Applied GeoSystems 3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

• FREMONT • IRVINE • HOUSTON • BOSTON • SACRAMENTO • CULVER CITY • SAN JOSE

REPORT
ENVIRONMENTAL INVESTIGATION RELATED TO UNDERGROUND TANK REMOVAL
at
ARCO Service Station No. 2152
22141 Center Street
Castro Valley, California

AGS Job No. 69013-2

Report prepared for

ARCO Products Company
2000 Alameda de las Pulgas
San Mateo, California

by
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January 18, 1990

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22141 Center Street
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For ARCO Products Company

INTRODUCTION

ARCO Products Company contracted with Applied GeoSystems to conduct an environmental investigation in conjunction with the removal of five underground storage tanks at ARCO Station No. 2152 in Castro Valley, California. This investigation involved the following tasks related to underground storage-tank removal: (1) observing the removal of four steel 6,000-gallon underground storage tanks and one fiberglass 12,000-gallon underground storage tank; (2) collecting soil samples from beneath each tank and from the limits of the excavation to assess the presence of hydrocarbon contamination in the soil in the tank area; (3) observing the removal of and collecting soil samples from beneath the product-transfer lines; (4) collecting samples of stockpiled soil onsite; (5) analyzing the soil samples in accordance with Environmental Protection Agency methods; (6) monitoring and recording activities related to excavating, stockpiling, and handling the contaminated soil; and (7) preparation of this report. This report describes the field work associated with the

above tasks, summarizes the results of analysis, and presents our conclusions. As requested by ARCO, our recommendations are included under separate cover.

SITE DESCRIPTION AND BACKGROUND

ARCO Service Station No. 2152 is an operating service station at the intersection of Center Street and Grove Way in Castro Valley, California, as shown on the Site Vicinity Map (Plate P-1). The Generalized Site Plan (Plate P-2) shows the approximate site boundaries and locations of pertinent features at the site. The site is on a relatively flat, asphalt- and concrete-covered lot. Residences are southeast and southwest of the site, and commercial developments are northwest across Grove Way and northeast across Center Street.

Five underground product-storage tanks were buried in the northeastern portion of the site, including four 6,000-gallon tanks and one 12,000-gallon tank. These tanks are designated T1 through T5 on Plate P-2; tank T1 was a 12,000-gallon unleaded supreme gasoline tank, tanks T2 through T4 were 6,000-gallon regular unleaded gasoline tanks, and tank T5 was a leaded regular gasoline tank. It is our understanding that the 12,000-gallon tank was installed in 1983, and the four 6,000-gallon tanks were installed in 1976.

Pressure testing of tanks T1 through T5 was performed in February 1989, by Paradiso Construction Company of Oakland, California. Paradiso indicated that two 6,000-gallon unleaded regular tanks (T2 and T4) failed the test and were put out of service.

Applied GeoSystems performed a site assessment on April 13, 1989, to evaluate the extent of potential soil contamination in the vicinity of the underground storage tanks (Applied GeoSystems Report No. 69013-1, dated May 26, 1989). This work included drilling three soil borings in the area of the product tanks. Results of laboratory analyses of soil samples collected from the borings indicated concentrations of total petroleum hydrocarbons as gasoline (TPHg) to be less than 6 parts per million (ppm) in the samples, with the exception of one soil sample, collected adjacent to T1 at a depth of 5 feet, indicating a concentration of 460 ppm. Ground water was not encountered in the borings to an approximate depth of 45 feet. Locations of the borings are shown on Plate P-2. The results of laboratory analyses of soil samples collected during the drilling are summarized in Table 1.

TABLE 1
RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street
Castro Valley, California
Page 1 of 2

Date	Sample Identifier	TPHg	B	T	E	X
4/13/89	S-10-B1	ND	ND	ND	ND	ND
4/13/89	S-20-B1	ND	0.11	0.15	ND	0.19
4/13/89	S-25-B1	ND	0.22	0.34	0.088	0.38
4/13/89	S-30-B1	5.1	0.42	0.89	0.11	0.56
4/13/89	S-35-B1	5.1	0.40	0.72	0.094	0.42
4/13/89	S-40-B1	ND	0.10	ND	ND	ND
4/13/89	S-45-B1	ND	ND	ND	ND	ND
4/13/89	S-10-B2	ND	ND	ND	ND	ND
4/13/89	S-20-B2	ND	ND	ND	ND	ND
4/13/89	S-25-B2	ND	ND	ND	ND	ND
4/13/89	S-30-B2	ND	ND	ND	ND	ND

See notes on page 2 of 2.

TABLE 1
RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street
Castro Valley, California
Page 2 of 2

Date	Sample Identifier	TPHg	B	T	E	X
4/13/89	S-5-B3	460	5.1	34	9.6	51
4/13/89	S-10-B3	5.6	ND	0.11	ND	1.0
4/13/89	S-20-B3	ND	ND	ND	0.055	0.068
4/13/89	S-25-B3	ND	ND	ND	0.17	0.16
4/13/89	S-30-B3	ND	ND	ND	ND	ND

Results in milligrams per kilogram (mg/kg), or parts per million (ppm).
TPHg: Total petroleum hydrocarbons as gasoline
B:benzene T:toluene E:ethylbenzene X:total xylene isomers
ND: Less than the detection limit of the specified analysis.

Analytical Methods: TPHg: EPA 5030/8015
BTEX: EPA 8020

Sample identification: S-30-B3

- S-30-B3
  - Boring number
  - Approximate sample depth in feet
  - Soil sample

FIELD WORK

Tank-Pit Excavation

Field work performed at the site by Applied GeoSystems on behalf of ARCO was conducted in accordance with Applied GeoSystems' Site Safety Plan No. 69013-2S, dated July 21, 1989. On August 17, 1989, a field geologist from Applied GeoSystems was present at the site to observe removal of five underground storage tanks, inspect their outer surfaces, and collect soil samples from beneath each tank. Mr. Scott Seery of the Alameda County Department of Environmental Health was present to witness the removal of the storage tanks.

ARCO contracted Paradiso Construction Company (Paradiso) to perform the excavation, tank removal, and tank replacement. The contents of the tanks were evacuated by H & H Ship Service of San Francisco, California. Paradiso applied dry ice to the tanks to purge hydrocarbon vapor from the tanks prior to removal. The excavation to the tops of the tanks was conducted with a rubber-tired excavator. Tanks T1 through T5 were removed from the tank pit near the northeastern corner of the property. A summary of observations made of the condition of the tanks after their removal is presented in Table 2. ARCO contracted H & H Ship Service to transport the tanks to their recycling facility in San Francisco after tank examination.

TABLE 2
SUMMARY OF OBSERVATIONS DURING TANK EXAMINATION
ARCO Station No. 2152
22141 Center Street
Castro Valley, California
August 17, 1989

Tank T1 (gasoline): Fiberglass, 12,000-gallon-capacity, ruptured upon removal, no holes observed in two separate pieces removed.

Tank T2 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.

Tank T3 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.

Tank T4 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.

Tank T5 (gasoline): steel, tar-coated, 6,000-gallon-capacity, slightly rusted, no holes observed, dissolved tar coating at fill end.

The backfill material excavated from above and around the steel tanks was predominately sand. The backfill removed from above and around the fiberglass tank was pea gravel. Backfill material was monitored with an organic vapor meter (OVM) as the material was removed. Readings collected during this monitoring indicated hydrocarbon concentrations of 200 ppm to 600 ppm in the backfill. The native material beneath the tanks consisted of predominately silty clay and sandy clay. Ground water was not encountered in the tank pit. Three new 12,000-gallon fiberglass tanks were placed in the pit which was then backfilled with pea-gravel. Four 12 inch PVC conductor casings were positioned between the tanks

to provide access for future exploratory drilling and/or ground-water monitoring well installation. A summary of our field methods used during tank removal are presented in Field Procedures, Appendix A.

Soil Sampling Beneath Tanks

Between August 18 and August 30, 1989, a total of 24 samples of native soil were collected from the gasoline-tank pit at depths of 13 to 22 feet (the limit of the equipment). Samples were initially collected from beneath the fill port and opposite end of each tank. OVM measurements of native soil from beneath the storage tanks indicated hydrocarbon concentrations between 1 ppm and 40 ppm beneath the southwestern ends of the tanks and between 15 ppm and 700 ppm beneath the northeastern (fill-port ends) of the tanks.

Because obvious soil discoloration with OVM measurements of 700 ppm was noted in the soil from the bottom of the northeastern end of the tank pit at a depth of about 13 feet, and after discussion with Mr. Seery of the Alameda County Department of Environmental Health, additional excavation to a depth of 18 feet in the northeastern end was performed. One soil sample was collected from beneath each tank at a depth of approximately 18 feet. One additional soil sample was collected from beneath T5 at a depth of 22 feet. Soil samples also were collected from the walls of the excavation at the northern and eastern corners of the pit (corresponding to the fill-port ends of tanks T1 and T5) and from beneath

the vapor-recovery system, which was located in the southern-central portion of the pit. One soil sample was collected from the bottom of the pit in both the south corner and the west corner respectively. Soil sample locations from inside the tank pit are presented in Tank Pit Soil Sampling Locations, Plate P-3.

Soil Sampling Beneath Product Lines

Between September 9, and October 4, 1989, an Applied GeoSystems geologist was present at the site to observe the removal of the product-transfer lines and to collect soil samples from beneath the lines. An obvious product odor was noted in the soil beneath the product-transfer lines feeding the service islands near Center Street, with OVM measurements indicating hydrocarbon concentrations of up to 500 ppm. In addition to the existing lines, three abandoned lines were found between the two dispenser islands near Center Street. An area between the Center Street islands measuring approximately 35 feet by 20 feet by 3 feet deep was excavated and a total of fourteen soil samples collected from the bottom of the excavation in the areas of the existing and abandoned product lines.

Two soil samples were collected from beneath the existing product lines feeding the single dispenser island near Grove Way and two samples collected from beneath two abandoned lines adjacent to the Grove Way dispenser island. The locations where samples were collected along the former locations of the product lines are presented in Product-Line Soil

Sample Locations, Plate P-4. A summary of the sampling methods used to collect soil samples from within the tank pit and from beneath the former product lines are presented in Appendix A.

LABORATORY ANALYSES

Forty-two soil samples collected from the gasoline-tank pit and beneath the product lines were analyzed for TPHg by modified Environmental Protection Agency (EPA) Method 5030/8015 and for purgeable gasoline constituents benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) by EPA Method 8020. Soil samples were analyzed at the Applied GeoSystems laboratory (Hazardous Waste Testing Laboratory No. 153) in Fremont, California, or at Anametrix, Inc. (Hazardous Waste Testing Laboratory No. 151) in San Jose, California. The results of the laboratory analyses of soil samples from the gasoline-tank pit are presented in Table 3 and on Plate P-3. Laboratory results of analysis of samples collected from the product-line trenches are presented in Table 4 and are also shown on Plate P-4. Laboratory analytical reports are included in Appendix B.

TABLE 3
RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street, Castro Valley, California

Date	Sample Number	TPHg	B	T	E	X
Tank-Pit Excavation						
08/18/89	S-14-T1S	<2	0.24	<0.05	<0.05	<0.05
08/18/89	S-13-T2S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T3S	4.3	0.09	<0.05	<0.05	<0.05
08/18/89	S-13-T4S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T5S	2.4	<0.05	<0.05	<0.05	<0.05
08/18/89	S-14-T1N	1,400	0.72	6.1	11	130
08/18/89	S-13-T2N	<2	0.076	<0.05	1.1	8.5
08/18/89	S-13-T3N	12	0.29	0.29	0.22	1.3
08/18/89	S-13-T4N	4.4	<0.05	<0.05	<0.05	0.23
08/18/89	S-13-T5N	700	4.6	2.0	4.6	83
08/18/89	S-18-T1N	430	<0.05	<0.05	1.1	8.5
08/18/89	S-18-T2N	<2	0.076	<0.05	<0.05	0.092
08/18/89	S-19-T3N	93	0.11	0.11	0.74	3.5
08/18/89	S-19-T4N	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-19-T5N	3,800	<0.05	15	18	150
08/24/89	S-22-T5N	6.5	<0.05	0.36	0.093	0.82
08/22/89	S-14-NW1	<2	<0.05	<0.05	<0.05	<0.05
08/22/89	S-14-EW1	<2	<0.05	<0.05	<0.05	<0.05
08/30/89	S-14-NW2	3.4	<0.005	<0.005	<0.005	.030
08/30/89	S-14-WW1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF2	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-VR1	2,300	<2	<2	19	146
08/30/89	S-22-VR1	37,000	<40	510	380	2,600

Results in parts per million (ppm). TPHg: Total petroleum hydrocarbons as gasoline; B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes. <: Less than the method detection limit. Sample ID: S-14-T1S

- S = Soil sample
- 14 = Approximate sample depth in feet
- T1 = Area of sample (See Plate P-4)

TABLE 3
RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street, Castro Valley, California

Date	Sample #	TPHg	B	T	E	X
Tank-Pit Excavation						
08/18/89	S-14-T1S	<2	0.24	<0.05	<0.05	<0.05
08/18/89	S-13-T2S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T3S	4.3	0.09	<0.05	<0.05	<0.05
08/18/89	S-13-T4S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T5S	2.4	<0.05	<0.05	<0.05	<0.05
08/18/89	S-14-T1N	1,400	0.72	6.1	11	130
08/18/89	S-13-T2N	<2	0.076	<0.05	1.1	8.5
08/18/89	S-13-T3N	12	0.29	0.29	0.22	1.3
08/18/89	S-13-T4N	4.4	<0.05	<0.05	<0.05	0.23
08/18/89	S-13-T5N	700	4.6	2.0	4.6	83
08/18/89	S-18-T1N	430	<0.05	<0.05	1.1	8.5
08/18/89	S-18-T2N	<2	0.076	<0.05	<0.05	0.092
08/18/89	S-19-T3N	93	0.11	0.11	0.74	3.5
08/18/89	S-19-T4N	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-19-T5N	3,800	<0.05	15	18	150
08/24/89	S-22-T5N	6.5	<0.05	0.36	0.093	0.82
08/22/89	S-14-NW1	<2	<0.05	<0.05	<0.05	<0.05
08/22/89	S-14-EW1	<2	<0.05	<0.05	<0.05	<0.05
08/30/89	S-14-NW2	3.4	<0.005	<0.005	<0.005	.030
08/30/89	S-14-WW1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF2	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-VR1	2,300	<2	<2	19	146

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).
TPHg: Total petroleum hydrocarbons as gasoline
B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes
<: Less than the detection limit for the analysis method.
Sample Identification: S-14-T1S
- S: Soil sample
- 14: Approximate sample depth in feet below grade
- T1S: Area of sample (See Plate P-4)

TABLE 4
RESULTS OF LABORATORY ANALYSES OF PRODUCT-LINE SOIL SAMPLES
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

Date	Sample #	TPHg	B	T	E	X
Center Street Dispensers						
09/06/89	S-4-PL3	43	1.0	3.2	0.74	4.0
09/06/89	S-2-PL9	4.9	0.24	0.18	0.16	0.64
09/06/89	S-4-PL10	3.4	0.21	0.18	0.11	0.25
09/06/89	S-3.5-PL11	43	1.0	3.2	0.74	4.0
09/06/89	S-2-PL12	73	0.13	<0.050	0.60	3.6
09/11/89	S-3-PL14	<2	<0.050	<0.050	<0.050	<0.050
09/11/89	S-3.5-PL15	<2	<0.050	<0.050	<0.050	0.087
09/15/89	S-3-PL16	21	0.14	0.84	0.42	2.5
09/15/89	S-3-PL17	190	0.85	7.4	2.3	14
09/15/89	S-3-PL18	100	0.72	3.3	1.2	7.2
09/15/89	S-2.5-PL19	<2	<0.050	<0.050	<0.050	<0.050
09/15/89	S-3-PL20	<2	<0.050	<0.050	<0.050	<0.050
09/15/89	S-5-PL21	<2	<0.050	<0.050	<0.050	<0.050
09/15/89	S-3-PL22	<2	<0.050	<0.050	<0.050	<0.050
Grove Street Dispensers						
09/06/89	S-1.5-PL1	130	1.6	3.8	2.4	13
09/19/89	S-4-PL22	13	0.20	0.97	0.16	1.2
10/04/89	S-3-PL25	<2	<0.050	<0.05	<0.050	<0.050
10/04/89	S-3-PL26	<2	<0.050	<0.050	<0.050	<0.050

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).
TPHg: Total petroleum hydrocarbons as gasoline
B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes
<: Less than the detection limit for the analysis method.
Sample identification:

S-4-PL3
| | └ Area of sample (See Plate P-5)
| └── Approximate sample depth in feet below grade
└──── Soil sample

AERATION AND DISPOSAL OF GASOLINE-CONTAMINATED SOIL

Approximately 1,850 cubic yards of soil excavated from the gasoline-tank pit and product-line trenches were stockpiled on asphalt at the site and covered with Visquene. From August 21, 1989 through October 10, 1989, a geologist from Applied GeoSystems periodically visited the site to collect composite samples of the stockpiled soil for laboratory analysis of TPHg and BTEX in the soil. Paradiso aerated the stockpiled soil by spreading and frequently turning the soil with a backhoe. A total of 45 composite samples were collected, each consisting of four brass sleeves for every 50 cubic yards of stockpiled soil tested.

Each composite soil sample collected was analyzed in the laboratory for TPHg and BTEX. Soil showing TPHg concentrations of 100 ppm or greater was aerated further and then resampled. Paradiso then arranged with Conrad Trucking of Escalon, California, to have the aerated soil transported to Redwood Landfill (Class III landfill) in Novato, California. The results of the laboratory analyses are presented in Table 5 and Appendix B. The methods used to aerate and to collect composite samples of the stockpiled soil are summarized in Appendix A.

Table 5
RESULTS OF LABORATORY ANALYSES OF STOCKPILED SOIL
ARCO Station No. 2152
22141 Center Street
Castro Valley, California (page 1 of 2)

Date	Sample #	TPHg	B	T	E	X
Stockpiled Soil						
08/21/89	S-0821-1A-D	3.2	<0.050	<0.050	<0.050	<0.050
08/21/89	S-0821-2A-D	<2	<0.050	<0.050	<0.050	<0.050
08/25/89	S-0825-1A-D	4.4	<0.050	<0.050	<0.050	<0.050
08/25/89	S-0825-2A-D	21	<0.050	0.12	0.089	1.0
08/25/89	S-0825-3A-D	9.9	<0.050	<0.050	<0.050	0.14
08/30/89	S-0830-1A-D	55	<0.050	<0.050	<0.050	0.16
08/30/89	S-0830-2A-D	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-0830-3A-D	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-0830-4A-D	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-0830-5A-D	<1	<0.005	<0.005	<0.005	<0.005
09/07/89	S-0907-AA-D	1,300	2.2	17	7.5	71
09/07/89	S-0907-BA-D	510	<0.050	<0.050	0.20	4.7
09/07/89	S-0907-CA-D	78	<0.050	<0.050	<0.050	1.5
09/07/89	S-0907-DA-D	2.3	<0.050	<0.050	<0.050	<0.050
09/07/89	S-0907-EA-D	670	<0.050	0.31	2.4	27
09/07/89	S-0907-FA-D	33	<0.050	<0.050	<0.050	<0.050
09/07/89	S-0907-GA-D	78	<0.050	<0.050	<0.050	0.061
09/07/89	S-0907-HA-D	68	<0.050	<0.050	<0.050	0.061
09/12/89	S-0912-1A-D	19	<0.05	<0.050	<0.050	<0.050
09/12/89	S-0912-2A-D	48	<0.050	<0.050	<0.050	0.19
09/12/89	S-0912-3A-D	42	<0.050	<0.050	<0.050	0.37
09/12/89	S-0912-4A-D	73	<0.050	<0.050	<0.050	1.6
09/13/89	S-0913-5A-D	49	<0.050	<0.050	<0.050	0.28
09/13/89	S-0913-6A-D	92	<0.050	<0.050	<0.050	1.5
09/13/89	S-0913-7A-D	560	<0.050	0.063	0.24	23
09/13/89	S-0913-8A-D	67	<0.050	<0.050	<0.050	1.4
09/14/89	S-0914-9A-D	25	<0.050	<0.050	<0.050	0.22
09/14/89	S-0914-10A-D	35	<0.050	<0.050	<0.050	0.23
09/14/89	S-0914-11A-D	20	<0.050	<0.050	<0.050	0.13

See page 2 for notes.

TABLE 5
RESULTS OF LABORATORY ANALYSES OF STOCKPILED SOIL
ARCO Station No. 2152
22141 Center Street
Castro Valley, California (page 2 of 2)

Date	Sample #	TPHg	B	T	E	X
Stockpiled Soil						
09/21/89	S-0921-12A-D	15	<0.050	<0.050	<0.050	0.074
09/21/89	S-0921-13A-D	30	<0.050	<0.050	<0.050	0.062
09/25/89	S-0925-14A-D	22	<0.050	<0.050	<0.050	<0.050
09/25/89	S-0925-15A-D	15	<0.050	<0.050	<0.050	<0.050
09/25/89	S-0925-16A-D	8.9	<0.050	<0.050	<0.050	<0.050
09/25/89	S-0925-17A-D	18	<0.050	<0.050	<0.050	<0.050
09/26/89	S-0926-18A-D	73	<0.050	0.066	0.14	1.6
10/02/89	S-1002-19A-D	100	<0.050	0.072	0.11	2.2
10/02/89	S-1002-20A-D	61	<0.050	<0.050	<0.050	0.56
10/02/89	S-1002-21A-D	91	<0.050	<0.050	<0.050	0.69
10/02/89	S-1002-22A-D	60	<0.050	<0.050	<0.050	0.30
10/02/89	S-1002-23A-D	35	<0.050	<0.050	<0.050	0.25
10/02/89	S-1002-24A-D	30	<0.050	<0.050	<0.050	0.074
10/04/89	S-1004-25A-D	33	<0.050	<0.050	<0.050	0.11
10/06/89	S-1006-26A-D	38	<0.050	<0.050	<0.050	0.087
10/06/89	S-1006-27A-D	32	<0.050	<0.050	<0.050	<0.050

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).
TPH: Total petroleum hydrocarbons
B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes
<: Less than the detection limit for the analysis method.
Sample identification:

S-0821-1A-D
| | └ Composite (ABCD)
| └ Sample collection date
└ Soil sample

CONCLUSIONS

From our investigation, we conclude that:

- Elevated levels of TPHg were present in the soil beneath the removed tanks. Results of laboratory analysis indicated TPHg concentrations of up to 1,400 ppm and 3,800 ppm in soil beneath the northeastern ends of the tanks at depths of approximately 14 and 19 feet, respectively.

- Elevated levels of TPHg were present in the soil beneath the former vapor-recovery system. Results of laboratory analysis indicated TPHg concentrations of 2,300 ppm and 37,000 ppm in the soil at depths of approximately 14 feet and 22 feet, respectively.

- The lateral extent of hydrocarbon contamination in the area of the former tanks and vapor-recovery system above depths of approximately 14 feet appears to be limited to the tank-pit area, with the possible exception of the northwestern side of the tank pit. This conclusion is based on the fact that nondetectable concentrations of TPHg are present in seven soil samples collected from the tank-pit floor and walls. This conclusion is supported further by results of analysis of soil samples collected from three soil borings

drilled in April 1989, indicating TPHg concentrations of 5.6 ppm and less at depths of 10 to 45 feet, and 460 ppm at a depth of 5 feet northwest of tank T1.

- The vertical extent of TPHg contamination in the tank pit area has not been delineated. This conclusion is based on results of analysis of a soil sample collected from beneath the vapor-recovery system at a depth of approximately 22 feet, indicating a concentration of 37,000 ppm as well as from a sample collected beneath T-1 indicating a TPHg concentration of 430 ppm at an approximate depth of 18 feet.

- Results of laboratory analyses of soil samples collected from beneath the product-dispenser lines suggest that the majority of contaminated soil has been removed. This is based on TPHg concentrations ranging from <2 ppm to 73 ppm in 11 soil samples collected from beneath the lines at a depth of approximately 3 feet. However, TPHg concentrations of 100 to 190 ppm in samples from the southwestern ends of the dispenser islands near Grove Way and Center Street indicate that the lateral and vertical extent of gasoline has not been delineated in these areas.

Copies of this report should be submitted to:

Mr. Tom Callaghan
California Regional Water Quality Control Board
San Francisco Region
1111 Jackson Street
Room 6040
Oakland, California 94607

Mr. Bob Bowman
Castro Valley Fire Department
20336 San Miguel Avenue
Castro Valley, California 94546

Mr. Scott Seery
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way
Suite 200
Oakland, California 94621

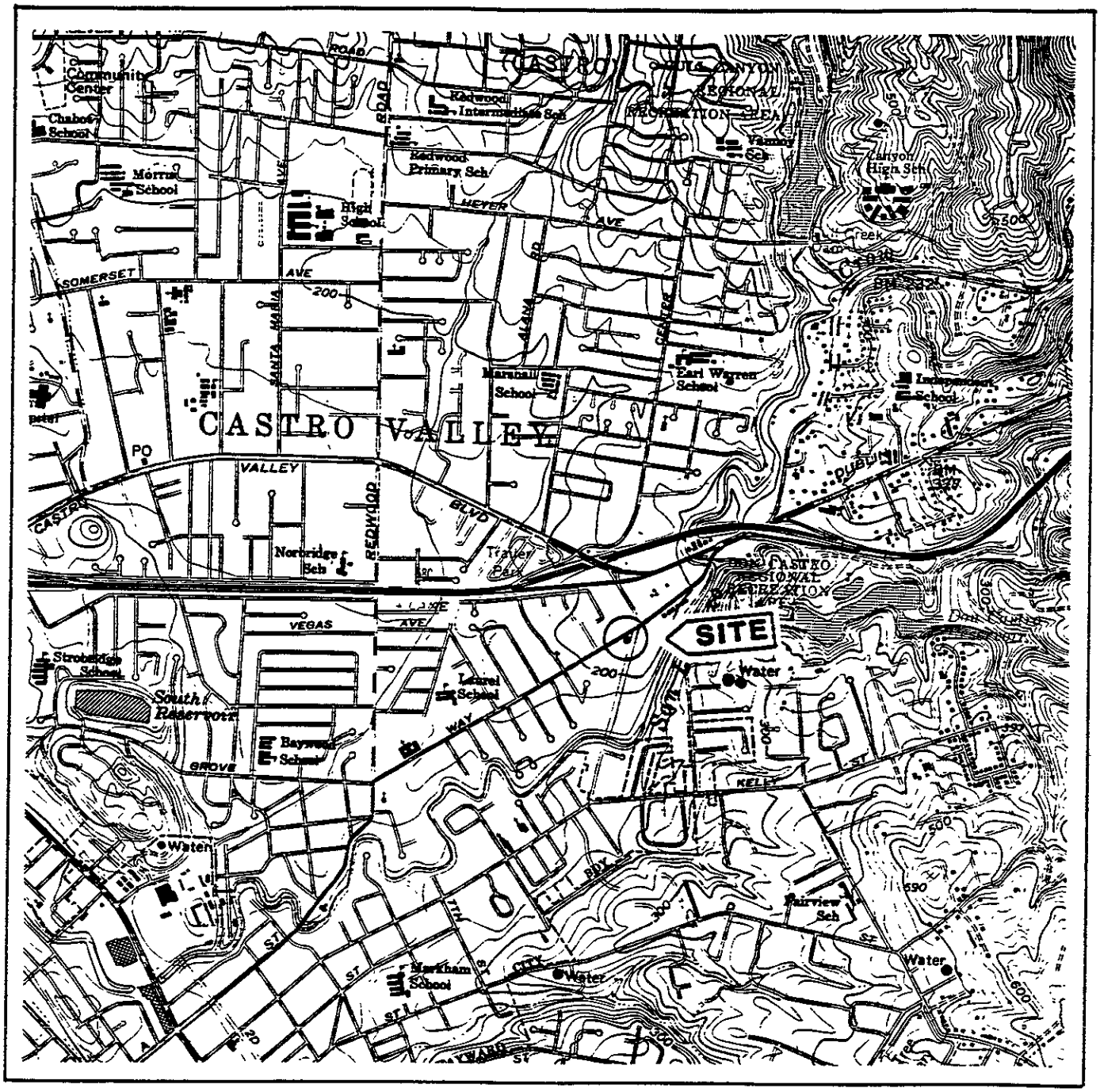
LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil with respect to gasoline contamination related to the underground gasoline storage tanks and dispenser lines at the subject site. No soil engineering or geotechnical implications are stated or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation.

REFERENCES CITED

Applied GeoSystems. May 26, 1989. Limited Environmental Site Assessment at ARCO Service Station No. 2152, 2214 Center Street, Castro Valley, California. Report 69013-1.

Applied GeoSystems. July 21, 1989. Site Safety Plan, ARCO Station No. 2152, Castro Valley, California. Report 69013-2S.



Source: U.S. Geological Survey
7.5-Minute Quadrangle
Hayward, California
Photorevised 1980

N

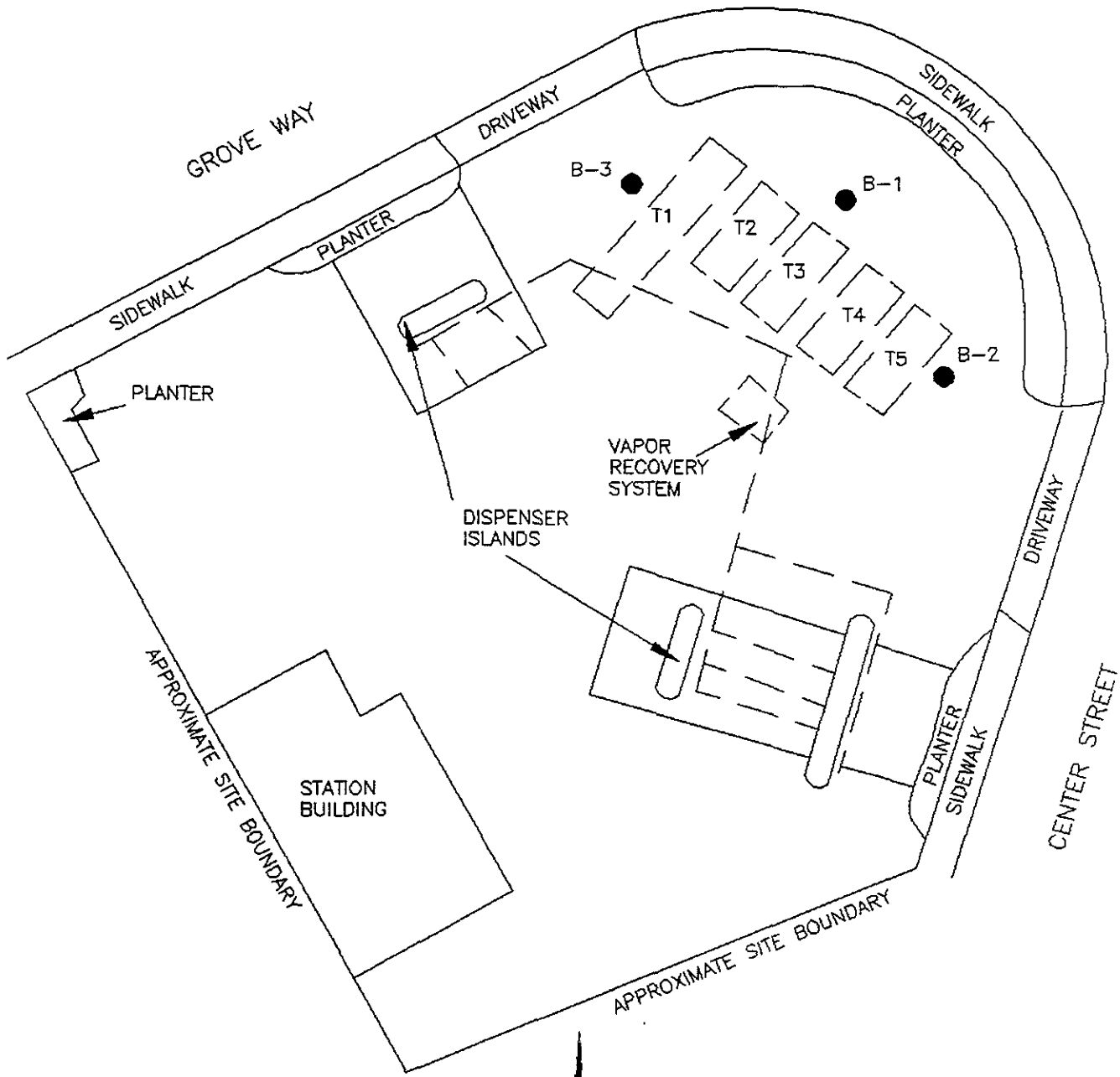
Approximate Scale
2000 1000 0 2000 4000
feet

Applied GeoSystems

PROJECT NO. 69013-2

SITE VICINITY MAP
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

PLATE
P-1



EXPLANATION

B-3 ● = Approximate soil boring (AGS, April 1989)

T5 = Underground gasoline-storage tanks

= Product lines

N

Approximate Scale

30 15 0 30 60

feet

Source: Modified from plan supplied by ARCO.

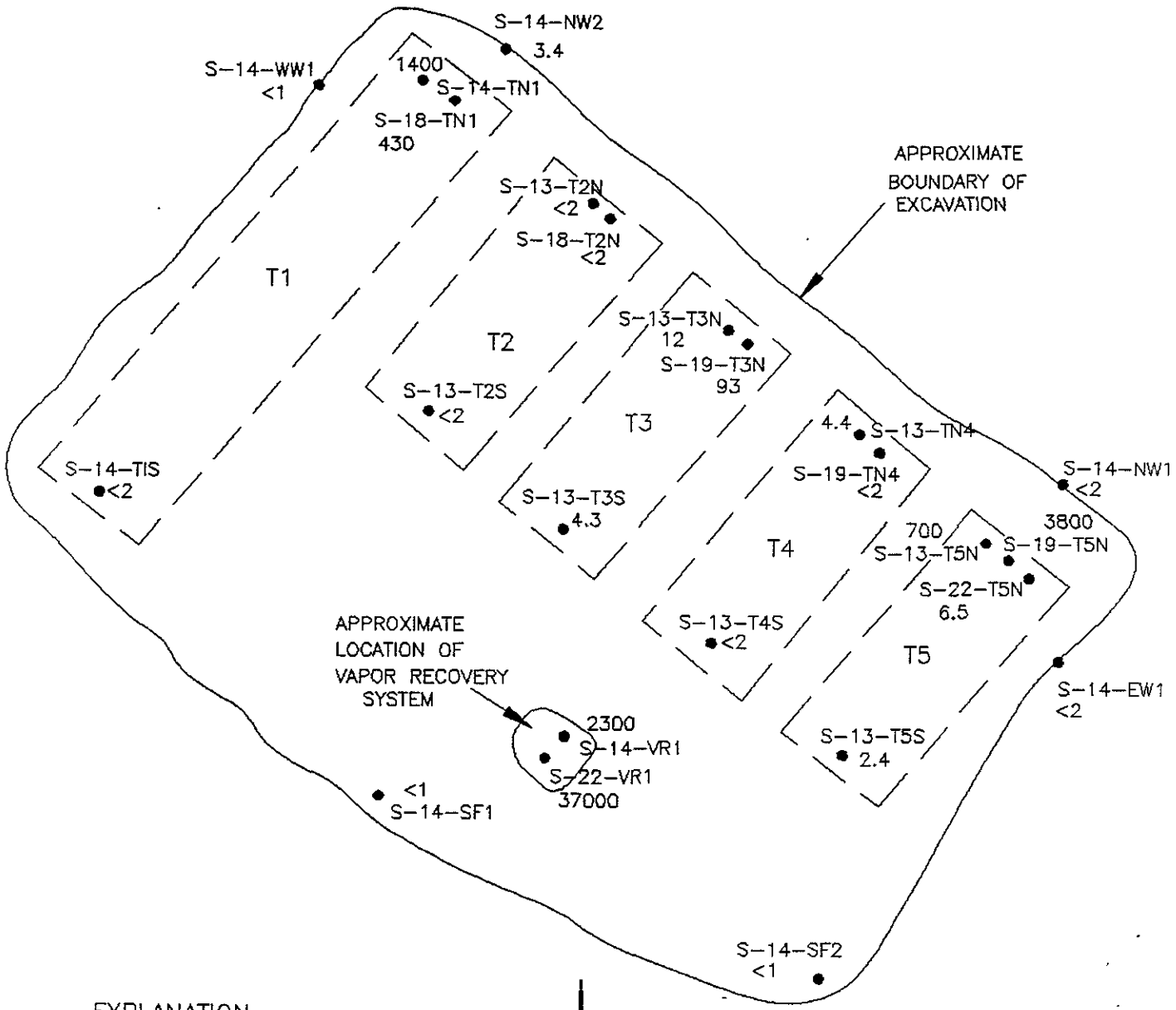
Applied GeoSystems

PROJECT NO. 69013-2

GENERALIZED SITE PLAN
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

PLATE

P - 2



EXPLANATION

T5 = Designated tank number

S-14-SF1 • = Soil sample

37,000 = Concentration of TPHg in ppm

N

Approximate Scale

10 5 0 10 20

feet

Source: Modified from plan prepared by ARCO.

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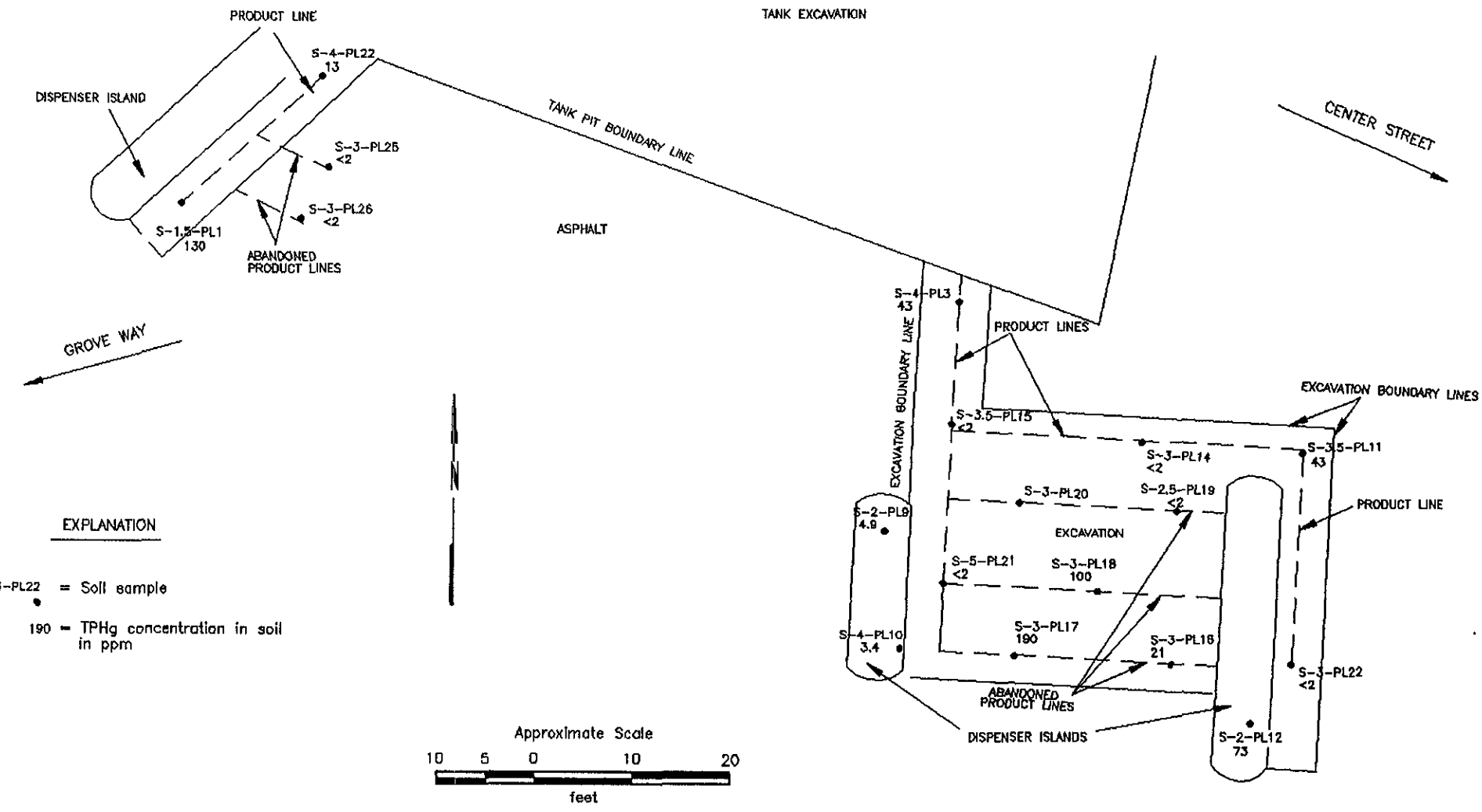
PROJECT NO. 69013-2

TANK PIT SOIL SAMPLING LOCATIONS
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

PLATE

P - 3



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PROJECT NO. 69013-2

PRODUCT-LINE SOIL SAMPLE LOCATIONS
ARCO Station No. 2152
22141 Center Street
Castro Valley, California

PLATE

P - 4

APPENDIX A

APPENDIX A

FIELD PROCEDURES

Site Safety Plan

Field work performed by Applied GeoSystems on behalf of ARCO at the site was conducted in accordance with Applied GeoSystems Site Safety Plan No. 69013-2S, dated July 21, 1989. This plan describes the safety requirements for the evaluation of soil, including soil sampling. The site safety plan is applicable to personnel of Applied GeoSystems and its subcontractors. Applied GeoSystems personnel and subcontractors of Applied GeoSystems scheduled to perform the work at the site were briefed on the contents of the site safety plan before work began. A copy of the site safety plan was available for reference by appropriate parties during the work. The Staff Geologist of Applied GeoSystems acted as the Site Safety Officer.

Tank Removal

Excavated soil was evaluated with an Organic Vapor Meter (OVM). This evaluation was done by removing the top portion of soil from the bucket and placing the intake probe of the OVM against the surface of the soil in the bucket. Field instruments such as the OVM are useful for measuring relative concentrations of vapor content but cannot be used to measure levels of contamination with the confidence of laboratory analysis. After removal of each tank, it was placed on its side for inspection. The underside of the tank then was scraped with a flat-nose shovel, and the tank was inspected for points of corrosion, pitting, through-going holes, and other indications of weakness.

Soil was excavated from below the former positions of the tank bottoms and evaluated with the OVM when the soil was brought to ground surface in the excavator bucket. Samples then were taken from the soil in the bucket by driving laboratory-cleaned brass sleeves into the soil. The samples were sealed in the sleeves with aluminum foil, plastic caps, and aluminized duct tape; labeled; and promptly placed in iced storage. Because field subjective analyses suggested the presence of hydrocarbons in the soil, additional excavation and soil sampling below the former position of the tank bottom was performed, using similar methods. The excavation was fenced prior to departure from the site.

Sampling Labeling and Handling

Sample containers were labeled in the field with the job number, sample location and depth, and date, and promptly placed in iced storage for transport to the laboratory. A Chain of Custody Record was initiated by the geologist and updated throughout handling of the samples, and accompanied the samples to a laboratory certified by the State of California for the analyses requested. Samples were transported to the laboratory promptly to help ensure that recommended sample holding times would not be exceeded. Samples will be disposed of properly after their useful life has expired.

Aeration and Sampling of Stockpiled Soil

The excavated soil was covered with Visquene immediately after it was stockpiled. In accordance with the Bay Area Air Quality Management District guidelines, the soil was uncovered and aerated in 50-cubic-yard to 600-cubic-yard increments depending on the concentrations of hydrocarbon contamination present. Aeration was accomplished through the use of a backhoe, which repeatedly turned the soil and spread it to a thickness of approximately 12 inches. One composite soil sample was collected for each 50 cubic yards of stockpiled soil.

Composite soil samples were obtained first by evaluating relatively high, average, and low areas of hydrocarbon concentration by digging approximately 1 to 2 feet into the stockpile and placing the intake probe of an OVM against the surface of the soil. We then collected one sample from the "high" reading area and three samples from the "average" areas. Samples were collected by removing the top 1 to 2 feet of soil, then driving laboratory-cleaned brass sleeves into the soil. The samples were sealed in the sleeves with aluminum foil, plastic caps, and aluminized duct tape; labeled; and promptly placed in iced storage for transport to the laboratory, where compositing was performed.

APPENDIX B

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 2 weeks

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date
Steve Bittman		
	Received for laboratory by:	8/18/89

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-14-T1N	69013-2	8-18-89	TPH(g) BTEX	Cool
S-18-T1N				
S-13-T2N				
S-18-T2N				
S-19-T3N				
S-13-T4N				
S-19-T4N				
S-13-T5N				

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S01
Project #: 69013-2
Sample #: S-14-TIN
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	1400		50		08-30-89	
TEH as Diesel						NR
Benzene	0.72		0.50		08-30-89	
Toluene	6.1		0.50		08-30-89	
Ethylbenzene	11		0.50		08-30-89	
Total Xylenes	130		0.50		08-30-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-05-89
Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S02
Project #: 69013-2
Sample #: S-18-T1N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	430		10		08-30-89	
TEH as Diesel						NR
Benzene	ND		0.50		08-30-89	
Toluene	ND		0.50		08-30-89	
Ethylbenzene	1.1		0.50		08-30-89	
Total Xylenes	8.5		0.50		08-30-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S03
Project #: 69013-2
Sample #: S-13-T2N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-30-89	
TEH as Diesel						NR
Benzene	0.076		0.050		08-30-89	
Toluene	ND		0.050		08-30-89	
Ethylbenzene	1.1		0.050		08-30-89	
Total Xylenes	8.5		0.050		08-30-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S04
Project #: 69013-2
Sample #: S-18-T2N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-30-89	
TEH as Diesel						NR
Benzene	0.076		0.050		08-30-89	
Toluene	ND		0.050		08-30-89	
Ethylbenzene	ND		0.050		08-30-89	
Total Xylenes	0.092		0.050		08-30-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-05-89
Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S05
Project #: 69013-2
Sample #: S-19-T3N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	93		2.0		08-31-89	
TEH as Diesel						NR
Benzene	0.11		0.050		08-31-89	
Toluene	0.11		0.050		08-31-89	
Ethylbenzene	0.74		0.050		08-31-89	
Total Xylenes	3.5		0.050		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89
Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S06
Project #: 69013-2
Sample #: S-13-T4N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	4.4		2.0		08-31-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-31-89	
Toluene	ND		0.050		08-31-89	
Ethylbenzene	ND		0.050		08-31-89	
Total Xylenes	0.23		0.050		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S07
Project #: 69013-2
Sample #: S-19-T4N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-31-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-31-89	
Toluene	ND		0.050		08-31-89	
Ethylbenzene	ND		0.050		08-31-89	
Total Xylenes	ND		0.050		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89
Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90853S08
Project #: 69013-2
Sample #: S-13-T5N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	700		2.0		08-31-89	
TEH as Diesel						NR
Benzene	4.6		1.0		08-31-89	
Toluene	2.0		1.0		08-31-89	
Ethylbenzene	4.6		1.0		08-31-89	
Total Xylenes	83		1.0		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date
Steve Bittman		
	Received for laboratory by:	

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-14-T1S	69013-2	8-18-89	TPH(S) BTEX	Cool
S-13-T2S	SB 69013-2	SB 8-18-89	SB TPH(S) BTEX	SB Cool
S-13-T3S				
S-13-T4S				
S-13-T5S				
S-13-T3N				
S-19-T6N	SB	SB	SB	SB

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S06
Project #: 69013-2
Sample #: S-14-T1S
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-18-89	
TEH as Diesel						NR
Benzene	0.24		0.050		08-18-89	
Toluene	ND		0.050		08-18-89	
Ethylbenzene	ND		0.050		08-18-89	
Total Xylenes	ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-21-89
Date Reported

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ANALYSIS REPORT

02121ab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S01
Project #: 69013-2
Sample #: S-13-T2S
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-18-89	
Toluene	ND		0.050		08-18-89	
Ethylbenzene	ND		0.050		08-18-89	
Total Xylenes	ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck

Laura Kuck, Laboratory Manager

08-21-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S03
Project #: 69013-2
Sample #: S-13-T3S
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	4.3		2.0		08-18-89	
TEH as Diesel						NR
Benzene	0.090		0.050		08-18-89	
Toluene	ND		0.050		08-18-89	
Ethylbenzene	ND		0.050		08-18-89	
Total Xylenes	ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-21-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S04
Project #: 69013-2
Sample #: S-13-T4S
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-18-89	
Toluene	ND		0.050		08-18-89	
Ethylbenzene	ND		0.050		08-18-89	
Total Xylenes	ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-21-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S05
Project #: 69013-2
Sample #: S-13-T5S
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	2.4		2.0		08-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-18-89	
Toluene	ND		0.050		08-18-89	
Ethylbenzene	ND		0.050		08-18-89	
Total Xylenes	ND		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S02
Project #: 69013-2
Sample #: S-13-T3N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	12		2.0		08-18-89	
TEH as Diesel						NR
Benzene	0.29		0.050		08-18-89	
Toluene	0.29		0.050		08-18-89	
Ethylbenzene	0.22		0.050		08-18-89	
Total Xylenes	1.3		0.050		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-21-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-18-89
Laboratory Number: 90852S07
Project #: 69013-2
Sample #: S-19-T5N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	3800		50		08-18-89	
TEH as Diesel						NR
Benzene	ND		5.0		08-18-89	
Toluene	15		5.0		08-18-89	
Ethylbenzene	18		5.0		08-18-89	
Total Xylenes	150		5.0		08-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-21-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 48 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date
Steve Bittman		
	Received for laboratory by: [illegible]	8/22/89

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-14-NW1	69013-2	8-22-89	TPH(G) BTEX	Cool
S-14-EW1	69013-2	8-22-89	↓	Cool

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-22-89
Laboratory Number: 90860S01
Project #: 69013-2
Sample #: S-14-EW1
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-24-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-24-89	
Toluene	ND		0.050		08-24-89	
Ethylbenzene	ND		0.050		08-24-89	
Total Xylenes	ND		0.050		08-24-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-24-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-22-89
Laboratory Number: 90860S02
Project #: 69013-2
Sample #: S-14-NW1
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-24-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-24-89	
Toluene	ND		0.050		08-24-89	
Ethylbenzene	ND		0.050		08-24-89	
Total Xylenes	ND		0.050		08-24-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-24-89
Date Reported

CHAIN OF CUSTODY RECORD

SEP 11 1989

Applied GeoSystems

43255 Mission Blvd Suite B Fremont CA 94539 (415) 651-1906

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 2 weeks

Project Leader: Steve Bittman

Phone No. 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. | Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Bittman			
	Received for laboratory by: [signature]	8/25/89	16

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-22-T5N	69013-2	8-24-89	TPH(S) BTEX	Cool

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-25-89
Laboratory Number: 90866S01
Project #: 69013-2
Sample #: S-22-T5N
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	6.5		2.0		08-31-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-31-89	
Toluene	0.36		0.050		08-31-89	
Ethylbenzene	0.093		0.050		08-31-89	
Total Xylenes	0.82		0.050		08-31-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-06-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY:
Anametrix Inc
1961 Concourse Dr - Suite E
San Jose, CA

TURNAROUND TIME: ~~2~~ 2 weeks

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by: Tashi Menthum	8/30/89	13

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-14-MW2	69013-2	8-30-89	TPH(S) BTEX	Cool
S-14-MW1	SB	SB	SB	SB
S-14-SF1	69013-2	8-30-89	TPH(S) BTEX	Cool
S-14-VR1				
S-22-VR1				
S-14-SF2	SB	SB	SB	SB

ANAMETRIX INC
Environmental & Analytical Chemistry
[illegible] Concourse Drive Suite E San Jose CA 95131
(408) [illegible] • Fax (408) 432-8198

REPORT

Steve Bittman
Applied GeoSystems
3315 Almaden Expressway
Suite 34
San Jose, CA 95118

September 06, 1989
Anametrix W.O.#: 8908237
Date Received : 08/30/89
Project Number#: 69013-2

Dear Mr. Bittman:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke
TPH Supervisor

TC/dm

REPORT SUMMARY
ANAMETRIX, INC. (408) 432-8192

Client	: Applied GeoSystems	Anametrix W.O.#:	8908237
Address	: 3315 Almaden Expressway	Date Received :	08/30/89
	Suite 34	Purchase Order#:	N/A
City	: San Jose, CA 95118	Project No. :	69013-2
Attn.	: Steve Bittman	Date Released :	09/06/89

Anametrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
RESULTS							
8908237-01	S-14-NW2	SOIL	08/30/89	TPH		09/01/89	N/A
8908237-02	S-14-WW1	SOIL	08/30/89	TPH		08/31/89	N/A
8908237-03	S-14-SF1	SOIL	08/30/89	TPH		09/01/89	N/A
8908237-04	S-14-VR1	SOIL	08/30/89	TPH		09/01/89	N/A
8908237-05	S-22-VR1	SOIL	08/30/89	TPH		09/01/89	N/A
8908237-06	S-14-SF2	SOIL	08/30/89	TPH		09/01/89	N/A
RESULTS							
8908237-02	S-14-WW1	SOIL	08/30/89	SPIKE		08/31/89	N/A
8908237-03	S-14-SF1	SOIL	08/30/89	SPIKE		09/01/89	N/A

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-14-NW2	Anametrix I.D.	: 8908237-01
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 09/01/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	30
	TPH as Gasoline	1000	3400

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-14-WW1	Anametrix I.D.	: 8908237-02
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: JC
Date anl.TPHg	: 08/31/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-14-SF1	Anametrix I.D.	: 8908237-03
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 09/01/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-14-VR1	Anametrix I.D.	: 8908237-04
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 09/01/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	2000	ND
108-88-3	Toluene	2000	ND
100-41-4	Ethylbenzene	2000	19000
1330-20-7	Total Xylenes	2000	146000
	TPH as Gasoline	40000	2300000

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-22-VR1	Anametrix I.D.	: 8908237-05
Matrix	: SOIL	Analyst	: JB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 09/01/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	40000	ND
108-88-3	Toluene	40000	510000
100-41-4	Ethylbenzene	40000	380000
1330-20-7	Total Xylenes	40000	2600000
	TPH as Gasoline	800000	37000000

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-14-SF2	Anametrix I.D.	: 8908237-06
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 09/01/89	Date released	: 09/06/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5.0	ND
108-88-3	Toluene	5.0	ND
100-41-4	Ethylbenzene	5.0	ND
1330-20-7	Total Xylenes	5.0	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : S-14-WW1
Matrix : SOIL
Date sampled : 08-30-89
Date analyzed : 08-31-89

Anametrix I.D. : 8908237-02
Analyst : CD
Supervisor : TC
Date Released : 09-05-89

COMPOUND	SPIKE AMT. (ug/Kg)	MS (ug/Kg)	%REC MS	MSD (ug/Kg)	%REC MSD	RPD	%REC LIMITS
Gasoline	500	390	78%	400	80%	3%	50-150

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : S-14-SF1
Matrix : SOIL
Date sampled : 08-30-89
Date analyzed : 09-01-89

Anametrix I.D. : 8908237-03
Analyst : CB
Supervisor : TC
Date Released : 09-05-89

COMPOUND	SPIKE AMT. (ug/Kg)	MS (ug/Kg)	%REC MS	MSD (ug/Kg)	%REC MSD	RPD	%REC LIMITS
Gasoline	500	450	90%	470	94%	4%	50-150

* Limits established by Anametrix, Inc.

CHAIN OF CUSTODY RECORD

Applied GeoSystems
43255 Mission Blvd Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): Steve Strausz / Janet Burggraf

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hr.

Project Leader: Steve Bittman

Phone No. 408-264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

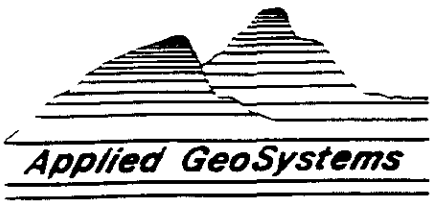
Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Tim
Janet Burggraf		9/12/89	2:3
	Received for laboratory by:	9-12-89	144

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0912-1a (Comp.)	69013-2	9/12/89	TPHg & BTEX	iced
-1b				
-1c				
-1d				
S-0912-2a (Comp.)				
2b				
2c				
2d				
S-0912-3a (Comp.)				
3b				
3c				
3d				
S-0912-4a (Comp.)				
4b				
4c				
4d				

CHAIN OF CUSTODY RECORD



43255 Mission Blvd Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): Steve Straus

Phone: 408-264-7723

LABORATORY: Applied GeoSystem
43255 Mission Blvd.
Fremont, CA

TURNAROUND TIME: 24-hour

Project Leader: Steve Bittman

Phone No. 408-264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Straus		9-6-89	1345
	Received for laboratory by: Nallan	9-6-89	13[illegible]

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-1½-PL1	69013-2	9-6-89 1030	TPHg, BTEX	Iced
S-2-PL9	SS	1130	SS	SS
S-4-PL10		1140	SJ	CS
S-2-PL12	SS	1210		

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-06-89
Laboratory Number: 90910S01
Project #: 69013-2
Sample #: S-1.5-PL1
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	130		5.0		09-06-89	
TEH as Diesel						NR
Benzene	1.6		0.050		09-06-89	
Toluene	3.8		0.050		09-06-89	
Ethylbenzene	2.4		0.050		09-06-89	
Total Xylenes	13		0.050		09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-06-89
Laboratory Number: 90910S02
Project #: 69013-2
Sample #: S-2-PL9
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	4.9		2.0		09-06-89	
TEH as Diesel						NR
Benzene	0.24		0.050		09-06-89	
Toluene	0.18		0.050		09-06-89	
Ethylbenzene	0.16		0.050		09-06-89	
Total Xylenes	0.64		0.050		09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-06-89
Laboratory Number: 90910S03
Project #: 69013-2
Sample #: S-4-PL10
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	3.4		2.0		09-06-89	
TEH as Diesel						NR
Benzene	0.21		0.050		09-06-89	
Toluene	0.18		0.050		09-06-89	
Ethylbenzene	0.11		0.050		09-06-89	
Total Xylenes	0.25		0.050		09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-06-89
Laboratory Number: 90910S04
Project #: 69013-2
Sample #: S-2-PL12
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	73		2.0		09-06-89	
TEH as Diesel						NR
Benzene	0.13		0.050		09-06-89	
Toluene	ND		0.050		09-06-89	
Ethylbenzene	0.60		0.050		09-06-89	
Total Xylenes	3.6		0.050		09-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-07-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Ste Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: ~~Rush~~ 1 week

Project Leader: Ste Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Ste Bittman			
	Received for laboratory by:	9-26-89	11

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-4-PL22	69013-2	9-19-89	TPH(G) BTEX	Cool

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-26-89
Laboratory Number: 90947S01
Project #: 69013-2
Sample #: S-4-PL22
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	13		2.0		09-27-89	
TEH as Diesel						NR
Benzene	0.20		0.050		09-27-89	
Toluene	0.97		0.050		09-27-89	
Ethylbenzene	0.16		0.050		09-27-89	
Total Xylenes	1.2		0.050		09-27-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-29-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 2 weeks

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	10-4-89	11

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-3-PL25	69013-2	10-4-89	TPH(g) BTEX	Cool
S-3-PL26	↓	↓	↓	↓

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-04-89
Laboratory Number: 91010S01
Project #: 69013-2
Sample #: S-3-PL25
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		10-06-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-06-89	
Toluene	ND		0.050		10-06-89	
Ethylbenzene	ND		0.050		10-06-89	
Total Xylenes	ND		0.050		10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-04-89
Laboratory Number: 91010S02
Project #: 69013-2
Sample #: S-3-PL26
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		10-06-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-06-89	
Toluene	ND		0.050		10-06-89	
Ethylbenzene	ND		0.050		10-06-89	
Total Xylenes	ND		0.050		10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Strauss

Phone. 408-264-7723

LABORATORY:
Applied GeoSystems
43255 Mission Blvd.
Fremont, CA

TURNAROUND TIME: 48-hour

Project Leader: Steve Bittman

Phone No.

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Strauss			
	Received for laboratory by:	9-15-89	143

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-4-PL3	69013-2	9/6/89	TPHg, BTEX	iced
S-3½-PL11	SS	9/6/89	SS	SS
S-3-PL14		9/11/89		
S-3½-PL15		9/11/89		
S-3-PL16		9/15/89		
S-3-PL17		SS		
S-3-PL18				
S-2½-PL19				
S-3-PL20				
S-5-PL21				
S-3-PL22	SS	SS	SS	SS

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S01
Project #: 69013-2
Sample #: S-4-PL3
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	43		2.0		09-18-89	
TEH as Diesel						NR
Benzene	1.0		0.050		09-18-89	
Toluene	3.2		0.050		09-18-89	
Ethylbenzene	0.74		0.050		09-18-89	
Total Xylenes	4.0		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89
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Report Prepared for:
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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S02
Project #: 69013-2
Sample #: S-3.5-PL11
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S03
Project #: 69013-2
Sample #: S-3-PL14
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S04
Project #: 69013-2
Sample #: S-3.5-PL15
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	0.087		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S05
Project #: 69013-2
Sample #: S-3-PL16
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	21		2.0		09-18-89	
TEH as Diesel						NR
Benzene	0.14		0.050		09-18-89	
Toluene	0.84		0.050		09-18-89	
Ethylbenzene	0.42		0.050		09-18-89	
Total Xylenes	2.5		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S06
Project #: 69013-2
Sample #: S-3-PL17
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	190		10		09-18-89	
TEH as Diesel						NR
Benzene	0.85		0.50		09-18-89	
Toluene	7.4		0.50		09-18-89	
Ethylbenzene	2.3		0.50		09-18-89	
Total Xylenes	14		0.50		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S07
Project #: 69013-2
Sample #: S-3-PL18
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	100		2.0		09-18-89	
TEH as Diesel						NR
Benzene	0.72		0.050		09-18-89	
Toluene	3.3		0.050		09-18-89	
Ethylbenzene	1.2		0.050		09-18-89	
Total Xylenes	7.2		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S08
Project #: 69013-2
Sample #: S-2.5-PL19
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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Report Prepared for:
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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S09
Project #: 69013-2
Sample #: S-3-PL20
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S10
Project #: 69013-2
Sample #: S-5-PL21
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

• FREMONT • COSTA MESA • SACRAMENTO • HOUSTON

ANALYSIS REPORT

0212lab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-15-89
Laboratory Number: 90931S11
Project #: 69013-2
Sample #: S-3-PL22
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		09-18-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-18-89	
Toluene	ND		0.050		09-18-89	
Ethylbenzene	ND		0.050		09-18-89	
Total Xylenes	ND		0.050		09-18-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-20-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

AUG 24 1989
APPLIED GEOSYSTEMS
SAN JOSE BRANCH

Shipper

Address

Date Shipped

Service Used

Airbill No. _____ Cooler No. _____

Relinquished by: (signatures)	Received by: (signatures)	Date
Steve Bittman		
	Received for laboratory by: Dawn Kurtz	8/24/89

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0821-1a (composite)	69013-2	8-21-89	TPH(G) BTEX	cool
S-0821-1b (composite)				
S-0821-1c (composite)				
S-0821-1d (composite)				
S-0821-2a (composite)				
S-0821-2b (composite)				
S-0821-2c (composite)				
S-0821-2d (composite)				

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

02121ab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-21-89
Laboratory Number: 90854S01
Project #: 69013-2
Sample #: S-0821-1(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	3.2		2.0		08-21-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-21-89	
Toluene	ND		0.050		08-21-89	
Ethylbenzene	ND		0.050		08-21-89	
Total Xylenes	ND		0.050		08-21-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-22-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-21-89
Laboratory Number: 90854S02
Project #: 69013-2
Sample #: S-0821-2(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	ND		2.0		08-21-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-21-89	
Toluene	ND		0.050		08-21-89	
Ethylbenzene	ND		0.050		08-21-89	
Total Xylenes	ND		0.050		08-21-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-22-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

02121ab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-25-89
Laboratory Number: 90865S01
Project #: 69013-2
Sample #: S-0825-1(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	4.4		2.0		08-28-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-28-89	
Toluene	ND		0.050		08-28-89	
Ethylbenzene	ND		0.050		08-28-89	
Total Xylenes	ND		0.050		08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-28-89
Date Reported

CHAIN OF CUSTODY RECORD

RECEIVED
AUG 30 1989
APPLIED GEOSYSTEMS
SAN JOSE BRANCH

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date
Steve Bittman		
	Received for laboratory by: L. Graham	8/25/89

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0825-1a (composite)	69013-2	8-25-89	TPH(g) BTEX	Cool
S-0825-1b				
S-0825-1c				
S-0825-1d				
S-0825-2a (composite)	69013-1	5'	TPH(g) BTEX	(Cool)
S-0825-2b				
S-0825-2c				
S-0825-2d				
S-0825-3a (composite)				
S-0825-3b				
S-0825-3c				
S-0825-3d				

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-25-89
Laboratory Number: 90865S01
Project #: 69013-2
Sample #: S-0825-1(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	4.4		2.0		08-28-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-28-89	
Toluene	ND		0.050		08-28-89	
Ethylbenzene	ND		0.050		08-28-89	
Total Xylenes	ND		0.050		08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-28-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

02121ab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-25-89
Laboratory Number: 90865S02
Project #: 69013-2
Sample #: S-0825-2(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	21		2.0		08-28-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-28-89	
Toluene	0.12		0.050		08-28-89	
Ethylbenzene	0.089		0.050		08-28-89	
Total Xylenes	1.0		0.050		08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck, Laboratory Manager

08-28-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 08-25-89
Laboratory Number: 90865S03
Project #: 69013-2
Sample #: S-0825-3(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	9.9		2.0		08-28-89	
TEH as Diesel						NR
Benzene	ND		0.050		08-28-89	
Toluene	ND		0.050		08-28-89	
Ethylbenzene	ND		0.050		08-28-89	
Total Xylenes	0.14		0.050		08-28-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laura Kuck
Laura Kuck, Laboratory Manager

08-28-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY:
Anametrix Inc
1961 Concourse Dr Suite E
San Jose CA.

TURNAROUND TIME: 24 hr

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. **Cooler No.**

Relinquished by: (signatures)	Received by: (signatures)	Date	T
Steve Bittman			
	Received for laboratory by: Yghi Monarrez	8/30/89	18

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.		Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0830-1a	Composite	69013-2 SB	8-30-89 SB	TPH(G) BTEX	Cool SR
S-0830-1b					
S-0830-1c					
S-0830-1d					
S-0830-2a	Composite				
S-0830-2b					
S-0830-2c		69013-2	8-30-89	TPH(G) BTEX	Cool
S-0830-2d					
S-0830-3a	Composite				
S-0830-3b					
S-0830-3c					
S-0830-3d					
S-0830-4a	Composite				
S-0830-4b					
S-0830-4c					
S-0830-4d		SB	SB		SB

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Sten Bittner

Phone: (408) 264-7723

LABORATORY:
Anametrix Inc
1961 Concourse Dr. Suite E
San Jose CA

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Sten Bittner			
	Received for laboratory by: [illegible signature]	8/30/89	13

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0830-5a	69013-2	8-30-89	TPH(G) BTEX	cool
S-0830-5b	69013-2 SB	8-30-89 SB	TPH(G) BTEX	cool SB
S-0830-5c				
S-0830-5d	SB	SB		SB

(S-0830-5a through S-0830-5d: Composite)

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive Suite E. San Jose CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

Steve Bittman
Applied GeoSystems
3315 Almaden Expressway
Suite 34
San Jose, CA 95118

August 31, 1989
Anametrix W.O.#: 8908236
Date Received : 08/30/89
Project Number : 69013-2

Dear Mr. Bittman:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke
TPH Supervisor

TC/dag

REPORT SUMMARY
ANAMETRIX, INC. (408) 432-8192

Client	: Applied GeoSystems	Anametrix W.O.#:	8908236
Address	: 3315 Almaden Expressway	Date Received :	08/30/89
	Suite 34	Purchase Order#:	N/A
City	: San Jose, CA 95118	Project No. :	69013-2
Attn.	: Steve Bittman	Date Released :	08/31/89

Anametrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
RESULTS							
8908236-01	S-0830-1(A-D)COMP	SOIL	08/30/89	TPHg		08/30/89	N/A
8908236-02	S-0830-2(A-D)COMP	SOIL	08/30/89	TPHg		08/31/89	N/A
8908236-03	S-0830-3(A-D)COMP	SOIL	08/30/89	TPHg		08/30/89	N/A
8908236-04	S-0830-4(A-D)COMP	SOIL	08/30/89	TPHg		08/31/89	N/A
8908236-05	S-0830-5(A-D)COMP	SOIL	08/30/89	TPHg		08/31/89	N/A

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-0830-1(A-D)COMP.	Anametrix I.D.	: 8908236-01
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 08/30/89	Date released	: 08/31/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	50	ND
108-88-3	Toluene	50	ND
100-41-4	Ethylbenzene	50	ND
1330-20-7	Total Xylenes	50	160
	TPH as Gasoline	1000	55000

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-0830-2(A-D)COMP.	Anametrix I.D.	: 8908236-02
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 08/31/89	Date released	: 08/31/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-0830-3(A-D)COMP.	Anametrix I.D.	: 8908236-03
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 08/30/89	Date released	: 08/31/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-0830-4(A-D)COMP.	Anametrix I.D.	: 8908236-04
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 08/31/89	Date released	: 08/31/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 69013-2 S-0830-5(A-D)COMP.	Anametrix I.D.	: 8908236-05
Matrix	: SOIL	Analyst	: CB
Date sampled	: 08/30/89	Supervisor	: TC
Date anl.TPHg	: 08/31/89	Date released	: 08/31/89
Date ext.TPHd	: N/A	Date ext. TOG	: N/A
Date anl.TPHd	: N/A	Date anl. TOG	: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	5	ND
108-88-3	Toluene	5	ND
100-41-4	Ethylbenzene	5	ND
1330-20-7	Total Xylenes	5	ND
	TPH as Gasoline	1000	ND

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

CHAIN OF CUSTODY RECORD

Applied GeoSystems
43255 Mission Blvd Suite B Fremont, CA 94539 (415) 651-1906

SAMPLER (signature): Steve Strausz / Janet Burggraf

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hr.

Project Leader: Steve Bittman

Phone No. 408-264-7723

SHIPPING INFORMATION:

Shipper _____

Address _____

Date Shipped _____

Service Used _____

Airbill No. _____ **Cooler No.** _____

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Janet Burggraf		9/12/89	2:30
	Received for laboratory by:	9-12-89	1445

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0912-1a (Comp.)	69013-2	9/12/89	TPHg & BTEX	iced
-1b				
-1c				
-1d				
S-0912-2a (Comp.)				
2b				
2c				
2d				
S-0912-3a (Comp.)				
3b				
3c				
3d				
S-0912-4a (Comp.)				
4b				
4c				
4d				

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-12-89
Laboratory Number: 90924S01
Project #: 69013-2
Sample #: S-0912-1(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	19		2.0		09-12-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-12-89	
Toluene	ND		0.050		09-12-89	
Ethylbenzene	ND		0.050		09-12-89	
Total Xylenes	ND		0.050		09-12-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-12-89
Laboratory Number: 90924S02
Project #: 69013-2
Sample #: S-0912-2(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	48		2.0		09-12-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-12-89	
Toluene	ND		0.050		09-12-89	
Ethylbenzene	ND		0.050		09-12-89	
Total Xylenes	0.19		0.050		09-12-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-12-89
Laboratory Number: 90924S03
Project #: 69013-2
Sample #: S-0912-3(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	42		2.0		09-12-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-12-89	
Toluene	ND		0.050		09-12-89	
Ethylbenzene	ND		0.050		09-12-89	
Total Xylenes	0.37		0.050		09-12-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-12-89
Laboratory Number: 90924S04
Project #: 69013-2
Sample #: S-0912-4(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	73		2.0		09-12-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-12-89	
Toluene	ND		0.050		09-12-89	
Ethylbenzene	ND		0.050		09-12-89	
Total Xylenes	1.6		0.050		09-12-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-13-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Hsu

Phone. 408-264-7723

LABORATORY:
Applied GeoSystems
43255 Mission Blvd.
Fremont, CA

TURNAROUND TIME: 24-hour

Project Leader: Steve Bittman

Phone No. 408-264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Hsu		9-13-89	1500
	Received for laboratory by:	9-13-89	1570

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0913-5a	69013-2	9-13 89	TDHc BTEX	iced
S-0913-5b	"	"	"	"
S-0913-5c				
S-0913-5d				
S-0913-6a				
S-0913-6b				
S-0913-6c				
S-0913-6d				
S-0913-7a				
S-0913-7b				
S-0913-7c				
S-0913-7d				
S-0913-8a				
S-0913-8b				
S-0913-8c				
S-0913-8d				
	"	"	"	"

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-13-89
Laboratory Number: 90926S01
Project #: 69013-2
Sample #: S-0913-5(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	49		2.0		09-13-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-13-89	
Toluene	ND		0.050		09-13-89	
Ethylbenzene	ND		0.050		09-13-89	
Total Xylenes	0.28		0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-13-89
Laboratory Number: 90926S02
Project #: 69013-2
Sample #: S-0913-6(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	92		2.0		09-13-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-13-89	
Toluene	ND		0.050		09-13-89	
Ethylbenzene	ND		0.050		09-13-89	
Total Xylenes	1.5		0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-13-89
Laboratory Number: 90926S04
Project #: 69013-2
Sample #: S-0913-8(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	67		2.0		09-13-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-13-89	
Toluene	ND		0.050		09-13-89	
Ethylbenzene	ND		0.050		09-13-89	
Total Xylenes	1.4		0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-13-89
Laboratory Number: 90926S03
Project #: 69013-2
Sample #: S-0913-7(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	560		2.0		09-13-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-13-89	
Toluene	0.063		0.050		09-13-89	
Ethylbenzene	0.24		0.050		09-13-89	
Total Xylenes	23		0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89
Date Reported

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-13-89
Laboratory Number: 90926S04
Project #: 69013-2
Sample #: S-0913-8(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	67		2.0		09-13-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-13-89	
Toluene	ND		0.050		09-13-89	
Ethylbenzene	ND		0.050		09-13-89	
Total Xylenes	1.4		0.050		09-13-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-14-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Straus

Phone: 408-264-7723

LABORATORY:
Applied GeoSystems
43255 Mission Blvd.
Fremont, CA

TURNAROUND TIME: 24-hr.

Project Leader: Steve Bitdman

Phone No. 408-264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Straus		9-14-89	150
	Received for laboratory by:	9-14-89	150

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0914-9a (composite)	69013-2	9-14-89	TPHg, BTEX	iced
S-0914-9b (composite)	SS	SS	SS	SS
S-0914-9c (composite)				
S-0914-9d (composite)				
S-0914-10a (composite)				
S-0914-10b (composite)				
S-0914-10c (composite)				
S-0914-10d (composite)				
S-0914-11a (composite)				
S-0914-11b (composite)				
S-0914-11c (composite)				
S-0914-11d (composite)	SS	SS	SS	SS

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-14-89
Laboratory Number: 90928S01
Project #: 69013-2
Sample #: S-0914-9(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	25		2.0		09-14-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-14-89	
Toluene	ND		0.050		09-14-89	
Ethylbenzene	ND		0.050		09-14-89	
Total Xylenes	0.22		0.050		09-14-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-15-89
Date Reported

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-14-89
Laboratory Number: 90928S02
Project #: 69013-2
Sample #: S-0914-10(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	35		2.0		09-14-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-14-89	
Toluene	ND		0.050		09-14-89	
Ethylbenzene	ND		0.050		09-14-89	
Total Xylenes	0.23		0.050		09-14-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-15-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-14-89
Laboratory Number: 90928S03
Project #: 69013-2
Sample #: S-0914-11(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	20		2.0		09-14-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-14-89	
Toluene	ND		0.050		09-14-89	
Ethylbenzene	ND		0.050		09-14-89	
Total Xylenes	0.13		0.050		09-14-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-15-89
Date Reported

CHAIN OF CUSTODY RECORD

SEP 25 1989

APPLIED GEOSYSTEMS
SAN JOSE BRANCH

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. ~~(264)~~ (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. **Cooler No.**

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	9-21-89	12

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0921-12A (Composite)	69013-2	9-21-89	TPH(G) BTEX	Cool
S-0921-12B				
S-0921-12C				
S-0921-12D				
S-0921-13A (Composite)				
S-0921-13B				
S-0921-13C				
S-0921-13D				

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-21-89
Laboratory Number: 90939S01
Project #: 69013-2
Sample #: S-0921-12(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	15		2.0		09-21-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-21-89	
Toluene	ND		0.050		09-21-89	
Ethylbenzene	ND		0.050		09-21-89	
Total Xylenes	0.074		0.050		09-21-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-22-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-21-89
Laboratory Number: 90939S02
Project #: 69013-2
Sample #: S-0921-13(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	30		2.0		09-21-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-21-89	
Toluene	ND		0.050		09-21-89	
Ethylbenzene	ND		0.050		09-21-89	
Total Xylenes	0.062		0.050		09-21-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-22-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hours

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Tim
Steve Bittman			
	Received for laboratory by:	9-25-89	121

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.		Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0925-14a	Composite	69013-2	9-25-89	TPH(G) BTEX	Cool
S-0925-14b		"	"	"	"
S-0925-14c					
S-0925-14d					
S-0925-15a	Composite				
S-0925-15b					
S-0925-15c					
S-0925-15d		69013-1	9-25-89	TPH, BTEX	Cool
S-0925-16a	Composite				
S-0925-16b					
S-0925-16c					
S-0925-16d					
S-0925-17a	Composite				
S-0925-17b					
S-0925-17c					
S-0925-17d		"	"	"	"

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-25-89
Laboratory Number: 90941S01
Project #: 69013-2
Sample #: S-0925-14(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	22		2.0		09-25-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-25-89	
Toluene	ND		0.050		09-25-89	
Ethylbenzene	ND		0.050		09-25-89	
Total Xylenes	ND		0.050		09-25-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-25-89
Laboratory Number: 90941S02
Project #: 69013-2
Sample #: S-0925-15(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	15		2.0		09-25-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-25-89	
Toluene	ND		0.050		09-25-89	
Ethylbenzene	ND		0.050		09-25-89	
Total Xylenes	ND		0.050		09-25-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-25-89
Laboratory Number: 90941S03
Project #: 69013-2
Sample #: S-0925-16(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	8.9		2.0		09-25-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-25-89	
Toluene	ND		0.050		09-25-89	
Ethylbenzene	ND		0.050		09-25-89	
Total Xylenes	ND		0.050		09-25-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-25-89
Laboratory Number: 90941S04
Project #: 69013-2
Sample #: S-0925-17(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	18		2.0		09-25-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-25-89	
Toluene	ND		0.050		09-25-89	
Ethylbenzene	ND		0.050		09-25-89	
Total Xylenes	ND		0.050		09-25-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-26-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	9-26-89	11

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0926-18a (Composite)	69013-2	9-26-89	TPH(G) BTEX	cool
S-0926-18b	69013-2	9-26-89	TPH(G) BTEX	cool
S-0926-18c	69013-2	9-26-89	TPH(G) BTEX	cool
S-0926-18d	69013-2	9-26-89	TPH(G) BTEX	cool

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-26-89
Laboratory Number: 90946S01
Project #: 69013-2
Sample #: S-0926-18(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	73		2.0		09-26-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-26-89	
Toluene	0.066		0.050		09-26-89	
Ethylbenzene	0.14		0.050		09-26-89	
Total Xylenes	1.6		0.050		09-26-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-27-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	10-2-89	141

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-1002-19a (Composite)	690B-2	10-2-89	TPH(G) BTEX	Cool
S-1002-19b	SB	SB	SB	SB
S-1002-19c				
S-1002-19d				
S-1002-20a (Composite)				
S-1002-20b				
S-1002-20c				
S-1002-20d				
S-1002-21a (Composite)				
S-1002-21b				
S-1002-21c				
S-1002-21d				
S-1002-22a (Composite)				
S-1002-22b				
S-1002-22c				
S-1002-22d				

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	10-2-89	14:

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-1002-23a (Composite)	6901B-2	10-2-89	TPHg BTEX	Cool
S-1002-23b	"	"	"	"
S-1002-23c	"	"	"	"
S-1002-23d	"	"	"	"
S-1002-24a (Composite)	"	"	"	"
S-1002-24b	"	"	"	"
S-1002-24c	"	"	"	"
S-1002-24d	"	"	"	"

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ANALYSIS REPORT

0212lab.frm

Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S01
Project #: 69013-2
Sample #: S-1002-19(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	100		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	0.072		0.050		10-03-89	
Ethylbenzene	0.11		0.050		10-03-89	
Total Xylenes	2.2		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S02
Project #: 69013-2
Sample #: S-1002-20(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	61		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	ND		0.050		10-03-89	
Ethylbenzene	ND		0.050		10-03-89	
Total Xylenes	0.56		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S03
Project #: 69013-2
Sample #: S-1002-21(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	91		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	ND		0.050		10-03-89	
Ethylbenzene	ND		0.050		10-03-89	
Total Xylenes	0.69		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S04
Project #: 69013-2
Sample #: S-1002-22(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	60		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	ND		0.050		10-03-89	
Ethylbenzene	ND		0.050		10-03-89	
Total Xylenes	0.30		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S05
Project #: 69013-2
Sample #: S-1002-23(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	35		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	ND		0.050		10-03-89	
Ethylbenzene	ND		0.050		10-03-89	
Total Xylenes	0.25		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-02-89
Laboratory Number: 91001S06
Project #: 69013-2
Sample #: S-1002-24(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	30		2.0		10-02-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-03-89	
Toluene	ND		0.050		10-03-89	
Ethylbenzene	ND		0.050		10-03-89	
Total Xylenes	0.074		0.050		10-03-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-04-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 48 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Ti
Steve Bittman			
	Received for laboratory by:	10-4-89	114

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-1004-25a	6903-2	10-4-89	TPH(G) BTEX	Cool
S-1004-25b	6903-2	10-4-89	BTEX	
S-1004-25c	6903-2	10-4-89	TPH(G)	Cool
S-1004-25d	6903-2	10-4-89		

Composite

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-04-89
Laboratory Number: 91009S01
Project #: 69013-2
Sample #: S-1004-25(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	33		2.0		10-05-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-05-89	
Toluene	ND		0.050		10-05-89	
Ethylbenzene	ND		0.050		10-05-89	
Total Xylenes	0.11		0.050		10-05-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-06-89
Date Reported

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Bittman

Phone: (408) 264-7723

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 24 hrs

Project Leader: Steve Bittman

Phone No. (408) 264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	T
Steve Bittman			
	Received for laboratory by:	10-6-89	11

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-1006-26a (Composite)	69013-2	10-6-89	TPH(G) BTEX	Cool
S-1006-26b				
S-1006-26c				
S-1006-26d				
S-1006-27a (Composite)				
S-1006-27b				
S-1006-27c				
S-1006-27d				

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-06-89
Laboratory Number: 91015S01
Project #: 69013-2
Sample #: S-1006-26(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	38		2.0		10-06-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-06-89	
Toluene	ND		0.050		10-06-89	
Ethylbenzene	ND		0.050		10-06-89	
Total Xylenes	0.087		0.050		10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 10-06-89
Laboratory Number: 91015S02
Project #: 69013-2
Sample #: S-1006-27(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	32		2.0		10-06-89	
TEH as Diesel						NR
Benzene	ND		0.050		10-06-89	
Toluene	ND		0.050		10-06-89	
Ethylbenzene	ND		0.050		10-06-89	
Total Xylenes	ND		0.050		10-06-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

10-09-89
Date Reported

CHAIN OF CUSTODY RECORD

RECEIVED
SEP 11 1989
APPLIED GEOSYSTEMS
SAN JOSE BRANCH

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Strom

Phone: 408·264-7723

LABORATORY:
Applied GeoSystems
48255 Mission Blvd.
Fremont, CA

TURNAROUND TIME: 24-hour

Project Leader: Steve Bittman

Phone No. 408·264·7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Strom		9/7/89	1540
	Received for laboratory by:	9-7-89	1574

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0907-Aa (composite)	69013-2	9-7-89	TPHg, BTEX	iced
S-0907-Ab (composite)	"	"	"	"
S-0907-Ac (composite)	"	"	"	"
S-0907-Ad (composite)	"	"	"	"
S-0907-Ba (composite)				
S-0907-Bb (composite)				
S-0907-Bc (composite)				
S-0907-Bd (composite)				
S-0907-Ca (composite)				
S-0907-Cb (composite)				
S-0907-Cc (composite)				
S-0907-Cd (composite)				
S-0907-Da (composite)				
S-0907-Db (composite)				
S-0907-Dc (composite)				
S-0907-Dd (composite)	"	"	"	"

CHAIN OF CUSTODY RECORD

San Jose Branch
3315 Almaden Expressway, Suite 34
San Jose, CA 95118 (408)264-7723

Applied GeoSystems

SAMPLER (signature): Steve Strawn

Phone: 408.264-7723

LABORATORY:
Applied GeoSystems
43255 Mission Blvd
Fremont, CA

TURNAROUND TIME: 24-hour

Project Leader: Steve Bittman

Phone No. 408.264-7723

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Steve Strawn		9/7/89	154
	Received for laboratory by:	9-7-89	154

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
S-0907-Ea (composite)	69013-2	9-07-89	TPHg, BTEX	iced
S-0907-Eb (composite)	SS	SS	SS	SS
S-0907-Ec (composite)				
S-0907-Ed (composite)				
S-0907-Fa (composite)				
S-0907-Fb (composite)				
S-0907-Fc (composite)				
S-0907-Fd (composite)				
S-0907-Ga (composite)				
S-0907-Gb (composite)				
S-0907-Gc (composite)				
S-0907-Gd (composite)				
S-0907-Ha (composite)				
S-0907-Hb (composite)				
S-0907-Hc (composite)				
S-0907-Hd (composite)	SS	SS	SS	SS

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S01
Project #: 69013-2
Sample #: S-0907-A(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	1300		2.0		09-07-89	
TEH as Diesel						NR
Benzene	2.2		0.050		09-07-89	
Toluene	17		0.050		09-07-89	
Ethylbenzene	7.5		0.050		09-07-89	
Total Xylenes	71		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89
Date Reported

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ANALYSIS REPORT

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S02
Project #: 69013-2
Sample #: S-0907-B(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	510		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	0.20		0.050		09-07-89	
Total Xylenes	4.7		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
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ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89
Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S03
Project #: 69013-2
Sample #: S-0907-C(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	78		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	ND		0.050		09-07-89	
Total Xylenes	1.5		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Date Reported

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S04
Project #: 69013-2
Sample #: S-0907-D(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	2.3		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	ND		0.050		09-07-89	
Total Xylenes	ND		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S05
Project #: 69013-2
Sample #: S-0907-E(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	670		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	0.31		0.050		09-07-89	
Ethylbenzene	2.4		0.050		09-07-89	
Total Xylenes	27		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S06
Project #: 69013-2
Sample #: S-0907-F(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	33		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	ND		0.050		09-07-89	
Total Xylenes	ND		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
mg/L = milligrams per liter = ppm.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S07
Project #: 69013-2
Sample #: S-0907-G(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	78		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	ND		0.050		09-07-89	
Total Xylenes	0.061		0.050		09-07-89	

mg/kg = milligrams per kilogram = parts per million (ppm).
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ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not required.

PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TPH--Total petroleum hydrocarbons (low-to-medium boiling points) are measured by extraction according to EPA Method 5030 followed by analysis by a modified EPA Method 8015 which uses a GC equipped with an FID. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89
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Report Prepared for:
Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Attention: Steve Bittman

Date Received: 09-07-89
Laboratory Number: 90915S08
Project #: 69013-2
Sample #: S-0907-H(abcd)
Matrix: Soil

Parameter	Result (mg/kg)	Result (mg/L)	Detection Limit (mg/kg)	Detection Limit (mg/L)	Date Analyzed	Notes
TVH as Gasoline						NR
TPH as Gasoline	68		2.0		09-07-89	
TEH as Diesel						NR
Benzene	ND		0.050		09-07-89	
Toluene	ND		0.050		09-07-89	
Ethylbenzene	ND		0.050		09-07-89	
Total Xylenes	0.061		0.050		09-07-89	

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mg/L = milligrams per liter = ppm.
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PROCEDURES

TVH/BTEX--Total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction according to EPA Method 5030 followed by analysis by a EPA Method 8020/602 (modified for TVH) which uses a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and a flame-ionization detector (FID) in series. Soil extracts and water samples are subjected to purge-and-trap introduction into the GC.

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TEH--Total extractable hydrocarbons (high boiling points) are measured by extraction according to EPA Method 3550 for soils or EPA Method 3510 for water followed by a modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Tia Tran, Laboratory Supervisor

09-08-89
Date Reported

TRANSMITTAL FORM

Applied GeoSystems
3315 Almaden Expressway, Suite 34
San Jose, California 95118
(408) 264-7723 FAX (408) 264-2435

Date	Project No.
1/19/90	69013-2

Subject: REPORT ON ENVIRONMENTAL INVESTIGATION, ARCO STATION NO. 2152 LOCATED IN CASTRO VALLEY, CA.

TO MR SCOTT SEERY
ALAMEDA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY
OAKLAND, CA 94621

FROM STEVE BITTMAN

TITLE STAFF GEOLOGIST

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