of-custody (COC) procedures will be implemented for documenting and tracking the handling of soil and/or groundwater samples. The term "chain of custody" refers to a procedure of written documentation of sample acquisition, handling, and shipping of all samples potentially intended for enforcement or legal purposes. COC documents will include the following information:

- Company name and address;
- Project name and address;
- Name of project manager;
- Laboratory name;
- Name of sampler(s);
- Sample identification number, location, matrix, and type and number of sample container(s);
- Date and time of sample collection; and
- Required analysis and turnaround/reporting time

Field sampling personnel will visually inspect the groundwater samples to ensure that the samples are correctly labeled and that the sample integrity is maintained with no apparent leakage or incorrect packaging. Field sampling personnel will complete and sign the COC prior to sample transfer. The COC will accompany the samples to the analytical laboratory. This form will be placed inside a sealed, plastic bag and packed into the ice chest.

Whenever the samples are transferred from one party to another, both parties will sign the COC and record the date and time of transfer. COC records will be signed and completed between both parties prior to the sample shipment off-site to the designated state-certified analytical laboratory. After the samples are submitted to the laboratory, they will be assigned unique laboratory log numbers for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in a logbook maintained by the laboratory. The sample description, date received, name of client, and other relevant information will also be recorded.

After the samples are analyzed, a copy of each completed form will accompany the data transmittal from the analytical laboratory. Completed COC forms will be reviewed by Augeas prior to insertion into the project files/reports.

Laboratory Coordination

The analytical laboratory will be contacted at least 48 hours prior to receipt of the samples. Following drop-off or shipment of the samples, a sample custodian at the laboratory will accept the samples and verify the receipt of the samples on the accompanying COC forms. The samples will be tracked on a laboratory sample custody log consisting of serially numbered, standard laboratory tracking report sheets. At least 24 hours after sample shipment, the laboratory will then be contacted to verify receipt of the samples and the estimated turnaround time for analysis. However, this final step may not be necessary if the samples are picked up by a courier from the laboratory, or the samples are delivered directly to the laboratory by the sampler. In the event the water samples cannot be submitted to the analytical laboratory on the same day of collection (i.e. due to weekends or holidays), the samples will be temporarily stored in either a chilled ice cooler or in a refrigerator at Augeas Corporation's office until the first opportunity for submittal to the laboratory.

Laboratory Analytical Quality Assurance/Quality Control (QA/QC)

In addition to routine instrument calibration, replicates, spikes, blanks, spiked blanks, and certified reference materials are routinely analyzed at method-specific frequencies to monitor precision and bias.

Additional components of the laboratory QA/QC program included the following:

- Participation in state and federal laboratory accreditation/certification programs;
- Participation in both U.S. EPA Performance Evaluation studies and inter-laboratory performance evaluation programs;
- Standard operating procedures describing routine and periodic instrument maintenance; and
- Multi-level review of raw laboratory and client reports.

Decontamination and Waste Containerization

Various types of bailers will be used to purge monitoring wells and to obtain groundwater samples. Purging equipment will be decontaminated prior to use at each monitoring well. Groundwater samples will be obtained using the portable, dedicated sample bailers. Equipment used for water quality monitoring will also be decontaminated, where necessary and practical. Decontamination procedures on water quality monitoring equipment will be dependent upon equipment manufacturers' instructions and specifications. Decontamination procedures will take place at a pre-designated on-site location. Decontamination procedures will be recorded in the field logbook.

Decontamination procedures of the well purging equipment will be accomplished by rinsing the equipment in Liquinox® and water solution, followed by a triple rinse using tap water and de-ionized water. Tap water will be used for the first two rinses of the purging equipment. De-ionized water will be used during the third (final) rinse of the equipment. Rinsing of the equipment will take place with the use of 5-gallon buckets, that will placed on top of plastic sheeting laid along the ground surface in the pre-designated on-site decontamination location.

Water generated during well purging will be placed into DOT-approved 55-gallon waste barrels. Excess water generated during groundwater sampling will also be placed into these waste barrels. Waste barrels containing the purge water and any excess water will be sealed and labeled, and then moved to a temporary centralized storage area, as designated by the manager of the site facilities. The barrels will be labeled with the project name (site location), date of generation, well number, and type of matrix (i.e., purged groundwater). Arrangements for transport and disposal of the water will be made upon receipt of the analytical results. The water will be transported and disposed at an approved transport, storage, and disposal (TSD) facility. Health and safety equipment, such as Tyvek suits and nitrile gloves, worn during monitoring will also be placed into a 55-gallon waste barrel at each facility.

Appendix B

Unified Soil Classification System, Soil Boring Logs

Project: 7900-7916 Dublin Boulevard, Dublin, CA		Boring I.D.: B-1	Page: 1 of 1
Drilling Agency: N/A		Date Started: 8/31/98	Date Finished: 8/31/98
Drilling Equipment: Hand Auger	Logged By: JC	Completion Depth: ~15'	Hammer: N/A
Drilling Method: Hand Auger	Samples: 3	Initial Water Depth: N/A	Sampler: brass
WELL DETAILS: N/A			

Depth (feet)	Lithologic Description/Remarks	PID/(PPM)	Soil Class'n	Depth (feet)	Blows/ft.	Sample Interval / Sample Number	Well Construction
1	3.0 to 4.0 inches of ashpalt at ground surface Base rock to approximately 1.0 feet bgs			1			
2				2			
3				3			
4				4			
5	Clayey silt (ML); light to medium brown; slightly damp; low plasticity; no product odor; 0-10% fine sand, 70-80% silt, 20-30% clay	1.4	ML	5		B-1@5'	
6				6			
7				7			
8				8			
9				9			
10	Silty clay (CL); medium brown; damp to moist; low to medium plasticity; no product odor; 0-10% fine sand, 25-35% silt, 65-75% clay	2.3	CL	10		B-1@10'	
11				11			
12				12			
13				13			
14				14			
15	Same as above; 6.0" to 1.0' fine to medium sand stringer occurs at approximately 13.5' bgs	3.0	CL	15		B-1@15'	
16				16			
17	Total depth = 15 feet bgs			17			
18				18			
19				19			
20				20			
21				21			
22				22			
23				23			
24				24			
25				25			

AUGEAS CORPORATION	Site Address: 7900-7916 Dublin Boulevard, Dublin, CA

Project: 7900-7916 Dublin Boulevard, Dublin, CA		Boring I.D.: B-2	Page: 1 of 2
Drilling Agency: N/A		Date Started: 9/2/98	Date Finished: 9/2/98
Drilling Equipment: Geoprobe	Logged By: JC	Completion Depth: ~30'	Hammer: N/A
Drilling Method: direct push	Samples: 1 (water)	Initial Water Depth: ~27'	Sampler: hydropunch

WELL DETAILS: N/A

Depth (feet)	Lithologic Description/Remarks	PID/(PPM)	Soil Class'n	Depth (feet)	Blows/ft.	Sample Interval / Sample Number	Well Construction
1	3.0 to 4.0 inches of ashpalt at ground surface Base rock to approximately 1.0 feet bgs			1			
2				2			
3				3			
4				4			
5	Clayey silt (ML); light to medium brown; slightly damp; low plasticity; no product odor, 0-10% fine sand, 70-80% silt, 20-30% clay	11	ML	5			
6				6			
7				7			
8				8			
9				9			
10	Same as above	19	ML	10			
11				11			
12				12			
13	6.0" to 1.0' fine to medium grained sand (SC) stringer occurs at approximately 13.0' bgs			13			
14				14			
15	Silty clay (CL); medium brown; damp to moist; low to medium plasticity; no product odor; 0-10% fine sand, 25-35% silt, 65-75% clay,	22	CL	15			
16				16			
17				17			
18				18			
19				19			
20	Same as above; moist to very moist	20	CL	20			
21				21			
22				22			
23				23			
24				24			
25	Clayey sand (SC); light to medium brown; very moist; no product odor; 65-75% fine to medium sand, 5-15% silt, 20-30% clay;	27	SC	25			

Project: 7900-7916 Dublin Boulevard, Dublin, CA		Boring I.D.: B-2	Page: 2 of 2
Drilling Agency: N/A		Date Started: 9/2/98	Date Finished: 9/2/98
Drilling Equipment: Geoprobe	Logged By: JC	Completion Depth: ~30'	Hammer: N/A
Drilling Method: direct push	Samples: 1 (water)	Initial Water Depth: ~27'	Sampler: hydropunch

WELL DETAILS: N/A

Depth (feet)	Lithologic Description/Remarks	PID/(PPM)	Soil Class'n	Depth (feet)	Blows/ft.	Sample Interval / Sample Number	Well Construction
26	Clayey sand (SC); light to medium brown, very moist; no product odor, 65-75% fine to medium sand, 5-15% silt, 20-30% clay;	27	SC	26			
27		▽		27			
28				28			
29				29			
30	Clayey silt (ML), light to medium brown, saturated; low plasticity; no product odor, 0-10% fine sand, 70-80% silt, 20-30% clay	34	ML	30			
31				31			
32	Total depth = 30 feet bgs			32			
33				33			
34				34			
35				35			
36				36			
37				37			
38				38			
39				39			
40				40			
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49				49			
50				50			

Appendix C

Chain of Custody and Certified Analytical Reports for Soil

AUGEAS CORPORATION
780 PURISSIMA
HALF MOON BAY, CALIFORNIA 94019
650 (415) 726-7700
650 (415) 726-1217 (FAX)

Chain of Custody

Page 1 of 1

• PLEASE PRINT IN PEN

12232 xanq5.doc

Client 7700 DUBLIN BLVD.	Contact	Phone # ( )	FAX # ( )
Address	City	State	Zip
Project Name/Number		Project MGR Mc VICKER	
Bill (if different than above)	Address	STANDARD	
Sampler (Print and sign) J. CALVI J Calvi	Due Date	Circle for RUSH*	Copies To: Auth. Init.

Sample Description	Date/Time Coll'd	*Matrix	# of Containers	Pres.	Filt. y/n	Analysis (* Subject to Availability)	Remarks	Lab ID #
AB-1A	8/31/98 1229	S	ONE	—		TPHg, TPH-d, MTBE, BTEX		94475
AB-1B	8/31/98 1231	S	ONE	—		↓ ↓ ↓ ↓		94476
AB-1C	8/31/98 1233	S	ONE	—		↓ ↓ ↓ ↓		94477

Relinquished By	Date/Time	Received By	Relinquished By	Date/Time	Received By
J Calvi	9/01/98 15:15	9-1-98 Phillip 138	Phillip 138	9-1-98 ?:25	Jim Perry 676 9/1/98
Jim Perry 676	9/1/98 ?:20	Rusa V RAF			

FOR LAB USE ONLY

Shipping Method	Shipping #	Received By	Date/Time	Condition (See Remarks) Cold	Sealed	Intact
	—					

REMARKS: ICED ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATION ✓ APPROPRIATE CONTAINERS ✓ VOAS | O&G | METALS | OTHER

*Matrix: DW Drinking Water; WW Wastewater; GW Groundwater; SW Surface Water; IM Impinger; FI Filter; FP Free Product; A/G Air/Gas; SL Sludge/Soil/Solid; OT Other

AUGEAS CORPORATION
780 PURISSIMA
HALF MOON BAY, CALIFORNIA 94019
650 (415) 726-7700
650 (415) 726-1217 (FAX)

Chain of Custody

Page 1 of 1

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Client 7500 DUBLIN BLVD.	Contact	Phone # ( )	FAX # ( )
Address	City	State	Zip
Project Name/Number		Project MGR MIKE VICKER	
Bill (If different than above)	Address STANDARD		
Sampler (Print and sign) J. CALVI	Due Date	Circle for RUSH*	Copies To: Auth. Init.

Sample Description	Date/Time Coll'd	*Matrix	# of Containers	Pres.	Filt. y/n	* Subject to Availability Analysis	Remarks	Lab ID #
AB-1A@5-0'	8/31/01 1120	S	ONE	—	—	TPHg, TPH-d, MTBE, BTEX		
AB-1B@10-0'	8/31/01 1231	S	ONE	—	—	"		
AB-1C@15-0	8/31/01 1333	S	ONE	—	—	"		

Relinquished By	Date/Time	Received By	Relinquished By	Date/Time	Received By
J. Calvi	9/01/01 15:15	9-1-01 Phillip 138			

FOR LAB USE ONLY

Shipping Method	Shipping #	Received By	Date/Time	Condition (See Remarks) Cold	Sealed	Intact

REMARKS

* Matrix:
DW – Drinking Water
WW – Wastewater
GW – Groundwater
SW – Surface Water
IM – Impinger
FI – Filter
FP – Free Product
A/G – Air/Gas
SL – Sludge/Soil/Solid
OT – Other

McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Augeas Corporation 780 Purissima Half Moon Bay, CA 94019	Client Project ID: 7900 Dublin Blvd.	Date Sampled: 08/31/98
		Date Received: 09/01/98
	Client Contact: Keith McVicker	Date Extracted: 09/01/98
	Client P.O:	Date Analyzed: 09/01-09/02/98

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	Ethylbenzene	Xylenes	% Recovery Surrogate
94475	AB-1A	S	ND	ND	ND	ND	ND	ND	102
94476	AB-1B	S	ND	ND	ND	ND	ND	ND	97
94477	AB-1C	S	ND	ND	ND	ND	ND	ND	93
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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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Augeas Corporation	Client Project ID: 7900 Dublin Blvd.	Date Sampled: 08/31/98
780 Purissima		Date Received: 09/01/98
Half Moon Bay, CA 94019	Client Contact: Keith McVicker	Date Extracted: 09/01/98
	Client P.O:	Date Analyzed: 09/01-09/02/98

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
94475	AB-1A	S	ND	98
94476	AB-1B	S	ND	99
94477	AB-1C	S	ND	94
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 mg/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.

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Edward Hamilton, Lab Director

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/01/98-09/02/98 Matrix: SOIL

Analyte	Concentration (mg/kg) Sample (#90224)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	2.199	2.207	2.03	108	109	0.4
Benzene	0.000	0.203	0.210	0.2	101	105	3.9
Toluene	0.000	0.210	0.218	0.2	105	109	3.7
Ethylbenzene	0.000	0.206	0.214	0.2	103	107	3.8
Xylenes	0.000	0.606	0.630	0.6	101	105	3.9
TPH(diesel)	0	324	330	300	108	110	1.9
TRPH (oil and grease)	0.0	21.9	23.2	20.8	105	112	5.8

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

Appendix D

Chain of Custody and Certified Analytical Reports for Groundwater

AUGEAS CORPORATION
780 PURISSIMA STREET
HALF MOON BAY, CALIFORNIA 94019
(650) 726-7700
(650) 726-1217 (FAX)

Chain of Custody

Page 1 of 1

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Project Name/Number 7900 DUBLIN BLVD			Project MGR Mo Vinkler
Client	Contact	Phone # ( )	FAX # ( )
Address	City	State	Zip
Bill (if different than above)	Address	24 HOUR	
Sampler (Print and sign) J. CALW		Due Date Circle for RUSH*	Copies To: Auth. Init.

* ~~Subject to Availability~~

Sample Description	Date/Time Coll'd	Matrix	# of Containers	Analysis	Remarks	Lab ID #
GW-1	2/20 1155	W	2	TPHg MTBE BTEX		94492
GW-1	2/20 1155	W	1	DIESEL		

Relinquished By	Date/Time	Received By	Relinquished By	Date/Time	Received By
J Calw	2/21 1155	Heidi Rucu			

FOR LAB USE ONLY

Shipping Method	Shipping #	Received By	Date/Time	Condition (See Remarks) Cold	Sealed	Intact

REMARKS

ICE/T° ✓	PRESERVATION ✓	VOAs	O&G	METALS	OTHER
GOOD CONDITION ✓	APPROPRIATE				
HEAD SPACE ABSENT ✓	CONTAINERS ✓				

Matrix:
DW - Drinking Water
WW - Wastewater
GW - Groundwater
SW - Surface Water
IM - Impinger
FI - Filter
FP - Free Product
A/G - Air/Gas
SL - Sludge/Soil/Solid
OT - Other

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

Augeas Corporation 780 Purissima Half Moon Bay, CA 94019	Client Project ID: 7900 Dublin Blvd	Date Sampled: 09/02/98
		Date Received: 09/02/98
	Client Contact: Keith McVicker	Date Extracted: 09/02/98
	Client P.O:	Date Analyzed: 09/02/98

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	Ethylbenzene	Xylenes	% Recovery Surrogate
94492	GW-1	W	440,b,f	160	ND	21	ND	0.69	90
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

f 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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Augeas Corporation 780 Purissima Half Moon Bay, CA 94019	Client Project ID: 7900 Dublin Blvd	Date Sampled: 09/02/98
		Date Received: 09/02/98
	Client Contact: Keith McVicker	Date Extracted: 09/02/98
	Client P.O:	Date Analyzed: 09/02/98

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
94492	GW-1	W	1000,g,b	110
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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Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/01/98-09/02/98 Matrix: WATER

Analyte	Concentration (mg/L) Sample (#94114)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	91.3	96.6	100.0	91.3	96.6	5.7
Benzene	0.0	8.9	9.1	10.0	89.0	91.0	2.2
Toluene	0.0	9.2	9.4	10.0	92.0	94.0	2.2
Ethyl Benzene	0.0	9.4	9.7	10.0	94.0	97.0	3.1
Xylenes	0.0	28.6	29.3	30.0	95.3	97.7	2.4
TPH(diesel)	0.0	173	167	150	115	111	3.3
TRPH (oil & grease)	0	21400	20700	23700	90	87	3.3

% Rec. = (MS - Sample) / Amount Spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100