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December 4, 2000

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ENVIRONMENTAL PROTECTION
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Mr. Barney M. Chan
Alameda County
Department of Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Claim No. 7912
Site Address: 3609 International Blvd., Oakland, California

Dear Mr. Chan:

A copy of SOMA's "Fourth Quarter 2000 Groundwater Monitoring Report" for the subject property is enclosed.

Thank you for your time in reviewing our report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

MS/jb

Enclosure

cc: Mr. Abolghassem Razi w/enclosure
Tony's Express Auto Service

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1.0 INTRODUCTION

This report presents the results of the fourth quarter 2000 groundwater monitoring activities conducted by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the property owner. The report also details the status of the pump and treat system (PATS) and vapor extraction system (VES) installed by SOMA in December 1999 and July 2000, respectively. The project site is Tony's Express Auto Service, located at 3609 International Boulevard, Oakland, California (the "Site"), as shown in Figure 1.

The Site is located at the intersection of 36th Avenue and International Boulevard (formerly known as East 14th Street), Oakland, California. It is currently houses a gasoline service station and mechanic shop. The Site is relatively flat, and the surrounding properties are primarily commercial businesses and residential housing. Figure 2 shows the location of the main building, fuel tank areas, and the on-site and off-site groundwater monitoring wells. The groundwater monitoring wells are being monitored on a quarterly basis. The results of the groundwater monitoring programs have indicated elevated levels of petroleum hydrocarbons in the groundwater beneath the Site. The source of petroleum hydrocarbons in the groundwater is believed to be the former underground storage tanks (USTs), which were used to store gasoline at the Site. This report includes the results of historical groundwater monitoring events, as well as the results of the fourth quarter 2000 groundwater monitoring event.

Based on the property owner's request, the recent groundwater-monitoring event was conducted by SOMA in response to Alameda County Environmental Health Services (ACEHS) requirements.

1.1 BACKGROUND

Currently, the Site is used as a gasoline service station. The environmental investigation at the subject property started since 1992, when Mr. Razi, the property owner, retained Soil Tech Engineering, Inc. (STE) of San Jose to conduct a limited subsurface investigation. The purpose of STE's investigation was to determine whether or not the soil near the product lines and underground storage tanks (USTs) had been impacted with petroleum hydrocarbons.

In July 1993, STE removed one single-walled 10,000-gallon gasoline tank and one single-walled 6,000-gallon gasoline tank along with a 550-gallon waste oil tank from the Site. Three double-walled USTs replaced these tanks. Currently, there are one-10,000 gallon double-walled gasoline tank and two-6,000 gallon double-walled gasoline tanks beneath the Site (as shown in Figure 2).

In December 1997, Mr. Razi retained Western Geo-Engineers (WEGE) to conduct additional investigations and perform groundwater monitoring on a quarterly basis. The results of the WEGE groundwater monitoring events indicated elevated levels of petroleum hydrocarbons and methyl tertiary butyl ether (MTBE) in the groundwater. The historical groundwater elevation data, total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethlybenzene, xylenes, (BTEX) and MTBE concentrations reported by STE and WEGE are included in Table 2 and Table 5.

In April 1999, Mr. Razi retained SOMA to conduct groundwater monitoring, risk based corrective action (RBCA), corrective action plan (CAP) and soil and groundwater remediation at the Site. The results of the RBCA study indicated that the site is a high risk area, and that, therefore, the soil and groundwater in on-and off-site areas needed to be decontaminated. The results of the CAP study indicated that installation of a French drain with air sparging would be a cost effective alternative for site remediation.

In late August 1999, SOMA installed a French drain and groundwater treatment system to prevent further migration of chemically impacted groundwater. This treatment system has been in operation since early December 1999.

In July 2000, SOMA installed a vapor extraction system based on the recommendation of the Corrective Action Plan (CAP) document dated July 1, 1999 prepared by SOMA, followed by approval from the Alameda County Department of Environmental Health.

1.2 SITE HYDROGEOLOGY

Previous investigations have shown that groundwater is encountered at depths ranging from 10 to 11 feet beneath the Site. (Figure 2 shows the location of the on-site and off-site groundwater monitoring wells.) Prior to the operation of the French drain, the groundwater was found to flow from the north to the south with an average gradient of 0.014 ft/ft. As shown in Figure 3, the groundwater now flows from all directions toward the French drain. The capture zone of the drain has extended down gradient to well MW-10.

Based on the results of a pumping test conducted by SOMA, the hydraulic conductivity of the saturated sediments ranges from 1.5 to 18.3 feet per day. Assuming that the effective porosity of saturated sediments is 0.35, the groundwater velocity ranges from 22 to 267 feet per year.

2.0 FIELD ACTIVITIES

Field activities were performed in accordance with the procedures and guidelines of the California Regional Water Quality Control Board, San Francisco Bay Region.

On November 2, 2000, the SOMA field crew measured the depths to groundwater in the monitoring wells from the top of casings to the nearest 0.01 feet using an electrical sounder. The depth to groundwater and top of casing elevation data at each groundwater monitoring well were used to calculate the groundwater elevation. A total of 11 groundwater monitoring wells and three risers of the French drain were monitored during this event. Table 1 presents the groundwater elevations, and Appendix A presents a summary of the field notes for each groundwater monitoring well and the French drain risers.

Prior to collecting the groundwater samples, each well was purged of at least three casing volumes of water, and field measurements of pH and temperature were recorded. A 2-inch diameter submersible pump (model ES-60 DC) was used to purge each well. Groundwater samples were collected using disposable bailers. Each groundwater sample was transferred into two 40-ml VOA vials and sealed properly to prevent the development of any air bubbles within the headspace area. The vials were placed in an ice chest and delivered to Delta Environmental Laboratories, of Benicia, California for analysis. For field measurements, samples were transferred into 500-ml polyethylene containers.

The groundwater samples that were kept in polyethylene bottles were immediately used for on-site measurements of ferrous iron ($Fe+^{2}$), nitrate-N (NO_3^--N), sulfate (SO_4^{-2}), pH, and electrical conductivity (EC).

The D.O. and temperature were measured with a dissolved oxygen meter, YSI Model 50B (YSI Incorporated, Yellow Springs, Ohio 45387 USA); see the field notes in Appendix A for the details of the field measurements. The instrument was calibrated at the Site according to a procedure provided by the manufacturer and prescribed by Taras *et.al.* (1975). Detail of the calibration and measurement procedures can be found in the instrument's handbook. The measurements were corrected for barometric pressure, temperature and salinity using correction

factors provided by the user's manual, as described in Appendix A.

In order to avoid the intrusion of oxygen in ambient air to groundwater samples, the D.O. and temperature measurements were conducted in situ (down-hole inside each monitoring well).

Turbidity was measured with HANNA Instruments (HI) Model 93703 portable turbidity meter. The HI 93703 portable microprocessor-based turbidity meter provides lab-grade accuracy, even in the field. The unit of measure adopted by the ISO Standard is the FTU (Formazine Turbidity Unit), which is identical to the NTU (Nephelometric Turbidity Unit). The instrument was calibrated at two points, 0 FTU and 10 FTU, using the two calibration solutions of primary standard AMCO-AEPA-1 at 0 FTU and 10 FTU that were supplied with the meter. Suspended materials cause the cloudy appearance of water or turbidity. Turbidity is one of the most important parameters used to determine the quality of drinking water. It has been found that there is a strong correlation between the turbidity level and the Biological Oxygen Demand of the natural water bodies. Turbidity is an indicator and, as such, does not reveal the presence or quantity of specific pollutants in groundwater. It does, however, provide general information on the extent of the suspended solids in groundwater.

A HANNA ORP electrode was used to measure the Oxidation-Reduction Potential of the groundwater samples. Oxidation is a process in which a molecule or ion loses one or several electrons. Reduction is a process by which a molecule or ion gains one or several electrons. The Oxidation Reduction Potential, or Eh, is a measure of the potential for these processes to occur. The unit of Eh, which is commonly referred to as the redox potential, is the Volt or m-Volt. The most important redox reaction in petroleum contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O_2 in water is low (9 mg/L at 25 ^{o}C

11

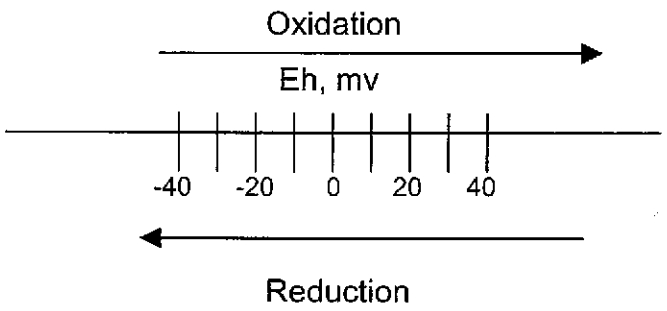
23 2/3 | 5/9

$0°C = 5/9(F - 32)$

$°F = 9/5 C + 32$

41°F

and 11 mg/L at 5 °C), and because the rate of O_2 replenishment in subsurface environments is limited, oxidation of only a small amount of petroleum hydrocarbons can result in the consumption of all the dissolved oxygen. When all the dissolved O_2 in groundwater is consumed, oxidation of petroleum hydrocarbons can still occur, but the oxidizing agents (i.e., the constituents that undergo reduction) are NO^-_3, MnO_2, $Fe(OH)_3$, SO_4^{2-} and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process proceeds far enough, the environment may become very strongly reduced, and the petroleum hydrocarbons may undergo anaerobic degradation, possibly resulting in the production of methane gas and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below:



Fe^{+2}, NO^-_3-N and SO_4^{-2} were measured colorimetrically using the Hach Model DR/850 colorimeter (Hach Company World Headquarters, P.O. Box 389, Loveland, Colorado 80539-0389). The Hach DR/800 Series Colorimeter is a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

Fe^{+2} was measured colorimetrically using Method 8146 (1,10-phenanthroline Method). The 1,10-phenathroline indicator in Ferrous Iron Reagent reacts with Fe^{+2} in the sample to form an orange color. The intensity of orange color is proportional to the iron concentration.

SO_4^{-2} was measured colorimetrically using Method 8051 of Sulfa Ver 4 Method. Sulfate ions in the sample react with Sulfa Ver 4 Sulfate Reagent to form insoluble barium sulfate. The amount of turbidity formed is proportional to the sulfate concentration. The Sulfa Ver 4 also contains a stabilizing agent to hold the barium sulfate in suspension.

NO^-_3-N was measured colorimetrically using Method 8039 or Cadmium Reduction Method. Cadmium metal in the Nitra Ver 5 Nitrate Reagent reduces nitrates present in the sample to nitrite; the nitrite ion reacts in an acidic medium with sulfanilic acid to form an intermediate diazonium salt, which couples to getistic acid to form an amber-colored product. The intensity of the color is proportional to nitrate-N concentration in the sample.

Electrical conductivity and pH were measured with Hydac Model 910 pH meter. The instrument was calibrated for conductance with a standard solution of known concentration (12,000 us/cm) and for pH with 4, 7 and 10 pH units buffer solutions. All measurements were performed according to the instruction manual provided by the manufacturer.

2.1 LABORATORY ANALYSIS

Delta Environmental Laboratories of Benicia analyzed the groundwater samples. The measured constituents included TPH-g, BTEX and MTBE.

TPH-g was measured using EPA Method 5030/GCFID. EPA Method 8020 was used to measure BTEX. MTBE levels in the groundwater were measured using EPA Method 8020 and confirmed using EPA Method 8260. The results of the laboratory analysis are presented in Table 4. As discussed above, the groundwater constituents related to bio-degradation activities (such as dissolved

oxygen, redox potential, turbidity, nitrate, sulfate and ferrous iron) were analyzed in the field by SOMA.

3.0 RESULTS

Table 1 presents the measured groundwater elevations at different groundwater monitoring wells and the risers of the French drain. At each location, depth to watertable and the elevation of the top of casing were used to calculate the watertable elevation relative to the assumed datum.

Depths to watertable in the monitoring wells and the risers of the French drain ranged from 11.35 to 16.85 feet. Watertable elevations ranged from 80.25 to 85.98 feet. Figure 3 displays the groundwater elevation contour map. The contour map shows the impact of the French drain operation on the water level elevations of the surrounding monitoring wells. On most of the Site, during the recent monitoring event the groundwater flow was found to be from the north towards the south. This is consistent with the findings of the previous monitoring events that were conducted prior to the installation of the French drain. However, on the off-site properties south of the Site, the groundwater flow has been reversed by the effects of the French drain and is now flowing from the south towards the north. As Figure 3 shows, the capture zone of the French drain has been extended as far as well MW-10, which is located about 170 feet downgradient of the center riser of the French drain.

Table 2 displays the historical static water level elevations measured at the monitoring wells and the risers of the French drain. During the recent monitoring event, in comparison with the previous monitoring event, the water level elevations decreased by 1.15 feet in the Center Drain of the French riser, and rose 2.32 feet in MW-11. The changes in elevation in all of the other wells were between these two values, with most showing a slight increase in water

elevation, which is probably attributable to the beginning of the rainy season. Historically, no floating products have been detected in any of the on-or-off site monitoring wells.

The field measurements of some physical and chemical parameters of the groundwater samples are presented in detail in the field notes in Appendix A, and are summarized in Table 3. Water temperatures ranged from 18.7 ^{0}C to 20.7 ^{0}C. The variation in temperature may reflect the changes in air temperature during sampling, see the field notes in Appendix A. The temperature measurements allowed us to make corrections to the pH and EC measurements, using the Manual Temperature Compensation procedure described in the Hydac Model 910 pH meter manual. The dissolved oxygen (D.O.) measurements were also corrected automatically for the recorded temperatures, see Appendix A.

The dissolved oxygen concentrations in the groundwater samples ranged from 0.53 mg/L in MW-10 to 1.35 mg/L in MW-2. The low oxygen content may suggest the presence of an anaerobic biodegradation process in this groundwater system. Figure 4 shows the concentration contour map of D.O. concentrations in the groundwater. The dissolved oxygen measurement was conducted down-hole (in-situ) after purging the wells.

The turbidity of the groundwater samples ranged from 2 FTU to 109 FTU. The maximum turbidity was recorded in monitoring well MW-2.

The Redox potential in the groundwater samples ranged from -1049 mV in well MW-8 to +111 mV in Well MW-2. Monitoring wells MW-2, MW-5, MW-10, MW-11 and MW-12 showed oxidized conditions, while the remainder of the wells showed strongly reduced conditions. The low oxygen levels in the latter wells (i.e., MW-1, MW-3, MW-4, MW-6, MW-7, and MW-8), in combination with the positive redox potentials, suggest the presence of weak aerobic oxidation of the petroleum

hydrocarbons in these wells. However, the other monitoring wells impacted by petroleum show strongly reduced conditions. In these oxygen-depleted environments, anaerobic processes utilizing alternate electron acceptors for oxidation of petroleum hydrocarbons may be responsible for the reduced conditions. Possible alternate electron acceptors include nitrate, iron (III) and sulfate (Lovley *et. al.*, 1994). Under strongly reduced conditions and a lack of other terminal electron acceptors, the occurrence of methanogenesis and production of methane gas is highly possible.

During this monitoring event, nitrate was detected in wells MW-4, MW-5, MW-7, MW-10, and MW-11. As discussed earlier, the concentrations of dissolved oxygen in all wells are quite low, and because the replenishment of oxygen in subsurface environments is limited, oxidation of only a small amount of petroleum hydrocarbons depletes the oxygen. Under this condition, oxidation of petroleum hydrocarbons can still occur, but the oxidizing agents (i.e., constituents that undergo reduction) are NO^-_3, MnO_2, $Fe(OH)_3$, SO_4^{2-} and others (Lovley *et. al.*, 1994). The disappearance of nitrate in many of the wells may suggest that, under the observed anaerobic condition, nitrate may have been used as a source of terminal electron acceptor by microorganisms (Lovley *et. al.*, 1994). Figure 5 shows the contour map of nitrate concentration in the groundwater.

Sulfate concentrations ranged from 6.0 mg/L in well MW-12 to 45 mg/L in well MW-4. Sulfate-depleted subsurface contaminated environments may reveal a strong demand by microorganisms for a source of terminal electron acceptor for oxidizing contaminant hydrocarbons (Lovley *et. al.*, 1994). Figure 6 shows the groundwater sulfate concentration contour map, as measured on November 2, 2000.

Ferrous iron concentration in the groundwater samples ranged from 0.0 mg/L in

MW-4 to 73.3 mg/L in MW-8. High concentrations of ferrous iron in the groundwater is a good indication of biological activities. Figure 7 shows the groundwater ferrous iron concentration contour, as measured on November 2, 2000. The presence of high ferrous iron concentrations and low concentrations of electron receptors, such as nitrogen, sulfate and dissolved oxygen, is indicative of anaerobic biodegradation beneath the Site. Due to the presence of low levels of dissolved oxygen, as well as the nutrients such as nitrates and sulfate, generation of methane gas from the biodegradation of petroleum hydrocarbons seems likely.

The pH measurements ranged from 7.05 to 7.41. Electrical conductivity ranged from 496 µs/cm to 1,080 µs/cm. The unit of electrical conductivity is Siemens (s) or micro-Siemens (µs) in the SI system. In the past, these units have been known as millimhos and micromhos.

Table 4 displays the results of the laboratory chemical analyses of the groundwater samples. The concentrations of TPH-g were below the detection limit of 50 µg/L in monitoring wells MW-2, MW-4, MW-5, and MW-10, and peaked at 48,000 µg/L in monitoring well MW-3 (which is a good deal lower than the concentration measured in this well during the previous two quarterly monitoring events). TPH-g concentrations decreased in every well since the previous monitoring event on August 9, 2000. Benzene concentrations were below the detection limit of 5 µg/L in five monitoring wells: MW-2, MW-5, MW-7, MW-10 and MW-11, and peaked at 6,789 µg/L in MW-3. Figures 8 and 9 display the TPH-g and benzene concentration contours maps. MTBE concentrations were below the detection limit of 5 µg/L in five monitoring wells MW-2, MW-4, MW-5, MW-6, and MW-11, and peaked at 215 µg/L in MW-12. Figure 10 displays the MTBE concentration contour map.

Table 5 presents the historical data of groundwater contamination. Generally,

chemical concentrations showed a decreasing pattern during the recent groundwater monitoring event in most of the wells. Benzene concentrations decreased in all but two of the wells: there was a slight increase in MW-4 and MW-6. MTBE concentrations decreased in all wells except MW-12, which had a slight increase. As noted above, TPH-g concentrations did not increase in any of the wells during this monitoring event, and showed large decreases in MW-1, MW-3, MW-6, MW-8 and MW-10, where the TPH-g concentrations decreased by 3,950, 28,000, 5,000, 19,000 and 6,800 µg/L, respectively. This monitoring event also confirmed the findings of the previous monitoring events: petroleum hydrocarbons are decreasing in well MW-12, which is located at the BART property south of the Site. This decrease of concentrations in MW-12 is mainly due to the operation of the French Drain. It is expected that due to biodegradation activities the concentration of contaminants in MW-12 will gradually drop to non-detectable levels. (but not MTBE).

4.0 TREATMENT SYSTEM OPERATION

The treatment system began operation on December 9, 1999. Since then, more than 816,000 gallons of groundwater has been treated and discharged to the East Bay Municipal Utility District (EBMUD) under the existing discharge permit (as of November 2, 2000).

As required by the discharge permit and the ACEHS, sampling of the groundwater treatment system has been performed on a routine basis. The effluent sampling and maintenance of the system was performed on a weekly basis from the start of the system to the end of July. From August onward, maintenance of the system continued weekly, but sampling was performed on a monthly basis. The result of the first effluent testing was used to acquire a discharge permit from EBMUD.

Table 6 presents the total volume and chemical composition of the effluent treated at the Site. Table 6 shows that all of the effluent samples have maintained compliance with the permit, having concentrations below the laboratory detection limits. Approximately 4,000 gallons of chemically impacted groundwater per week were treated during the fourth quarter of 2000 by the treatment system. As discussed in the previous monitoring reports, the effluent passing both GAC units is regularly being collected for chemical analysis. The schedule for re-furbishing the GAC units is based on the analytical results of the effluent samples. The first GAC unit was re-furbished as soon as traces of chemicals broke through the unit. The second GAC unit is serving as a polishing unit and is always kept highly active. This procedure ensures that the effluent discharging to EBMUD has non-detectable levels of contaminants.

As Figure 11 shows, a total of 63 pounds of TPH-g and 3.5 pounds of MTBE have been removed during the operation of the treatment system.

5.0 Vapor Extraction System Operation

The Vapor Extraction System (VES) consists of 6 vapor extraction wells, a de-moisturizing unit, a blower and three drums of Granulated Active Carbon (GAC) filters. The VES began operation on July 24, 2000. Since then, more than 3,000,000 liters/day of soil gas has been extracted from the vadose zone and treated with the GAC filters before being discharged into the atmosphere. When the system first began to operate, the influent had a concentration of 394 ppmv petroleum hydrocarbons, but this gradually dropped, and after 31 days of operation decreased to 68 ppmv. A total of 72 pounds of petroleum hydrocarbons have been removed from the vadose zone since the system began operation. Based on the requirements of the Bay Area Air Quality Management District (BAAQMD) permit, the frequency of monitoring and GAC unit replacement are scheduled such that the concentration of the hydrocarbons in the exhaust air

remains below 10 ppmv.

6.0 CONCLUSIONS

The results of the November 2, 2000 groundwater monitoring event are summarized as follows:

1. The groundwater flow direction was found to be from the north towards the south, which is consistent with the findings of the previous monitoring events. However, on the off-site properties south of the Site, the groundwater flow has been reversed by the effects of the French drain and is now flowing from the south towards the north.

2. In comparison with the previous monitoring event, the water level elevations continued to decrease in the immediate vicinity of the French Drain, but rose a slight amount in most of the other wells. The slight rise is probably attributable to the beginning of the rainy season.

3. Benzene concentrations were below the detection limit of 5 µg/L in five monitoring wells: MW-2, MW-5, MW-7, MW-10 and MW-11, and peaked at 6,789 µg/L in MW-3.

4. MTBE concentrations were below the detection limit of 5 µg/L in five monitoring wells MW-2, MW-4, MW-5, MW-6, and MW-11, and peaked at 215 µg/L in MW-12.

5. The concentrations of TPH-g were below the detection limit of 50 µg/L in monitoring wells MW-2, MW-4, MW-5, and MW-10, and peaked at 48,000 µg/L in monitoring well MW-3. Since the previous monitoring event, TPH-g concentrations decreased in every well that showed TPH-g contamination.

6. The results of the recent monitoring event confirmed the findings of the previous monitoring event that petroleum hydrocarbons concentrations are decreasing in well MW-12, which is located at the BART property south of the Site.

7. Due to the presence of low levels of dissolved oxygen and nutrients such as nitrates and sulfate, generation of methane gas from petroleum hydrocarbon seems likely.

8. So far, more than 816,000 gallons of groundwater has been treated and discharged to the East Bay Municipal Utility District (EBMUD) under the existing discharge permit.

9. All effluent samples have maintained compliance with the permit, with contaminant concentrations values below the laboratory detection limit.

10. A total of 63 pounds of TPH-g and 3.5 pounds of MTBE have been removed during the operation of the treatment system.

11. The Vapor Extraction System has removed 73 pounds of petroleum hydrocarbons from the vadose zone beneath the Site since it was installed.

7.0 REPORT LIMITATIONS

This report is the summary of work done by SOMA including observations and descriptions of the Site conditions. It includes the analytical results produced by Delta Environmental Laboratories, as well as the data summaries produced by the previous environmental consultants. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire Site conditions. All conclusions and recommendations are based on the results of laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that the services provided were done in accordance with the generally accepted practices in the environmental engineering and consulting field at the time of this sampling.

8.0 REFERENCES

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TABLES

Table 1

Groundwater Elevation Data, November 2, 2000

Monitoring Well	Depth to Water (ft.)	Top of Casing Elevation (ft.)	Groundwater Elevation (ft.)	Product Thickness (ft.)
MW-1	13.20	97.99	84.79	ND
MW-2	12.60	98.58	85.98	ND
MW-3	13.40	97.78	84.38	ND
MW-4	13.05	97.85	84.80	ND
MW-5	13.55	99.04	85.49	ND
MW-6	13.40	98.77	85.37	ND
MW-7	11.95	97.83	85.88	ND
MW-8	12.55	97.25	84.70	ND
MW-10	11.35	94.54	83.19	ND
MW-11	12.55	95.94	83.39	ND
MW-12	12.05	94.84	82.79	ND
F.D. Center	16.85	97.10	80.25	ND
F.D. East	12.75	97.9	85.15	ND
F.D. West	15.5	96.9	81.40	ND

ND Not Detected

TABLE 2

Historical Groundwater Elevation Data
Tony's Express
Oakland, California

Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12	French Drain
Nov-00	**84.79**	**85.98**	**84.38**	**84.80**	**85.49**	**85.37**	**85.88**	**84.70**	**83.19**	**83.39**	**82.79**	**80.25**
Aug-00	84.63	85.55	84.05	84.5	85.82	84.99	85.2	84.38	83.02	81.07	82.77	81.4
May-00	86.50	87.70	86.10	86.39	88.01	87.07	87.31	86.10	85.09	82.14	84.36	81.50
Feb-00	86.79	88.73	86.83	86.60	89.19	87.82	88.33	86.40	85.29	82.34	84.64	81.70
Nov-99	83.54	84.48	83.08	83.75	84.74	84.02	84.58	83.60	82.04	82.09	81.64	-
Aug.99	84.64	85.08	83.93	84.65	85.49	84.87	85.03	84.50	82.94	83.19	-	-
Jun.99	86.89	87.34	85.98	86.55	87.54	86.87	87.13	86.45	84.59	84.44	-	-
Mar.99	88.08	90.98	89.34	89.39	91.31	90.37	90.83	89.67	87.24	87.13	-	-
Dec.98	86.89	87.64	86.23	86.72	87.84	87.17	87.31	86.50	84.35	84.36	-	-
Sep.98	84.41	85.00	83.10	84.21	85.22	84.67	84.74	84.23	82.61	82.70	-	-
Dec.97	88.69	89.54	-	88.42	89.89	89.47	89.18	88.30	85.76	85.54	-	-
Apr.97	86.85	87.18	86.05	86.62	87.69	87.01	84.88	84.30	84.47	84.47	-	-
Dec.96	86.32	86.91	85.76	86.27	87.56	86.73	86.86	86.12	84.10	83.95	-	-
Apr.96	89.70	90.45	89.02	89.50	90.80	90.01	90.08	89.27	-	-	-	-
Jan.96	87.92	88.65	87.23	87.74	89.01	88.22	88.26	87.46	-	-	-	-
Oct.95	84.70	85.16	84.87	-	85.47	84.83	84.88	84.39	-	-	-	-
Jun.95	88.46	88.99	87.53	-	-	-	-	-	-	-	-	-
Mar.95	89.92	90.90	89.09	-	-	-	-	-	-	-	-	-
Dec.94	88.67	89.98	87.99	-	-	-	-	-	-	-	-	-
Oct.94	82.60	83.22	81.99	-	-	-	-	-	-	-	-	-

Table 3

Analytical Results of Groundwater Biodegradation Parameters

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (FTU)
MW-1	**11/2/00**	**0.0**	**33.0**	**1.1**	**0.56**	**-39.40**	**18.00**
	8/9/00	0.0	0.0	1.7	0.32	-40.0	219.0
	5/31/00	2.8	0.0	0.57	0.30	-37.0	30
	2/7/00	0.0	1.0	3.3	0.77	-74.0	-
	11/9/99	0.0	26.0	5.1	0.2	-	-
	8/23/99	0.0	8.0	2.67	1.4	-	-
	6/10/99	0	1	3.17	0.14	-	-
	12/30/97	<0.1	<1	3.04	0.5	-	-
MW-2	**11/2/00**	**0.0**	**7.9**	**0.7**	**1.35**	**111.00**	**ND**
	8/9/00	5.4	0	0.72	0.76	-74	1000
	5/31/00	2.5	54.0	0.18	0.8	-55.0	30.9
	2/7/00	6.2	55.0	0.15	1.12	-20.0	-
	11/9/99	0.9	55.0	1.0	0.8	-	-
	8/23/99	1.0	60.0	0.62	0.7	-	-
	6/10/99	0.7	40	0.55	0.44	-	-
	6/30/98	<0.1	14	0.5	3.2	-	-
	12/30/97	<0.1	<1	3.35	<0.1	-	-
MW-3	**11/2/00**	**0**	**28**	**4.1**	**0.83**	**-94**	**4816**
	8/9/00	0	0	6.1	0.4	-72	123
	5/31/00	0.00	4.00	7.80	0.45	-117.0	188.0
	2/7/00	0.00	140.00	3.60	0.70	-82.00	-
	11/9/99	0.00	0.00	3.50	0.61	-	-
	8/23/99	0.00	0.00	3.90	0.80	-	-
	6/10/99	0.00	0.00	3.10	0.42	-	-
	6/30/98	0.10	77.00	0.37	2.00	-	-
MW-4	**11/2/00**	**4.5**	**45**	**0**	**0.6**	**-39**	**ND**
	8/9/00	1	14	0.32	0.46	-50	83
	5/31/00	0.50	40.00	0.25	0.50	-40.0	26.8
	2/7/00	0.00	1.00	1.56	1.30	-31.0	-
	11/9/99	0.50	23.00	0.99	0.12	-	-
	8/23/99	0.50	28.00	0.67	0.15	-	-
	6/10/99	0.40	10.00	0.81	0.15	-	-
	6/30/98	0.90	7.00	0.93	1.30	-	-
	12/30/97	4.50	42.00	0.39	<0.1	-	-

Table 3

Analytical Results of Groundwater Biodegradation Parameters

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (FTU)
MW-5	**11/2/00**	**6.5**	**31**	**1.02**	**0.56**	**49**	**ND**
	8/9/00	0	26	0	1.97	80	490
	5/31/00	0.00	50.00	0.35	0.48	-25.0	27.2
	2/7/00	0.00	47.00	0.64	0.90	18.0	-
	11/9/99	2.00	32.00	0.72	0.27	-	-
	8/23/99	2.40	45.00	1.19	0.75	-	-
	6/10/99	2.50	33.00	0.34	0.25	-	-
	6/30/98	1.60	6.00	0.50	0.60	-	-
	12/30/97	0.30	18.00	0.94	<0.1	-	-
MW-6	**11/2/00**	**0**	**16**	**2.65**	**0.8**	**-34**	**618**
	8/9/00	2.5	0	4.1	0.65	-33	1000
	5/31/00	0.00	0.00	3.27	0.72	-62.0	111.0
	2/7/00	0.00	0.00	3.02	1.25	-51.0	-
	11/9/99	0.00	0.00	7.00	0.22	-	-
	8/23/99	0.00	9.00	3.30	0.55	-	-
	6/10/99	0.00	23.00	2.52	0.61	-	-
	6/30/98	0.70	4.00	0.40	2.50	-	-
	12/30/97	<0.1	5.00	0.30	<0.1	-	-
MW-7	**11/2/00**	**3.5**	**30**	**0.27**	**0.58**	**-11.6**	**ND**
	8/9/00	0	17	0.95	0.26	-33	131
	5/31/00	0.00	28.00	0.72	0.30	-52.0	34.9
	2/7/00	0.00	41.00	0.53	0.91	-19.0	-
	11/9/99	0.00	25.00	0.99	0.14	-	-
	8/23/99	0.00	20.00	1.40	0.65	-	-
	6/10/99	0.00	22.00	0.19	0.15	-	-
	6/30/98	0.50	4.00	0.78	1.00	-	-
	12/30/97	0.20	32.00	0.23	1.20	-	-
MW-8	**11/2/00**	**0**	**16**	**73.3**	**0**	**-1049**	**350**
	8/9/00	0	7	3.3	0.5	-91	94
	5/31/00	0.00	0.00	3.30	0.45	-95.0	13.0
	2/7/00	0.00	0.00	3.46	0.65	-90.0	-
	11/9/99	0.00	0.00	8.90	0.38	-	-
	8/23/99	0.00	13.00	8.20	0.20	-	-
	6/10/99	0.00	0.00	4.70	0.10	-	-
	6/30/98	<0.1	3.00	2.82	1.30	-	-

Table 3

Analytical Results of Groundwater Biodegradation Parameters

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (FTU)
	12/30/97	0.10	<1	3.35	2.50	-	-
MW-10	**11/2/00**	**1.3**	**13**	**0.42**	**0.53**	**26.7**	**ND**
	8/9/00	0	0	0.4	0.45	19	116
	5/31/00	0.00	0.00	0.29	0.40	17.0	22.4
	2/7/00	0.00	0.00	0.00	0.82	55.0	-
	11/9/99	0.00	12.00	0.37	0.44	-	-
	8/23/99	0.00	9.00	0.52	0.50	-	-
	6/10/99	0.00	0.00	0.25	0.20	-	-
	6/30/98	<0.1	<1	0.38	0.90	-	-
	12/30/97	0.30	<1	2.21	<0.1	-	-
MW-11	**11/2/00**	**1.5**	**21**	**0.44**	**0.6**	**17**	**ND**
	8/9/00	1.5	0	0.8	0.48	10	42
	5/31/00	5.20	10.00	0.69	0.50	-15.0	12
	2/7/00	0.00	24.00	0.75	1.10	-14.0	-
	11/9/99	0.00	21.00	0.06	0.22	-	-
	8/23/99	0.00	52.00	0.92	0.60	-	-
	6/10/99	0.00	0.00	0.28	0.19	-	-
	6/30/98	1.20	6.00	0.15	2.20	-	-
	12/30/97	3.50	35.00	0.32	<0.1	-	-
MW-12	**11/2/00**	**0**	**6**	**1.93**	**0.6**	**12**	**19**
	8/9/00	0	0	2.84	0.31	-48	56
	5/31/00	0.00	0.00	2.11	0.29	-54.0	7.7
	2/7/00	0.00	0.00	1.53	0.62	-42.0	-
	11/9/99	3.10	9.00	2.21	0.34	-	-

Table 4

Groundwater Analytical Data, November 2, 2000

Monitoring Well	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MTBE* (µg/L)	TPH-g (µg/L)
MW-1	435	52	ND	689	10	7,050
MW-2	ND	ND	ND	ND	ND	ND
MW-3	6,789	4,816	676	7,258	83	48,000
MW-4	5	ND	ND	7.50	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	1,387	618	ND	5,250	ND	19,000
MW-7	ND	ND	ND	ND	9.1	50
MW-8	278	350	209	980	21	3,000
MW-10	ND	ND	ND	ND	145	ND
MW-11	ND	ND	ND	ND	ND	60
MW-12	9.3	19.0	ND	7.40	215	1,010

ND Not Detected

* MTBE analyzed with EPA Method 8260

Table 5
Historical Groundwater Analytical Data

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPH-g (µg/L)
MW-1	**11/2/00**	435	52	ND	689	10	7,050
	8/9/00	638	<5	<5	<5	17.1	11,000
	5/31/00	610	350	310	1,400	<5	15,610
	2/7/00	2,280	1,380	8	6,130	47	40,000
	11/9/99	693	15	<5	3,471	50	10,000
	8/23/99	678	463	893	2,938	38	19,750
	6/10/99	1,110	1,460	1,330	5,265	77	25,000
	3/16/99	480	860	850	3,000	190	17,000
	12/16/98	2,500	2,400	2,300	9,500	160	65,000
	12/30/97	2,300	2,100	1,400	5,100	NA	27,000
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	98	120	63	170	NA	31,000
	1/3/96	71	73	50	120	NA	30,000
	10/2/95	140	130	140	390	NA	59,000
	6/5/95	950	650	570	150	NA	21,000
	3/6/95	190	160	150	490	NA	32,000
	12/2/94	3,800	6,600	2,300	11,000	NA	80,000
	10/5/94	24,000	21,000	2,600	15,000	NA	320,000
MW-2	**11/2/00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
	8/9/00	<5	<5	<5	<5	<5	<50
	5/31/00	130	330	130	570	<5	2,930
	2/7/00	372	639	46	134	8	6,400
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	6	9	4	11	ND	60
	6/10/99	290	428	211	744	ND	3,500
	3/16/99	730	830	610	1,900	55	7,600
	12/16/98	1,400	1,600	880	9,500	<5	26,000
	9/29/98	290	180	160	360	<0.5	29,000
	6/30/98	2,000	2,000	1,300	4,300	NA	25,000
	12/30/97	4,900	4,900	1,600	7,000	NA	35,000
	4/10/97	150	110	37	0	ND	53,000
	12/9/96	11	7	2	14	ND	6,200
	4/3/96	0	92	44	13	NA	27,000
	1/3/96	160	130	93	240	NA	46,000
	10/2/95	160	130	93	240	NA	46,000
	6/5/95	220	330	350	660	NA	8,000
	3/6/95	3	3	3	1	NA	490
	12/2/94	1,700	2,200	1,200	3,600	NA	42,000
MW-3	**11/2/00**	**6,789**	**4,816**	**676**	**7,258**	**83**	**48,000**
	8/9/00	8,900	5,636	883	7,356	176	76,000

Table 5
Historical Groundwater Analytical Data

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPH-g (µg/L)
	5/31/00	15,000	8,900	1,500	7,400	<5	68,000
	2/7/00	6,090	3,360	<5	5,780	276	44,000
	11/9/99	3,218	1,319	<5	6,697	126	26,000
	8/23/99	7,484	8,052	1,744	9,749	141	64,000
	6/10/99	8,245	6,425	1,015	7,173	274	46,000
	3/16/99	4,100	6,400	1,000	6,100	470	45,000
	12/16/98	5,700	3,900	1,200	6,300	410	51,000
	1/3/96	510	410	210	650	NA	150,000
	10/2/95	510	410	210	65	NA	150,000
	6/5/95	20,000	42,000	5,800	36,000	NA	350,000
	3/6/95	20,000	42,000	5,800	36,000	NA	350,000
	12/2/94	19,000	22,000	4,400	28,000	NA	250,000
	10/5/94	190,000	740,000	310,000	130,000	NA	3,000,000
MW-4	**11/2/00**	**5.30**	**ND**	**ND**	**8**	**ND**	**ND**
	8/9/00	5.08	<5	<5	<5	<5	370
	5/31/00	42	19	16	67	<5	552
	2/7/00	1,200	61	<5	781	<5	7,800
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	497	41	54	145	6	660
	6/10/99	298	44	19	64	13	1,000
	3/16/99	200	35	19	56	11	600
	12/16/98	590	33	28	94	24	1,400
	9/29/98	910	77	68	200	18	6,200
	6/30/98	780	160	54	200	NA	1,700
	12/30/97	410	270	100	1,500	NA	2,300
	4/10/97	ND	ND	ND	ND	ND	ND
	12/9/96	14	6	4	12	ND	4,000
	4/3/96	12	8	5	14	NA	1,900
	1/3/96	230	110	10	29	NA	9,300
	10/2/95	23	11	10	29	NA	9,300
MW-5	**11/2/00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
	8/9/00	<5	<5	<5	<5	<5	<50
	5/31/00	7.4	24	12	32.4	<5	627.4
	2/7/00	<5	<5	<5	7	<5	70
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	ND	4	ND	4	ND	120
	6/10/99	4	3	6	4	ND	270
	3/16/99	3	1	16	2	10	650
	12/16/98	1	1	ND	2	ND	1,400
	9/29/98	2	1	3	3	<.5	270
	6/30/98	<5	<5	15	<10	NA	400

Table 5
Historical Groundwater Analytical Data

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPH-g (µg/L)
	12/30/97	82	66	59	160	NA	790
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	1	1	5	4	NA	780
	1/3/96	1	1	4	5	NA	1,500
	10/2/95	1	1	4	5	NA	1,500
MW-6	**11/2/00**	**1,387**	**618**	**ND**	**5,250**	**ND**	**19,000**
	8/9/00	1,306	870	<5	5,162	<5	24,000
	5/31/00	1,700	1,200	17	3,600	<5	21,700
	2/7/00	1,360	521	<5	4,150	6	17,000
	11/9/99	1,084	130	<5	10,940	<5	40,000
	8/23/99	3,806	3,649	1,554	7,996	10	42,000
	6/10/99	2,060	1,650	735	3,170	ND	18,500
	3/16/99	3,900	4,300	1,600	7,000	180	37,000
	1/3/96	350	310	200	610	NA	120,000
	10/2/95	350	310	200	610	NA	120,000
MW-7	**11/2/00**	**ND**	**ND**	**ND**	**ND**	**9.1**	**50**
	8/9/00	<5	<5	<5	<5	11.7	80
	5/31/00	4.9	22	4.2	21.9	29	494.9
	2/7/00	<5	<5	<5	<5	23	80
	11/9/99	<5	9	<5	<5	12	290
	8/23/99	5	10	ND	ND	ND	570
	6/10/99	3	7	4	3	26	320
	3/16/99	3	1	1	1	62	300
	12/16/98	5	10	5	20	160	990
	9/29/98	1	1	1	2	68	1,800
	6/30/98	4	<5	9	<10	NA	620
	12/30/97	130	98	75	200	NA	1,400
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	2	3	5	7	NA	1,900
	1/3/96	9	12	17	45	NA	3,300
	10/2/95	10	12	17	NA	3,300	NA
MW-8	**11/2/00**	**278**	**350.00**	**209**	**980**	**21.0**	**3,000**
	8/9/00	632	5.38	<5	2,686	37.3	22,000
	5/31/00	940	130	1,600	3,960	75	25,940
	2/7/00	1,080	617	<5	4,160	240	44,200
	11/9/99	92	<5	<5	3,414	769	10,500
	8/23/99	5,379	2,438	3,001	6,960	639	58,000
	6/10/99	3,610	1,635	2,175	5,913	988	39,500

Table 5
Historical Groundwater Analytical Data

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPH-g (µg/L)
	3/16/99	1,800	470	2,000	2,000	820	22,000
	12/16/98	6,300	1,700	2,200	4,400	1,300	61,000
	6/30/98	4,600	2,800	3,500	7,300	NA	54,000
	12/30/97	6,000	1,600	2,100	4,700	NA	28,000
	4/10/97	86	55	50	100	ND	24,000
	12/9/96	88	43	44	80	ND	27,000
	4/3/96	250	170	140	330	NA	58,000
	1/3/96	310	250	180	480	NA	94,000
	10/2/95	310	250	180	480	NA	94,000
MW-10	**11/2/00**	**ND**	**ND**	**ND**	**ND**	**145**	**ND**
	8/9/00	1,055	26	54	53.8	1,283	6,800
	5/31/00	1,500	25	390	107.1	580	4,400
	2/7/00	<5	<5	<5	<5	448	<50
	11/9/99	1,134	20	<5	70	652	2,950
	8/23/99	2,135	97	600	248	1,800	3,250
	6/10/99	1,168	34	264	154	1,195	4,200
	3/16/99	15	28	420	250	2,800	4,100
	12/16/98	3,800	51	790	420	1,800	8,700
	9/29/98	5,400	66	970	620	2,600	9,900
	12/30/97	5,300	76	1,100	780	NA	10,000
	4/10/97	21	9	3	3	ND	1,000
MW-11	**11/2/00**	**ND**	**ND**	**ND**	**ND**	**ND**	**60**
	8/9/00	10.5	5.94	<5	7.75	<5	590
	5/31/00	27	13	9.5	29.0	<5	477
	2/7/00	20	15	<5	35	<5	700
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	4	4	ND	6	ND	170
	6/10/99	1,240	35	290	159	1,291	4,600
	3/16/99	30	6	53	84	8	710
	12/16/98	27	4	25	33	>0.5	650
	9/29/98	7	1	4	9	22	170
	6/30/98	45	24	71	100	NA	1,100
	12/30/97	66	97	59	190	NA	710
	4/10/97	ND	ND	ND	ND	ND	ND
MW-12	**11/2/00**	9.3	19.0	ND	7.40	215	1,010
	8/9/00	15.4	12.4	<5	<5	185	1,730
	5/31/00	230	10	34	12	200	3,930
	2/7/00	351	37	<5	24	513	4,000
	11/9/99	<5	<5	<5	<5	229	80

Table 5
Historical Groundwater Analytical Data

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPH-g (µg/L)
French	**11/2/00**	-	-	-	-	-	-
Drain	8/9/00	17	4.74	<5	5.18	171	1,720
	5/31/00	2,400	1,000	210	1,440	230	12,400
	2/7/00	419	72	<5	522	797	5,200

Table 6: Total Volume of Water Treated and Effluent Chemistry

Tony's Auto Express, Oakland, California

	Date	Meter Reading (gallons)	Lab Results For GAC-1 and Effluent* (concentrations in µg/L) MTBE	TPH-g	Benzene	Toluene	Ethyl benzene	Total Xylenes
November	11/1/00	816,680	ND	ND	ND	ND	ND	ND
	11/1/00	816,680	ND	ND	ND	ND	ND	ND
August	8/24/00	778,000	ND	ND	ND	ND	ND	ND
July	7/26/00	726,000	ND	ND	ND	ND	ND	ND
	7/19/00	718,000	ND	ND	ND	ND	ND	ND
	7/13/00	712,000	ND	ND	ND	ND	ND	ND
	7/7/00	706,000	ND	ND	ND	ND	ND	ND
June	06/29/00	700,000	ND	ND	ND	ND	ND	ND
	06/21/00	682,220	ND	ND	ND	ND	ND	ND
	06/16/00	669,720	ND	ND	ND	ND	ND	ND
	06/10/00	651,200	ND	ND	ND	ND	ND	ND
May	05/31/00	629,000	ND	ND	ND	ND	ND	ND
	05/23/00	603,700	ND	ND	ND	ND	ND	ND
	05/18/00	570,000	ND	ND	ND	ND	ND	ND
	05/10/00	530,400	ND	ND	ND	ND	ND	ND
April	04/30/00	488,300	ND	ND	ND	ND	ND	ND
	04/18/00	485,300	ND	ND	ND	ND	ND	0.51
	04/10/00	440,200	ND	ND	ND	ND	ND	ND
	04/04/00	390,100	ND	ND	ND	ND	ND	ND
March								
	03/24/00	388,000	ND	ND	ND	ND	ND	ND
	03/17/00	357,100	ND	ND	ND	ND	ND	ND
	03/10/00	329,000	ND	ND	ND	ND	ND	ND
	03/03/00	300,000						
February								
	02/25/00	274,000	ND	ND	ND	ND	ND	ND
	02/18/00	233,000	ND	ND	ND	ND	ND	ND
	02/11/00	190,000	ND	ND	ND	ND	ND	ND

Table 6: Total Volume of Water Treated and Effluent Chemistry
Tony's Auto Express, Oakland, California

	Date	Meter Reading (gallons)	Lab Results For GAC-1 and Effluent* (concentrations in µg/L) MTBE	TPH-g	Benzene	Toluene	Ethyl benzene	Total Xylenes
	02/04/00	160,800	ND	ND	ND	ND	ND	ND
January								
	01/28/00	130,600	ND	ND	ND	ND	ND	ND
	01/21/00	103,435	ND	ND	ND	ND	ND	ND
	01/14/00	83,500	185	ND	ND	ND	ND	ND
December								
	12/23/99	51,680	1486	NA	ND	ND	ND	ND
	12/23/99		ND	NA	ND	ND	ND	ND
	12/16/99	30,450	963	NA	ND	ND	ND	ND
	12/16/99		ND	NA	ND	ND	ND	ND
	12/09/99	9,000	230	ND	ND	ND	ND	ND
Pumping began on December 6, 1999								

* Effluent is equivalent to GAC-2

Table 7

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System at Tony's Auto Express, 3609 International Blvd., Oakland, California

Date	Time	PID (ppmv)		Flow Rate (cfm)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed [1] (pounds)
		Influent	Effluent				
7/24/00	5:00	394	0	85	0	0	0.00
7/25/00	5:15	38	2	95	24	3,914,096	1.01
7/26/00	5:05	207	1	80	48	3,228,121	4.52
7/27/00	9:00	160	5	92	64	2,500,944	2.71
7/28/00	4:30	141	7	87	96	4,656,139	4.44
7/29/00	1:30	225	8	85	117	3,032,734	4.62
7/30/00	9:00	226	12	85	136	2,816,110	4.31
7/31/00	3:00	141	5	85	166	4,332,478	4.13
8/1/00	5:00	135	4	80	192	3,533,942	3.23
8/2/00	4:00	80	4	80	215	3,126,180	1.69
8/3/00	5:00	60	5	85	240	3,610,398	1.47
8/4/00	3:00	57	4	85	262	3,177,150	1.23
8/5/00	2:00	97	8	87	285	3,399,721	2.23
8/6/00	12:00	114	8	80	307	2,990,259	2.31
8/7/00	12:00	93	9	85	331	3,465,982	2.18
8/8/00	4:30	152	10	85	360	4,115,854	4.23
8/10/00	10:00	173	1	85	377	2,527,279	2.96
8/11/00	7:00	78	4	70	410	3,924,715	2.07
8/12/00	9:00	100	6	70	424	1,665,031	1.13
8/13/00	5:00	107	9	70	456	3,805,784	2.75
8/14/00	12:30	122	5	70	476	2,319,150	1.91
8/15/00	6:00	103	12	70	505	3,508,457	2.44
8/16/00	12:30	112	0	70	524	2,200,219	1.67
8/18/00	9:00	90	0	75	568	5,670,449	3.45
8/21/00	12:00	74	5	80	643	10,194,065	5.10
8/24/00	12:00	68	13	80	712	9,378,540	4.31
8/27/00	12:30	68.5	2	80	785	9,854,263	4.57
8/31/00	1:30	52	6	80	882	13,184,324	4.64
9/4/00	12:30	54	5	80	977	12,912,482	4.72
9/7/00	12:00	55	3	80	1,048	9,718,342	3.62
9/11/00	4:30[2]	141	0	80	1,149	13,660,047	13.03
9/14/00	9:30	56	5	80	1,214	8,834,856	3.35
9/18/00	2:00	46	9.5	80	1,314	13,660,047	4.25
9/18/00	4:30[3]	34	0	80	1,317	339,802	0.08
9/21/00	4:30	43	1	80	1,389	9,786,302	2.85
9/25/00	5:30	55	6	80	1,486	13,184,324	4.91
9/28/00	9:00	47.5	7.5	80	1,550	8,766,896	2.82
10/1/00	1:00	38.5	6	80	1,626	10,329,986	2.69
10/5/00	3:00[4]	28.5	3	80	1,724	13,320,245	2.57

Table 7

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System at Tony's Auto Express, 3609 International Blvd., Oakland, California

Date	Time	PID (ppmv)		Flow Rate (cfm)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed [1] (pounds)
		Influent	Effluent				
10/5/00	5:00	36	0	80	1,726	271,842	0.07
10/8/00	3:00	28.5	3	80	1,796	9,514,460	1.83
10/14/00	3:00	24.5	2.5	80	1,940	19,572,604	3.24
10/17/00	2:00	36.5	3.5	80	2,011	9,650,381	2.38
10/20/00	8:30	18.5	3.5	80	2,078	9,038,737	1.13
10/25/00	2:00	38	3.7	80	2,203	17,058,068	4.39
10/29/00	10:00	35	4	80	2,295	12,504,719	2.96
11/2/00	4:00	30.5	4	80	2,397	13,863,928	2.86
11/7/00	4:00	30	6	80	2,517	16,310,504	3.31
					Total Mass of Petroleum Hydrocarbons Removed=		**148.35**
					Average Daily Removal=		***1.41***

[1] The represantetive molecular weight of hydrocarbons was assumed to be 78 gram/mole and used the measured temperature of Vapor (36 °C) in converting ppm-v to ppm on mass basis.

[2] System accidentally shut down from main box, readings taken 30 minutes after startup.

[3] GAC Replaced

[4] GAC-1 removed, new GAC installed at effluent end

FIGURES

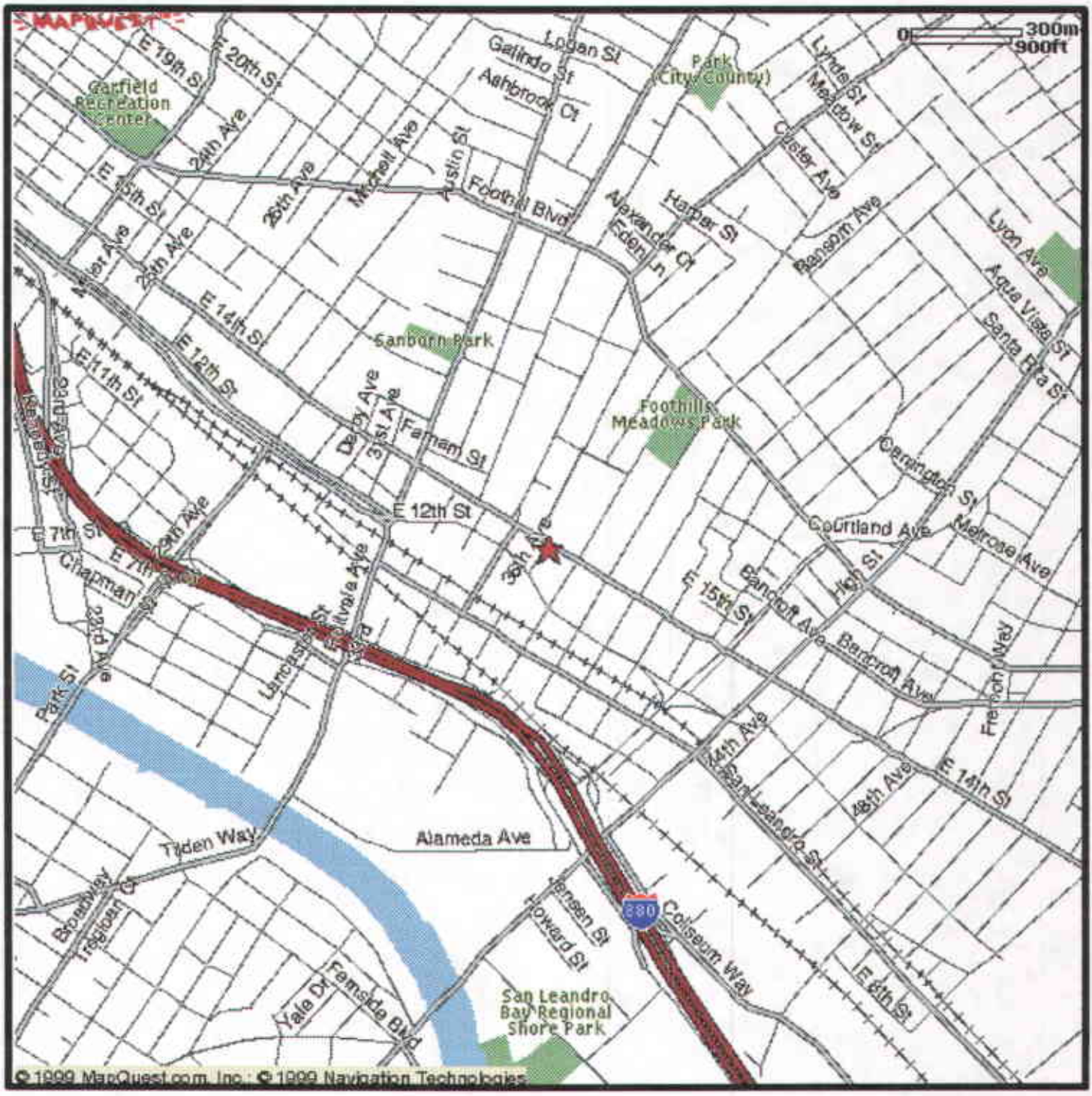


Figure 1: Site Location Map

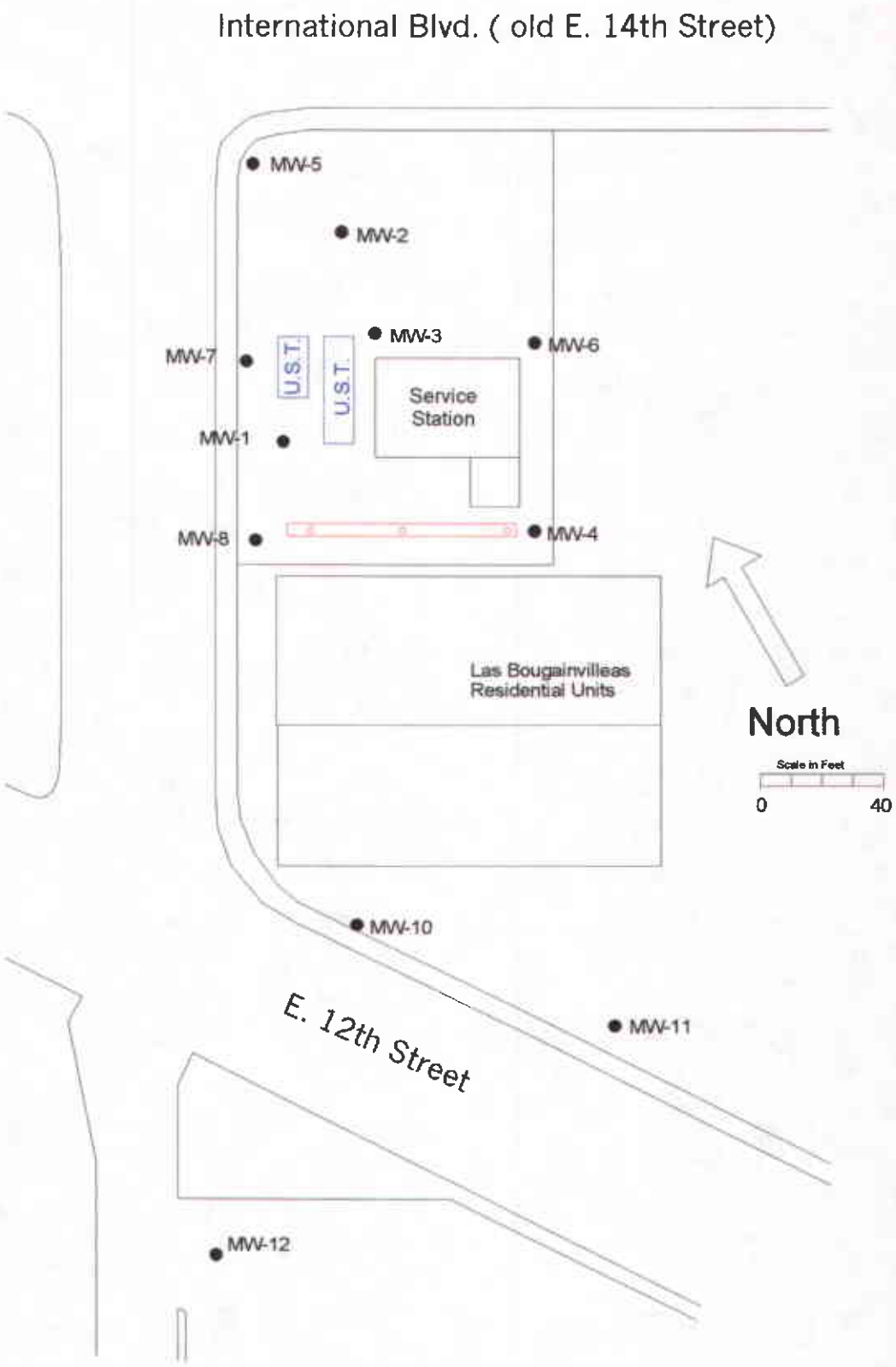


Figure 2: Location of Groundwater Monitoring Wells

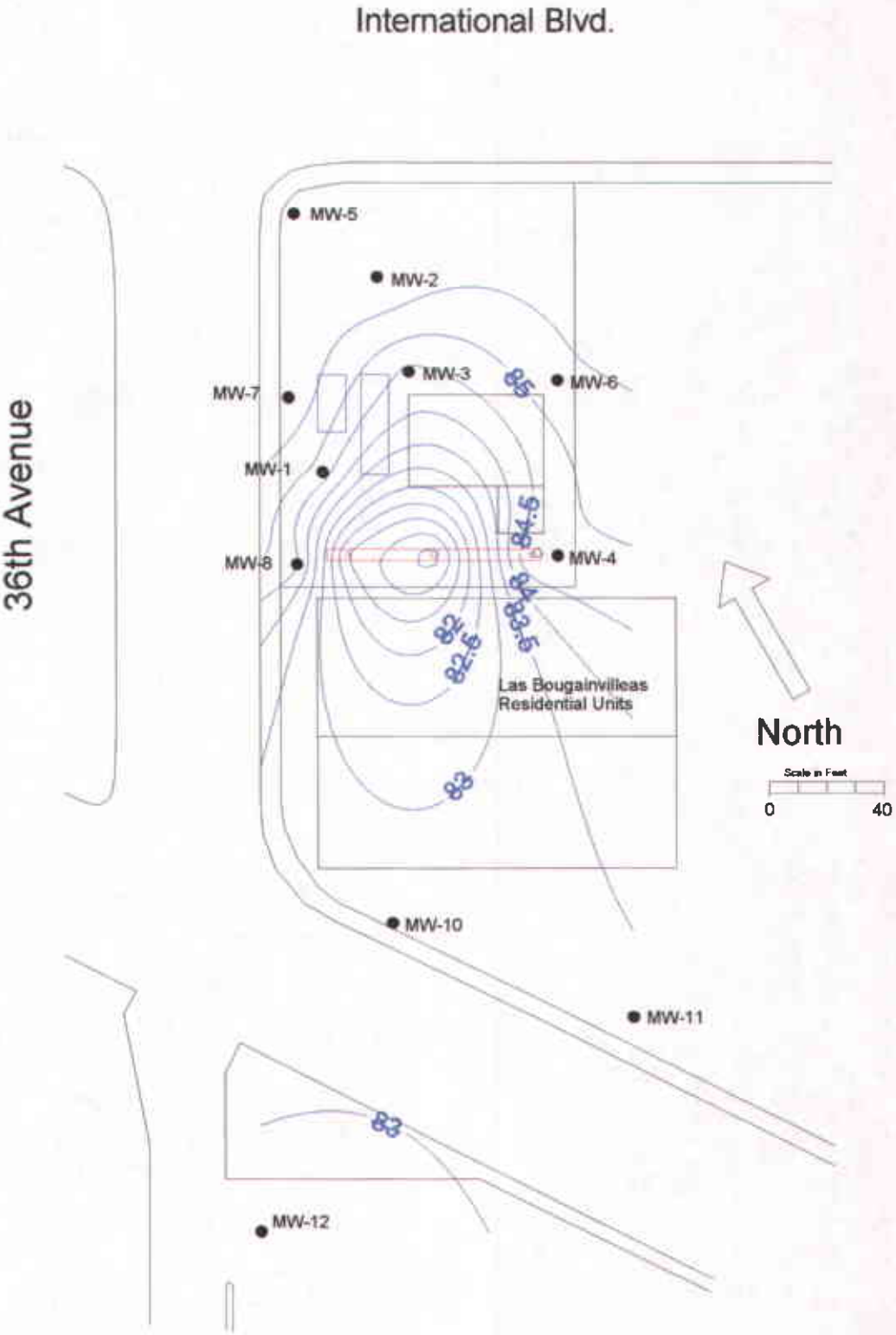


Figure 3: Groundwater Elevation Contour Map, November 2, 2000

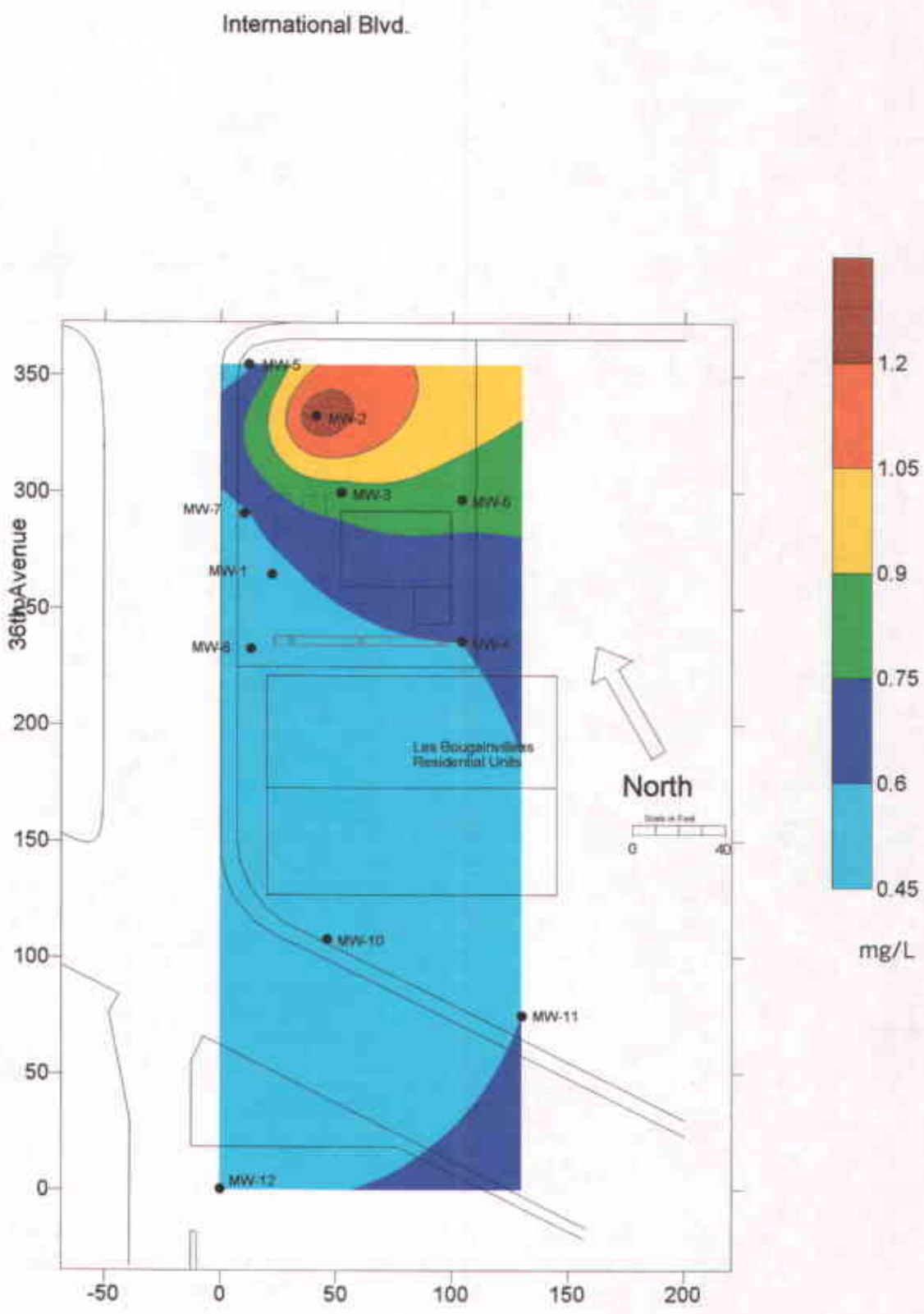


Figure 4: Dissolved Oxygen Concentration in Groundwater, November 2, 2000

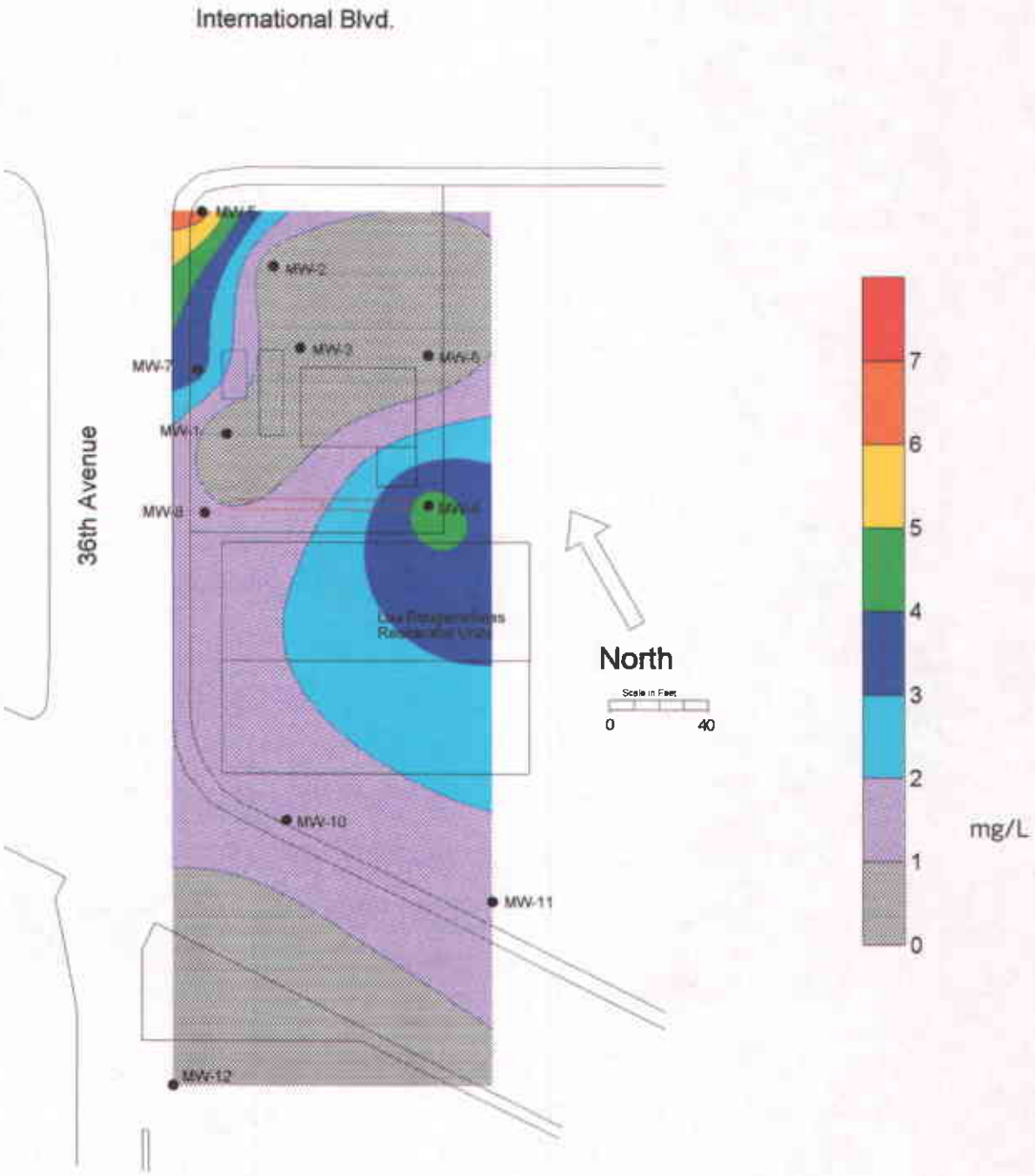


Figure 5: Nitrate Concentration Contour Map in Groundwater, November 2, 2000

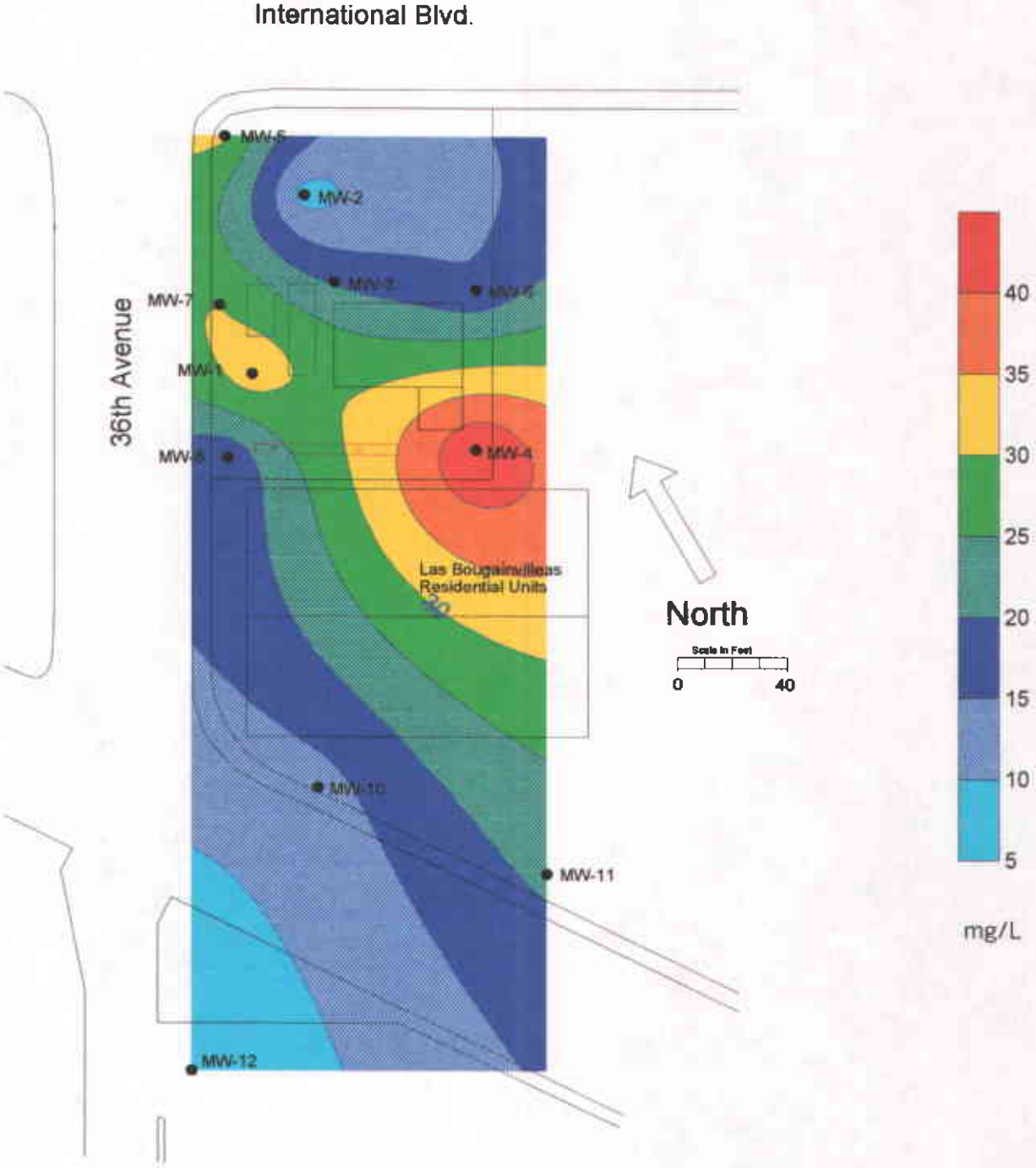


Figure 6: Sulfate Concentration Contour Map in Groundwater, November 2, 2000

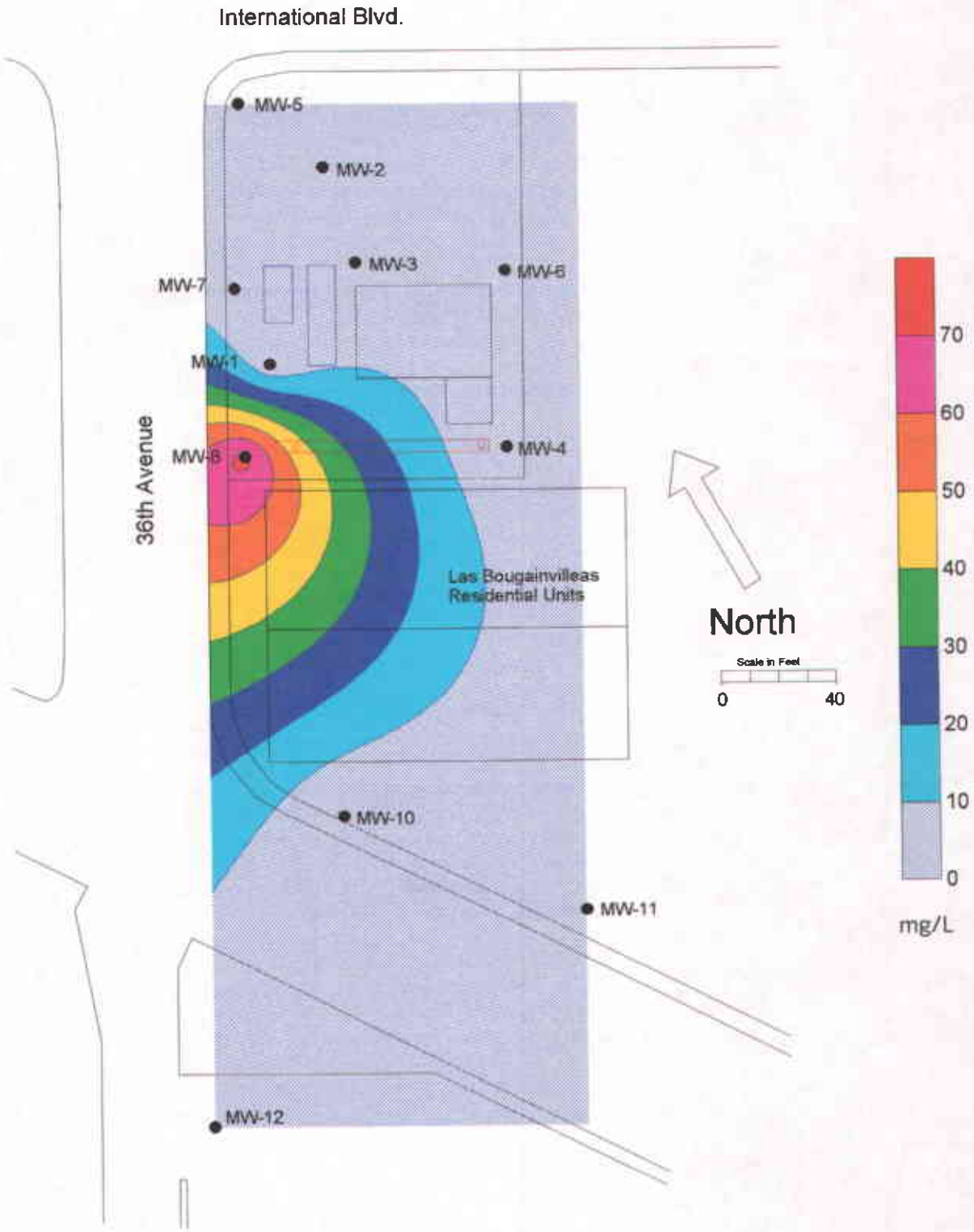


Figure 7: Ferrous Iron Concentration Contour Map in Groundwater, November 2, 2000

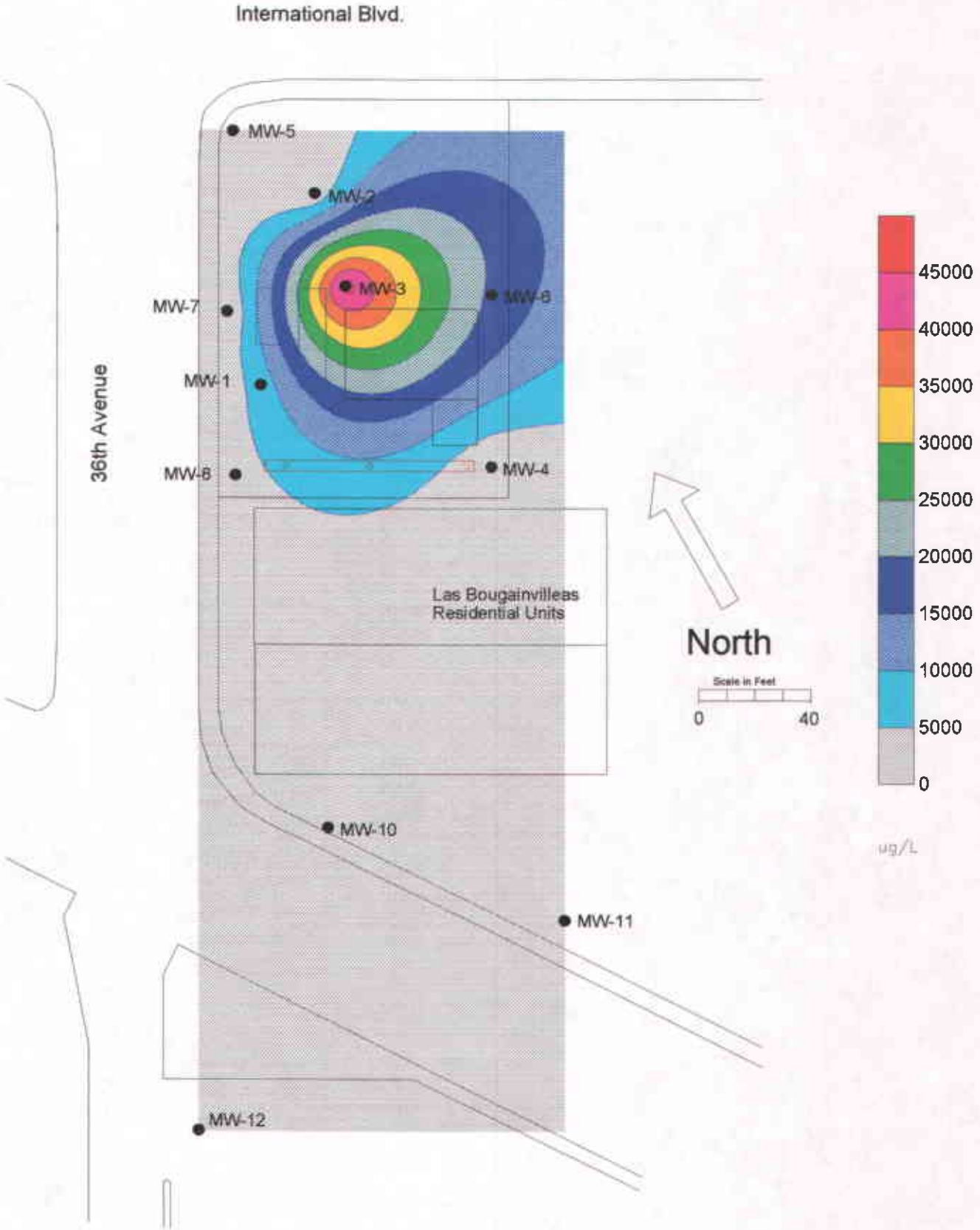


Figure 8: TPH-g Concentration Contour Map in Groundwater, November 2, 2000

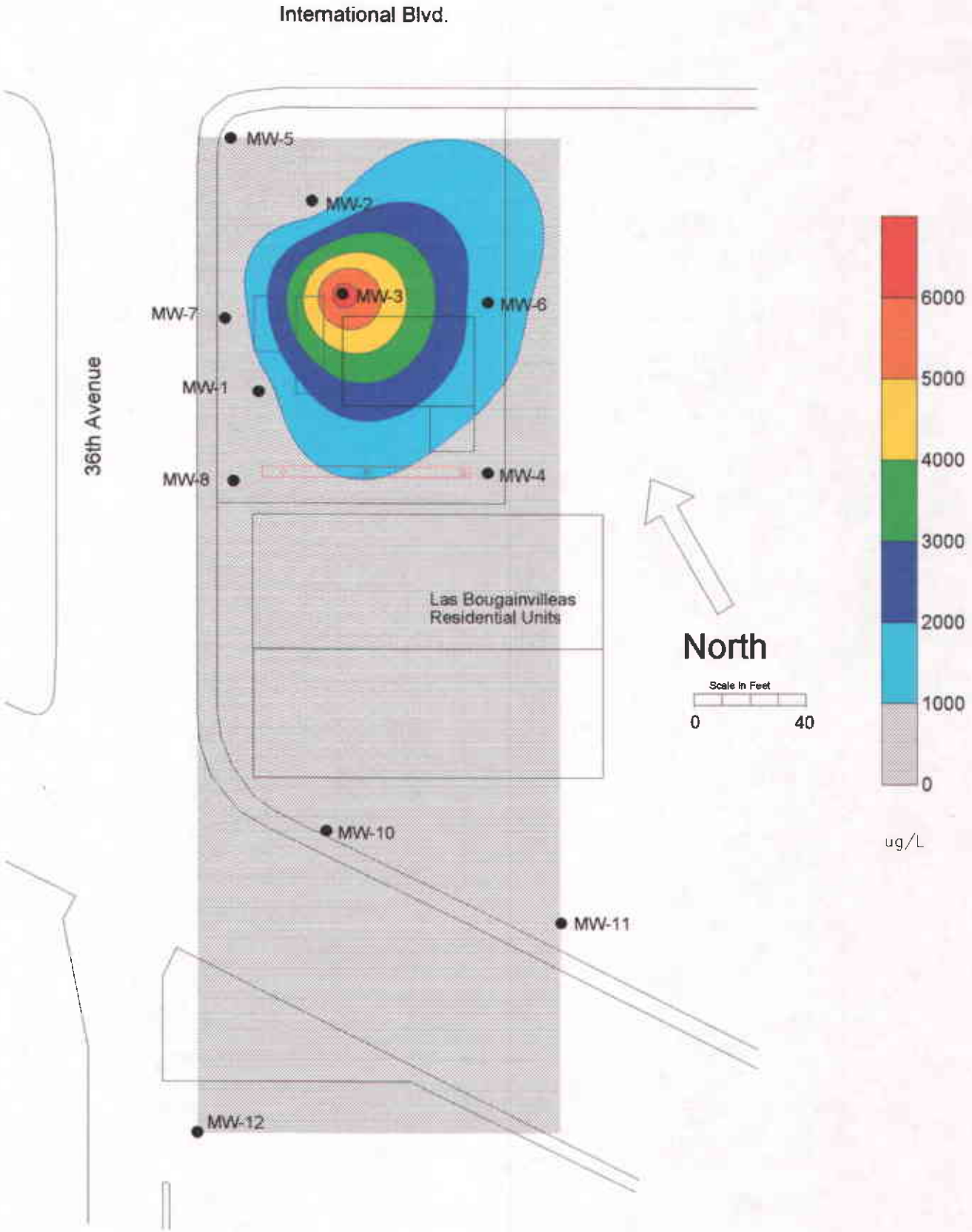


Figure 9: Benzene Concentration Contour Map in Groundwater, November 9, 2000

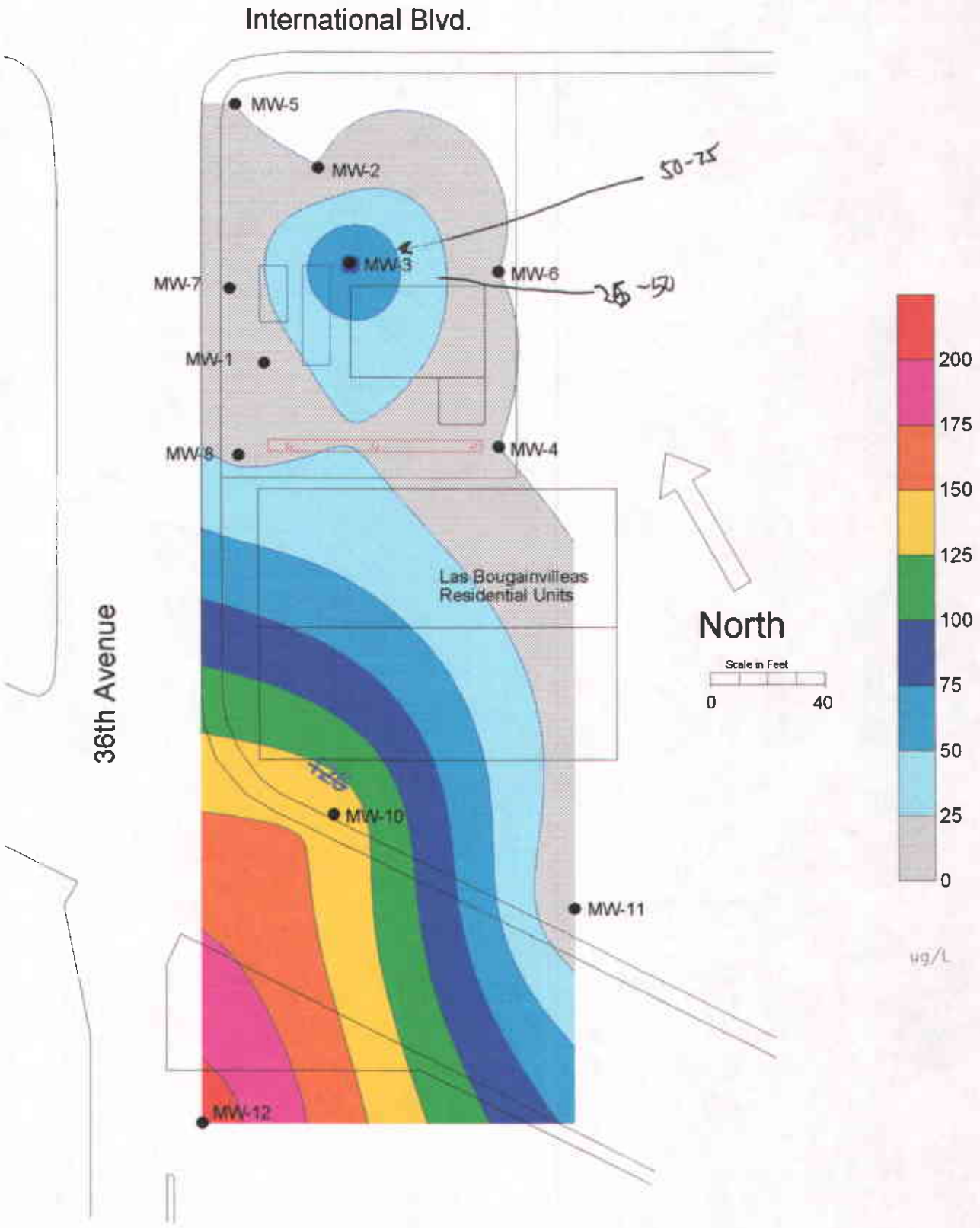
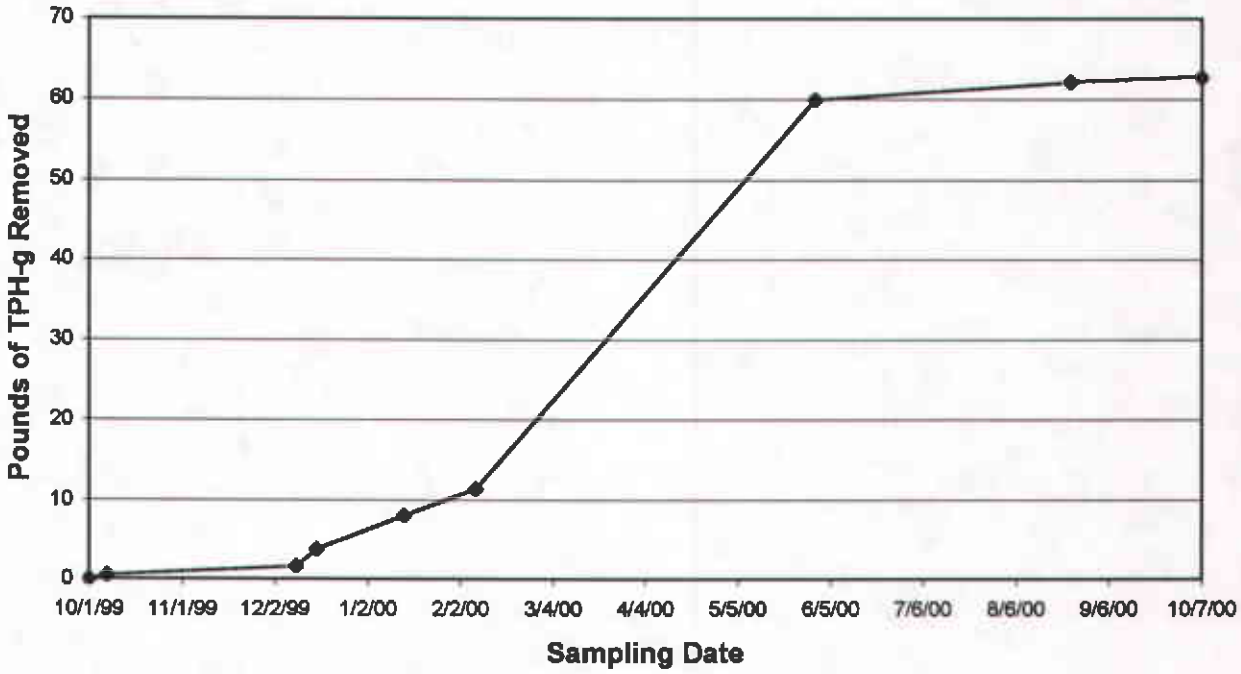
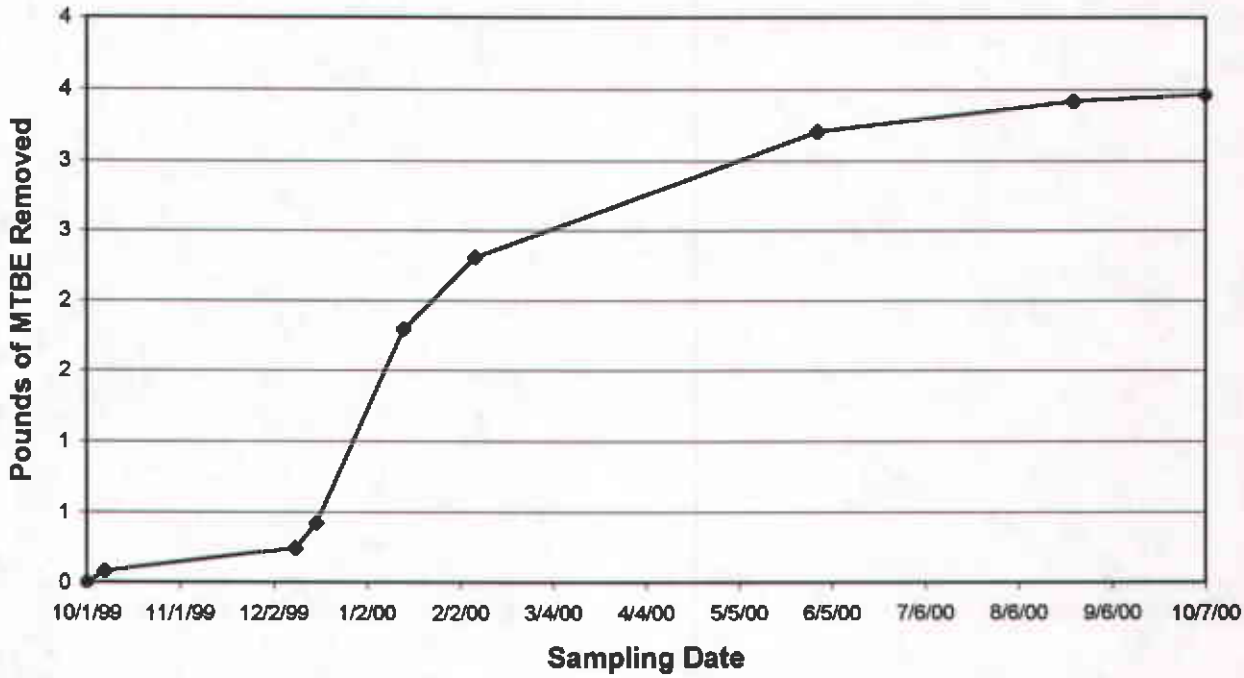


Figure 10: MTBE Concentration Contour Map in Groundwater, November 2, 2000

Figure 11: Cumulative Weight of TPH-g and MTBE Extracted from Groundwater Since Installation of the Treatment System





APPENDIX A

FIELD NOTES, LABORATORY REPORTS, CHAIN OF CUSTODY FORMS, D.O. CORRECTION TABLES

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	29.70	feet		Oakland, CA
Elevation of the Casing:	97.99	feet	Date:	November 2, 2000
Depth to Water Table:	13.20	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	84.79	feet		Frank Cioffi
Height of Water:	16.50	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■	
Sampling Method:	Bailer ■	Bailer ☐	
Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3--N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	19.7	7.34	682	0	33	1.14	0.56	-39.4	18

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-2		Project No.:	2331
Casing Diameter:	4	inch	Address:	3609 International Blvd.
Depth of Well:	30.00	feet		Oakland, CA
Elevation of the Casing:	98.58	feet	Date:	November 2, 2000
Depth to Water Table:	12.60	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	85.98	feet		Frank Cioffi
Height of Water:	17.40	feet		
Purged Volume:	12	gallons		

Purging Method:	Bailer ☐	Pump ■
Sampling Method:	Bailer ■	Bailer ☐

Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	19.5	7.05	685	0	7.9	0.69	1.35	111	109

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-3		Project No.:	2331
Casing Diameter:	4	inch	Address:	3609 International Blvd.
Depth of Well:	29.75	feet		Oakland, CA
Elevation of the Casing:	97.78	feet	Date:	November 2, 2000
Depth to Water Table:	13.40	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	84.38	feet		Frank Cioffi
Height of Water:	16.35	feet		
Purged Volume:	12	gallons		

Purging Method:	Bailer ☐	Pump ■		
Sampling Method:	Bailer ■	Bailer ☐		
Sheen:	Yes ■	No ☐	Describe	
Odor:	Yes ■	No ☐	Describe	Strong gasoline odor

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	19.5	7.2	1080	0	28	4.1	0.83	-94	24

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-4		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	24.34	feet		Oakland, CA
Elevation of the Casing:	97.85	feet	Date:	November 2, 2000
Depth to Water Table:	13.05	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	84.80	feet		Frank Cioffi
Height of Water:	11.29	feet		
Purged Volume:	6	gallons		

Purging Method: Bailer ☐ Pump ■

Sampling Method: Bailer ■ Bailer ☐

Sheen: Yes ☐ No ■ Describe

Odor: Yes ☐ No ■ Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	18.7	7.32	623	4.5	45	0	0.6	-39	3

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-5		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	26.08	feet		Oakland, CA
Elevation of the Casing:	99.04	feet	Date:	November 2, 2000
Depth to Water Table:	13.55	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	85.49	feet		Frank Cioffi
Height of Water:	12.53	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■	
Sampling Method:	Bailer ■	Bailer ☐	
Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3--N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	20.1	7.36	737	6.5	31	1.02	0.56	49	34

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-6		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	24.45	feet		Oakland, CA
Elevation of the Casing:	98.77	feet	Date:	November 2, 2000
Depth to Water Table:	13.40	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	85.37	feet		Frank Cioffi
Height of Water:	11.05	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■
Sampling Method:	Bailer ■	Bailer ☐

Sheen:	Yes ■	No ☐	Describe	
Odor:	Yes ■	No ☐	Describe	Strong gasoline odor

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	19.7	7.32	696	0	16	2.65	0.8	-34	73

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-7		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	24.60	feet		Oakland, CA
Elevation of the Casing:	97.83	feet	Date:	November 2, 2000
Depth to Water Table:	11.95	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	85.88	feet		Frank Cioffi
Height of Water:	12.65	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■
Sampling Method:	Bailer ■	Bailer ☐

Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	20.7	7.41	593	3.5	30	0.27	0.58	-11.6	2

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-8		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	26.34	feet		Oakland, CA
Elevation of the Casing:	97.25	feet	Date:	November 2, 2000
Depth to Water Table:	12.55	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	84.70	feet		Frank Cioffi
Height of Water:	13.79	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■	
Sampling Method:	Bailer ■	Bailer ☐	
Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	20.4	7.14	496	-	16	73.3	-	-1049	11

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-10		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	24.35	feet		Oakland, CA
Elevation of the Casing:	94.54	feet	Date:	November 2, 2000
Depth to Water Table:	11.35	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	83.19	feet		Frank Cioffi
Height of Water:	13.00	feet		
Purged Volume:	6	gallons		

Purging Method:	Bailer ☐	Pump ■
Sampling Method:	Bailer ■	Bailer ☐

Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	20.7	7.2	756	1.3	13	0.42	0.53	26.7	3

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-11		Project No.:	2331
Casing Diameter:	2	inch	Address:	3609 International Blvd.
Depth of Well:	24.30	feet		Oakland, CA
Elevation of the Casing:	95.94	feet	Date:	November 2, 2000
Depth to Water Table:	12.55	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	83.39	feet		Frank Cioffi
Height of Water:	11.75	feet		
Purged Volume:	6	gallons		

Purging Method: Bailer ☐ Pump ■

Sampling Method: Bailer ■ Bailer ☐

Sheen: Yes ☐ No ■ Describe

Odor: Yes ☐ No ■ Describe

Field Measurements:

Time	Temp (°C)	pH	EC (ms/cm)	No.3--N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox (mV)	Turbidity FTU
12:15 PM	19.7	7.22	687	1.5	21	0.44	0.6	17	3

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-12		Project No.:	2331
Casing Diameter:	4	inch	Address:	3609 International Blvd.
Depth of Well:	30.00	feet		Oakland, CA
Elevation of the Casing:	94.84	feet	Date:	November 2, 2000
Depth to Water Table:	12.05	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	82.79	feet		Frank Cioffi
Height of Water:	17.95	feet		
Purged Volume:	12	gallons		

Purging Method:	Bailer ☐	Pump ■	
Sampling Method:	Bailer ■	Bailer ☐	
Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (µs/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	19.8	7.33	765	0	6	1.93	0.6	12	40

ENVIRONMENTAL ENGINEERING, INC

Well No.:	F.D.C.R.		Project No.:	2331
Casing Diameter:	6	inch	Address:	3609 International Blvd.
Depth of Well:		feet		Oakland, CA
Elevation of the Casing:	97.10	feet	Date:	November 2, 2000
Depth to Water Table:	12.41	feet	Sampler:	Naser Pakrou
Elevation of Water Table:	84.69	feet		Frank Cioffi
Height of Water:		feet		
Purged Volume:	n/a	gallons		

Purging Method:	Bailer ☐	Pump ☐	
Sampling Method:	Bailer ☐	Bailer ☐	
Sheen:	Yes ☐	No ■	Describe
Odor:	Yes ☐	No ■	Describe

Field Measurements:

Time	Temp (°C)	pH	EC (ms/cm)	No.3–N (mg/L)	SO_4^{+2} (mg/L)	Fe^{+2} (mg/L)	D.O. (mg/L)	Redox mV	Turbidity FTU
12:15 PM	-	-	-	-	-	-	-	-	-

WATER • WASTE WATER • HAZARDOUS WASTE • FUEL • AIR • SOIL

DELTA
ENVIRONMENTAL LABORATORIES, Ltd

Soma

2680 Bishop Dr., Ste 203
San Ramon, CA 94583

Client Project ID:
2331
Tony's Express Auto
Oakland, CA

Ref.:	R5432400
Method	5030 GCFID/ 8020/8260
Sampled:	11/2/2000
Received:	11/3/2000
Matrix:	Water
Analyzed:	11/7-9/00
Reported:	11/14/2000
Units:	ug/L

Attention : Dr. M. Sepehr

Laboratory Results for BTEX , MTBE & TPH-G Analysis

Sample	Benzene	Toluene	Ethylbenzene	Total-Xylene	MTBE	TPH-Gas
MW-1	435	52	ND	689	10*	7050
MW-2	ND	ND	ND	ND	ND*	ND
MW-3	6789	4816	676	7258	83*	48000
MW-4	5.3	ND	ND	7.5	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	1387	618	ND	5250	ND*	19000
MW-7	ND	ND	ND	ND	9.1*	50
MW-8	278	350	209	980	21*	30000
MW-10	ND	ND	ND	ND	145*	ND
MW-11	ND	ND	ND	ND	ND*	60
MW-12	9.3	19	ND	7.4	215*	1010
Det.Limits	5 ug/L	5 ug/L	5 ug/L	5 ug/L	5 ug/L	50 ug/L
Method	8020	8020	8020	8020	8020/8260	5030/GCFID

* The results reported for MTBE are confirmed values by GC/MS; EPA 8260.

Delta Environmental Laboratories

Hossein KhoshKhoo, Ph.D.,
Laboratory Director/ President

Delta Environmental Laboratories

5432

Chain of Custody (COC) Form

685 Stone Road #11 & 12
Benicia, Ca. 94510
(707) 747-6081, 800-747-6082 FAX (707) 747-6082

Project Name Proj 2331

Tony's Auto.

LAB ID Oakland ca.

Ref #

1 of 2

Results to: Naser Paniou
Client Name SOMA
Address
City
Telephone Fax: 925 2446601
SAMPLER (signature)
Turnaround Time Standard

Analysis Requested

Special Instructions::

#	Sample ID	Date	Time	Matrix	No. of containers	pH	Temperature	TPH-g, BTEX, MTBE	Comments
1	MW-1	11/3	2:20	H2O	2			✓	
2	MW-2		10:40					✓	
3	MW-3		11:00					✓	
4	MW-4		12:0					✓	
5	MW-5		11:30					✓	
6	MW-6		12:10					✓	
7	MW-7		2:30					✓	
8	MW-8		1:30					✓	
9	MW-10		3:40					✓	
10	MW-11		3:0					✓	

Relinquished by:	Date 11/3	1)	Have all samples received been stored on ice?
Received By:	Date	2)	Did any VOA samples received have any head space?
Relinquished by:	Date	3)	Were samples in appropriate containers and packaged properly?
Received By:	Date	4)	Were samples received in good condition?

For Lab Use Only:

D-E-L-T-A TUE 17:08 FAX 17077476082 11/14/00 006

Delta Environmental Laboratories

3432

Chain of Custody (COC) Form

685 Stone Road #11 & 12
Benicia, Ca. 94510
(707) 747-6081, 800-747-6082 FAX (707) 747-6082

Project Name proj 2331

Results to: Nasir Parlow

Client Name

Address

City

Telephone Fax:

SAMPLER (signature)

Turnaround Time Standard

Analysis Requested

Tony's Auto

LAB ID Oakland Ca.

Ref #

242

Special Instructions::

#	Sample ID	Date	Time	Matrix	No. of containers	pH	Temperature	TPHg, BTEX, MTBE	Comments
11	MW-12	11/2	8:40	H20	2				
		"	"	"					

Relinquished by:	Date 11/3	1)	Have all samples received been stored on ice?
Received By:	Date	2)	Did any VOA samples received have any head space?
Relinquished by:	Date	3)	Were samples in appropriate containers and packaged properly?
Received By:	Date	4)	Were samples received in good condition?

For Lab Use Only:

WATER • WASTE WATER • HAZARDOUS WASTE • FUEL • AIR • SOIL

DELTA ENVIRONMENTAL LABORATORIES, Ltd

SOMA
2680 Bishop Drive, Suite 203
San Ramon, CA 94583

Client project ID:
Proj 2333
Tony's Auto
Oakland, CA

Ref.: R5430400
Method: 5030 GCFID/ 8020
Sampled: 11/1/2000
Received: 11/3/2000
Matrix: Water
Analyzed: 11/7/2000
Reported: 11/14/2000
Units: ug/L
Analyst: DS

Attention: Dr. M Sepehr

Laboratory Results for TPH + BTEX & MTBE Analysis

Analyte	EPA Method	Detection Limit ug/L	Results Sample ID	
			Gac-1	Effluent
BTEX				
Benzene	8020	0.5	ND	ND
Toluene	8020	0.5	ND	ND
Ethylbenzene	8020	0.5	ND	ND
Total-Xylene	8020	1.0	ND	ND
MTBE	8020	5.0	ND	ND
TPH-g	5030/GCFID	50	ND	ND

ND:Not Detected(<MDL)

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.

Delta Environmental Laboratories

5430

Chain of Custody (COC) Form

685 Stone Road #11 & 12
Benicia, Ca. 94510
(707) 747-6081, 800-747-6082 FAX (707) 747-6082

Project Name Proj 2333

Tony's Auto

LAB ID Oakland Ca

Ref #

Results to:	Nasar Pakhoo
Client Name	SOMA
Address	
City	
Telephone	Fax: 9252446601
SAMPLER (signature)	
Turnaround Time	Standard

Analysis Requested

Special Instructions::

#	Sample ID	Date	Time	Matrix	No. of containers	pH	Temperature	TPHg BTEX MTBE	Comments
1	GAC-1	11/1	3:30	H2O	2			✓	Confirm MTBE Peaks
2	Effluent	11/1	"	"	2			✓	with 8260

Relinquished by:		Date 11/3	1) Have all samples received been stored on ice? ___
Received By:		Date	2) Did any VOA samples received have any head space? ___
Relinquished by:		Date	3) Were samples in appropriate containers and packaged properly? ___
Received By:		Date	4) Were samples received in good condition? ___

For Lab Use Only:

OXYGEN SOLUBILITY AND CALIBRATION VALUE TABLES

TABLE A — Solubility of Oxygen in mg/L in Water Exposed to Air at 760 mm Hg Pressure

Temp °C	Chlorinity: 0 Salinity: 0	5.0 9.0	10.0 18.1	15.0 27.1	20.0 36.1	25.0 45.2
0.0	14.62	13.73	12.89	12.10	11.36	10.66
1.0	14.22	13.36	12.55	11.78	11.07	10.39
2.0	13.83	13.00	12.22	11.48	10.79	10.14
3.0	13.46	12.66	11.91	11.20	10.53	9.90
4.0	13.11	12.34	11.61	10.92	10.27	9.66
5.0	12.77	12.02	11.32	10.66	10.03	9.44
6.0	12.45	11.73	11.05	10.40	9.80	9.23
7.0	12.14	11.44	10.78	10.16	9.58	9.02
8.0	11.84	11.17	10.53	9.93	9.36	8.83
9.0	11.56	10.91	10.29	9.71	9.16	8.64
10.0	11.29	10.66	10.06	9.49	8.96	8.45
11.0	11.03	10.42	9.84	9.29	8.77	8.28
12.0	10.78	10.18	9.62	9.09	8.59	8.11
13.0	10.54	9.96	9.42	8.90	8.41	7.95
14.0	10.31	9.75	9.22	8.72	8.24	7.79
15.0	10.08	9.54	9.03	8.54	8.08	7.64
16.0	9.87	9.34	8.84	8.37	7.92	7.50
17.0	9.67	9.15	8.67	8.21	7.77	7.36
18.0	9.47	8.97	8.50	8.05	7.62	7.22
19.0	9.28	8.79	8.33	7.90	7.48	7.09
20.0	9.09	8.62	8.17	7.75	7.35	6.96
21.0	8.92	8.46	8.02	7.61	7.21	6.84
22.0	8.74	8.30	7.87	7.47	7.09	6.72
23.0	8.58	8.14	7.73	7.34	6.96	6.61
24.0	8.42	7.99	7.59	7.21	6.84	6.50
25.0	8.26	7.85	7.46	7.08	6.73	6.39
26.0	8.11	7.71	7.33	6.96	6.62	6.29
27.0	7.97	7.58	7.20	6.85	6.51	6.18
28.0	7.83	7.44	7.08	6.73	6.40	6.09
29.0	7.69	7.32	6.96	6.62	6.30	5.99
30.0	7.56	7.19	6.85	6.51	6.20	5.90
31.0	7.43	7.07	6.73	6.41	6.10	5.81
32.0	7.31	6.96	6.62	6.31	6.01	5.72
33.0	7.18	6.84	6.52	6.21	5.91	5.63
34.0	7.07	6.73	6.42	6.11	5.82	5.55
35.0	6.95	6.62	6.31	6.02	5.73	5.46
36.0	6.84	6.52	6.22	5.93	5.65	5.38
37.0	6.73	6.42	6.12	5.84	5.56	5.31
38.0	6.62	6.32	6.03	5.75	5.48	5.23
39.0	6.52	6.22	5.93	5.66	5.40	5.15
40.0	6.41	6.12	5.84	5.58	5.32	5.08
41.0	6.31	6.03	5.75	5.49	5.24	5.01
42.0	6.21	5.93	5.67	5.41	5.17	4.93
43.0	6.12	5.84	5.58	5.33	5.09	4.86
44.0	6.02	5.75	5.50	5.25	5.02	4.79
45.0	5.93	5.67	5.41	5.17	4.94	4.72

TABLE B — Calibration Values for Various Atmospheric Pressures and Altitudes

PRESSURE		ALTITUDE			CORRECTION
in. Hg	mm Hg	kPa	Feet	m	FACTOR (%)
30.23	768	102.3	-276	-84	101
29.92	760	101.3	0	0	100
29.61	752	100.3	278	85	99
29.33	745	99.3	558	170	98
29.02	737	98.3	841	256	97
28.74	730	97.3	1126	343	96
28.43	722	96.3	1413	431	95
28.11	714	95.2	1703	519	94
27.83	707	94.2	1995	608	93
27.52	699	93.2	2290	698	92
27.24	692	92.2	2587	789	91
26.93	684	91.2	2887	880	90
26.61	676	90.2	3190	972	89
26.34	669	89.2	3496	1066	88
26.02	661	88.2	3804	1160	87
25.75	654	87.1	4115	1254	86
25.43	646	86.1	4430	1350	85
25.12	638	85.1	4747	1447	84
24.84	631	84.1	5067	1544	83
24.53	623	83.1	5391	1643	82
24.25	616	82.1	5717	1743	81
23.94	608	81.1	6047	1843	80
23.62	600	80.0	6381	1945	79
23.35	593	79.0	6717	2047	78
23.03	585	78.0	7058	2151	77
22.76	578	77.0	7401	2256	76
22.44	570	76.0	7749	2362	75
22.13	562	75.0	8100	2469	74
21.85	555	74.0	8455	2577	73
21.54	547	73.0	8815	2687	72
21.26	540	71.9	9178	2797	71
20.94	532	70.9	9545	2909	70
20.63	524	69.9	9917	3023	69
20.35	517	68.9	10293	3137	68
20.04	509	67.9	10673	3253	67
19.76	502	66.9	11058	3371	66