



SMITH-EMERY GEOSERVICES

A MEMBER OF THE SMITH-EMERY COMPANIES, ESTABLISHED 1904

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October 22, 1996

SEG File No. 90404
SEG Report No. 96-810

Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Parkway, #250
Alameda, California 94502-6577

3586

Attn: Mr. Barney Chan

Smith-Emery GeoServices herein submits a copy of our report entitled "**Quarter 3, 1996 Groundwater Monitoring, 3925 Alameda Avenue, Oakland, California.**" If there are any questions regarding this report, please contact us.

Respectfully submitted,
SMITH-EMERY GEOSERVICES

RICK WIDEBROOK
R.E.A. 6603
Project Geologist

cc: Smooke and Sons Investment Company
Mr. Richard Smooke

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Attn: Mr. Barney Chan

**REPORT: QUARTER 3, 1996 GROUNDWATER MONITORING
3925 ALAMEDA AVENUE
OAKLAND, CALIFORNIA**

Gentlemen:

INTRODUCTION

In accordance with your request, Smith-Emery GeoServices is pleased to present this report of quarterly groundwater monitoring for the above referenced site. The location of the site is shown on Vicinity Map, Plate 1. The locations of the monitoring wells and the calculated groundwater gradient are presented on the Plot Plan, Plate 2.

This is the first quarterly monitoring report that includes Monitoring Well No. 4, which was installed on September 9, 1996. The details of the monitoring wells installation previously were presented in Smith-Emery GeoServices Report No. 95-187, dated August 22, 1995. The detailed description for Monitoring Well No. 4 is presented in the Well Installation report, SEG Report No. 96-721, which is in progress.

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**TABLE 1 - WELL MEASUREMENT DATA
(Sampled September 20, 1996)**

<u>Well I.D.</u>	<u>Date of Measurement</u>	<u>Casing Elevation</u>	<u>Depth to water from top of casing</u>	<u>Water Elevation, Mean Sea Level</u>
MW1	09-20-96	8.73'	9.68'	-0.95'
MW2	09-20-96	8.42'	9.34'	-0.92'
MW3	09-20-96	9.26'	9.88'	-0.66'
MW4	09-20-96	8.44'	9.78'	-1.34'

Gradient: 0.68% @ S38°W

Note: The benchmark elevation was set referenced to City of Oakland survey monument BM-19NW24 at elevation 9.664 feet above mean sea level. Per the USGS topographical map for the Oakland East Quadrangle, the ground surface elevation at the site is approximately 10 feet above mean sea level.

WATER PURGING

The monitoring wells were purged and sampled according to established guidelines and the approved workplan (previously submitted). Prior to sampling, the depth to water was measured with respect to a reference point at the top of the casing using an electronic water level meter, accurate to the nearest one-hundredth of a foot. A transparent bailer was then used to sample the surface of the water table in the wells for the purpose of observing any free product. In wells MW1, MW2, MW3, and MW4, no visible free product was noticed. In MW1, MW2, MW3, and MW4 a slight petroleum odor was noticed in the purge water.

Each well was purged with a development bailer after checking for free product. A minimum of three well volumes had been removed from each well. Measured levels of conductivity, temperature, and

pH were monitored prior to taking samples. Detailed records of well purging and sampling data appear in Appendix I - Well Purge Data Sheets.

Groundwater samples were obtained in clean disposable Teflon bailers equipped with a flow control valve. Water samples for EPA Method 8015M were placed in EPA-approved 40 ml vials capped with Teflon backed caps, and 1L glass bottles with Teflon backed caps. No air bubble or headspace was present in the samples taken. All samples were then labeled and placed in zip lock bags, preserved at approximately four degrees Celsius on blue ice, and transported with appropriate chain-of-custody documentation to a state-certified laboratory.

ANALYTICAL PROGRAM

Analytical tests on the samples taken for this project were performed by state-certified laboratories of North State Environmental in South San Francisco, California. The detailed results of all analytical work are contained in Appendix II - Report of Analytical Results.

Groundwater Samples

The groundwater samples obtained from the wells MW1, MW2, MW3, and MW4 were analyzed for gasoline by Method EPA 8015M, for BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes) gasoline constituents by Method EPA 8020, and for the gasoline constituent MTBE (methyl tertiary butyl ether) by EPA Method 8020. A summary of the analytical results is presented in the following table, Table 2 - Analytical Findings.

A historical summary of the well data and analytical findings for this site's prior monitoring events is presented in Table 3, on the following page. All results on Tables 2 and 3 are presented in milligrams per liter, or parts per million (ppm).

TABLE 2 - ANALYTICAL FINDINGS
THIRD QUARTER, 1996

MONITORING WELL SAMPLINGS, sampled 9/20/96, analyzed 9/20/96

TEST: BTEX AND TPH AS GASOLINE

Sample Name	TPH-G (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MBTE (mg/L)
MW1	2.20	0.570	0.030	0.110	0.080	0.070
MW2	11.0	2.700	0.600	0.500	1.500	0.370
MW3	0.370	0.004	ND	0.026	0.013	0.006
MW4	12.0	0.890	0.120	1.100	2.000	0.260

Note: ND - Not Detected

TABLE 3 - SUMMARY OF WELL MEASUREMENT AND ANALYTICAL DATA

<u>Well I.D.</u>	<u>Date of Meas.</u>	<u>Water Elevation (MSL)</u>	<u>Gradient</u>	<u>Flow Direction</u>	<u>TPH-G (mg/L)</u>	<u>Diesel Fuel (mg/L)</u>	<u>Kerosene (mg/L)</u>	<u>Motor Oil (mg/L)</u>	<u>Benzene (mg/L)</u>	<u>Toluene (mg/L)</u>	<u>Ethylbenzene (mg/L)</u>	<u>Xylenes (mg/L)</u>	<u>MTBE (mg/L)</u>
MW-1	9-20-96	-0.95'	0.68%	S36°W	2.2	---	---	---	0.570	0.030	0.110	0.800	0.070
MW-2	9-20-96	-0.92'			11.0	---	---	---	2.7	0.600	0.500	1.500	0.370
MW-3	9-20-96	-0.67'			0.37	---	---	---	0.004	ND	0.026	0.013	0.006
MW4	9-20-96	-1.34'			12.0	---	---	---	0.890	0.120	1.100	2.000	0.260
MW-1	6-26-96	-1.23'	1.3%	S46°W	7	ND	3	ND	2.3	0.062	0.230	0.160	0.093
MW-2	6-26-96	-1.15'			5	ND	1	ND	1.0	0.170	0.150	0.290	0.120
MW-3	6-26-96	-1.59'			0.4	ND	0.6	ND	0.004	0.004	0.025	0.012	0.009
MW-1	3-29-96	-0.85'	0.3%	S4°W	12**	ND	4	ND	0.730	0.089	0.300	0.180	0.270
MW-2	3-29-96	-0.78'			6**	ND	2	ND	0.640	0.300	0.190	0.490	0.078
MW-3	3-29-96	-0.69'			0.3**	ND	0.2	ND	0.002	0.002	0.015	0.009	0.006
MW-1	12-7-95	-1.59'	0.6%	S37°E	6	ND	ND	ND	0.343	0.032	0.133	0.184	---
MW-2	12-7-95	-1.41'			8	ND	ND	ND	0.240	0.200	0.108	0.402	---
MW-3	12-7-95	-1.38'			ND	ND	ND	ND	ND	ND	0.013	0.013	---
MW-1	9-22-95	-1.78'	2.2%	S8°W	11.0	5	3	ND	2.3	0.081	0.390	0.560	---
MW-2	9-22-95	-1.27'			7.2	3.5	2	ND	1.2	0.560	0.250	1.0	---
MW-3	9-22-95	-0.62'			0.130	1.9	ND	ND	0.001	0.001	0.012	0.013	---

Notes: All results are presented in milligrams per liter (mg/L) or parts per million.
 ND = not detected above the method detection limit.
 --- = not analyzed.
 ---* = Laboratory did not report as requested.
 ** = Analysis for lead also performed; result was ND for all three samples.

HISTORY

Two underground storage tanks, a 10K diesel and a 1K gasoline, were removed from this site in March 1988 by Blaine Tech. Evidence of a hydrocarbon release was found under the tank at that time. Additional soil excavation and soil samplings by Engeo, Inc. in March 1994 have confirmed gasoline, diesel, kerosene, and BTEX contamination of the subsurface soil immediately surrounding the former tank pit. The purpose of this work is to continue to monitor the extent of and concentrations of hydrocarbons in the subsurface downgradient of the former tank location. This quarterly monitoring program was initiated at the request of the Alameda County Department of Environmental Health.

CONCLUSIONS

This is the first quarterly monitoring report that includes Monitoring Well No. 4, which was installed on September 9, 1996. Review of this quarter's data from the monitoring wells indicated that the groundwater beneath the project site is flowing in a direction of S38°W with a slope of approximately 0.68% percent. The groundwater has a shallower slope of 0.68% as compared to 1.3% measured during the previous quarter measurement on June 26, 1996. In addition, the direction of groundwater flow has shifted 10 degrees toward the south from the last quarter. The groundwater elevation in Monitoring Wells 1 and 2 rose approximately two to three tenths of a foot, while the groundwater

elevation in Monitoring Well 3 rose approximately nine tenths of a foot. The groundwater gradients surrounding the project site may vary due to either natural or man-made influences, such as subsurface recharge zones, tidal influences, subsurface geology, or groundwater extraction wells.

This quarter's analytical results show that all but one of the petroleum hydrocarbon concentrations in Monitoring Well 1 decreased from the previous quarter's result, all of the concentrations in Monitoring Well 2 increased from the previous quarter's result, and the petroleum hydrocarbon concentrations in Monitoring Well 3 had very slight changes from the previous quarter with gasoline and toluene decreasing, ethyl benzene and xylenes increasing, and benzene remaining the same.

LIMITS OF LIABILITY

The findings, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our investigation, and we further assume the explorations to be representative of the subsurface conditions throughout the site.

The factual data and interpretations pertain to the specific project described in this report and are solely for the use of **Smooke and Sons Investment Company** and are not applicable to any other project or site. Any reliance on this document by any other person or entity shall be at that party's sole risk.

Our investigation was performed using the standard of care level of skill ordinarily exercise under similar circumstances by reputable Environmental Assessors and Geologists currently practicing in

these or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

The following plates and appendices complete this report.

Plate 1	Vicinity Map
Plate 2	Plot Plan with Groundwater Gradient
Appendix I	Well Purge Data Sheets
Appendix II	Analytical Results Chain of Custody

Respectfully submitted,

SMITH-EMERY GEOSERVICES



MILES GRANT, R.G.
Registered Geologist No. 5367
Project Geologist

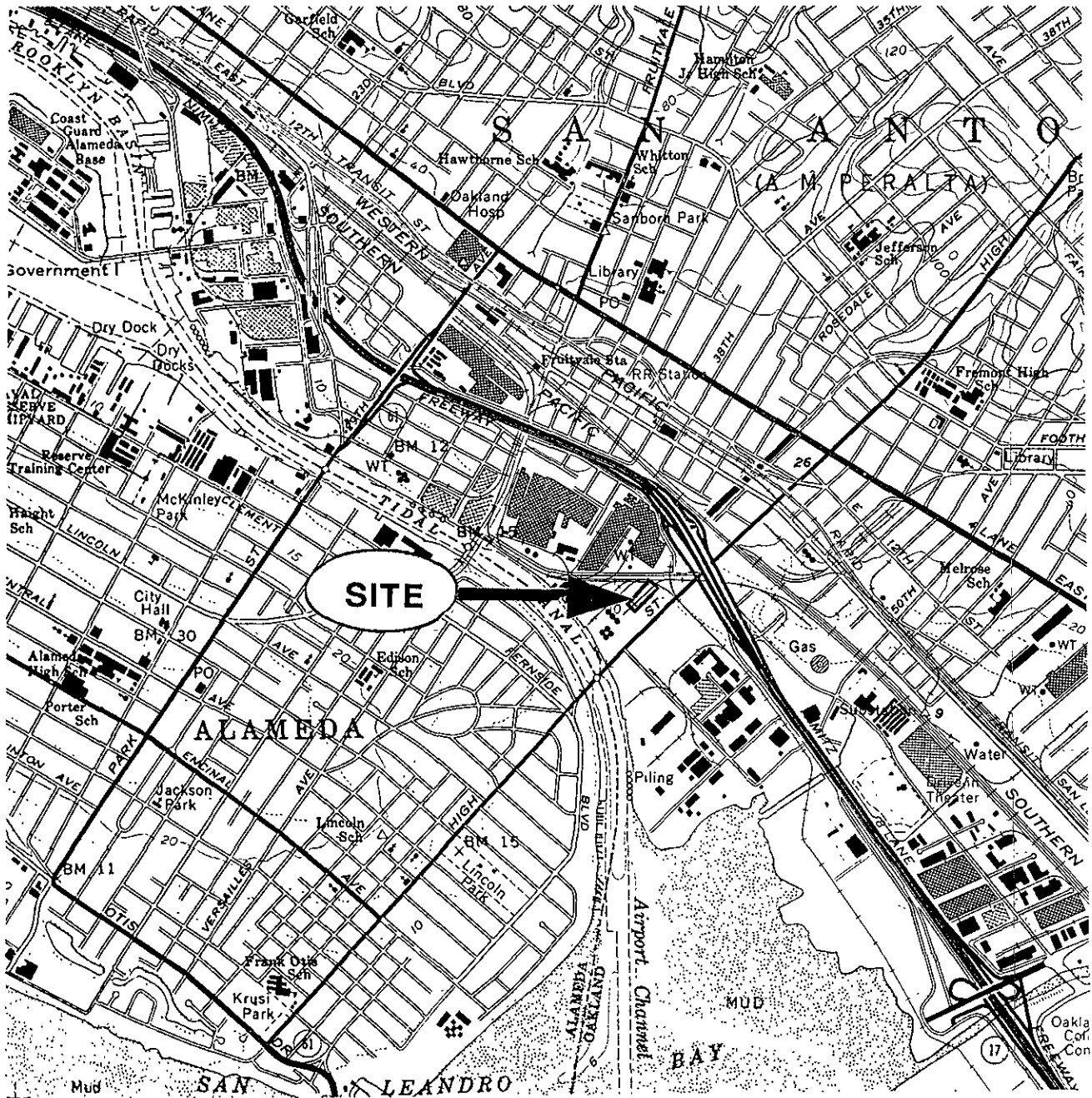
Reviewed and approved by



RICK WIDEBROOK
Registered Environmental Assessor No. 6603
Project Geologist



SCALE: 1" = 2000'



REFERENCE:
U.S.D.I. - GEOLOGICAL SURVEY
OAKLAND EAST QUADRANGLE
ALAMEDA COUNTY, CALIFORNIA

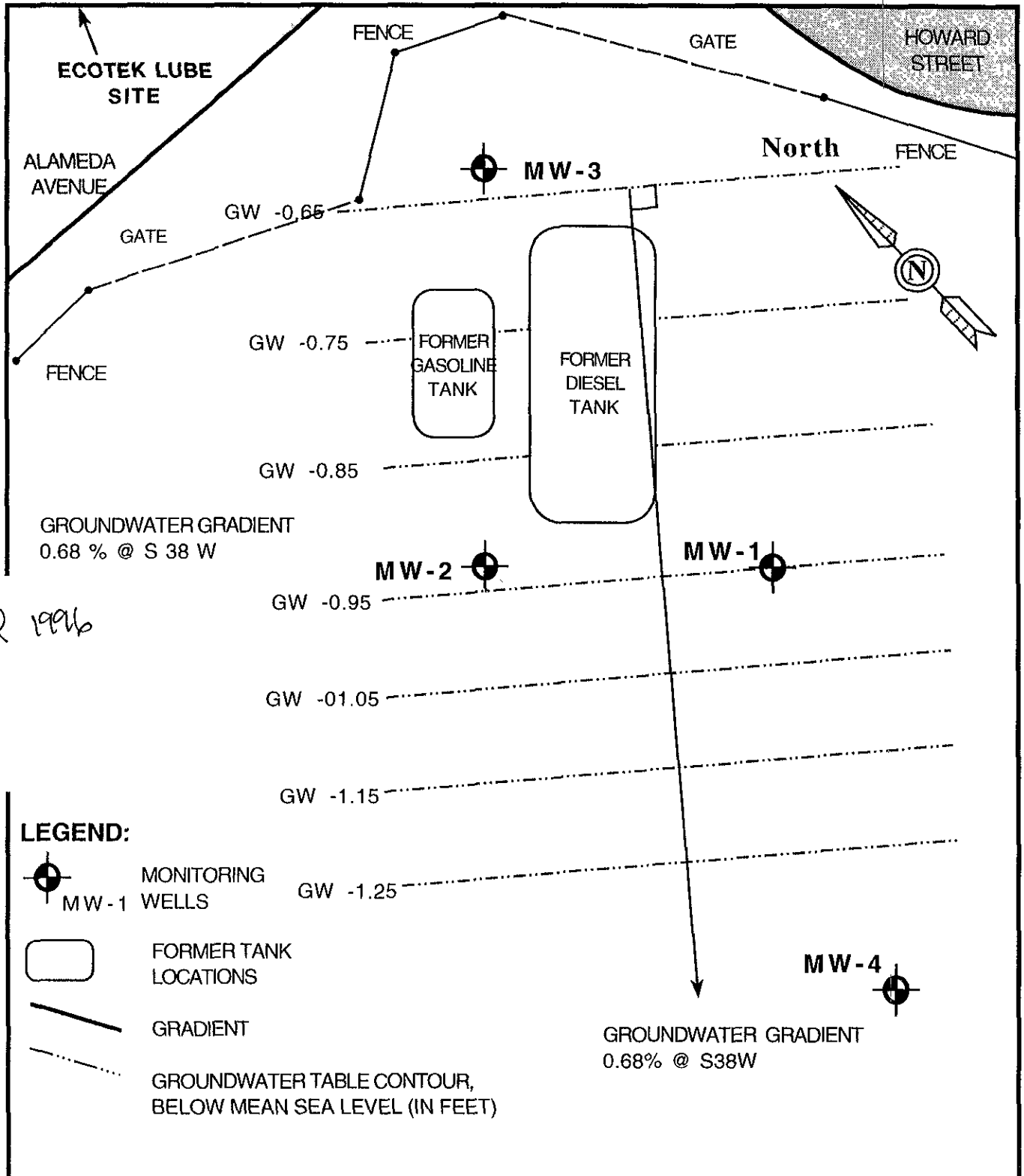
VICINITY MAP

FILE REVIEW
SMOOKE & SONS
3925 ALAMEDA AVENUE
OAKLAND, CALIFORNIA

SMITH-EMERY GEOSERVICES

JOB NO: 90404

PLATE 1



3Q 1996

1-STORY WAREHOUSE 3925 ALAMEDA AVENUE		DOCK	
SMOOKE & SONS INVESTMENT CO. 3925 ALAMEDA AVENUE OAKLAND, CALIFORNIA		QUARTERLY MONITORING SMITH-EMERY GEOSERVICES SEG Job No. 90404 PLATE 2	

APPENDIX I

WELL PURGE DATA SHEETS

APPENDIX II

ANALYTICAL RESULTS



North State Environmental
 Chemical Waste Disposal • Trucking • Consulting

CERTIFICATE OF ANALYSIS

Lab No:	96-693	Date Sampled:	09-20-96
Client:	SEG	Date Extracted:	09-24-96
Project:	3925 Alameda Avenue Smooke #90404	Date Analyzed:	09-26-96

MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by Method 8020
 Gasoline range hydrocarbons by EPA method 8015M

SAMPLE NO	CLIENT ID	ANALYTE	METHOD	RESULT
96-693-01	MW-1-QTR-3 WATER	MTBE	8020	70 ug/l
		Benzene	8020	570 ug/L
		Toluene	8020	30 ug/L
		Ethylbenzene	8020	110 ug/l
		Xylenes	8020	80 ug/l
		Gasoline	8015M	2200 ug/L
96-693-02	MW-2-QTR-3 WATER	MTBE	8020	370 ug/l
		Benzene	8020	2700 ug/L
		Toluene	8020	600 ug/L
		Ethylbenzene	8020	500 ug/l
		Xylenes	8020	1500 ug/L
		Gasoline	8015M	11000 ug/L
96-693-03	MW-3-QTR-3 WATER	MTBE	8020	6 ug/l
		Benzene	8020	4 ug/L
		Toluene	8020	ND
		Ethylbenzene	8020	26 ug/l
		Xylenes	8020	13 ug/L
		Gasoline	8015M	370 ug/L
96-693-04	MW-4-QTR-3 WATER	MTBE	8020	260 ug/l
		Benzene	8020	890 ug/l
		Toluene	8020	120 ug/l
		Ethylbenzene	8020	1100 ug/L
		Xylenes	8020	2000 ug/l
		Gasoline	8015M	12000 ug/l



North State Environmental
 Chemical Waste Disposal • Trucking • Consulting

CERTIFICATE OF ANALYSIS

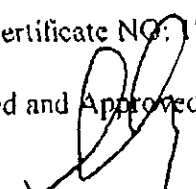
Lab No: 96-693	Date Sampled: 09-20-96
Client: SEG	Date Extracted: 09-24-96
Project: 3925 Alameda Avenue	Date Analyzed: 09-26-96
Smooke #90404	

Quality Control/Quality Assurance Summary- WATER

Analyte	Method	Reporting Limit	Blank	MS/MSD Recovery	RPD
MTBE	8020	0.5 ug/l.	ND	84	61
Benzene	8020	0.5 ug/l.	ND	103	48
Toluene	8020	0.5 ug/L	ND	103	7
Ethylbenzene	8020	0.5 ug/L	ND	102	16
Xylenes	8020	1.0 ug/l.	ND	97	10
Gasoline	8015M	0.05 ug/l.	ND	136	8

ELAP Certificate No: 1753

Reviewed and Approved:



 John A. Murphy, Laboratory Director

