Epigene International
CONSULTING GEOLOGISTS

February 7, 1997

Mr. J.W. Silveira
J.W. Silveira Company
499 Embarcadero
Oakland, CA 94606

Subject: Quarterly Monitoring Report for Site Located at 2301 East 12th Street, Oakland

The purpose of this report is to provide the results of the site investigations carried out in the first quarter of 1997 at the subject site. The site is located at the southwest corner of the intersection of East 12th Street and 23rd Avenue in Oakland. The site location is shown on Figure 1. A site plan is presented on Figure 2. The site is presently occupied by Discount Brake and Tire.

There are six monitoring wells and one extraction well located on or adjacent to the site. The well locations are shown on Figure 2. Gauging of the depth to groundwater was carried out for each project well on January 16, 1997 prior to any purging of the wells. An electronic probe was used to measure the depth to groundwater from the survey mark on the top of the casing. The probe is calibrated to hundredths of a foot. Several of the wells had significant vapor pressure and up to 2 hours were required for the water levels in the wells to stabilize. The groundwater elevations were calculated and are presented on Figure 3. Groundwater elevation contours are also plotted on Figure 3.

In addition to the contouring, a direction and slope of the gradient was also calculated by a graphical

solution to a three-point problem based on the groundwater elevations of MW-1, MW-5, AND MW-6. The results of this calculation are plotted on Figure 3. The direction of the gradient is generally consistent with the groundwater elevation contouring and most of the more recent previous calculations.

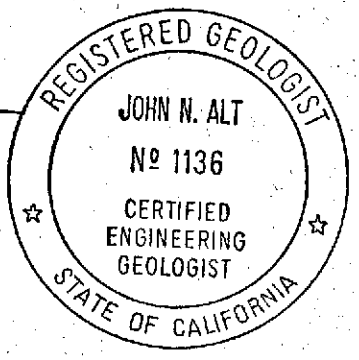
Groundwater samples were collected on January 16 from all of the project wells. The wells were purged of approximately five casing volumes prior to sampling by bailing or pumping with a purge pump. Purge water was placed in new 55 gallon drums. The samples were collected using a dedicated bailer for each well. The samples were placed in appropriate sample containers provided by the laboratory. After labeling each sample, it was stored in a cooled ice chest and transferred to a State certified laboratory under chain-of-custody control.

The requested analysis for each sample was based on the original Workplan, amendment, and the results of the past quarter sampling and analysis. The results of the analysis for water samples are summarized on Tables 1 through 7 for wells MW-1 through MW-6 and EW-1 respectively. Tables 1A, 2A, etc. present hydrocarbon contamination concentrations. Tables 1B, 2B, etc. present concentrations of compounds included in the EPA 8010 analysis that have been found at the site. The tables also include the results of previous data for each well. In addition, LUFT metals were run for the samples from MW-2, MW-3, AND EW-1. These results are included in Appendix A.

The Certified Laboratory Report and chain-of-custody documentation are included in Appendix A. Significant levels of contamination continue to be present in all of the project wells. Graphs showing summaries of concentrations of diesel and gasoline contamination for each well through time are presented on Figures 4 and 5 respectively. For the January analysis, concentrations of diesel, gasoline and benzene are plotted on Figure 6. Concentrations of Toluene, Ethyl benzene and xylenes are graphed on Figure 7. Concentrations of 8010 compounds are graphed on Figure 8.

At the request of Mr. Barney Chan, a workplan is being prepared as a separate document to carry out additional characterization of the site. We appreciate the opportunity to be of service to you on this project. Should you have any questions, please contact the undersigned.

Sincerely,




John N. Alt, CEG No. 1136

Attachments

cc: Mr. Barney Chan, Alameda County Department of Environmental Health
Mr. Robert Shapiro, Esquire

Table 1A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-1

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 7/27/92 | 360 | 1800 | 600 | 5.1 | 13 | 18 | ND |
| 11/6/92 | 670 | 8000 | 2400 | 6.1 | 41 | ND | NA |
| 3/2/93 | 1100 | 5600 | 3800 | ND | 120 | ND | NA |
| 5/26/93 | 1700 | 4800 | 3400 | 44 | 140 | 150 | NA |
| 8/27/93 | 1200 | 8400 | 2300 | 35 | 180 | 57 | ND |
| 12/23/93 | ND | 7800 | 29 | 16 | 5.8 | 26 | NA |
| 3/27/94 | 2600 | 10,000 | 2400 | 84 | 310 | 280 | NA |
| 6/24/94 | 1500 | 9000 | 2300 | 44 | 260 | 170 | NA |
| 10/16/94 | 2000 | 10,000 | 2100 | 35 | 250 | 140 | NA |
| 2/13/95 | 2500 | 16,000 | 3200 | 110 | 460 | 260 | NA |
| 6/20/95 | 3500 | 18,000 | 2600 | 87 | 450 | 220 | NA |
| 10/16/95 | 2700 | 13,000 | 2200 | 63 | 220 | 110 | NA |
| 2/15/96 | 16,000 | 11,000 | 1400 | 25 | 130 | 81 | NA |
| 6/18/96 | 8000 | 12,000 | 2500 | 72 | 190 | 130 | NA |
| 9/17/96 | 3100 | 7000 | 1200 | 29 | 86 | 55 | NA |
| 1/16/97 | 11,000 | 14,000 | 1500 | 47 | 190 | 130 | NA |
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MW-1 is a 2 inch PVC well installed 12/23/91 to a total depth of 28 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 1B-Summary of Volatile Halocarbon Concentrations (in PPB) Detected in MW-1

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-Di Chloro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 7/27/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 11/6/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3/2/93 | ND | ND | ND | ND | ND | ND | 5.8 | ND |
| 5/26/93 | ND | ND | ND | ND | ND | ND | 6.8 | ND |
| 8/27/93 | ND | ND | ND | 1.1 | ND | 5.4 | ND | ND |
| 12/23/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3/27/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/24/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/16/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 2/13/95 | ND | ND | ND | 1.3 | ND | ND | ND | ND |
| 6/20/95 | ND | 1.1 | ND | 1.1 | ND | ND | 6.5 | ND |
| 10/16/95 | ND | ND | ND | 0.84 | ND | ND | 2.5 | ND |
| 2/15/96 | ND | ND | ND | 0.82 | ND | ND | 24 | ND |
| 6/18/96 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 |
| 9/19/96 | ND<3 | ND<3 | ND<3 | ND<3 | ND<3 | ND<3 | 11 | ND<3 |
| 1/16/97 | ND | ND | ND | 0.71 | ND | ND | 13 | ND |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 2A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-2

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 7/27/92 | 1500 | 20,000 | 110 | 6 | 37 | 39 | ND |
| 11/6/92 | 17,000 | 19,000 | 2800 | 120 | 790 | 1100 | NA |
| 3/2/93 | 37,000 | 14,000 | 3800 | 110 | 950 | 1100 | NA |
| 5/26/93 | 6000 | 11,000 | 5200 | 140 | 1000 | 990 | 32 |
| 8/27/93 | 5400 | 16,000 | 1700 | 120 | 640 | 710 | ND |
| 12/23/93 | 720 | 18,000 | 87 | 79 | 42 | 400 | NA |
| 3/27/94 | 6100 | 17,000 | 2100 | 100 | 630 | 750 | ND |
| 6/24/94 | 3000 | 15,000 | 2000 | 72 | 550 | 520 | 7.9 |
| 10/16/94 | 5300 | 15,000 | 1500 | 81 | 410 | 520 | 13 |
| 2/13/95 | 4900 | 18,000 | 2000 | 120 | 660 | 900 | 20 |
| 6/20/95 | 6600 | 30,000 | 1300 | 85 | 510 | 520 | 11 |
| 10/16/95 | 31,000 | 19,000 | 1500 | 92 | 400 | 330 | 11 |
| 2/15/96 | 11,000 | 25,000 | 1700 | 93 | 490 | 440 | 20 |
| 6/13/96 | 5500 | 13,000 | 1400 | 75 | 460 | 410 | 10 |
| 9/17/96 | 13,000 | 15,000 | 1600 | 66 | 480 | 460 | 13 |
| 1/16/97 | 30,000 | 20,000 | 1800 | 150 | 670 | 780 | 95 |
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MW- 2 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 2B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-2

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-DI Chloro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 7/27/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 11/6/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3/2/93 | ND | ND | ND | ND | ND | ND | ND | ND |
| 5/26/93 | 9.8 | ND | ND | 2.7 | 2.7 | ND | ND | ND |
| 8/27/93 | 10 | 1.3 | 0.66 | 3.2 | ND | ND | ND | 2.2 |
| 12/23/93 | 4.3 | ND | ND | 1.0 | ND | ND | ND | 1.5 |
| 3/27/94 | ND | ND | ND | ND | ND | ND | ND | ND |
| 6/24/94 | 6.5 | ND | ND | ND | ND | ND | ND | ND |
| 10/16/94 | 5.7 | 1.1 | ND | 0.73 | ND | ND | ND | 1.0 |
| 2/13/95 | 12 | ND | ND | ND | ND | ND | ND | ND |
| 6/20/95 | 7.9 | 1.5 | 1.4 | 1.0 | ND | ND | ND | 2.1 |
| 10/16/95 | 5.1 | ND | ND | ND | ND | ND | ND | ND |
| 2/15/96 | 4.8 | ND | ND | ND | ND | ND | ND | ND |
| 6/13/96 | 5.6 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 |
| 9/17/96 | 8.2 | ND<4 | ND<4 | ND<4 | ND<4 | ND<4 | ND<4 | ND<4 |
| 1/16/97 | ND | ND | ND | 0.69 | ND | ND | 12 | ND |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.5 PPB for this well.

Table 3A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-3

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 7/27/92 | 4000 | 8800 | 150 | 8.6 | 88 | 13 | ND |
| 11/6/92 | 21,000 | 10,000 | 78 | 3.1 | 830 | 13 | NA |
| 3/2/93 | 9300 | 3900 | 120 | ND | 240 | 37 | NA |
| 5/26/93 | 4400 | 7400 | 570 | 4.1 | 640 | 8.4 | ND |
| 8/27/93 | 8200 | 7100 | 180 | 15 | 110 | 9.4 | ND |
| 12/23/93 | 230 | 7900 | 30 | 14 | 12 | 62 | NA |
| 3/27/94 | 4300 | 5700 | 180 | 10 | 100 | 24 | ND |
| 6/24/94 | 1500 | 8400 | 230 | 13 | 93 | 7.6 | NA |
| 10/16/94 | 2700 | 6300 | 140 | 8.7 | 68 | 25 | 7.3 |
| 2/13/95 | 1600 | 7500 | 220 | 17 | 110 | 22 | 8.3 |
| 6/20/95 | 13,000 | 11,000 | 310 | 23 | 160 | 63 | 8.5 |
| 10/16/95 | 1900 | 4700 | 120 | 6.7 | 32 | 16 | 8.3 |
| 2/15/96 | 9400 | 8100 | 62 | 13 | 50 | 33 | 12 |
| 6/13/96 | 5000 | 30,000 | 110 | 65 | 130 | 160 | 51 |
| 9/17/96 | 15,000 | 10,000 | 68 | 20 | 61 | 42 | NA |
| 1/16/97 | 57,000 | 9700 | 64 | 19 | 38 | 60 | NA |
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MW-3 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 3B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-3

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-DI Chloro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 7/27/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 11/6/92 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3/2/93 | ND | ND | ND | ND | ND | ND | ND | ND |
| 5/26/93 | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/27/93 | ND | ND | ND | ND | ND | ND | 16 | ND |
| 12/23/93 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3/27/94 | ND | ND | ND | ND | ND | ND | 6 | ND |
| 6/24/94 | ND | ND | ND | 6.0 | 1.5 | ND | ND | ND |
| 10/16/94 | ND | ND | ND | 8.4 | 2.1 | ND | 12 | ND |
| 2/13/95 | ND | ND | ND | 4.3 | 1.3 | ND | 5.1 | ND |
| 6/20/95 | ND | 0.5 | ND | 4.9 | 1.7 | ND | 5.7 | ND |
| 10/16/95 | ND | ND | ND | 7.1 | 2.0 | ND | 7.8 | ND |
| 2/15/96 | ND | ND | ND | 7.3 | 2.6 | ND | 9.3 | ND |
| 6/13/96 | ND<1 | ND<1 | ND<1 | 6.9 | 2.5 | ND<1 | ND<1 | ND<1 |
| 9/17/96 | ND<5 | ND<5 | ND<5 | 11 | ND<5 | ND<5 | 13 | ND<5 |
| 1/16/97 | ND<2 | ND<2 | ND<2 | 4.9 | 2 | ND<2 | 3.9 | ND<2 |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 4A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-4

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 3/27/94 | 1800 | 2200 | 19 | 1.2 | 2.9 | 12 | NA |
| 6/24/94 | 420 | 2300 | 2.9 | 1.6 | 2.8 | 4.6 | NA |
| 10/16/94 | 900 | 3500 | 3.8 | 2 | 5.2 | 24 | NA |
| 2/13/95 | 630 | 2600 | 100 | 100 | 3.8 | 7.1 | NA |
| 6/20/95 | 1100 | 3000 | 31 | 3.4 | 6.1 | 12 | NA |
| 10/16/95 | 1100 | 2000 | 43 | 2.3 | 8.4 | 6.9 | NA |
| 2/15/96 | 940 | 3400 | ND | ND | ND | ND | NA |
| 6/13/96 | 1100 | 1900 | 12 | 5.7 | 3.4 | 9.6 | NA |
| 9/17/96 | 2500 | 3100 | ND<.5 | 15 | 78 | 12 | NA |
| 1/16/97 | 13,000 | 4000 | ND | 7 | 3 | 15 | NA |
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MW-4 is a 2 inch PVC well installed 3/18/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 4B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-4

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2 Di Chloro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 3/27/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/24/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/16/94 | ND | ND | 0.67 | 0.71 | ND | ND | ND | ND |
| 2/13/95 | ND | ND | ND | ND | ND | ND | ND | ND |
| 6/20/95 | ND | ND | ND | 2.2 | 1.0 | ND | ND | ND |
| 10/16/95 | ND | ND | ND | 1.3 | ND | ND | ND | ND |
| 2/15/96 | ND | ND | ND | 1.8 | 0.79 | ND | ND | ND |
| 6/13/96 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 | ND<0.5 | ND | ND |
| 9/17/96 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND<5 | ND | ND<5 |
| 1/16/97 | ND | ND | ND | 0.76 | ND | ND | ND | ND |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 5A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-5

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 3/27/94 | 870 | 2900 | 71 | ND | 27 | 15 | NA |
| 6/24/94 | 950 | 6100 | 220 | 12 | 38 | 24 | NA |
| 10/16/94 | 1100 | 4300 | 120 | 5.1 | 27 | 13 | NA |
| 2/13/95 | 1200 | 4600 | 130 | 7.9 | 38 | 29 | NA |
| 6/20/95 | 1000 | 6000 | 140 | 6.7 | 27 | 29 | NA |
| 10/16/95 | 940 | 2000 | 43 | 2.3 | 8.4 | 6.9 | NA |
| 2/15/96 | 2200 | 4400 | 61 | 5.3 | 34 | ND | NA |
| 6/18/96 | NA | 7400 | 94 | 11 | 32 | 40 | NA |
| 9/17/96 | 1600 | 5200 | 140 | 7.5 | 18 | 21 | NA |
| 1/16/97 | 2500 | 4500 | 64 | 8.7 | 23 | 26 | NA |
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MW-5 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 5B-Summary of Volatile Haolcarbons Concentrations (in PPB) Detected in MW-5

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-Di Chloro-ethane | Cis 1,2 Dichlor oethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 3/27/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/24/94 | 0.53 | ND | ND | 11 | 3.1 | ND | ND | 7.5 |
| 10/16/94 | 0.66 | ND | ND | 16 | 4.2 | ND | ND | 9.6 |
| 2/13/95 | ND | ND | ND | 20 | 5.1 | ND | ND | 8.4 |
| 6/20/95 | 0.95 | ND | ND | 12 | 4.1 | ND | ND | 10 |
| 10/16/95 | 0.54 | ND | ND | 9.8 | 2.9 | ND | 2.0 | 7.6 |
| 2/15/96 | 0.57 | ND | ND | 7.7 | ND | ND | ND | 5.3 |
| 6/18/96 | ND<2.5 | ND<2.5 | ND<2.5 | 2.9 | ND<2.5 | ND<2.5 | ND<2.5 | ND<2.5 |
| 9/17/96 | 0.83 | ND<0.5 | ND<0.5 | 4.5 | 2.7 | ND<0.5 | ND<0.5 | 7.3 |
| 1/16/97 | 0.71 | ND | ND | 6.1 | 3.8 | ND | ND | 9.1 |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 6A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-6

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 3/27/94 | 1000 | 5000 | 1100 | 17 | 180 | 41 | NA |
| 6/24/94 | 660 | 8000 | 1200 | 21 | 210 | 54 | NA |
| 10/16/94 | 850 | 6300 | 870 | 14 | 140 | 49 | NA |
| 2/13/95 | 1000 | 5500 | 1000 | 17 | 210 | 55 | NA |
| 6/20/95 | 1400 | 9100 | 1300 | 24 | 240 | 79 | NA |
| 10/16/95 | 770 | 3000 | 590 | 8.8 | 84 | 24 | 2.8 |
| 2/15/96 | 1500 | 3900 | 460 | 11 | 110 | 23 | NA |
| 6/13/96 | 1300 | 4800 | 630 | 14 | 140 | 37 | 4.1 |
| 9/17/96 | 1300 | 4700 | 550 | 14 | 120 | 38 | NA |
| 1/16/97 | 2200 | 5600 | 850 | 17 | 190 | 43 | NA |
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MW-6 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 6B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-6

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-Di Chloro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 3/27/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/24/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/16/94 | NA | NA | NA | NA | NA | NA | NA | NA |
| 2/13/95 | ND | ND | ND | 40 | 13 | ND | 99 | 87 |
| 6/20/95 | ND | ND | ND | 26 | 17 | ND | 29 | 130 |
| 10/16/95 | ND<5 | ND<5 | ND<5 | 75 | 16 | ND<5 | 110 | 54 |
| 2/15/96 | ND | ND | ND | 110 | 25 | ND | 160 | 46 |
| 6/13/96 | ND<2 | ND<2 | ND<2 | 72 | 20 | ND<2 | 83 | 33 |
| 9/17/96 | ND<1 | 2.7 | ND<1 | 73 | 25 | ND<1 | 59 | 48 |
| 1/16/97 | ND<1 | 1.1 | 1.1 | 81 | 21 | ND<1 | 82 | (29) |
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NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.5 PPB for this well.

Table 7A-Summary of Hydrocarbon Concentrations (in PPB) Detected in EW-1

| Sampling Date | TPH Diesel | TPH Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes | TRPH* |
|---|---|---|---|---|---|---|---|
| 3/27/94 | 920 | 1200 | 270 | 6.2 | 30 | 13 | ND |
| 6/24/94 | 1200 | 4600 | 410 | 5.6 | 78 | 22 | NA |
| 10/16/94 | 1200 | 4900 | 310 | 5.2 | 30 | 32 | 6.4 |
| 2/13/95 | 1000 | 3900 | 380 | 5.9 | 41 | 22 | ND |
| 6/20/95 | 1800 | 7800 | 710 | 14 | 260 | 52 | 6.5 |
| 10/16/95 | 940 | 3200 | 310 | 3.3 | 32 | 16 | 5.5 |
| 2/15/96 | 2400 | 5000 | 270 | 7.5 | 50 | 20 | 4.2 |
| 6/13/96 | 1800 | 5700 | 450 | 11 | 75 | 19 | 8.3 |
| 9/17/96 | 1300 | 5300 | 300 | 15 | 67 | 29 | 7.2 |
| 1/16/97 | 2100 | 5800 | 480 | 8.6 | 100 | 30 | 99 |
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EW-1 is a 4 inch PVC well installed 3/16/94 to a total depth of 30 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 7B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in EW-1

| Sampling Date | Chloro-benzene | Chloro-ethane | 1,2-Di Cldoro-ethane | Cis 1,2 Dichloro-ethene | Trans 1,2 Dichloro-ethene | PCE | TCE | Vinyl Chloride |
|---|---|---|---|---|---|---|---|---|
| 3/27/94 | ND | ND | ND | ND | ND | ND | 40 | ND |
| 6/24/94 | ND | ND | 1.3 | 42 | 11 | ND | 68 | 3.2 |
| 10/16/94 | ND | ND | ND | 36 | ND | ND | 74 | ND |
| 2/13/95 | ND | ND | ND | 13 | 4.4 | ND | 53 | ND |
| 6/20/95 | ND | 2.0 | ND | 4.3 | 2.0 | ND | 6.0 | 2.8 |
| 10/16/95 | ND<2 | ND<2 | ND<2 | 24 | 7.1 | ND<2 | 46 | ND<2 |
| 2/15/96 | ND | 1.0 | ND | 17 | 6.4 | ND | 33 | 2.3 |
| 6/13/96 | ND<1 | ND<1 | ND<1 | 25 | 9.8 | ND<1 | 38 | 4.9 |
| 9/17/96 | ND<2 | 2.3 | ND<2 | 25 | 9.0 | ND<2 | 39 | 5.4 |
| 1/16/97 | ND | 0.87 | ND | 14 | 5.2 | ND | 14 | 3.7 |
| | | | | | | | | |
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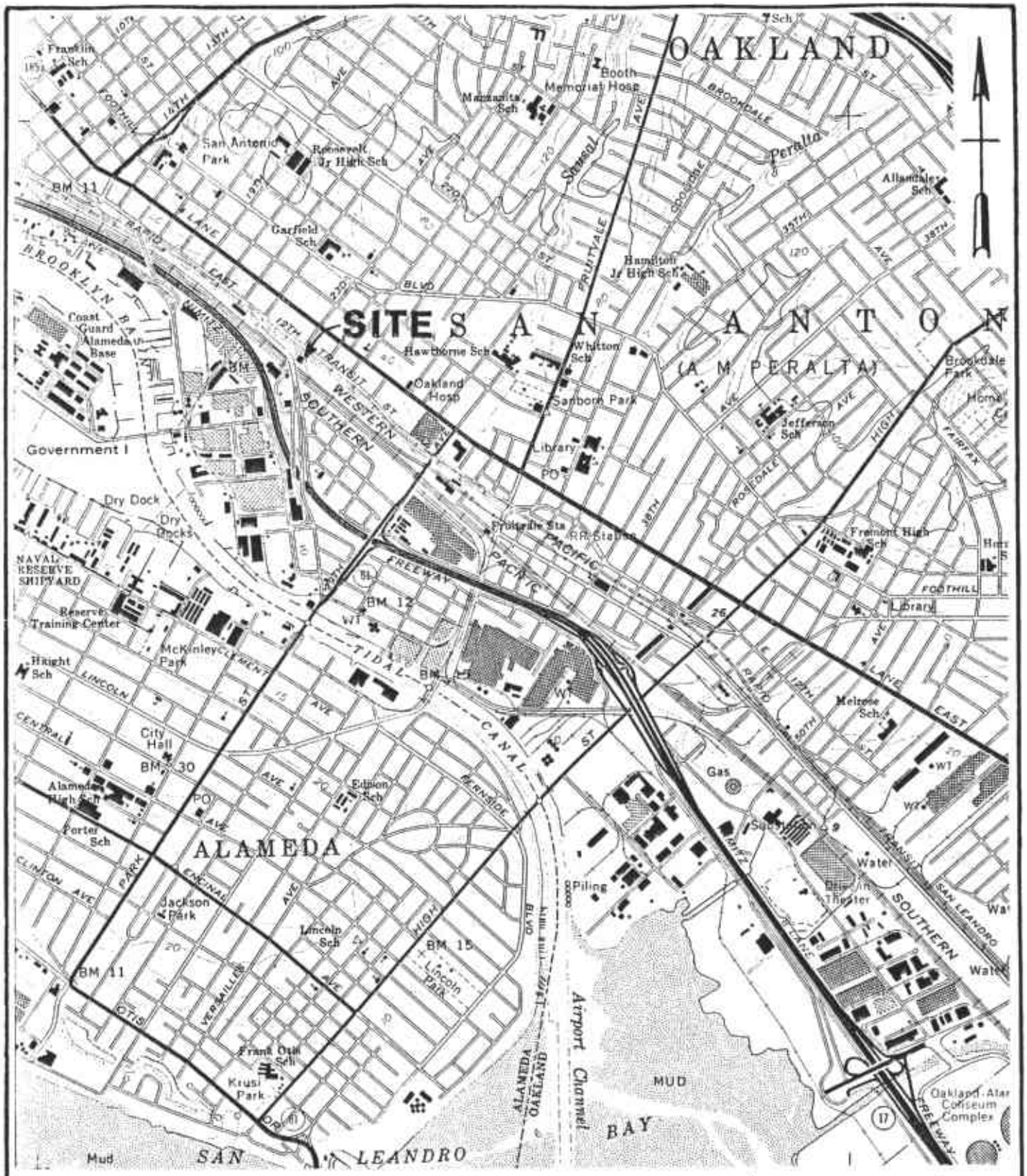
NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.0 PPB for this well.

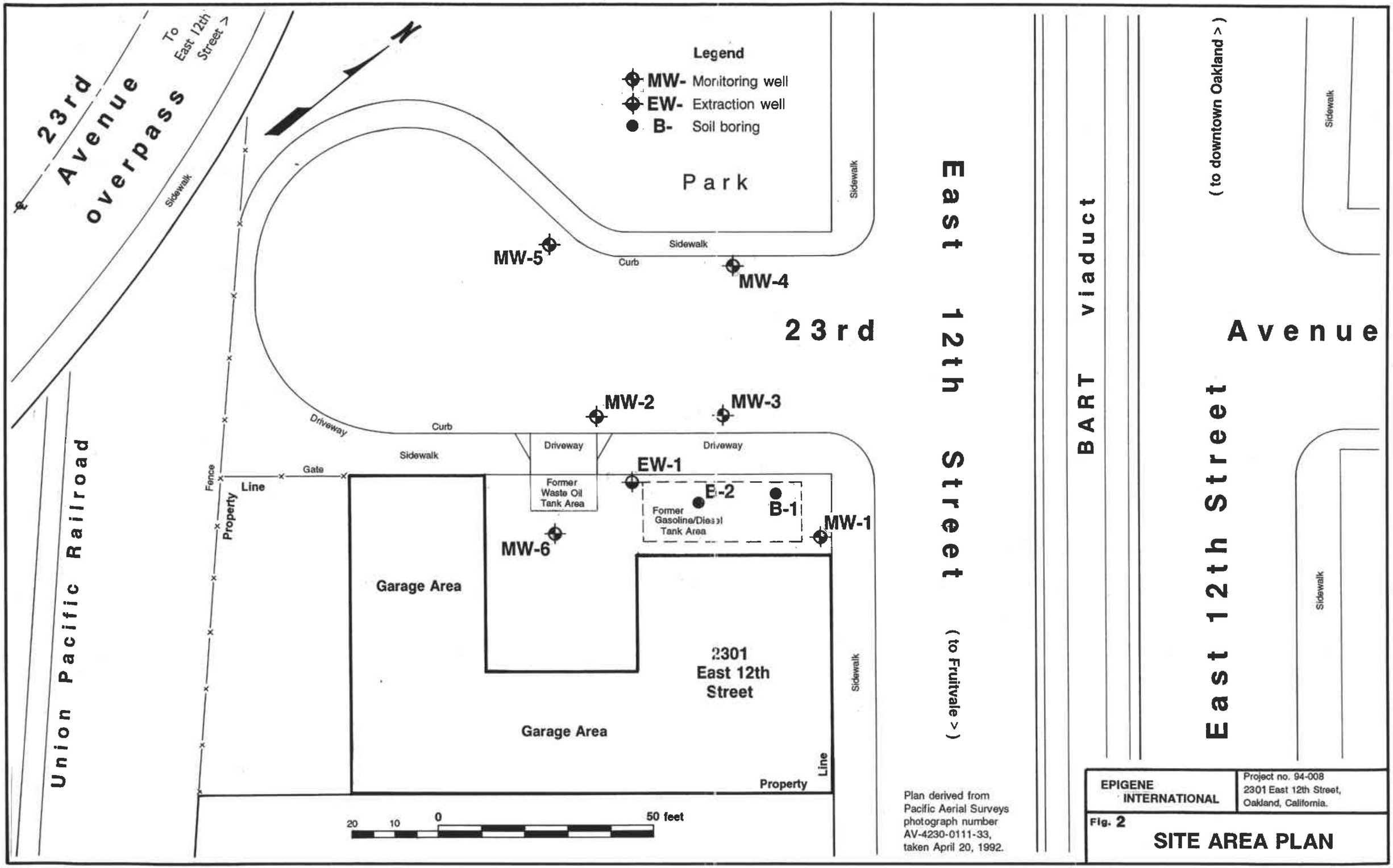



Base map from U.S.G.S. 7 1/2' series
Oakland East quadrangle, 1980.

| | |
|---|---|
| EPIGENE INTERNATIONAL | East 12th Street, Oakland, California. |

Fig. 1

# SITE LOCATION MAP

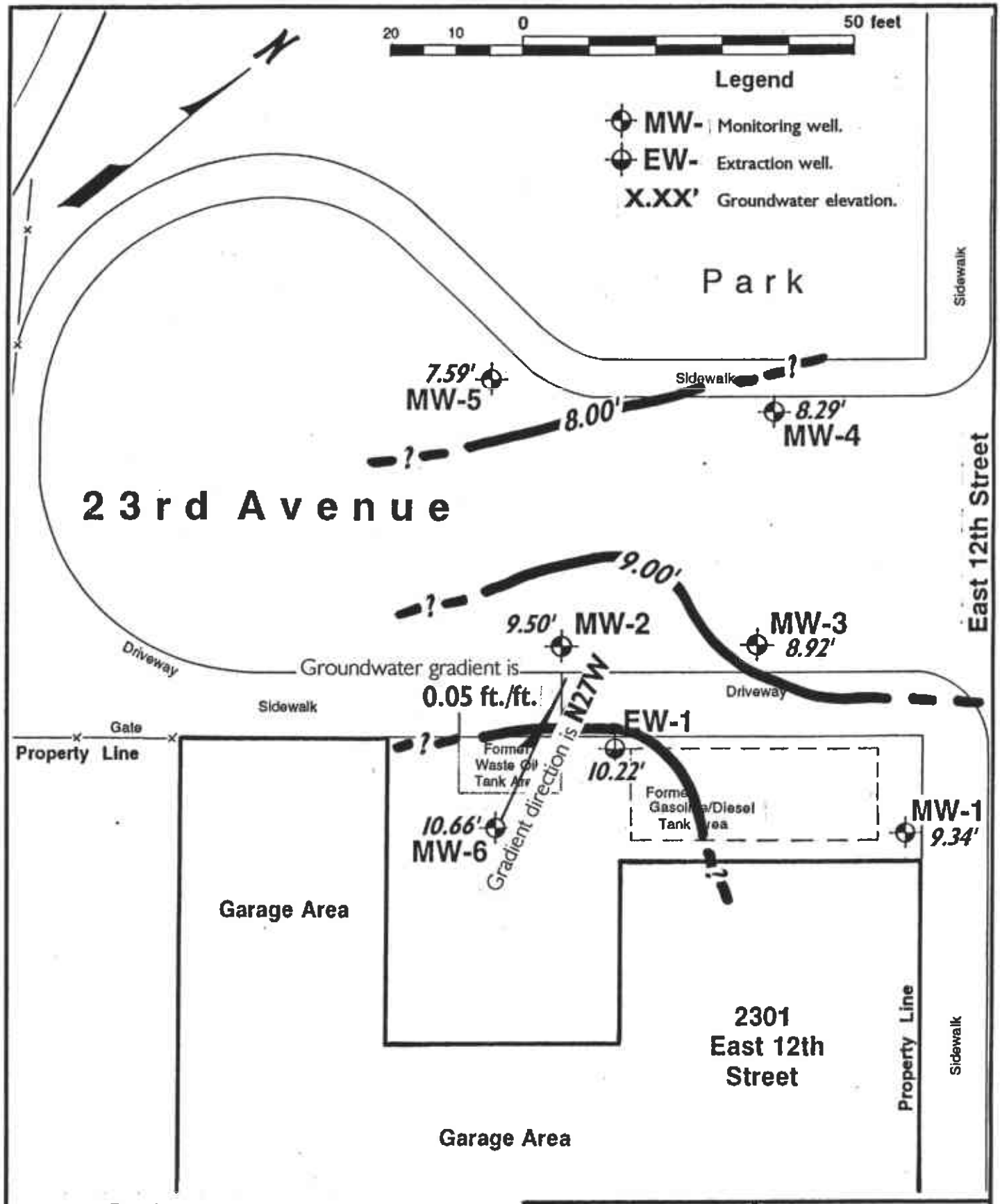



Plan derived from Pacific Aerial Surveys photograph number AV-4230-0111-33, taken April 20, 1992.

| | |
|---|---|
| EPIGENE INTERNATIONAL | Project no. 94-008<br>2301 East 12th Street,<br>Oakland, California. |

Fig. 2

# SITE AREA PLAN




Depths to groundwater measured on

**January 16, 1997**

Groundwater gradient value and direction is calculated from groundwater elevations in Monitoring Wells 1, 5, and 6.

| | |
|---|---|
| EPIGENE INTERNATIONAL | Project No. 197-008<br>2301 East 12th Street,<br>Oakland, California. |

Fig. 3

# GROUNDWATER GRADIENT

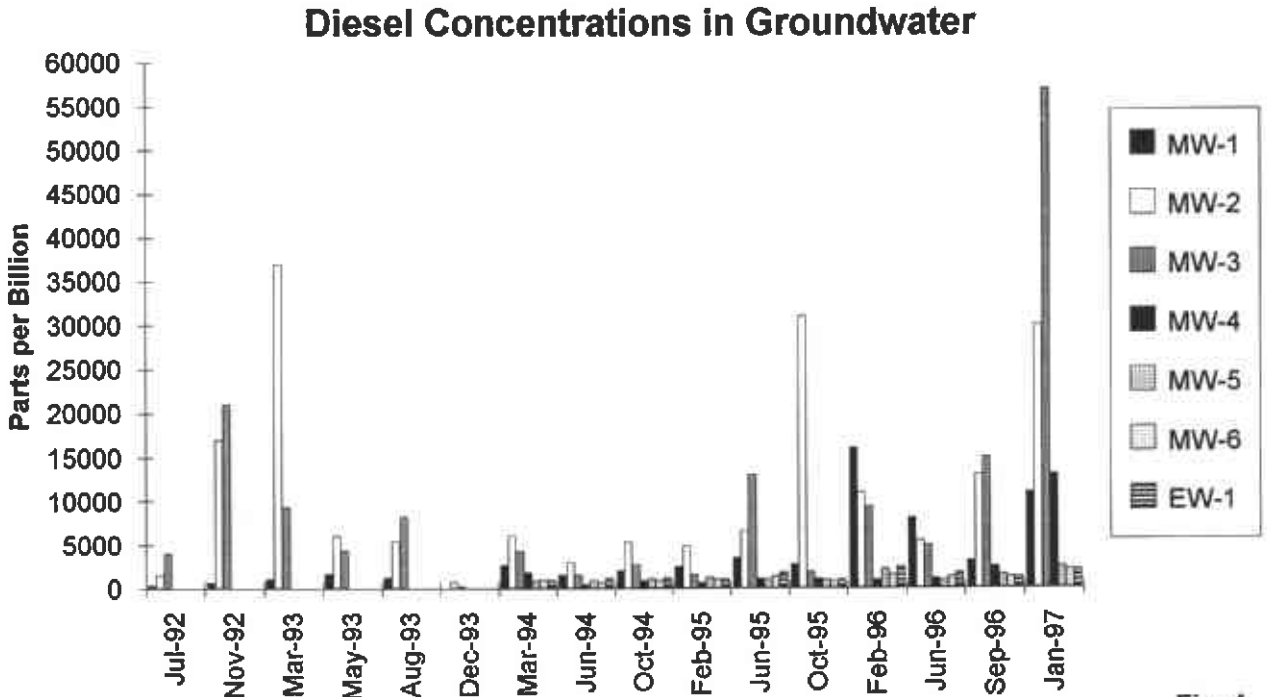

Diesel Concentrations in Groundwater
Parts per Billion
60000
55000
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Jul-92
Nov-92
Mar-93
May-93
Aug-93
Dec-93
Mar-94
Jun-94
Oct-94
Feb-95
Jun-95
Oct-95
Feb-96
Jun-96
Sep-96
Jan-97
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
EW-1

Fig. 4

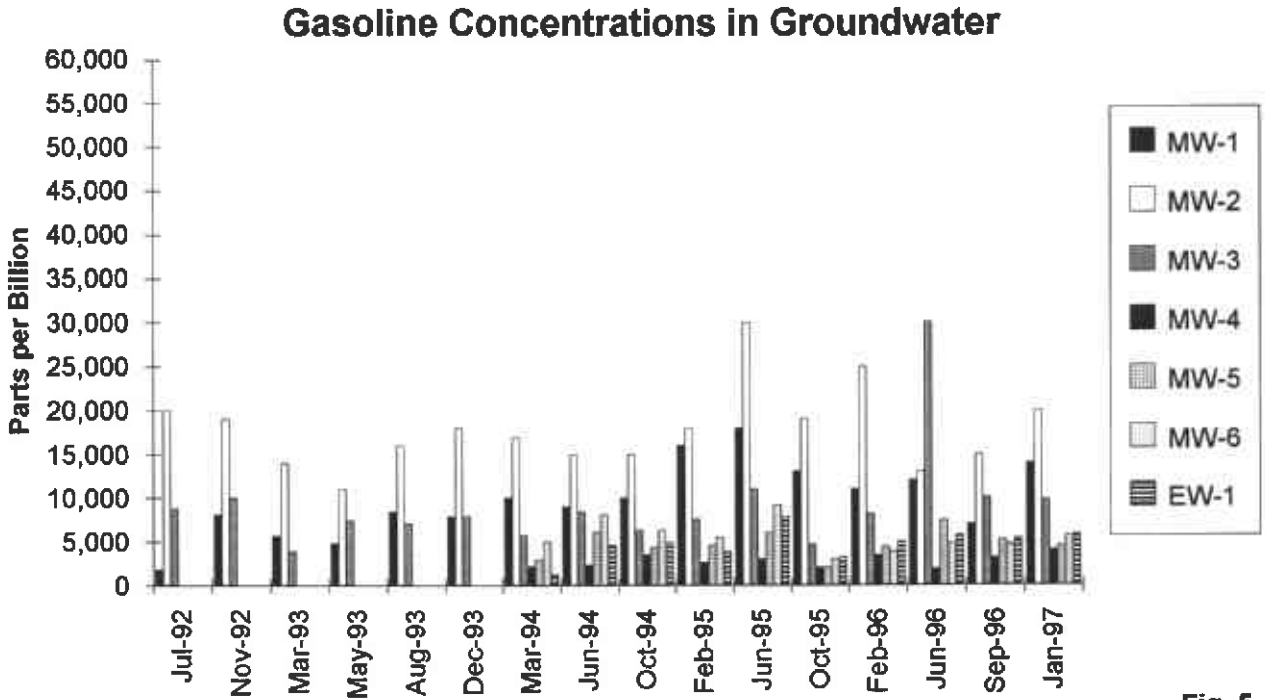

Gasoline Concentrations in Groundwater
Parts per Billion
60,000
55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Jul-92
Nov-92
Mar-93
May-93
Aug-93
Dec-93
Mar-94
Jun-94
Oct-94
Feb-95
Jun-95
Oct-95
Feb-96
Jun-96
Sep-96
Jan-97
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
EW-1

**Fig. 5**

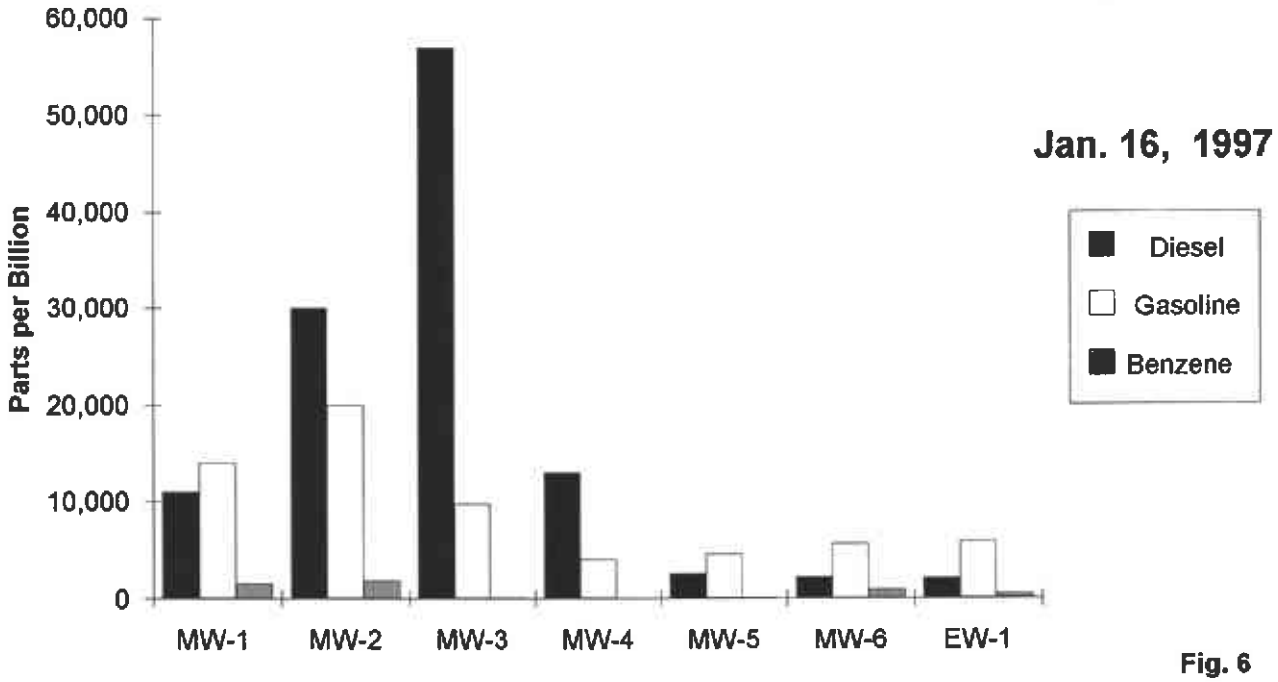

60,000
50,000
40,000
30,000
20,000
10,000
0
Parts per Billion
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
EW-1
Jan. 16, 1997
Diesel
Gasoline
Benzene

Fig. 6

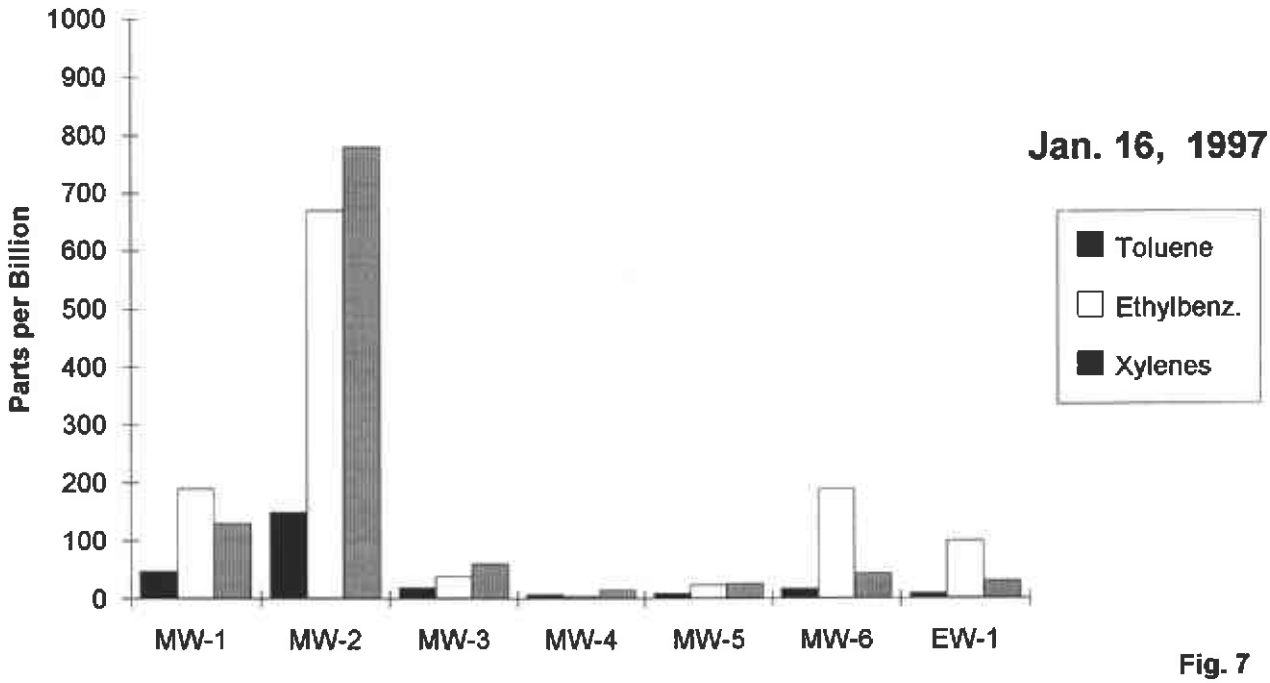

Jan. 16, 1997
Parts per Billion
1000
900
800
700
600
500
400
300
200
100
0
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
EW-1
Toluene
Ethylbenz.
Xylenes

Fig. 7

# Volatile Halocarbons in Groundwater

Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;
Trans 1,2 Dichloroethene; Tetrachloroethene; Trichloroethene; Vinyl Chloride

**Jan. 16, 1997**

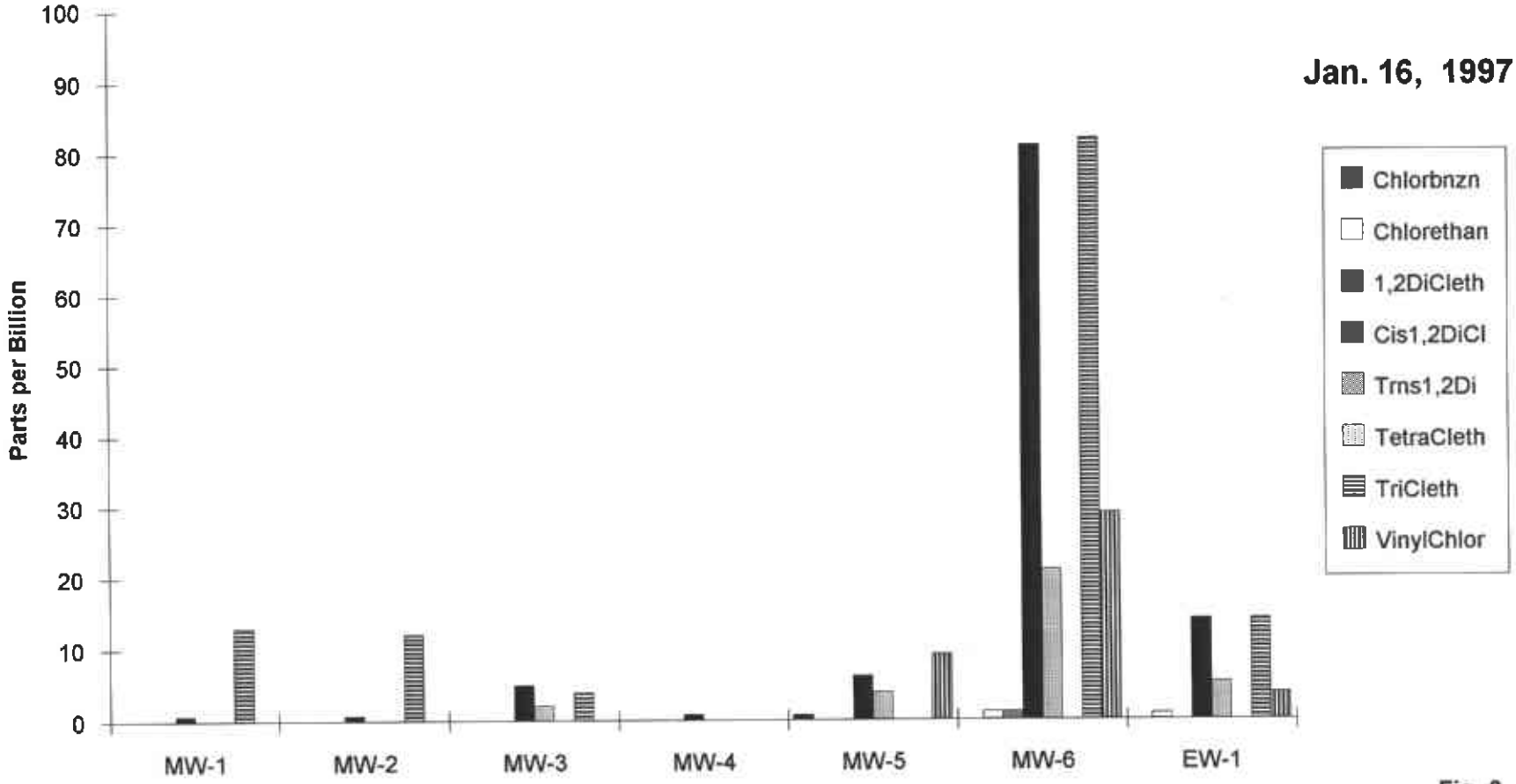



Fig. 8

# APPENDIX A

# CERTIFIED LABORATORY REPORT

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

02/03/97

Dear John:

Enclosed are:

1). the results of 7 samples from your **# 95-008; 2301 East 12th Street, Oakland** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/21-01/22/97 |
| | Client P.O: | Date Analyzed: 01/21-01/22/97 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX***
EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | MTBE | Benzene | Toluene | Ethylben-zene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|---|
| 72997 | MW-3 | W | 9700b,j,h | --- | 64 | 19 | 38 | 60 | 104 |
| 72998 | MW-4 | W | 4000,b,j,h | --- | ND | 7.0 | 3.0 | 15 | 103 |
| 72999 | MW-5 | W | 4500,b,j | --- | 64 | 8.7 | 23 | 26 | 104 |
| 73000 | MW-6 | W | 5600,a,h | --- | 850 | 17 | 190 | 43 | 105 |
| 73001 | EW-1 | W | 5800,a,h | --- | 480 | 8.6 | 100 | 30 | 118# |
| 73002 | MW-1 | W | 14,000,a,h | --- | 1500 | 47 | 190 | 130 | 108# |
| 73003 | MW-2 | W | 20,000,a,h | --- | 1800 | 150 | 670 | 780 | 109# |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Reporting Limit unless otherwise stated; ND means not detected above the reporting limit | | W | 50 ug/L | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | |

* water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/22/97 |
| | Client P.O: | Date Analyzed: 01/22-01/23/97 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 72997 | MW-3 | W | 57,000,d,h | 107 |
| 72998 | MW-4 | W | 13,000,d,h | 100 |
| 72999 | MW-5 | W | 2500,d | 108 |
| 73000 | MW-6 | W | 2200,b,d,h | 100 |
| 73001 | EW-1 | W | 2100,d,h | 107 |
| 73002 | MW-1 | W | 11,000,d,c/g,h | 101 |
| 73003 | MW-2 | W | 30,000,d,h | 107 |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| Reporting Limit unless otherwise stated; ND means not detected above the reporting limit | | W | 50 ug/L | |
| | | S | 1.0 mg/kg | |

* water samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP and STLC extracts in mg/L

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/23/97 |
| | Client P.O: | Date Analyzed: 01/23/97 |

**Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) by Scanning IR Spectrometry***

EPA method 418.1 or 9073; Standard Methods 5520 C&F

| Lab ID | Client ID | Matrix | TRPH+ | % Recovery Surrogate |
|---|---|---|---|---|
| 72997 | MW-3 | W | 200,h | ---# |
| 73001 | EW-1 | W | 7.5,h | 99 |
| 73003 | MW-2 | W | 38,h | 95 |
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| | | | | |
| Reporting Limit unless otherwise stated; ND means not detected above the reporting limit | | W | 1.0 mg/L | |
| | | S | 10 mg/kg | |

* water samples are reported in mg/L and soils and sludges in mg/kg

# surrogate diluted out of range or not applicable to this sample

+ At the laboratory's discretion, one positive sample may be run by direct injection chromatography with FID detection. The following comments pertain to this GC result: a) gasoline-range compounds (C6-C12) are present; b) diesel range compounds (C10-C23) are present; c) oil-range compounds (> C18) are present; d) other patterned solvent (?); e) isolated peaks; f) GC compounds are absent or insignificant relative to TRPH inferring that complex biologically derived molecules (lipids?)are the source of IR absorption; h) a lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/28/97 |
| | Client P.O: | Date Analyzed: 01/28/97 |

**Volatile Halocarbons**

EPA method 601 or 8010

| Lab ID | 73002 | 73003 | | |
|---|---|---|---|---|
| Client ID | MW-1 | MW-2 | | |
| Matrix | W | W | | |
| Compound | Concentration* | | | |
| Bromodichloromethane | ND | ND | | |
| Bromoform(b) | ND | ND | | |
| Bromomethane | ND | ND | | |
| Carbon Tetrachloride(c) | ND | ND | | |
| Chlorobenzene | ND | ND | | |
| Chloroethane | ND | ND | | |
| 2-Chloroethyl Vinyl Ether(d) | ND | ND | | |
| Chloroform (e) | ND | ND | | |
| Chloromethane | ND | ND | | |
| Dibromochloromethane | ND | ND | | |
| 1,2-Dichlorobenzene | ND | ND | | |
| 1,3-Dichlorobenzene | ND | ND | | |
| 1,4-Dichlorobenzene | ND | ND | | |
| Dichlorodifluoromethane | ND | ND | | |
| 1,1-Dichloroethane | ND | ND | | |
| 1,2-Dichloroethane | ND | ND | | |
| 1,1-Dichloroethene | ND | ND | | |
| cis 1,2-Dichloroethene | 0.71 | 0.69 | | |
| trans 1,2-Dichloroethene | ND | ND | | |
| 1,2-Dichloropropane | ND | ND | | |
| cis 1,3-Dichloropropene | ND | ND | | |
| trans 1,3-Dichloropropene | ND | ND | | |
| Methylene Chloride(f) | ND | ND | | |
| 1,1,2,2-Tetrachloroethane | ND | ND | | |
| Tetrachloroethene | ND | ND | | |
| 1,1,1-Trichloroethane | ND | ND | | |
| 1,1,2-Trichloroethane | ND | ND | | |
| Trichloroethene | 13 | 12 | | |
| Trichlorofluoromethane | ND | ND | | |
| Vinyl Chloride(g) | ND | ND | | |
| % Recovery Surrogate | 104 | 103 | | |
| Comments | h | h | | |

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/21/97 |
| | Client P.O: | Date Analyzed: 01/21/97 |

**Volatile Halocarbons**

EPA method 601 or 8010

| Lab ID | 72997 | | | |
|---|---|---|---|---|
| Client ID | MW-3 | | | |
| Matrix | W | | | |
| Compound | Concentration* | | | |
| Bromodichloromethane | ND< 2 | | | |
| Bromoform(b) | ND< 2 | | | |
| Bromomethane | ND< 2 | | | |
| Carbon Tetrachloride(c) | ND< 2 | | | |
| Chlorobenzene | ND< 2 | | | |
| Chloroethane | ND< 2 | | | |
| 2-Chloroethyl Vinyl Ether(d) | ND< 2 | | | |
| Chloroform(e) | ND< 2 | | | |
| Chloromethane | ND< 2 | | | |
| Dibromochloromethane | ND< 2 | | | |
| 1,2-Dichlorobenzene | ND< 2 | | | |
| 1,3-Dichlorobenzene | ND< 2 | | | |
| 1,4-Dichlorobenzene | ND< 2 | | | |
| Dichlorodifluoromethane | ND< 2 | | | |
| 1,1-Dichloroethane | ND< 2 | | | |
| 1,2-Dichloroethane | ND< 2 | | | |
| 1,1-Dichloroethene | ND< 2 | | | |
| cis 1,2-Dichloroethene | 4.9 | | | |
| trans 1,2-Dichloroethene | 2.0 | | | |
| 1,2-Dichloropropane | ND< 2 | | | |
| cis 1,3-Dichloropropene | ND< 2 | | | |
| trans 1,3-Dichloropropene | ND< 2 | | | |
| Methylene Chloride(f) | ND< 2.5 | | | |
| 1,1,2,2-Tetrachloroethane | ND< 2 | | | |
| Tetrachloroethene | ND< 2 | | | |
| 1,1,1-Trichloroethane | ND< 2 | | | |
| 1,1,2-Trichloroethane | ND< 2 | | | |
| Trichloroethene | 3.9 | | | |
| Trichlorofluoromethane | ND< 2 | | | |
| Vinyl Chloride(g) | ND< 2 | | | |
| % Recovery Surrogate | 104 | | | |
| Comments | j,h | | | |

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/28/97 |
| | Client P.O: | Date Analyzed: 01/28/97 |

**Volatile Halocarbons**

EPA method 601 or 8010

| Lab ID | 72998 | 72999 | 73000 | 73001 |
|---|---|---|---|---|
| Client ID | MW-4 | MW-5 | MW-6 | EW-1 |
| Matrix | W | W | W | W |
| Compound | Concentration* | | | |
| Bromodichloromethane | ND | ND | ND< 1 | ND |
| Bromoform(b) | ND | ND | ND< 1 | ND |
| Bromomethane | ND | ND | ND< 1 | ND |
| Carbon Tetrachloride(c) | ND | ND | ND< 1 | ND |
| Chlorobenzene | ND | 0.71 | ND< 1 | ND |
| Chloroethane | ND | ND | 1.1 | 0.87 |
| 2-Chloroethyl Vinyl Ether(d) | ND | ND | ND< 1 | ND |
| Chloroform (e) | ND | ND | ND< 1 | ND |
| Chloromethane | ND | ND | ND< 1 | ND |
| Dibromochloromethane | ND | ND | ND< 1 | ND |
| 1,2-Dichlorobenzene | ND | ND | ND< 1 | ND |
| 1,3-Dichlorobenzene | ND | ND | ND< 1 | ND |
| 1,4-Dichlorobenzene | ND | ND | ND< 1 | ND |
| Dichlorodifluoromethane | ND | ND | ND< 1 | ND |
| 1,1-Dichloroethane | ND | ND | ND< 1 | ND |
| 1,2-Dichloroethane | ND | ND | 1.1 | ND |
| 1,1-Dichloroethene | ND | ND | ND< 1 | ND |
| cis 1,2-Dichloroethene | 0.76 | 6.1 | 81 | 14 |
| trans 1,2-Dichloroethene | ND | 3.8 | 21 | 5.2 |
| 1,2-Dichloropropane | ND | ND | ND< 1 | ND |
| cis 1,3-Dichloropropene | ND | ND | ND< 1 | ND |
| trans 1,3-Dichloropropene | ND | ND | ND< 1 | ND |
| Methylene Chloride(f) | ND | ND | ND< 1 | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND< 1 | ND |
| Tetrachloroethene | ND | ND | ND< 1 | ND |
| 1,1,1-Trichloroethane | ND | ND | ND< 1 | 0.57 |
| 1,1,2-Trichloroethane | ND | ND | ND< 1 | ND |
| Trichloroethene | ND | ND | 82 | 14 |
| Trichlorofluoromethane | ND | ND | ND< 1 | ND |
| Vinyl Chloride(g) | ND | 9.1 | 29 | 3.7 |
| % Recovery Surrogate | 104 | 103 | 99 | 101 |
| Comments | h | | h | h |

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Epigene International<br>38750 Paseo Padre Pkwy, # A-11<br>Fremont, CA 94536 | Client Project ID: # 95-008; 2301 East 12th Street, Oakland | Date Sampled: 01/16/97 |
| | | Date Received: 01/20/97 |
| | Client Contact: John Alt | Date Extracted: 01/21/97 |
| | Client P.O: | Date Analyzed: 01/22-01/27/97 |

**LUFT Metals***

EPA analytical methods 6010/200.7, 239.2+

| Lab ID | Client ID | Matrix | Extraction° | Cadmium | Chromium | Lead | Nickel | Zinc | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|---|
| 72997 | MW-3 | W | TTLC | ND | 0.020 | 0.014 | ND | 0.069 | 107 |
| 73001 | EW-1 | W | TTLC | ND | ND | ND | ND | ND | 112 |
| 73003 | MW-2 | W | TTLC | ND | ND | 0.0076 | 0.10 | ND | 110 |
| | | | | | | | | | |
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| | | | | | | | | | |
| Reporting Limit unless otherwise stated; ND means not detected above the reporting limit | | S | TTLC | 0.5 mg/kg | 0.5 | 3.0 | 2.0 | 1.0 | |
| | | W | TTLC | 0.005 mg/L | 0.005 | 0.005 | 0.05 | 0.05 | |
| | | --- | STLC,TCLP | 0.01 mg/L | 0.05 | 0.2 | 0.05 | 0.05 | |

* soil samples and sludge are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 6010 (ICP)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

° EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

# surrogate diluted out of range; N/A means surrogate not applicable to this analysis

& reporting limit raised due matrix interference

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/21/97-01/22/97 Matrix: Water

| Analyte | Concentration (mg/L) Sample (#72664) | MS | MSD | Amount Spiked | % Recovery MS | MSD | RPD |
|---|---|---|---|---|---|---|---|
| TPH (gas) | 0.0 | 107.0 | 105.6 | 100.0 | 107.0 | 105.6 | 1.3 |
| Benzene | 0.0 | 11.1 | 10.2 | 10.0 | 111.0 | 102.0 | 8.5 |
| Toluene | 0.0 | 11.1 | 10.4 | 10.0 | 111.0 | 104.0 | 6.5 |
| Ethyl Benzene | 0.0 | 10.8 | 10.3 | 10.0 | 108.0 | 103.0 | 4.7 |
| Xylenes | 0.0 | 31.4 | 30.1 | 30.0 | 104.7 | 100.3 | 4.2 |
| TPH (diesel) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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Tele: 510-798-1620 Fax: 510-798-1622

# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/22/97-01/23/97 Matrix: Water

| Analyte | Concentration (mg/L) Sample (#72842) | MS | MSD | Amount Spiked | % Recovery MS | MSD | RPD |
|---|---|---|---|---|---|---|---|
| TPH (gas) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Benzene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Toluene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Ethyl Benzene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Xylenes | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TPH (diesel) | 0 | 127 | 125 | 150 | 85 | 84 | 1.5 |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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# QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/22/97-01/23/97 Matrix: Water

| Analyte | Concentration (mg/L) Sample (#73037) | MS | MSD | Amount Spiked | % Recovery MS | MSD | RPD |
|---|---|---|---|---|---|---|---|
| TPH (gas) | 0.0 | 89.5 | 87.3 | 100.0 | 89.5 | 87.3 | 2.5 |
| Benzene | 0.0 | 7.9 | 8.0 | 10.0 | 79.0 | 80.0 | 1.3 |
| Toluene | 0.0 | 8.6 | 8.7 | 10.0 | 86.0 | 87.0 | 1.2 |
| Ethyl Benzene | 0.0 | 9.1 | 9.4 | 10.0 | 91.0 | 94.0 | 3.2 |
| Xylenes | 0.0 | 27.5 | 29.4 | 30.0 | 91.7 | 98.0 | 6.7 |
| TPH (diesel) | 0 | 150 | 148 | 150 | 100 | 98 | 1.5 |
| TRPH (oil & grease) | 0 | 26400 | 24900 | 23700 | 111 | 105 | 5.8 |

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

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

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# QC REPORT FOR EPA 8010/8020/EDB

Date: 01/28/97 Matrix: Water

| Analyte | Concentration (ug/L) Sample (#72570) | MS | MSD | Amount Spiked | % Recovery MS | MSD | RPD |
|---|---|---|---|---|---|---|---|
| 1,1-DCE | 0.0 | 10.4 | 11.0 | 10.0 | 104 | 110 | 5.6 |
| Trichloroethene | 0.0 | 9.3 | 9.6 | 10.0 | 93 | 96 | 3.2 |
| EDB | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobenzene | 0.0 | 9.7 | 10.0 | 10.0 | 97 | 100 | 3.0 |
| Benzene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Toluene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobz (PID) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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# QC REPORT FOR EPA 8010/8020/EDB

Date: 01/21/97 Matrix: Water

| Analyte | Concentration (ug/L) | | | | % Recovery | | |
|---|---|---|---|---|---|---|---|
| | Sample (#72918) | MS | MSD | Amount Spiked | MS | MSD | RPD |
| 1,1-DCE | 0.0 | 10.8 | 11.3 | 10.0 | 108 | 113 | 4.5 |
| Trichloroethene | 0.0 | 9.5 | 10.0 | 10.0 | 95 | 100 | 5.1 |
| EDB | 0.0 | 8.5 | 8.8 | 10.0 | 85 | 88 | 3.5 |
| Chlorobenzene | 0.0 | 9.8 | 10.3 | 10.0 | 98 | 103 | 5.0 |
| Benzene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Toluene | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chlorobz (PID) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

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Tele: 510-798-1620 Fax: 510-798-1622

# QC REPORT FOR METALS

Date: 01/22/97 Matrix: Water

Extraction: TTLC

| Analyte | Concentration (mg/L) | | | Amount | % Recovery | | RPD |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | Spiked | MS | MSD | |
| Arsenic | 0.0 | 5.0 | 4.8 | 5.0 | 100 | 96 | 3.8 |
| Selenium | 0.0 | 4.8 | 4.8 | 5.0 | 97 | 95 | 1.9 |
| Molybdenum | 0.0 | 4.9 | 4.9 | 5.0 | 99 | 98 | 1.2 |
| Silver | 0.0 | 0.5 | 0.5 | 0.5 | 101 | 99 | 1.6 |
| Thallium | 0.0 | 4.4 | 4.4 | 5.0 | 88 | 88 | 0.7 |
| Barium | 0.0 | 4.3 | 4.2 | 5.0 | 86 | 84 | 2.5 |
| Nickel | 0.0 | 4.6 | 4.6 | 5.0 | 93 | 93 | 0.0 |
| Chromium | 0.0 | 4.7 | 4.6 | 5.0 | 93 | 92 | 1.0 |
| Vanadium | 0.0 | 4.7 | 4.7 | 5.0 | 94 | 93 | 1.4 |
| Beryllium | 0.0 | 4.9 | 4.8 | 5.0 | 97 | 96 | 1.6 |
| Zinc | 0.0 | 5.0 | 5.0 | 5.0 | 100 | 99 | 0.8 |
| Copper | 0.0 | 4.7 | 4.4 | 5.0 | 93 | 89 | 4.8 |
| Antimony | 0.0 | 4.8 | 4.6 | 5.0 | 95 | 93 | 2.4 |
| Lead | 0.0 | 4.5 | 4.4 | 5.0 | 91 | 89 | 2.3 |
| Cadmium | 0.0 | 4.9 | 4.9 | 5.0 | 99 | 98 | 1.5 |
| Cobalt | 0.0 | 4.5 | 4.5 | 5.0 | 91 | 90 | 0.4 |
| Mercury | 0.000 | 0.002 | 0.002 | 0.002 | 100 | 100 | 0.0 |

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

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

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# QC REPORT FOR ICP and/or AA METALS

Date: 01/27/97 Matrix: Water

Extraction: TTLC

| Analyte | Concentration (mg/L) | | | Amount | % Recovery | | RPD |
|---|---|---|---|---|---|---|---|
| | Sample | MS | MSD | | MS | MSD | |
| Total Lead | 0.00 | 5.00 | 5.00 | 5.00 | 100 | 100 | 0.1 |
| Total Cadmium | 0.00 | 5.66 | 5.62 | 5.00 | 113 | 112 | 0.5 |
| Total Chromium | 0.00 | 5.37 | 5.35 | 5.00 | 107 | 107 | 0.3 |
| Total Nickel | 0.00 | 5.19 | 5.18 | 5.00 | 104 | 104 | 0.1 |
| Total Zinc | 0.00 | 5.64 | 5.63 | 5.00 | 113 | 113 | 0.2 |
| Total Copper | 0.00 | 5.32 | 5.26 | 5.00 | 106 | 105 | 1.1 |
| Organic Lead | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

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

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

7969AEI107

# CHAIN OF CUSTODY

ICE/T° GOOD CONDITION HEAD SPACE ABSENT
VOAS O&G METALS OTHER PRESERVATIVE APPROPRIATE CONTAINERS

| | |
|---|---|
| **Laboratory:** | McCampbell Analytical |
| | 110 2nd Avenue South, D-7 |
| | Pacheco, California 94553. |
| | telephone: (510) 798-1620 FAX: (510) 798-1622 |
| **Contact:** | Ed Hamilton |


**Epigene International**
CONSULTING GEOLOGISTS
38750 Paseo Padre Parkway, Suite A-11
Fremont, California, 94536
Business: (510) 791-1986 FAX: (510) 791-3306


| | |
|---|---|
| **Contact:** JOHN N ALT | **Sampler:** JDA/MD |
| **Project Name:** 3701 Edw 12th St Oakland | |
| **Project no.** 35 018 | **Date:** 1/16 to 1/20/97 |

| Sample I.D. | Date/Time Sampled | Matrix Desc. | Container No. of | Container Type | Comments | TPH/Gasoline | BTEX | TPH/Diesel | 601/8010 | 602/8020 | Total Oil & Grease | CAM 5 | 601/8010 5 day VSHG per SA | Lab. # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW-3 | 1/16 pm | Water | 2 | VOAs | | X | X | | X | | | | | 72997 |
| 2. " | | | 2 | liter bottles | | | | X | | | X | | | |
| 3. " | | | 1 | plastic bottle | | | | | | | | X | | |
| 4. MW-4 | | | 2 | VOAs | | X | X | | | | | | X | |
| 5. " | | | 1 | liter bottle | | | | X | | | | | | 72998 |
| 6. MW-5 | | | 2 | VOAs | | X | X | | | | | | X | |
| 7. " | | | 1 | liter bottle | | | | X | | | | | | 72999 |
| 8. MW-6 | | | 2 | VOAs | | X | X | | | | | | X | |
| 9. " | | | 1 | liter bottle | | | | X | | | | | | |
| 10. | | | | | | | | | | | | | | 73000 |

| | | | | | |
|---|---|---|---|---|---|
| **Relinquished by:** | **Date:** 1/20/97 | **Time:** 2:51 pm | **Received by:** | **Date:** 1/20/97 | **Time:** 2:51 pm |
| **Relinquished by:** | **Date:** | **Time:** | **Received by:** | **Date:** | **Time:** |
| **Relinquished by:** | **Date:** | **Time:** | **Received by:** | **Date:** | **Time:** |

**Turnaround Time:** Normal

**Additional Comments:** VOAs preserved w/ HCl, plastic bottles w/ HNO3

ICE/T° GOOD CONDITION HEAD SPACE ABSENT
VOAS O&G METALS OTHER PRESERVATIVE APPROPRIATE CONTAINERS

7969AEI107

# CHAIN OF CUSTODY

| | |
|---|---|
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| **Contact:** | Ed Hamilton |


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Fremont, California, 94536
Business: (510) 791-1986 FAX: (510) 791-3306


| | | | |
|---|---|---|---|
| **Contact:** | JOHN N. ALT | **Sampler:** | |
| **Project Name:** | 2301 EAST 12th STREET OAKLAND | | |
| **Project no.** | | **Date:** | 1 DEC 11, 1997 |

| Sample I.D. | Date/Time Sampled | Matrix Desc. | Container No. of | Container Type | Comments | TPH/Gasoline | BTEX | TPH/Diesel | 8011/8010 (1,2 DCA only) 8021/8020 | Total Oil & Grease | CAM 5 | Lab. # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. EW-1 | 1/16 PM | Water | 2 | VOAs | | X | X | | X | | | 73001 |
| 2. " | | | 2 | liter bottle | | | | X | | X | | |
| 3. " | | | 1 | plastic bottle | | | | | | | X | |
| 4. MW-1 | | | 2 | VOAs | | X | X | | X | | | 73002 |
| 5. " | | | 1 | liter bottle | | | | X | | | | |
| 6. MW-2 | | | 2 | VOAs | | X | X | | X | | | 73003 |
| 7. " | | | 2 | liter bottle | | | | X | | X | | |
| 8. " | | | 1 | plastic bottle | | | | | | | X | |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Relinquished by:** | **Date:** 12/8/97 | **Time:** 2:50pm | **Received by:** | **Date:** 12/8/97 | **Time:** 2:50 |
| **Relinquished by:** | **Date:** | **Time:** | **Received by:** | **Date:** | **Time:** |
| **Relinquished by:** | **Date:** | **Time:** | **Received by:** | **Date:** | **Time:** |

**Turnaround Time:** Normal

**Additional Comments:** See page 1

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