LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

Additional Soil and Ground Water Quality Evaluation

Grand Marina Village

Alameda, California

This report has been prepared for:

Encinal Marina, LTD

P.O. Box 2453, Alameda, California 94501-0251

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Project No. 1197-1A

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ADDITIONAL SOIL AND GROUND WATER QUALITY EVALUATION
GRAND MARINA VILLAGE
ALAMEDA, CALIFORNIA

1.0 INTRODUCTION

1.1 Purpose

In this report, we present the results of additional soil and ground water quality evaluation performed at the Grand Marina Village site located at 2033, 2039, 2041, 2043, 2045, 2047, and 2051 Grand Street in Alameda, California, as shown on Figures 1 and 2. This work was performed for Encinal Marina, LTD. Previous site sampling was performed for Ponderosa Homes and the results were presented in our report dated December 8, 2004. We understand that Ponderosa Homes is considering the purchase and redevelopment of the site. The planned development includes single-family homes.

1.2 Site Background

Based on our previous Phase I report (Lowney Associates, 2004), the site was developed by 1839 as a fishing vessel fleet harbor by Alaska Packer Association (approximately 1839 to 1940). Subsequent uses at the site have included a lumberyard (Taylor and Company; approximately 1906 to 1917); auto repair, carpentry, blacksmith, and animal shelter facilities (City of Alameda Corporation Yard; approximately 1917 to 1983); aboveground storage tank (AST) farm and related facilities for the storage of gasoline, diesel fuel, fuel oil, kerosene, aviation fuel, and other petroleum compounds (Union Oil Company; approximately 1930 to 1952); and a ship repair yard (Marine Ship Repair Lessees; at least 1948). Continued use of the site as an AST farm and bunker fuel depot continued through approximately 1992 by Bay City Fuel Oil Company (approximately 1953 to 1959), HTB (approximately 1926 to 1979), and Encinal Fuel Depot (approximately 1987 to 1992). The site was also used for the storage of marine construction equipment by Healey-Tibbets Construction Company (approximately 1980 to 1986). The site was purchased by Grand Marina in 1986. Current activities at the site include the use of western portions of the site as parking areas associated with the Grand Marina, dry storage of outriggers and boats, office areas, boat building and repair, car restoration, production of marine canvas products, and locksmith activities.

Additionally, a 550-gallon gasoline underground storage tank (UST) was reportedly installed at 2041 Grand Street in April 1949; no records were found reporting the removal of the UST. A 1,000-gallon gasoline UST was reportedly installed at 2041 Grand Street (near the southeast corner of Building B) in November 1963 and removed in May 1988. A 10,000-gallon bilge water tank was reported at 2047 Grand Street from at least June 1996 until its removal in October 2000.

Currently, a 250-gallon waste oil AST on a raised platform is located on-site, southwest of Area E. A 12,000-gallon diesel UST and 12,000-gallon gasoline UST installed in April 1989 and currently in use by the Grand Marina fuel dock are located

at an asphalt-paved driveway near the northern property boundary; based on observed site plans, the UST location appears partially located on-site.

Previous site investigation activities by others were conducted to investigate releases from the former 1,000-gallon gasoline UST and former AST farm. Cleanup activities at the site included removal of ASTs and USTs and over-excavation at the area of the former AST farm; no documentation was found reporting over-excavation activities at the former 1,000-gallon UST location. A Remedial Action Completion report for remediation activities at the former AST farm recommending no further action was issued June 25, 1998. A Remedial Action Completion letter reporting completion of site investigation and remedial action activities at the former 1,000 gallon UST release was issued March 16, 1999. This letter and an April 3, 1988 Case Closure Summary report documented concentrations in soil of up to 340 parts per million (ppm) total petroleum hydrocarbons in the gasoline range (TPHg), 4,700 ppm total petroleum hydrocarbons in the diesel range (TPHd), 0.15 ppm benzene, 0.87 ppm toluene, 1.0 ppm ethylbenzene, 5.8 ppm xylenes, and 12,000 ppm oil & grease. In ground water, reported concentrations were up to 110 parts per billion (ppb) TPHg, 300 ppb benzene, 15 ppb toluene, 7.6 ppb ethylbenzene, and 31 ppb xylenes in ground water. The closure summary recommended review of the closure action if future site-use changes were planned.

1.3 Scope of Work

The scope of work for this study included the following tasks.

- Drilling and logging of six exploratory borings.
- Collecting soil and ground water samples for laboratory analysis.
- Geophysical survey for undocumented UST.

2.0 SOIL AND GROUND WATER QUALITY EVALUATION

2.1 Subsurface Investigation

On December 17, 2004, under the supervision of Principal Geologist Thomas McCloskey, R.G., C.HG., Staff Environmental Engineer Veronica Tiglao directed a subsurface exploration program and logged six borings (GWS-7 through GWS-12) to approximate depths of 8 to 16 feet at the locations shown on Figure 2. Boring GWS-1 through GWS-6 were completed during the previous Lowney Associates investigation. The exploratory borings were positioned to determine if elevated concentrations were present near the estuary and to evaluate the lateral extent of impacted areas.

Exploratory borings GWS-7, GWS-8 and GWS-9 were advanced down-gradient of the existing 12,000-gallon diesel UST and 12,000-gallon gasoline UST (assuming ground water flow is north/northwest toward the Alameda/Oakland Estuary) and boring GWS-1, which had elevated concentrations of petroleum hydrocarbons identified during the previous Lowney Associates investigation. Exploratory boring GWS-10 was advanced up-gradient of boring GWS-1. Exploratory boring GWS-11 was advanced adjacent to the existing USTs. Exploratory boring GWS-12 was advanced down-

gradient of the former 1,000-gallon UST location and boring GWS-6. Soil samples were obtained continuously from the borings for logging purposes. Ground water was encountered at approximate depths of 4 to 12 feet. Soil sampling protocol, boring logs, and permits are presented in Appendix A. Subsurface conditions encountered are presented on the boring logs.

2.2 Soil Sample Collection and Analyses

Soil samples with potentially elevated concentrations of contaminants were collected based on field observations and organic vapor meter readings. Three samples were selected and submitted to a California certified laboratory for analysis.

The soil samples were analyzed for TPHg, TPHd, and motor oil range (TPHmo) (EPA Test Method 8015M) and benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Test Method 8021B/8260B). The sampling depths and the laboratory testing results are presented in Table 1, and the results are presented on Figure 2. Copies of the analytical reports and chain of custody documentation are presented in Appendix B.

Table 1. Laboratory Results of Selected Soil Samples
(concentrations in parts per million)

Boring Number	Depth (feet)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes
GWS-8	7½-8	<1.0	170	680	<0.005	<0.005	<0.005	<0.005
GWS-11	7½-8	<1.0	<1.0	<50	<0.005	<0.005	<0.005	<0.005
GWS-12	3½-4	<5.0	28	<50	<0.025	<0.025	<0.025	<0.025
Residential ESL*		100	100	500	0.044	2.9	3.3	1.5

< Residential ESL - Indicates that the compound was not detected at or above the stated laboratory reporting limit.
* Environmental Screening Level– San Francisco Bay California Regional Water Quality Control Board, July 2003 for direct exposure to the compound in a residential setting.

The Environmental Screening Levels (ESLs) presented in Table 1 are published by the San Francisco Bay California Regional Water Quality Control Board (CRWQCB) (CRWQCB, 2003) to address environmental protection goals as presented in the *Water Quality Control Plan for the San Francisco Bay Basin* (CRWQCB, 1995). ESLs were developed to protect human and ecological health and to be protective of beneficial uses of ground water taking into account site-specific conditions. The presence of a chemical at a concentration above an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; exceeding ESLs indicates that the potential for impacts may exist and that additional evaluation may be needed. The ESL limits in Table 1 are for protection of human health where there is direct exposure to the compound. In addition, the California Department of Toxic Substances (DTSC) control does not recognize ESLs.

2.3 Ground Water Sample Collection and Analyses

To evaluate ground water quality at the site, ground water grab samples were collected from each boring. A discussion of ground water sampling protocol is

included in Appendix A. The ground water samples were analyzed for TPHg and TPHd (EPA Test Method 8015M) and BTEX compounds (EPA Test Method 8021B/8260B). These analyses were selected to help evaluate on-site ground water quality. Laboratory testing results for the ground water samples collected from exploratory borings GWS-7 through GWS-12 showed concentrations below the detection limits, with exception of TPHg (1,000 ppb) and TPHd (500 ppb) in GWS-12. The results of all recent ground water sampling for the exploratory borings are presented on Figure 3.

2.4 Silica Gel Cleanup

The soil and ground water samples were passed through a silica gel column prior to the TPHd analysis (EPA Test method 8015) to help remove non-fuel hydrocarbons. The silica gel removes oxygenated organic compounds produced by biologic degradation of organic materials. Studies have shown that the silica gel filter does not significantly remove extractable range petroleum hydrocarbons, including diesel, because the petroleum hydrocarbons are composed of non-polar substances (Zemo, 1997). Performing the silica gel filtration prior to analysis is important where the samples are collected from organic rich environments common to the shallow ground water-bearing zones in the San Francisco Bay Area; these environments contain significant concentrations of naturally-occurring hydrocarbons that can be detected in the EPA 8015 analysis and falsely quantified by the laboratory as diesel.

3.0 GEOPHYSICAL SURVEY

To evaluate if buried fuel storage tanks and other buried metal debris may be still present in the western area of the site (Drawing 2, Appendix C), a registered geophysicist used a magnetometer to map the vertical magnetic gradient on accessible areas (Drawing 3, Appendix C).

The magnetic gradient is uniform throughout a site free of ferrous metal. Metal objects, however, will produce magnetic anomalies with characteristic shapes and magnitudes if not masked by overlying or nearby metallic debris. Magnetic data were collected on stations at 10-foot intervals along traverse lines spaced 10 feet apart. The data were downloaded to a computer and contoured.

The site contained numerous strong magnetic anomalies from surface metal and buried utilities. The magnetic anomalies will mask magnetic anomalies from buried metal structures in these areas. The geophysical survey did not locate any significant magnetic anomalies indicative of a UST in the area of investigation. Detailed results of the survey are presented in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 General Soil Quality

Laboratory analyses of soil samples did not detect benzene or toluene above laboratory reporting limits. Other petroleum hydrocarbons were not detected above laboratory reporting limits. Therefore, the hydrocarbons detected do not pose a vapor intrusion health threat to future residential occupants of the site.

TPHd and TPHmo concentrations were detected above residential ESLs at GWS-8 (170 ppm TPHd and 680 ppm TPHmo). The residential ESLs, assuming direct exposure in a residential setting, for TPHd and TPHmo are 100 ppm and 500 ppm, respectively. The elevated concentrations were detected at least 4- to 6-feet below ground surface and, therefore, direct exposure to these soils is not likely to occur on a regular basis, if at all, given the proposed high-density proposed site redevelopment. Therefore, the detected concentrations do not pose a threat to the proposed site reuse. Contaminated soil may be excavated during utility or foundation installation and would need to be handled appropriately to avoid future direct exposure. This can be controlled with a Soil Management Plan implemented during site redevelopment. Future deep excavations by homeowners, if any, would also need to be properly controlled to minimize direct exposure.

4.2 General Ground Water Quality

TPHg was detected in one of the six ground water samples collected. TPHg was detected at 1,000 ppb in boring GWS-12. TPHd was also detected in GWS-12 at 500 ppb. Elevated TPHg concentrations detected in the ground water sample collected from boring GWS-12 is likely associated with the release from the former 1,000-gallon UST located near this boring. These compounds and concentrations do not pose a threat to the proposed site reuse.

No contaminants were detected above the laboratory detection limits in GWS-7 through GWS-11. These borings are generally located in the area of boring GWS-1, which had elevated petroleum hydrocarbons identified in the previous site investigation. It appears that these contaminants do not extend to the estuary and represent an isolated release in the vicinity of GWS-1.

4.3 Regulatory Agency Submittal

We recommend that a copy of this report be sent to the CRWQCB for their review.

4.4 Geophysical Survey

The site contained several magnetic anomalies from surface metal and buried utilities. Such magnetic-anomalies mask magnetic-anomalies from buried metal structures. Therefore, it is possible that some ferrous objects will not produce an anomaly for several reasons; including if the object is buried too deep, is too small, is buried under something, or is near another ferrous object. As noted above, buried magnetic anomalies that did not appear to be caused by surface metal or buried utilities were not located within the geophysical investigation area.

5.0 LIMITATIONS

This report was prepared for the use of Encinal Marina, LTD in evaluating soil and ground water quality at the Grand Marina Village at the time of this study. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location. The chemical and other data presented in this report can change over time and are

applicable only to the time this study was performed. We are not responsible for the data presented by others.

The accuracy and reliability of geo- or hydro-chemical studies are a reflection of the number and type of samples taken and extent of the analyses conducted, and are thus inherently limited and dependent upon the resources expended. Chemical analyses were performed for specific parameters during this investigation, as detailed in the scope of services. Please note that additional constituents not analyzed for during this evaluation may be present in soil and ground water at the site. Our sampling and analytical plan was designed using accepted environmental principles and our judgment for the performance of a soil and ground water quality evaluation and was based on the degree of investigation approved by you. It is possible to obtain a greater degree of certainty, if desired, by implementing a more rigorous soil and ground water sampling program or evaluating the risk posed by the contaminants detected, if any.

Magnetic methods locate ferrous objects from the anomalies they produce in the earth's magnetic field. Some ferrous objects may not produce an anomaly. Some possible reasons are that the object is buried too deep, the object is too small, the object is buried under or near another ferrous object, or an object is buried near a utility. The anomalies from metal on the ground surface can mask the anomalies from objects buried below them. It is possible buried objects were not detected due to interference from metal objects on the surface.

6.0 REFERENCES

San Francisco Bay Regional Water Quality Control Board, July 2003, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.*

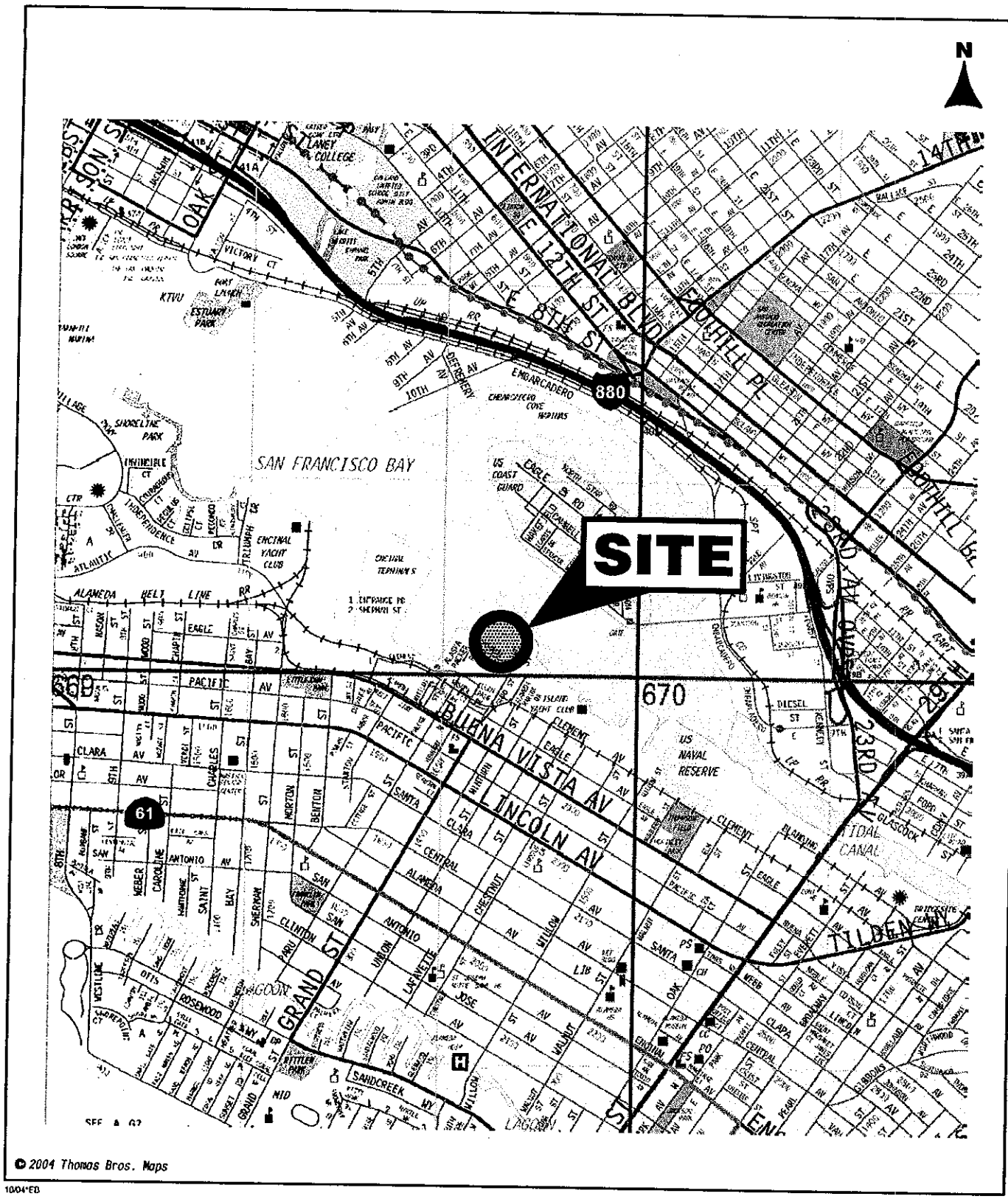
San Francisco Bay Regional Water Quality Control Board, June 1995, *Water Quality Control Plan for the San Francisco Bay Basin.*

Lowney Associates, October 18, 2004, *Phase I Environmental Site Assessment, Grand Marina Village, Alameda, California.*

Lowney Associates, December 8, 2004, *Soil and Ground Water Evaluation, Grand Marina Village, Alameda, California.*

Zemo, D.A, 1997, *Do Your Extractable TPH Concentrations Represent Dissolved Petroleum?* An Update on Applied Research, Proceedings of the Petroleum Hydrocarbons and Organic Chemicals in Ground Water, 1997 Conference, NGWA/API, pp. 640-654.

* * * * * * * * * * * * *



10/04*ED

VICINITY MAP

GRAND MARINA VILLAGE
Alameda, California

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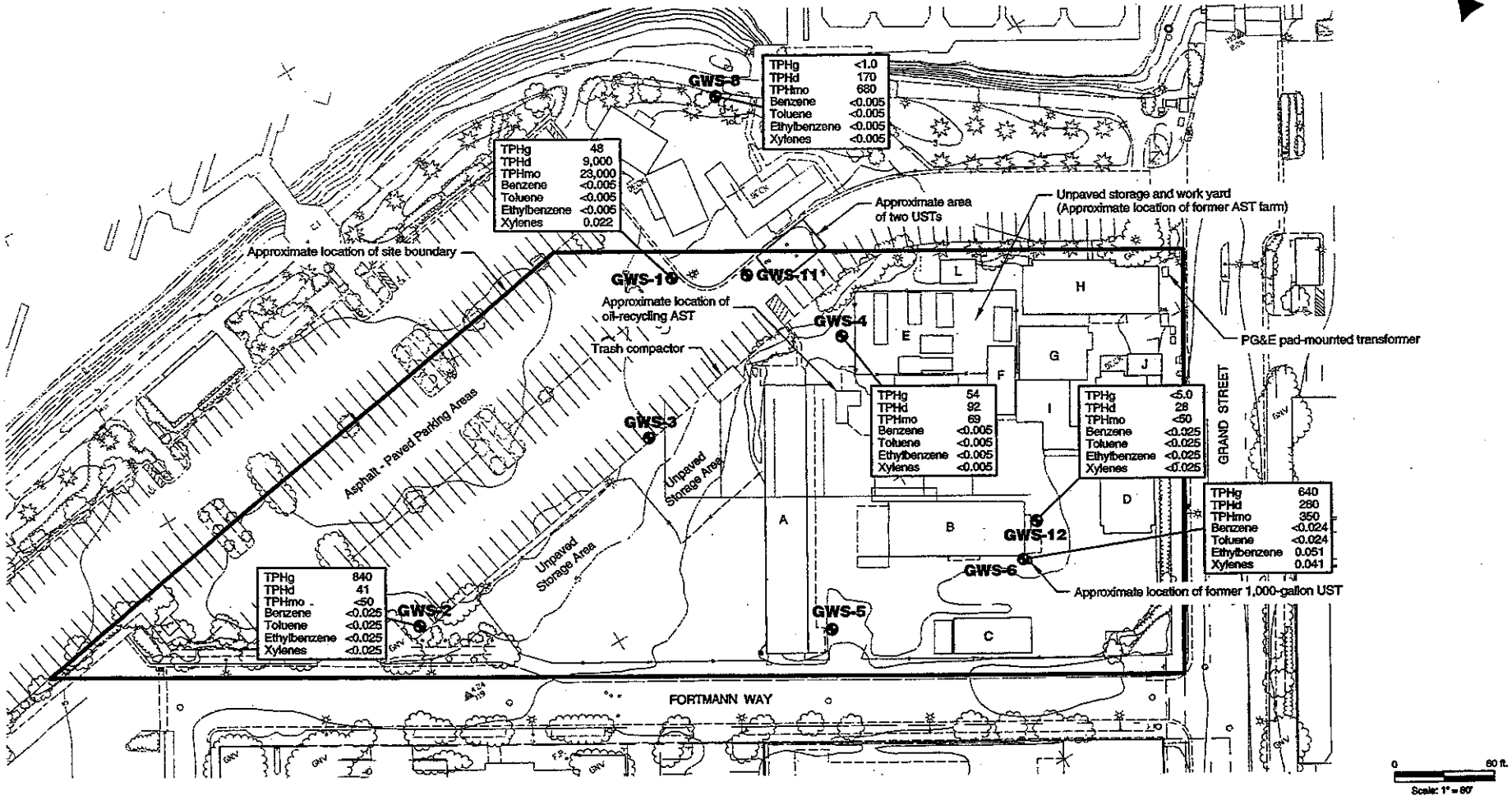
FIGURE 1
1197-1A



LEGEND

- ⊕ - Approximate location of exploratory boring
- * Concentrations shown in parts per million (ppm)
- [1]No compounds identified exceeding laboratory detection limits

A - Multiple tenants (offices and workshops)
B - Joakim Jonsson Boat Builders
C - Office spaces
D - "Sew What" Marine Canvas Shop
E - Mad Dog Drilling Company
F - Storage building
G - Locksmith
H - Multiple tenants (offices and piano studio)
I - Miscellaneous storage building
J - Vacant
K - Office spaces
L - Miscellaneous storage

Base by Carlson, Barbee & Gibson, Inc., dated 9-8-04.

SITE PLAN
SOIL ANALYTICAL RESULTS
GRAND MARINA VILLAGE
Alameda, California

LOVNEY ASSOCIATES
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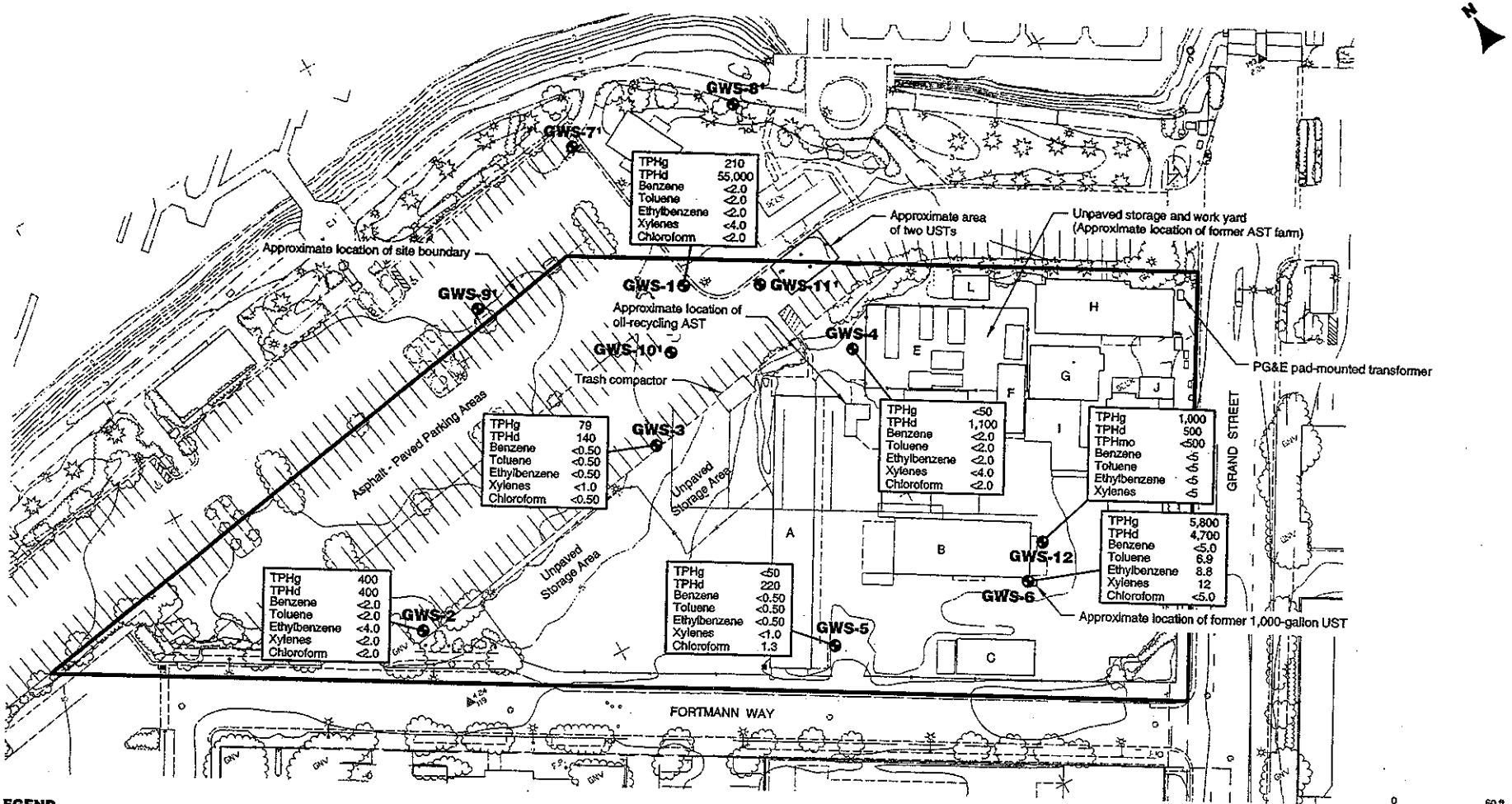
FIGURE 2
1197-1A

1/05"EB



LEGEND

- ⊕ - Approximate location of exploratory boring
- * Concentrations shown in parts per billion (ppb)
- [1]No compounds identified exceeding laboratory detection limits

A - Multiple tenants (offices and workshops)
B - Joakim Jonsson Boat Builders
C - Office spaces
D - "Sew What" Marine Canvas Shop
E - Mad Dog Drilling Company
F - Storage building
G - Locksmith
H - Multiple tenants (offices and piano studio)
I - Miscellaneous storage building
J - Vacant
K - Office spaces
L - Miscellaneous storage

Base by Carlson, Barbee & Gibson, Inc., dated 9-8-04.

SITE PLAN
GROUND WATER ANALYTICAL RESULTS
GRAND MARINA VILLAGE
Alameda, California

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FIGURE 3
1197-1A

1/06*EB

APPENDIX A
SOIL AND GROUND WATER SAMPLING PROTOCOL AND BORING LOGS

Drilling: The subsurface investigation was performed on December 17, 2004, using a truck-mounted drill-rig equipped Direct Push Technology. Six soil borings (GWS-7 through GWS-12) were drilled to depths of approximately 8 to 16 feet.

Soils encountered in the borings were logged using the Unified Soil Classification System (ASTM D-2487). The logs of the borings, as well as a key to the classification of soil (Figure A-1), are included as part of this appendix. Permits obtained for the borings are also included.

Soil Sampling: Soil samples for laboratory analysis were collected in acetate or brass liners. The ends of the liners were covered in aluminum foil or Teflon film, fitted with plastic end caps, taped, and labeled with a unique identification number. The samples were then placed in an ice-chilled cooler, and transported to a state-certified analytical laboratory with chain of custody documentation. Soil vapors from each sample were also monitored with an OVM by first placing the soil in a Ziplock™ bag for several minutes. The OVM probe was then used to pierce the bag and record the organic vapor levels present.

Ground Water Sampling: Borings GWS-7 through GWS-12 were converted into "temporary" wells with the installation of 1-inch I.D. flush-threaded, Schedule 40 PVC casing. The casing in the lower portion of the well had 0.02-inch factory machined slots. Ground water grab samples were collected from the temporary wells with a bailer. Samples were collected in appropriate sampled bottles, labeled, and immediately placed into an ice-chilled chest for delivery to a state-certified analytical laboratory for analysis.

Equipment Decontamination: All drilling and sampling equipment was cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

EXPLORATORY BORING: GWS-7

Sheet 1 of 1

DRILL RIG: VIRONEX
BORING TYPE: DIRECT PUSH
LOGGED BY: VMT
START DATE: 12-1-04 FINISH DATE: 12-1-04

PROJECT NO: 1197-1A
PROJECT: GRAND MARINA
LOCATION: ALAMEDA, CA
COMPLETION DEPTH: 12.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE
		SURFACE ELEVATION:	
	0	2 inches asphalt and aggregate base	
		SANDY CLAYEY GRAVEL (GC) [FILL] dense, dry, orange, with medium sand and fine to medium angular gravel	GC, FILL
		CLAYEY SILT (ML) [FILL] very stiff, slightly moist, olive green, with trace fine sand	ML, FILL
	5	**SANDY CLAY (CL) [FILL]** medium stiff, moist, black, with fine sand	CL, FILL
		SANDY CLAYEY GRAVEL (GC) [FILL] medium dense, moist, orange	GC, FILL
		SANDY CLAY (CL) medium stiff, moist, gray, with fine sand	CL
		SILTY CLAY (CL) medium stiff, moist, light brown, with trace fine sand	CL
	10	2 inches medium coarse sand layer, very moist, brown, medium dense	GC
		SANDY CLAYEY GRAVEL (GC) medium dense, very moist, olive green	
		SAND (SP-SC) medium dense, very moist, olive green, fine sand with some clay	SP-SC
		Bottom of Boring at 12 feet	
	15		
	20		

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | PID (ppm) | Undrained Shear Strength (tsf): ○ Pocket Penetrometer, △ Torvane, ● Unconfined Compression, ▲ U-U Triaxial Compression (1.0, 2.0, 3.0, 4.0)

PID (ppm): 2.5

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 9.0 FEET

LA CORP.GDT 1/7/05 MV*

EXPLORATORY BORING: GWS-8

Sheet 1 of 1

DRILL RIG: VIRONEX	PROJECT NO: 1197-1A
BORING TYPE: DIRECT PUSH	PROJECT: GRAND MARINA
LOGGED BY: VMT	LOCATION: ALAMEDA, CA
START DATE: 12-1-04 FINISH DATE: 12-1-04	COMPLETION DEPTH: 12.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PID (ppm)
		SURFACE ELEVATION:						
	0	2 inches asphalt and aggregate base						
		SANDY CLAYEY GRAVEL (GC) [FILL] dense, dry, orange, with medium sand and fine to medium angular gravel	GC, FILL					
		SANDY CLAY (CL) [FILL] medium stiff, moist, olive green, with medium coarse sand	CL, FILL					
		LEAN CLAY (CL) [FILL] very stiff, slightly moist, olive green, with trace fine sand	CL, FILL					
	5	2 inch layer coarse angular gravel						
		SANDY CLAY (CL) stiff, slightly moist, brown	CL					
		CLAYEY SAND (SC) dense, moist, gray, fine to medium sand, slight odor	SC					20
		SILTY CLAY (CL) medium stiff, very moist, gray, with trace fine sands	CL					
	10	**SAND (SP)** very dense, very moist, gray	SP					
		CLAY (CH) stiff, moist, gray, visible wood/organics	CH					
		Bottom of Boring at 12 feet						
	15							
	20							

Undrained Shear Strength (tsf): ○ Pocket Penetrometer; △ Torvane; ● Unconfined Compression; ▲ U-U Triaxial Compression; 1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:

▽: FREE GROUND WATER MEASURED DURING DRILLING AT 8.0 FEET

LA CORP.GDT 1/7/05 MV*

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GWS-8
1197-1A

EXPLORATORY BORING: GWS-9

Sheet 1 of 1

DRILL RIG: VIRONEX	PROJECT NO: 1197-1A
BORING TYPE: DIRECT PUSH	PROJECT: GRAND MARINA
LOGGED BY: VMT	LOCATION: ALAMEDA, CA
START DATE: 12-1-04 FINISH DATE: 12-1-04	COMPLETION DEPTH: 12.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PID (ppm)
		SURFACE ELEVATION:						
	0	2 inches asphalt and aggregate base						
		SANDY CLAYEY GRAVEL (GC) [FILL] very stiff, dry, orange	GC, FILL					
		CLAYEY SILT (ML) [FILL] very stiff, slightly moist, olive green, with trace fine sand	ML, FILL					0.1
		SANDY LEAN CLAY (CL) [FILL] very stiff, slightly moist, olive green, with fine sand	CL, FILL					
	5	**SANDY CLAYEY GRAVEL (GC) [FILL]** medium dense, slightly moist, orange	GC, FILL					
		SAND (SP) medium dense, very moist, fine to medium sand	SP					
		CLAY (CL) stiff, very moist, olive green, with some medium subangular gravel	CL					
	10	**CLAYEY SAND (SC)** dense, very moist, olive green	SC					
		CLAY (CH) stiff, moist, olive green	CH					
		Bottom of Boring at 12 feet						
	15							
	20							

Undrained Shear Strength (tsf): ○ Pocket Penetrometer; △ Torvane; ● Unconfined Compression; ▲ U-U Triaxial Compression; 1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:

▽: FREE GROUND WATER MEASURED DURING DRILLING AT 6.0 FEET

LA CORP.GDT 1/7/05 MV*

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GWS-9
1197-1A

EXPLORATORY BORING: GWS-10

Sheet 1 of 1

DRILL RIG: VIRONEX
BORING TYPE: DIRECT PUSH
LOGGED BY: VMT
START DATE: 12-1-04 FINISH DATE: 12-1-04

PROJECT NO: 1197-1A
PROJECT: GRAND MARINA
LOCATION: ALAMEDA, CA
COMPLETION DEPTH: 12.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	SOIL LEGEND	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE
			SURFACE ELEVATION:	
	0		2 inches asphalt and aggregate base	
			SANDY CLAYEY GRAVEL (GC) [FILL] dense, dry, orange, with medium sand, fine to medium gravel	GC, FILL
			CLAYEY SILT (ML) [FILL] very stiff, slightly moist, olive green, with trace fine sand,	ML, FILL
			SANDY CLAY (CL) [FILL] medium stiff, moist, olive green, with fine sand	CL, FILL
	5		**SANDY CLAYEY GRAVEL (GC) [FILL]** medium dense, moist, orange	GC, FILL
			CLAYEY SAND (SC) medium dense, very moist, olive green, fine sand	SC
	10		**CLAY (CH)** soft, very moist, gray	CH
			medium stiff, moist	
			2 inch layer fine to medium sand, medium dense, very moist, gray	CH
			CLAY (CH) soft, very moist, gray	
	15		Bottom of Boring at 12 feet	
	20			

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | PID (ppm)

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 7.0 FEET

LA_CORP.GDT 1/7/05 MK

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

EXPLORATORY BORING: GWS-11

Sheet 1 of 1

DRILL RIG: VIRONEX
BORING TYPE: DIRECT PUSH
LOGGED BY: VMT
START DATE: 12-1-04 FINISH DATE: 12-1-04

PROJECT NO: 1197-1A
PROJECT: GRAND MARINA
LOCATION: ALAMEDA, CA
COMPLETION DEPTH: 12.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	SOIL LEGEND	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE
			SURFACE ELEVATION:	
	0		2 inches asphalt and aggregate base	
			SANDY CLAYEY GRAVEL (GC) [FILL] dense, dry, dark brown, with medium sand and fine to medium angular gravel	GC, FILL
			CLAYEY SILT (ML) [FILL] very stiff, slightly moist, olive green	ML, FILL
			SANDY CLAYEY GRAVEL (GC) [FILL] medium dense, moist, orange	GC, FILL
			SILTY CLAY (CL) stiff, moist, olive green, with trace fine sand trace shells	CL
	5		**CLAYEY SAND (SC)** dense, moist, olive green	SC
			medium dense, light brown	
			CLAY (CH) stiff, moist, gray	CH
			soft, very moist	
			stiff, moist, olive with black mottles	
	10		gray, soft, moist	
			visible wood/organics	
	15		Bottom of Boring at 12 feet	
	20			

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | PID (ppm)

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 6.0 FEET

LA_CORP.GDT 1/7/05 MK

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

EXPLORATORY BORING: GWS-12

Sheet 1 of 1

DRILL RIG: VIRONEX	PROJECT NO: 1197-1A
BORING TYPE: DIRECT PUSH	PROJECT: GRAND MARINA
LOGGED BY: VMT	LOCATION: ALAMEDA, CA
START DATE: 12-1-04 FINISH DATE: 12-1-04	COMPLETION DEPTH: 8.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	SOIL LEGEND	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PID (ppm)
			SURFACE ELEVATION:						
	0		**CLAYEY SANDY GRAVEL (GC) [FILL]** dense, dry, brown, subangular gravel	GC, FILL					
			CLAYEY SAND (SC) medium dense, moist, brown, fine to medium coarse sand	SC					
	5		**CLAYEY SAND (SC)** loose, very moist, gray, fine to medium coarse sand	SC					
			CLAY (CH) stiff, slightly moist, gray	CH					
			Bottom of Boring at 8 feet						
	10								
	15								
	20								

Undrained Shear Strength (tsf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 4.0 FEET

LA CORP.GDT 1/7/05 MV

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

GWS-12
1197-1A

APPENDIX B
ANALYTICAL RESULTS

The chilled samples were delivered to a state-certified analytical laboratory. Chain of custody documentation was maintained for all samples. Attached are copies of the analytical results and the chain of custody forms.

SEVERN TRENT STL

Submission#: 2004-12-0710

Lowney & Associates Oakland

December 30, 2004

167 Filbert Street
Oakland, CA 94607
Attn.: Tom McCloskey
Project#: C14363 (1197-1A)
Project: Grand Marina

Attached is our report for your samples received on 12/20/2004 16:50
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 02/03/2005 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: asalimpour@stl-inc.com

Sincerely,

Afsaneh Salimpour

Afsaneh Salimpour
Project Manager

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972
Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
GWS-11 @ 7 1/2-8	12/17/2004	Soil	8

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3550/8015M
Test(s): 8015M
Sample ID: GWS-11 @ 7 1/2-8
Lab ID: 2004-12-0710 - 8
Sampled: 12/17/2004
Extracted: 12/27/2004 16:26
Matrix: Soil
QC Batch#: 2004/12/27-02.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	12/28/2004 17:38	
Motor Oil	ND	50	mg/Kg	1.00	12/28/2004 17:38	
Surrogate(s)						
o-Terphenyl	48.7	60-130	%	1.00	12/28/2004 17:38	S6

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3550/8015M
Test(s): 8015M
Method Blank
Soil
QC Batch # 2004/12/27-02.10
MB: 2004/12/27-02.10-001
Date Extracted: 12/27/2004 16:26

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	12/28/2004 10:57	
Motor Oil	ND	50	mg/Kg	12/28/2004 10:57	
Surrogates(s)					
o-Terphenyl	79.8	60-130	%	12/28/2004 10:57	

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
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Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Laboratory Control Spike Soil QC Batch #: 2004/12/27-02.10

LCS 2004/12/27-02.10-002 Extracted: 12/27/2004 Analyzed: 12/29/2004 11:20

LCSD 2004/12/27-02.10-003 Extracted: 12/27/2004 Analyzed: 12/29/2004 11:50

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	29.4	29.1	41.5	70.8	70.1	1.0	60-130	25		
Surrogates(s)										
o-Terphenyl	15.0	15.1	20.0	74.8	75.3		60-130	0		

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Legend and Notes

Result Flag

S6

Surrogate recoveries lower than acceptance limits.
Matrix interference suspected

Severn Trent Laboratories, Inc.
STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

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Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
GWS-8 @ 7 1/2-8	12/17/2004	Soil	7
GWS-12 @ 3 1/2-4	12/17/2004	Soil	9

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3550/3630M
Test(s): 8015M
Sample ID: GWS-8 @ 7 1/2-8
Lab ID: 2004-12-0710 - 7
Sampled: 12/17/2004
Extracted: 12/27/2004 16:28
Matrix: Soil
QC Batch#: 2004/12/27-02.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	170	2.0	mg/Kg	2.00	12/28/2004 18:31	Q2
Motor Oil	680	100	mg/Kg	2.00	12/28/2004 18:31	Q3
Surrogate(s)						
o-Terphenyl	78.5	60-130	%	2.00	12/28/2004 18:31	

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Submission: 2004-12-0710

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Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3550/3015M
Test(s): 8015M
Sample ID: SWS-12 @ 3 1/2-4
Lab ID: 2004-12-0710 - 5
Sampled: 12/17/2004
Extracted: 12/27/2004 15:26
Matrix: Soil
QC Batch#: 2004/12/27-02.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	28	1.0	mg/Kg	1.00	12/28/2004 18:04	Q2
Motor Oil	ND	50	mg/Kg	1.00	12/28/2004 18:04	
Surrogate(s)						
o-Terphenyl	74.6	60-130	%	1.00	12/28/2004 18:04	

SEVERN TRENT STL

Submission: 2004-12-0710

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Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3550/3015M
Method Blank
Soil
MB: 2004/12/27-02.10-001
Date Extracted: 12/27/2004 15:26

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	12/28/2004 10:57	
Motor Oil	ND	50	mg/Kg	12/28/2004 10:57	
Surrogates(s)					
o-Terphenyl	79.8	60-130	%	12/28/2004 10:57	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Laboratory Control Spike | **Soil** | **QC Batch # 2004/12/27-02.10**

LCS 2004/12/27-02.10-002 Extracted: 12/27/2004 Analyzed: 12/28/2004 11:23

LCSD 2004/12/27-02.10-003 Extracted: 12/27/2004 Analyzed: 12/28/2004 11:50

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	29.4	29.1	41.5	70.8	70.1	1.0	60-130	25		
Surrogates(s)										
o-Terphenyl	15.0	15.1	20.0	74.8	75.3		60-130	0		

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Legend and Notes

Result Flag

Q2

Quantit. of unknown hydrocarbon(s) in sample based on diesel.

Q3

Quantit. of unknown hydrocarbon(s) in sample based on motor oil.

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
GWS-7	12/17/2004	Water	1
GWS-8	12/17/2004	Water	2
GWS-9	12/17/2004	Water	3
GWS-10	12/17/2004	Water	4
GWS-11	12/17/2004	Water	5
GWS-12	12/17/2004	Water	6

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Sample ID: GWS-7
Sampled: 12/17/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-12-0710-1
Extracted: 12/22/2004 05:30
QC Batch#: 2004W12/22-07-49

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/22/2004 18:09	
Motor Oil	ND	500	ug/L	1.00	12/22/2004 18:09	
Surrogate(s)						
o-Terphenyl	79.1	60-130	%	1.00	12/22/2004 18:09	

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SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Sample ID: GWS-8
Sampled: 12/17/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-12-0710 - 2
Extracted: 12/22/2004 05:30
QC Batch#: 2004/12/22-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/22/2004 17:42	
Motor Oil	ND	500	ug/L	1.00	12/22/2004 17:42	
Surrogate(s)						
o-Terphenyl	82.5	60-130	%	1.00	12/22/2004 17:42	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Oakland, CA 94607
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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Sample ID: GWS-9
Sampled: 12/17/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-12-0710 - 3
Extracted: 12/22/2004 05:30
QC Batch#: 2004/12/22-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/22/2004 19:14	
Motor Oil	ND	500	ug/L	1.00	12/22/2004 19:14	
Surrogate(s)						
o-Terphenyl	82.1	60-130	%	1.00	12/22/2004 19:14	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Test(s): 8015M
Sample ID: GWS-10
Lab ID: 2004-12-0710-4
Sampled: 12/17/2004
Extracted: 12/22/2004 05:30
Matrix: Water
QC Batch#: 2004/12/22-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/22/2004 19:41	
Motor Oil	ND	500	ug/L	1.00	12/22/2004 19:41	
Surrogate(s)						
o-Terphenyl	75.8	60-130	%	1.00	12/22/2004 19:41	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Test(s): 8015M
Sample ID: GWS-11
Lab ID: 2004-12-0710-5
Sampled: 12/17/2004
Extracted: 12/22/2004 05:30
Matrix: Water
QC Batch#: 2004/12/22-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	12/22/2004 20:08	
Motor Oil	ND	500	ug/L	1.00	12/22/2004 20:08	
Surrogate(s)						
o-Terphenyl	82.1	60-130	%	1.00	12/22/2004 20:08	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

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Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 3510/8015M
Test(s): 8015M
Sample ID: GWS-12
Lab ID: 2004-12-0710 -6
Sampled: 12/17/2004
Extracted: 12/22/2004 05:30
Matrix: Water
QC Batch#: 2004/12/22-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	500	50	ug/L	1.00	12/22/2004 20:36	Q2
Motor Oil	ND	500	ug/L	1.00	12/22/2004 20:36	
Surrogate(s)						
o-Terphenyl	72.0	60-130	%	1.00	12/22/2004 20:36	

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3510/8015M
Test(s): 8015M
Method Blank
Water
QC Batch # 2004/12/22-01.10
MB: 2004/12/22-01.10-001
Date Extracted: 12/22/2004 05:30

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	12/22/2004 14:29	
Motor Oil	ND	500	ug/L	12/22/2004 14:29	
Surrogates(s)					
o-Terphenyl	77.8	60-130	%	12/22/2004 14:29	

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike Water QC Batch # 2004/12/22-01.10

LCS 2004/12/22-01.10-002 Extracted: 12/22/2004 Analyzed: 12/23/2004 [illegible]

LCSD 2004/12/22-01.10-003 Extracted: 12/22/2004 Analyzed: 12/23/2004 [illegible]

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	711	633	1000	71.1	63.3	11.6	60-130	25		
Surrogates(s)										
o-Terphenyl	16.2	14.8	20.0	81.0	74.0		60-130	0		

SEVERN TRENT STL

Submission: 2004-12-0710

TEPH w/ Silica Gel Clean-up

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Legend and Notes

Result Flag

Q2

Quantit. of unknown hydrocarbon(s) in sample based on diesel.

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
GWS-7	12/17/2004	Water	1
GWS-8	12/17/2004	Water	2
GWS-9	12/17/2004	Water	3
GWS-10	12/17/2004	Water	4
GWS-11	12/17/2004	Water	5
GWS-12	12/17/2004	Water	6
GWS-8 @ 7 1/2-8	12/17/2004	Soil	7
GWS-11 @ 7 1/2-8	12/17/2004	Soil	8
GWS-12 @ 3 1/2-4	12/17/2004	Soil	9

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-7

Lab ID: 2004-12-0710 - 1

Sampled: 12/17/2004

Extracted: 12/28/2004 16:52

Matrix: Water

QC Batch#: 2004/12/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/28/2004 16:52	
Benzene	ND	0.50	ug/L	1.00	12/28/2004 16:52	
Toluene	ND	0.50	ug/L	1.00	12/28/2004 16:52	
Ethyl benzene	ND	0.50	ug/L	1.00	12/28/2004 16:52	
Xylene(s)	ND	0.50	ug/L	1.00	12/28/2004 16:52	
Surrogate(s)						
Trifluorotoluene	109.5	58-124	%	1.00	12/28/2004 16:52	
4-Bromofluorobenzene-FID	85.9	50-150	%	1.00	12/28/2004 16:52	

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SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-8

Lab ID: 2004-12-0710 - 2

Sampled: 12/17/2004

Extracted: 12/28/2004 17:24

Matrix: Water

QC Batch#: 2004/12/28-01.05

pH: 3

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/28/2004 17:24	
Benzene	ND	0.50	ug/L	1.00	12/28/2004 17:24	
Toluene	ND	0.50	ug/L	1.00	12/28/2004 17:24	
Ethyl benzene	ND	0.50	ug/L	1.00	12/28/2004 17:24	
Xylene(s)	ND	0.50	ug/L	1.00	12/28/2004 17:24	
Surrogate(s)						
Trifluorotoluene	107.7	58-124	%	1.00	12/28/2004 17:24	
4-Bromofluorobenzene-FID	87.4	50-150	%	1.00	12/28/2004 17:24	

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-9

Lab ID: 2004-12-0710 - 3

Sampled: 12/17/2004

Extracted: 12/28/2004 17:57

Matrix: Water

QC Batch#: 2004/12/28-01.05

pH: 4

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/28/2004 17:57	
Benzene	ND	0.50	ug/L	1.00	12/28/2004 17:57	
Toluene	ND	0.50	ug/L	1.00	12/28/2004 17:57	
Ethyl benzene	ND	0.50	ug/L	1.00	12/28/2004 17:57	
Xylene(s)	ND	0.50	ug/L	1.00	12/28/2004 17:57	
Surrogate(s)						
Trifluorotoluene	107.2	58-124	%	1.00	12/28/2004 17:57	
4-Bromofluorobenzene-FID	85.7	50-150	%	1.00	12/28/2004 17:57	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-10

Lab ID: 2004-12-0710 - 4

Sampled: 12/17/2004

Extracted: 12/28/2004 18:29

Matrix: Water

QC Batch#: 2004/12/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/28/2004 18:29	
Benzene	ND	0.50	ug/L	1.00	12/28/2004 18:29	
Toluene	ND	0.50	ug/L	1.00	12/28/2004 18:29	
Ethyl benzene	ND	0.50	ug/L	1.00	12/28/2004 18:29	
Xylene(s)	ND	0.50	ug/L	1.00	12/28/2004 18:29	
Surrogate(s)						
Trifluorotoluene	107.3	58-124	%	1.00	12/28/2004 18:29	
4-Bromofluorobenzene-FID	83.4	50-150	%	1.00	12/28/2004 18:29	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-11

Lab ID: 2004-12-0710 - 5

Sampled: 12/17/2004

Extracted: 12/28/2004 19:01

Matrix: Water

QC Batch#: 2004/12/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/28/2004 19:01	
Benzene	ND	0.50	ug/L	1.00	12/28/2004 19:01	
Toluene	ND	0.50	ug/L	1.00	12/28/2004 19:01	
Ethyl benzene	ND	0.50	ug/L	1.00	12/28/2004 19:01	
Xylene(s)	ND	0.50	ug/L	1.00	12/28/2004 19:01	
Surrogate(s)						
Trifluorotoluene	108.4	58-124	%	1.00	12/28/2004 19:01	
4-Bromofluorobenzene-FID	87.8	50-150	%	1.00	12/28/2004 19:01	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: GWS-12

Lab ID: 2004-12-0710 - 6

Sampled: 12/17/2004

Extracted: 12/29/2004 14:22

Matrix: Water

QC Batch#: 2004/12/29-01.65

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1000	500	ug/L	10.00	12/29/2004 14:22	
Benzene	ND	5.0	ug/L	10.00	12/29/2004 14:22	
Toluene	ND	5.0	ug/L	10.00	12/29/2004 14:22	
Ethyl benzene	ND	5.0	ug/L	10.00	12/29/2004 14:22	
Xylene(s)	ND	5.0	ug/L	10.00	12/29/2004 14:22	
Surrogate(s)						
Trifluorotoluene	98.4	58-124	%	10.00	12/29/2004 14:22	
4-Bromofluorobenzene-FID	83.8	50-150	%	10.00	12/29/2004 14:22	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Prep(s): 5035
5035

Test(s): 8015M
8021B

Sample ID: GWS-8 @ 7.1'2-8

Lab ID: 2004-12-0710 - 7

Sampled: 12/17/2004

Extracted: 12/22/2004 00:07

Matrix: Soil

QC Batch#: 2004/12/21-01.01

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	12/22/2004 00:07	
Benzene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:07	
Toluene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:07	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:07	
Xylene(s)	ND	0.0050	mg/Kg	1.00	12/22/2004 00:07	
Surrogate(s)						
Trifluorotoluene	89.8	53-125	%	1.00	12/22/2004 00:07	
4-Bromofluorobenzene-FID	71.9	58-124	%	1.00	12/22/2004 00:07	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Prep(s): 5035
5035

Test(s): 8015M
8021B

Sample ID: GWS-11 @ 7 1/2-8

Lab ID: 2004-12-0710 - 8

Sampled: 12/17/2004

Extracted: 12/22/2004 00:41

Matrix: Soil

QC Batch#: 2004/12/21-01.01

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	12/22/2004 00:41	
Benzene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:41	
Toluene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:41	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	12/22/2004 00:41	
Xylene(s)	ND	0.0050	mg/Kg	1.00	12/22/2004 00:41	
Surrogate(s)						
Trifluorotoluene	89.4	53-125	%	1.00	12/22/2004 00:41	
4-Bromofluorobenzene-FID	60.2	58-124	%	1.00	12/22/2004 00:41	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Prep(s): 5035
5035

Test(s): 8015M
8021B

Sample ID: GWS-12 @ 3 1/2-4

Lab ID: 2004-12-0710 - 9

Sampled: 12/17/2004

Extracted: 12/28/2004 16:17

Matrix: Soil

QC Batch#: 2004/12/28-01.01

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	5.0	mg/Kg	5.00	12/28/2004 16:17	
Benzene	ND	0.025	mg/Kg	5.00	12/28/2004 16:17	
Toluene	ND	0.025	mg/Kg	5.00	12/28/2004 16:17	
Ethyl benzene	ND	0.025	mg/Kg	5.00	12/28/2004 16:17	
Xylene(s)	ND	0.025	mg/Kg	5.00	12/28/2004 16:17	
Surrogate(s)						
Trifluorotoluene	92.4	53-125	%	5.00	12/28/2004 16:17	
Trifluorotoluene-FID	100.5	53-125	%	5.00	12/28/2004 16:17	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035
5035

Test(s): 8015M
8021B

Method Blank | Soil | QC Batch # 2004/12/21-01.01

MB: 2004/12/21-01.01-604

Date Extracted: 12/21/2004 10:05

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	12/21/2004 10:05	
Benzene	ND	0.0050	mg/Kg	12/21/2004 10:05	
Toluene	ND	0.0050	mg/Kg	12/21/2004 10:05	
Ethyl benzene	ND	0.0050	mg/Kg	12/21/2004 10:05	
Xylene(s)	ND	0.0050	mg/Kg	12/21/2004 10:05	
Surrogates(s)					
Trifluorotoluene	101.4	53-125	%	12/21/2004 10:05	
4-Bromofluorobenzene-FID	104.6	58-124	%	12/21/2004 10:05	

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035
5035

Test(s): 8015M
8021B

Method Blank | Soil | QC Batch # 2004/12/28-01.01

MB: 2004/12/28-01.01-603

Date Extracted: 12/28/2004 09:31

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	12/28/2004 09:31	
Benzene	ND	0.0050	mg/Kg	12/28/2004 09:31	
Toluene	ND	0.0050	mg/Kg	12/28/2004 09:31	
Ethyl benzene	ND	0.0050	mg/Kg	12/28/2004 09:31	
Xylene(s)	ND	0.0050	mg/Kg	12/28/2004 09:31	
Surrogates(s)					
Trifluorotoluene	89.7	53-125	%	12/28/2004 09:31	
4-Bromofluorobenzene-FID	101.9	58-124	%	12/28/2004 09:31	

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M/8021B

Method Blank Water QC Batch # 2004/12/28-01.05

MB: 2004/12/28-01.05-001 Date Extracted: 12/28/2004 07:44

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/28/2004 07:44	
Benzene	ND	0.5	ug/L	12/28/2004 07:44	
Toluene	ND	0.5	ug/L	12/28/2004 07:44	
Ethyl benzene	ND	0.5	ug/L	12/28/2004 07:44	
Xylene(s)	ND	0.5	ug/L	12/28/2004 07:44	
Surrogates(s)					
Trifluorotoluene	110.9	58-124	%	12/28/2004 07:44	
4-Bromofluorobenzene-FID	88.0	50-150	%	12/28/2004 07:44	

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M/8021B

Method Blank Water QC Batch # 2004/12/29-01.05

MB: 2004/12/29-01.05-004 Date Extracted: 12/29/2004 09:56

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/29/2004 09:56	
Benzene	ND	0.5	ug/L	12/29/2004 09:56	
Toluene	ND	0.5	ug/L	12/29/2004 09:56	
Ethyl benzene	ND	0.5	ug/L	12/29/2004 09:56	
Xylene(s)	ND	0.5	ug/L	12/29/2004 09:56	
Surrogates(s)					
Trifluorotoluene	102.0	58-124	%	12/29/2004 09:56	
4-Bromofluorobenzene-FID	87.7	50-150	%	12/29/2004 09:56	

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Laboratory Control Spike | **Soil** | **QC Batch # 2004/12/21-01.01**

LCS 2004/12/21-01.01-005 | Extracted: 12/21/2004 | Analyzed: 12/21/2004 16:35

LCSD

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.105		0.1000	105.0			77-123	35		
Toluene	0.0977		0.1000	97.7			78-122	35		
Ethyl benzene	0.103		0.1000	103.0			70-130	35		
Xylene(s)	0.310		0.300	103.3			75-125	35		
Surrogates(s)										
Trifluorotoluene	523		500	104.6			53-125			

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Laboratory Control Spike | **Soil** | **QC Batch # 2004/12/21-01.01**

LCS 2004/12/21-01.01-006 | Extracted: 12/21/2004 | Analyzed: 12/21/2004 12:20

LCSD

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	0.435		0.500	87.0			75-125	35		
Surrogates(s)										
4-Bromofluorobenzene-FID	491		500	98.2			58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Laboratory Control Spike **Soil** QC Batch # 2004/12/28-01.01

LCS 2004/12/28-01.01-004 Extracted: 12/28/2004 Analyzed: 12/28/2004 10:56

LCSD

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.101		0.1000	101.0			77-123	35		
Toluene	0.105		0.1000	105.0			78-122	35		
Ethyl benzene	0.101		0.1	101.0			70-130	35		
Xylene(s)	0.314		0.300	104.7			75-125	35		
Surrogates(s)										
Trifluorotoluene	469		500	93.8			53-125			

SEVERN TRENT STL

Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8015M

Laboratory Control Spike Soil QC Batch # 2004/12/28-01.01

LCS 2004/12/28-01.01-005 Extracted: 12/28/2004 Analyzed: 12/28/2004 10:38

LCSD

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	0.442		0.500	88.4			75-125	35		
Surrogates(s)										
4-Bromofluorobenzene-FID	467		500	93.4			58-124			

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike Water QC Batch # 2004/12/28-01.05

LCS 2004/12/28-01.05-092 Extracted: 12/28/2004 Analyzed: 12/28/2004 08:17

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	50.6		50.0	101.2			77-123	20		
Toluene	49.1		50.0	98.2			78-122	20		
Ethyl benzene	47.5		50	95.0			70-130	20		
Xylene(s)	144		150	96.0			75-125	20		
Surrogates(s)										
Trifluorotoluene	550		500	110.0			58-124			

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Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike Water QC Batch # 2004/12/28-01.05

LCS 2004/12/28-01.05-093 Extracted: 12/28/2004 Analyzed: 12/28/2004 10:40

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	257		250	102.8			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	455		500	91.0			50-150			

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Submission: 2004-12-0710

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Project: C14363 (1197-1A)
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Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike | **Water** | **QC Batch # 2004/12/29-01.05**

LCS 2004/12/29-01.05-005 | Extracted: 12/29/2004 | Analyzed: 12/29/2004 10:29
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	49.4		50.0	98.8			77-123	20		
Toluene	48.5		50.0	97.0			78-122	20		
Ethyl benzene	46.8		50	93.6			70-130	20		
Xylene(s)	143		150	95.3			75-125	20		
Surrogates(s)										
Trifluorotoluene	524		500	104.8			58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike | **Water** | **QC Batch # 2004/12/29-01.05**

LCS 2004/12/29-01.05-006 | Extracted: 12/29/2004 | Analyzed: 12/29/2004 11:04
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	256		250	102.4			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	461		500	92.2			50-150			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Matrix Spike (MS / MSD) Soil QC Batch # 2004/12/21-01.01

MS/MSD

MS: 2004/12/21-01.01-011 Extracted: 12/21/2004 Lab ID: 2004-12-0710-002
Analyzed: 12/21/2004 14:13
Dilution: 1.00

MSD: 2004/12/21-01.01-012 Extracted: 12/21/2004 Analyzed: 12/21/2004 15:52
Dilution: 1.00

Compound	Conc. mg/Kg			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	0.100	0.103	ND	0.1000	100.0	103.0	3.0	65-135	35		
Toluene	0.0960	0.0973	ND	0.1000	96.0	97.3	1.3	65-135	35		
Ethyl benzene	0.0960	0.100	ND	0.1000	96.0	100.0	2.0	65-135	35		
Xylene(s)	0.290	0.299	ND	0.3	96.7	99.7	3.1	65-135	35		
Surrogate(s)											
Trifluorotoluene	539	517		500	107.8	103.4		53-125			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8015M

Matrix Spike (MS / MSD) Soil QC Batch # 2004/12/21-01.01

MS/MSD

MS: 2004/12/21-01.01-015 Extracted: 12/21/2004 Lab ID: 2004-12-0710-002
Analyzed: 12/21/2004 16:01
Dilution: 1.00

MSD: 2004/12/21-01.01-016 Extracted: 12/21/2004 Analyzed: 12/21/2004 17:42
Dilution: 1.00

Compound	Conc. mg/Kg			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	0.343	0.407	ND	0.500	68.6	81.4	17.1	65-135	35		
Surrogate(s)											
4-Bromofluorobenzene-FID	420	478		500	84.0	95.6		58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Matrix Spike (MS / MSD) Soil QC Batch # 2004/12/28-01.01

MS/MSD

MS: 2004/12/28-01.01-007 Extracted: 12/28/2004 Lab ID: 2004-12-0674 - 007
Analyzed: 12/28/2004 12:05
Dilution: 1.00

MSD: 2004/12/28-01.01-008 Extracted: 12/28/2004 Analyzed: 12/28/2004 12:38
Dilution: 1.00

Compound	Conc. mg/Kg			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	0.0871	0.0875	ND	0.0952	91.5	96.0	4.8	65-135	35		
Toluene	0.0832	0.0863	ND	0.0952	87.4	94.7	8.0	65-135	35		
Ethyl benzene	0.0726	0.0769	ND	0.0952	76.3	84.4	10.1	65-135	35		
Xylene(s)	0.222	0.232	ND	0.2856	77.7	84.9	8.9	65-135	35		
Surrogate(s)											
Trifluorotoluene	404	402		500	80.8	80.4		53-125			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5035

Test(s): 8015M

Matrix Spike (MS / MSD) Soil QC Batch # 2004/12/28-01.01

MS/MSD

MS: 2004/12/28-01.01-009 Extracted: 12/28/2004 Lab ID: 2004-12-0674 - 007
Analyzed: 12/28/2004 13:12
Dilution: 1.00

MSD: 2004/12/28-01.01-010 Extracted: 12/28/2004 Analyzed: 12/28/2004 13:45
Dilution: 1.00

Compound	Conc. mg/Kg			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	0.685	0.615	0.4317	0.479	52.9	40.4	26.8	65-135	35	M5	M5
Surrogate(s)											
4-Bromofluorobenzene-FID	427	396		500	85.5	79.2		58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) Water QC Batch # 2004/12/28-01.05

MS/MSD

MS: 2004/12/28-01.05-005 Extracted: 12/28/2004 Lab ID: 2004-12-0655-001
Analyzed: 12/28/2004 15:30
Dilution: 10.00

MSD: 2004/12/28-01.05-006 Extracted: 12/28/2004 Analyzed: 12/28/2004 15:51
Dilution: 10.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	607	611	137	500	94.0	94.8	0.8	65-135	20		
Toluene	500	504	34.6	500	93.1	93.9	0.9	65-135	20		
Ethyl benzene	533	527	70.45	500	92.5	91.3	1.3	65-135	20		
Xylene(s)	1620	1600	187	1500	95.5	94.2	1.4	65-135	20		
Surrogate(s)											
Trifluorotoluene	501	518		500	100.2	103.6		58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) Water QC Batch # 2004/12/28-01.05

MS/MSD

MS: 2004/12/28-01.05-007 Extracted: 12/28/2004 Lab ID: 2004-12-0655-001
Analyzed: 12/28/2004 17:01
Dilution: 10.00

MSD: 2004/12/28-01.05-008 Extracted: 12/28/2004 Analyzed: 12/28/2004 17:16
Dilution: 10.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	4670	4580	2440	2500	89.2	85.8	4.1	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	453	454		500	90.5	90.9		50-150			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/12/29-01.05**

GWS-12 >> MS

Lab ID: 2004-12-0710 -006

MS: 2004/12/29-01.05-008 Extracted: 12/29/2004

Analyzed: 12/29/2004 12:13

Dilution: 50.00

MSD: 2004/12/29-01.05-009 Extracted: 12/29/2004

Analyzed: 12/29/2004 12:35

Dilution: 50.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	2450	2470	ND	2500	98.0	98.8	0.8	65-135	20		
Toluene	2350	2420	2.29	2500	93.9	96.7	2.9	65-135	20		
Ethyl benzene	2230	2330	2.57	2500	89.1	93.1	4.4	65-135	20		
Xylene(s)	6930	7260	5.66	7500	92.3	96.7	4.7	65-135	20		
Surrogate(s)											
Trifluorotoluene	508	520		500	101.5	104.0		58-124			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/12/29-01.05**

GWS-12 >> MS

Lab ID: 2004-12-0710 -006

MS: 2004/12/29-01.05-010 Extracted: 12/29/2004

Analyzed: 12/29/2004 13:18

Dilution: 50.00

MSD: 2004/12/29-01.05-011 Extracted: 12/29/2004

Analyzed: 12/29/2004 16:50

Dilution: 50.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	13100	14800	2310	12500	86.3	99.9	14.6	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	448	469		500	89.6	93.8		50-150			

SEVERN TRENT STL

Submission: 2004-12-0710

Gas/BTEX by 8015M/8021

Lowney & Associates Oakland
Attn.: Tom McCloskey

167 Filbert Street
Oakland, CA 94607
Phone: (510) 267-1970 Fax: (510) 267-1972

Project: C14363 (1197-1A)
Grand Marina

Received: 12/20/2004 16:50

Legend and Notes

Analysis Flag

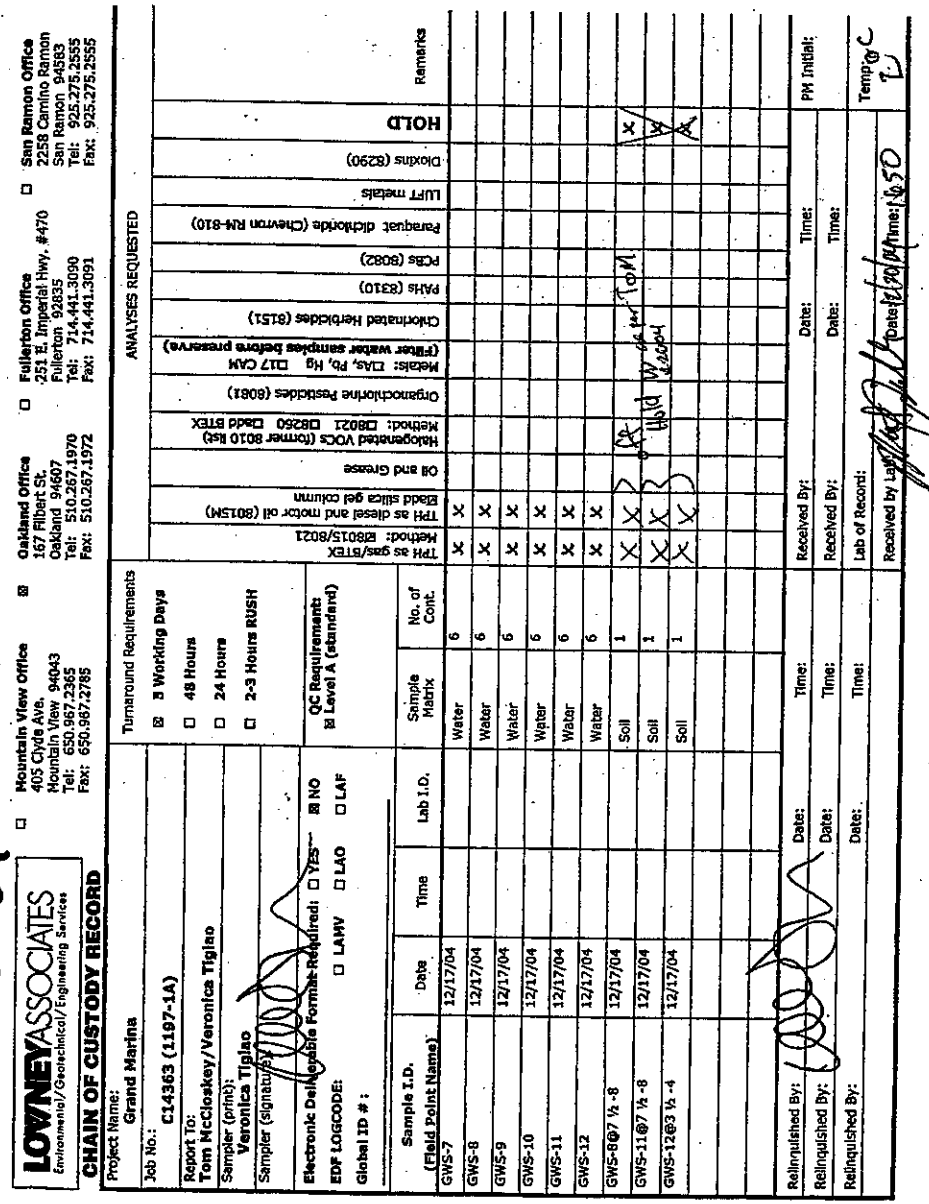
L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

M5

MS/MSD spike recoveries were below acceptance limits. See blank spike (LCS).



STL
STL San Francisco

Sample Receipt Checklist

Submission #:2004-12-0710

Checklist completed by: (initials) MV Date: 12/20/04

Courier name: STL San Francisco ☐ Client

			Not Present
Custody seals intact on shipping container/samples	Yes	No	
Chain of custody present?	Yes	No	
Chain of custody signed when relinquished and received?	Yes	No	
Chain of custody agrees with sample labels?	Yes	No	
Samples in proper container/bottle?	Yes	No	
Sample containers intact?	Yes	No	
Sufficient sample volume for indicated test?	Yes	No	
All samples received within holding time?	Yes	No	

[redacted]

Water - VOA vials have zero headspace? No VOA vials submitted Yes No

(If bubble is present, refer to approximate bubble size and itemize in comments as S (small ~ O), M (medium ~ O) or L (large ~ O)

Water - pH acceptable upon receipt? ☐ Yes ☐ No

☐ pH adjusted– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc –Lot #(s) _____

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/04 Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

☐ **Mountain View Office**
405 Clyde Ave.
Mountain View 94043
Tel: 650.967.7822
Fax: 650.967.7824

☒ **Oakland Office**
167 Filbert St.
Oakland 94607
Tel: 510.267.1970
Fax: 510.267.1972

☐ **Fullerton Office**
251 E. Imperial Hwy. #470
Fullerton 92835
Tel: 714.441.3090
Fax: 714.441.3091

☐ **San Ramon Office**
2258 Camino Ramon
San Ramon 94583
Tel: 925.275.2555
Fax: 925.275.2555

2004-12-0710

CHAIN OF CUSTODY RECORD

96828

Project Name: **Grand Marina**
Job No.: **C14363 (1197-1A)**
Report To: **Tom McCloskey/Veronica Tiglao**
Sampler (print): **Veronica Tiglao**
Sampler (signature):

Electronic Deliverable Format Required: ☐ YES ☒ NO
EDF LOGCODE: ☐ LAMV ☐ LAO ☐ LAF
Global ID # :

Turnaround Requirements
- ☒ 5 Working Days
- ☐ 48 Hours
- ☐ 24 Hours
- ☐ 2-3 Hours RUSH

QC Requirement:
- ☒ Level A (standard)

ANALYSES REQUESTED

Sample I.D. (Field Point Name)	Date	Time	Lab I.D.	Sample Matrix	No. of Cont.	TPH as gas/BTEX Method: ☒8015/8021	TPH as diesel and motor oil (8015M) ☒add silica gel column	Oil and Grease	Halogenated VOCs (former 8010 list) Method: ☐8021 ☐8260 ☐add 8TEX	Organochlorine Pesticides (8081)	Metals: ☐As, Pb, Hg ☐17 CAM (Filter water samples before preserve)	Chlorinated Herbicides (8151)	PAHs (8310)	PCBs (8082)	Paraquat dichloride (Chevron RM-810)	LUFT metals	Dioxins (8290)	HOLD	Remarks
GWS-7	12/17/04			Water	6	X	X												
GWS-8	12/17/04			Water	6	X	X												
GWS-9	12/17/04			Water	6	X	X												
GWS-10	12/17/04			Water	6	X	X												
GWS-11	12/17/04			Water	6	X	X												
GWS-12	12/17/04			Water	6	X	X												
GWS-8@7 ½ -8	12/17/04			Soil	1													X	
GWS-11@7 ½ -8	12/17/04			Soil	1													X	
GWS-12@3 ½ -4	12/17/04			Soil	1													X	

Relinquished By:	Date: 12/20/04	Time: 915	Received By: Date: 12.20.04 Time: 1040
Relinquished By:	Date: 12.20.04	Time: 1650	Received By: Date: Time:
Relinquished By:	Date:	Time:	Lab of Record:
			Received by Lab: Date: 12/20/04 Time: 1650

PM Initial:

Temp: 2°C

APPENDIX C
GEOPHYSICAL SURVEY

J R ASSOCIATES

Engineering Geophysics
1886 Emory Street
San Jose, CA 95126
(408) 293-7390

GEOPHYSICAL INVESTIGATION AT THE GRAND MARINA VILLAGE ALAMEDA, CALIFORNIA

January 6, 2005

For

Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

By

James Rezowalli, GP-921

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

I INTRODUCTION

This report presents the results of a geophysical investigation performed at the Grand Marina Village in Alameda, California (Drawing 1). The investigation was performed for Lowney Associates by J R Associates. The purpose of the investigation was to look for geophysical indications of buried fuel storage tanks and buried metal debris. James Rezowalli, Principal Geophysicist, and Bob Wing, Technician, of J R Associates performed the field work in December of 2004.

A. Site

The site is located at 2041, 2043, 2045, 2047 and 2051 Grand Street in Alameda. The site presently consists of parking and boat storage lots, several buildings and paved driveways (Drawing 2). In November of 2004 we performed a geophysical investigation near Building D. There was concern that a fuel storage tank may have been buried near building D. In December of 2004 we collected additional geophysical data in a larger portion of the site (Drawing 2). The purpose of the additional investigation was to look for geophysical indications of buried fuel storage tanks and buried metal.

II METHODS

We performed a magnetic investigation to look for magnetic anomalies indicative of buried tanks. A magnetic investigation maps the earth's magnetic field. The magnetic field is uniform throughout a site free of metal. The magnetic field at a site that contains ferrous metal is not uniform. Metal objects produce magnetic anomalies with characteristic shapes and magnitudes. For example, an anomaly caused by a buried tank consists of a strong magnetic low just south of the center of the tank and a weaker magnetic high just north of the tank's center. This type of anomaly is what we use to locate buried tanks.

A. Magnetic Instrumentation

We used a Geometrics model 856 proton precession magnetometer to collect magnetic data at the site. The magnetometer had two sensors and an electronics package. The magnetometer collected both total field data and vertical gradient data. The magnetometer can discriminate to 0.1 gammas in a total field of 40,000 to 60,000 gammas. Magnetic readings were stored in memory with the time of day, station numbers and line numbers of the readings. The data were downloaded to a computer and contoured.

B. Magnetic Field Procedures

The area where magnetic data were collected is shown on Drawing 2. Magnetic data were collected at ten-foot intervals throughout the area investigated. At the end of the field day the magnetic data were downloaded and contoured. An anomaly is indicated by a series of concentric magnetic contours.

III RESULTS

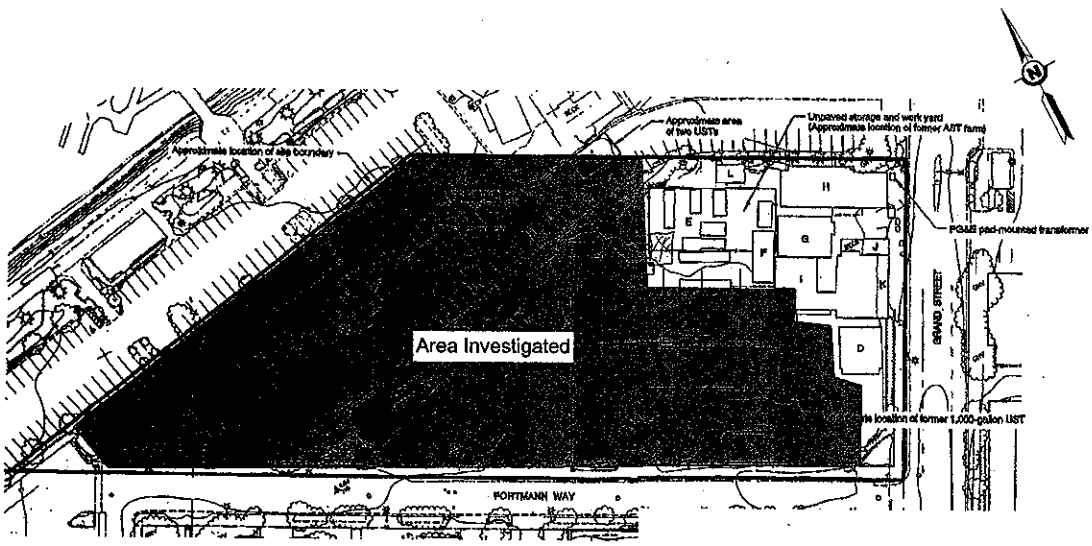
A. Magnetic Data

Drawing 3 shows the contour map of the magnetic data. There are many magnetic anomalies at the site. All the anomalies appear to be caused by surface metal, the known fuel storage tanks and buried pipes. The surface metal included parked cars, street posts, buildings and parked boat trailers. There were anomalies over the two known fuel storage tanks. The tanks are in the northern part of the area investigated and feed the pump at the fuel dock. The buried pipes appear to be electrical, telephone, gas and water lines. Parts of the area we wanted to investigate were blocked by surface metal. There were no geophysical indications of a buried tank in the area we could investigate.

B. Limitations

Magnetic methods locate ferrous objects from the anomalies they produce in the earth's magnetic field. It is possible some ferrous objects will not produce an anomaly. Some possible reasons are that the object is buried too deep, the object is too small, the object is buried under or near another ferrous object or an object is buried near a utility. It is possible there are materials buried at the site that were not detected by the magnetometer. Because parts of the area we wanted to collect data in were blocked by surface metal, we recommend performing a geophysical investigation after the boats, buildings and other surface metal have been removed.

IV DRAWINGS

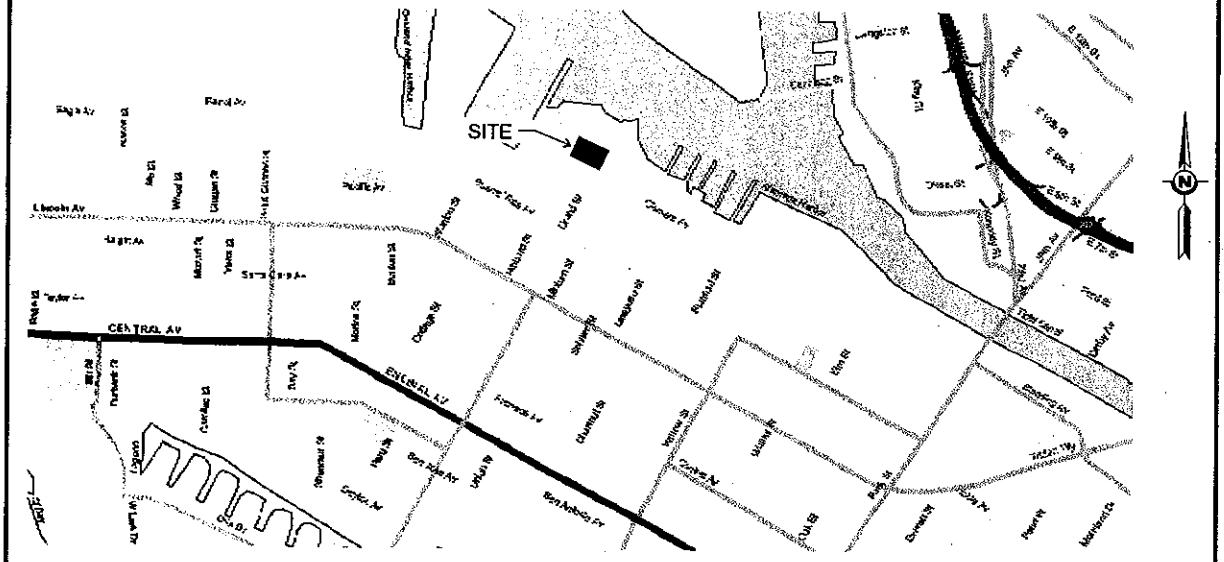


Site Map- Grand Marina Village
Fortmann Way and Grand Street
Alameda, California

SCALE: No Scale			DRAWN BY: J.J.R.
DATE: 12-20-04	JOB NUMBER:	J154-010-04	REVISED:

J R ASSOCIATES Civil and Environmental Geophysics
1886 Emory Street, San Jose, CA (408) 293-7390

DRAWING NUMBER: 2



Vicinity Map- Grand Marina Village
Fortmann Way and Grand Street
Alameda, California

SCALE: No Scale			DRAWN BY: J.J.R.
DATE: 12-20-04	JOB NUMBER:	J154-010-04	REVISED:

J R ASSOCIATES Civil and Environmental Geophysics
1886 Emory Street, San Jose, CA (408) 293-7390

DRAWING NUMBER: 1