

**PRELIMINARY REMEDIAL RISK ASSESSMENT
FOR
GOOD CHEVROLET
1630 PARK STREET, ALAMEDA, CA**

Prepared for:

Good Chevrolet
1630 Park Street
Alameda, California 94501

December 18, 1998



PRELIMINARY REMEDIAL RISK ASSESSMENT
FOR
GOOD CHEVROLET
1630 PARK STREET, ALAMEDA, CA

1.0 SITE DATA REVIEW

The project site is an automobile dealership and service center located at 1630 Park Street in the City of Alameda, in Alameda County, California as indicated on Figure 1.

A 300 gallon waste oil storage tank and a 500 gallon underground gasoline storage tank were reportedly removed from the property by Petroleum Engineering, Inc. in October, 1986. A subsurface investigation including installation of three ground water monitoring wells (see Figure 2) was performed by Groundwater Technology, Inc. in January, 1987 (Groundwater Technology, Inc. Report Dated April 29, 1987).

The three monitoring wells have been monitored to evaluate the ground water conditions and to establish the direction(s) of ground water flow at the project site. The monitoring determined that the direction of flow beneath the site varies from a northwesterly direction to a northeasterly direction throughout the year. The quarterly sampling has also detected Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds at various concentrations throughout the year. *flow direction*

A supplemental investigation was performed by Geo Plexus which included advancing 7 soil borings across the parking area of the property (see Figure 2). This investigation identified high concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene) in the immediate vicinity of the former underground storage tanks at depths of 5-12 feet below the ground surface. The borings identified concentrations of Total Petroleum Hydrocarbons as gasoline as high as 15,000 parts per million (ppm) decreasing to 1,000 ppm within 30-feet from the former tanks (lateral direction) and decreasing to 1,800 ppm at the down-gradient property boundary.

Two additional ground water monitoring wells were installed by Geo Plexus in April, 1994 to further characterize the down-gradient water conditions. The findings of the initial ground water samples indicated a significant increase in concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds down-gradient of the property.

The ground water levels recorded to date reflect fluctuations ranging from 3 to 13 feet below the ground surface and indicate that ground water generally flows in a northwest direction.

A Remedial Investigation was performed by Geo Plexus in April, 1997 which included advancing eight (8) subsurface exploratory geo-probes at locations which were immediately "up-", "down", and "cross-gradient" from the former underground storage tanks (see Figure 3). Grab ground water samples were also obtained from the probes for analytical testing.

The findings of the investigation indicated that gasoline contaminated soil remain in-place at the project site and is confined to depths ranging from 7- to 11-feet below the ground surface and is of limited extent.

The concentrations of Benzene in the soil exceed the ASTM RBCA Tier-1 RBSL's for contaminant leaching to ground water and gas migration to indoor air. Similarly, the concentrations of Benzene in the ground water exceed the Tier-1 RBSL's for ground water ingestion and gas migration to indoor air; however, the concentrations are below the Tier-1 RBSL's for gas migration to outdoor air. It was concluded that the site conditions did not warrant active ground water remediation.

2.0 SCOPE OF RISK ASSESSMENT INVESTIGATION

The scope of work for the current investigation action included:

- (1) advancing three (3) gas collection probes at the site to obtain soil gas measurements within and exterior to the existing building;
- (2) collection of summa canister gas samples from each probe from depths of 3-feet;
- (3) performing analytical testing of the air bag samples for gasoline, volatile aromatic, and volatile organic compounds;
- (4) collection of ground water samples from the existing monitoring wells for analytical testing;
- (5) performing analytical testing of the ground water samples for gasoline, volatile aromatic, and volatile organic compounds; and
- (6) performing a Tier-II ASTM Risk-Based Corrective Action (RBCA) assessment for the project site.

3.0 FIELD INVESTIGATION ACTIVITIES

3.1 GAS COLLECTION PROBES

Three (3) gas collection probes were advanced at the locations indicated on Figure 4 by Precision Sampling, a licensed C-57 drilling contractor. The probes were advanced using a portable pneumatic drive assembly. Drilling and sampling equipment used for advancing the exploratory probes was thoroughly steam cleaned before and between each boring to prevent the introduction of off-site contamination and cross contamination between borings.

Soil gas samples were obtained at depths of 3-feet below the ground surface through the use of summa canisters. A teflon tube was affixed to the top of the gas probe and connected to a vacuum pump to purge the probe and tubing.

The summa canisters were verified for integrity prior to connection to the gas probe. After initial purging of the connecting tube, the valve on the summa canister was opened to allow the air sample to enter the canister. The valve was closed upon a reduction in canister vacuum to approximately 4-in. of Hg. and was then sealed. Each canister was properly labeled including: the date, time, sample location (boring number and depth interval), initial and final vacuum pressures, and project number. The samples were placed in a padded shipping container immediately for transport to the laboratory under chain-of-custody documentation.

The probes holes were grouted with a neat bentonite-cement slurry mixed at the project site.

3.2 SOIL GAS ANALYTICAL TESTING

The air samples were submitted to and tested by Air Toxics, Ltd., a State of California, Department of Health Services certified testing laboratory as directed by Alameda County personnel. Analytical testing was scheduled and performed in accordance with the State of California and Alameda County protocols. The samples were tested for:

- Total Petroleum Hydrocarbons as gasoline by EPA Method TO-3 and
- Volatile Aromatics (BTEX and MTBE) by EPA Method TO-3

The Chain-of-Custody Form and analytical test data are attached in Appendix A.

The analytical test data for the summa canister air samples are summarized on Table 1:

TABLE 1

GAS-PROBE AIR ANALYTICAL TEST DATA

<u>Sample</u>	<u>Total Petroleum Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-Benzene</u>	<u>Total Xylenes</u>	<u>MTBE</u>
AGP-1	0.46*	0.012	0.030	0.0041	0.022	0.0058
AGP-2	0.73*	0.011	0.091	0.011	0.055	0.032
AGP-3	0.42*	ND	0.045	0.013	0.020	0.014

Notes: Concentrations reported as Parts Per Million (ppmv).

* Analytical Laboratory Blank Sample Contained Benzene at 0.017 ppmv

ND indicates that concentrations below detection limit.

0.384 ppm $\times 10^{-5}$

4.0 GROUND WATER MONITORING WELL SAMPLING

4.1 GRADIENT SURVEY

The elevation of the top of the casing of the monitoring wells at the site were established during previous investigations with reported vertical control of 0.01 foot. Ground water elevations were measured in each well to the nearest 0.01 foot with an electronic water level meter (prior to purging) to monitor the variations in the direction and gradient of ground water flow beneath the site.

Ground water elevations recorded suggest that the ground water flow is to the northwest as indicated on Figure 5. The ground water gradient was determined to be 0.013 ft/ft (see Figure 5). The direction of ground water is consistent with previously observed flow directions.

4.2 MONITORING WELL SAMPLING

Free product measurements were obtained for each monitoring well at the time of sample acquisition utilizing a teflon bailer lowered into the well to obtain a water sample. Due to very high traffic flow, Monitoring Well MW-4, located in the center of Park Street, was not sampled during this event. The bailer was used to collect a water sample to observe the presence of hydrocarbon odors, visible sheen, or free product. Free product or visible sheens were not observed in the water samples.

To evaluate the stabilized ground water conditions across the property established by the vapor extraction system, it was determined to comply with recent Regional Water Quality Control Board "No-Purge" guidelines, the wells were not purged and the ground water grab samples were collected from each well through the use of a dedicated teflon bailer.

Water samples for analytical testing were obtained through the use of dedicated teflon bailers and were collected in sterilized glass vials with Teflon lined screw caps. The samples were immediately sealed in the vials and properly labeled including: the date, time, sample location, project number, and indication of any preservatives (HCl) added to the sample. The samples were placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

4.3 GROUND WATER ANALYTICAL TESTING

The ground water samples were submitted to and tested by McCampbell Analytical, a State of California, Department of Health Services certified testing laboratory. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board, and Alameda County Department of Environmental Health guidelines. The samples were tested for the following:

- Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015; and
- Volatile Aromatics (BTEX and MTBE) by EPA Method 8020.

The Chain-of-Custody Form and analytical test data are attached in Appendix B.

Table 2 summarizes the current analytical test results for the monitoring well samples, along with the results of the previous analytical testing.

TABLE 2
SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Date</u> <u>Sample</u>	<u>Total Petroleum</u> <u>Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-</u> <u>Benzene</u>	<u>Total</u> <u>Xylenes</u>	<u>MTBE</u>
Monitoring Well MW-1						
1-21-87 ⁽¹⁾	21,020	1,148	8,627	1,792	6,012	
1-11-89 ⁽¹⁾	1,400	74	10	13	5	
7-12-89 ⁽¹⁾	1,200	470	49	45	33	
4-09-91 ⁽²⁾	850	260	10	15	12	
7-14-92 ⁽³⁾	13,000	2,300	1,200	1,200	1,200	
10-7-92 ⁽³⁾	3,600	1,600	80	120	120	
1-11-93 ⁽³⁾	1,200	410	16	23	19	
4-23-93 ⁽³⁾	2,200	720	180	82	150	
7-08-93 ⁽³⁾	3,200	1,200	110	97	100	
10-15-93 ⁽³⁾	3,700	1,400	43	94	36	
1-25-94 ⁽³⁾	1,600	680	16	41	35	
4-28-94 ⁽³⁾	6,100	1,900	380	250	340	
7-27-94 ⁽³⁾	6,000	1,800	510	220	450	
10-27-94 ⁽³⁾	3,000	1,100	79	82	87	
1-26-95 ⁽³⁾	1,600	660	100	82	87	
4-13-95 ⁽³⁾	3,800	1,200	270	120	260	
7-21-95 ⁽³⁾	5,200	1,500	450	190	400	
10-25-95 ⁽³⁾	5,900	1,800	450	210	400	
1-21-97 ⁽³⁾	3,100	1,100	87	160	180	ND<7.3
11-12-98 ⁽³⁾	1,000	280	3.0	3.3	7.9	ND<30
Monitoring Well MW-2						
1-21-87 ⁽¹⁾	5,018	386	1,981	285	1,432	
1-11-89 ⁽¹⁾	10,000	3,000	410	240	190	
7-12-89 ⁽¹⁾	7,600	2,700	540	250	320	
4-09-91 ⁽²⁾	4,900	910	210	130	200	
7-14-92 ⁽³⁾	13,000	4,400	1,500	610	1,100	
10-7-92 ⁽³⁾	11,000	5,200	1,500	500	1,200	
1-11-93 ⁽³⁾	17,000	940	1,100	480	930	
4-23-93 ⁽³⁾	52,000	13,000	8,400	1,700	5,300	
7-08-93 ⁽³⁾	6,400	2,500	470	280	530	
10-15-93 ⁽³⁾	17,000	3,900	870	500	940	

TABLE 2 (cont'd)
SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

Date Sample	Total Petroleum Hydrocarbons	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE
Monitoring Well MW-2 (cont'd)						
1-25-94 ⁽³⁾	16,000	5,400	1,140	640	1,500	
4-28-94 ⁽³⁾	15,000	4,000	910	480	1,200	
7-27-94 ⁽³⁾	18,000	6,000	760	630	1,600	
10-27-94 ⁽³⁾	9,500	2,700	230	320	640	
1-26-95 ⁽³⁾	5,900	1,900	290	230	500	
4-13-95 ⁽³⁾	10,000	3,300	620	360	930	
7-21-95 ⁽³⁾	9,900	3,300	320	390	830	
10-25-95 ⁽³⁾	13,000	4,900	400	580	990	
1-21-97 ⁽³⁾	7,600	2,600	310	330	660	ND<20
11-12-98 ⁽³⁾	31,000	11,000	750	1,500	2,300	ND<900
Monitoring Well MW-3						
1-21-87 ⁽¹⁾	10,287	1,428	3,281	610	2,761	
1-11-89 ⁽¹⁾	5,300	1,800	340	150	160	
7-12-89 ⁽¹⁾	7,800	3,100	900	300	480	
4-09-91 ⁽²⁾	9,400	1,400	730	200	510	
7-14-92 ⁽³⁾	17,000	3,500	390	390	260	
10-7-92 ⁽³⁾	9,200	4,300	470	390	610	
1-11-93 ⁽³⁾	2,000	740	29	58	28	
4-23-93 ⁽³⁾	6,500	2,600	280	260	190	
7-08-93 ⁽³⁾	5,200	2,100	260	250	180	
10-15-93 ⁽³⁾	11,000	3,500	580	430	370	
1-25-94 ⁽³⁾	6,200	2,500	270	160	28	
4-28-94 ⁽³⁾	5,300	1,700	190	210	180	
7-27-94 ⁽³⁾	5,900	2,000	360	260	330	
10-27-94 ⁽³⁾	8,000	2,200	580	260	470	
1-26-95 ⁽³⁾	3,700	1,200	150	150	190	
4-13-95 ⁽³⁾	4,000	1,400	200	180	210	
7-21-95 ⁽³⁾	5,700	2,000	280	270	280	
10-25-95 ⁽³⁾	11,000	3,500	1,100	460	680	
1-21-97 ⁽³⁾	2,200	860	63	71	80	ND
11-12-98 ⁽³⁾	180	44	0.51	ND	0.92	ND<20

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TABLE 3 (cont'd)
SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Date</u> <u>Sample</u>	<u>Total Petroleum</u> <u>Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-</u> <u>Benzene</u>	<u>Total</u> <u>Xylenes</u>	<u>MTBE</u>
Monitoring Well MW-4						
4-28-94 ⁽³⁾	190	3.8	2.9	2.1	3.1	
7-27-94 ⁽³⁾	180	15	9.2	7.6	28	
10-27-94 ⁽³⁾	130	8.6	6.6	4.5	17	
1-26-95 ⁽³⁾	110	6.5	1.2	1.8	11	
4-13-95 ⁽³⁾	82	3.9	N.D.	N.D.	2.5	
7-21-95 ⁽³⁾	130	8.8	1.3	4.5	7.6	
10-25-95 ⁽³⁾	95	6.6	1.7	4.3	7.0	
1-21-97 ⁽³⁾	not sampled					
11-12-98 ⁽³⁾	not sampled					
Monitoring Well MW-5						
4-28-94 ⁽³⁾	30,000	4,000	3,000	810	3,500	
7-27-94 ⁽³⁾	9,300	2,000	800	290	940	
10-27-94 ⁽³⁾	15,000	2,700	1,300	420	1,100	
1-26-95 ⁽³⁾	7,900	2,100	680	240	860	
4-13-95 ⁽³⁾	7,900	2,400	580	340	630	
7-21-95 ⁽³⁾	11,000	3,400	760	610	1,200	
10-25-95 ⁽³⁾	13,000	2,900	830	570	1,100	
1-21-97 ⁽³⁾	2,600	750	65	1860	280	ND
11-12-98 ⁽³⁾	ND	2.2	ND	ND	ND	ND

Note: (1) Concentrations reported by Groundwater Technology, Inc.
 (2) Concentrations reported by Environmental Science & Engineering, Inc.
 (3) Samples obtained and reported by Geo Plexus, Inc.

Figures 6 and 7 indicate the concentration distribution maps for Total Petroleum Hydrocarbons as gasoline and Benzene, respectively.

5.0 REMEDIAL ACTION THRESHOLD CRITERIA

Various agencies have published criteria and guidelines related to investigation and remediation of soil and ground water contaminated with petroleum compounds. This section addresses the documents and guidelines which were considered applicable to the project site and addresses the technical approach used to develop evaluation criteria for the project site.

The following standards and/or guidelines were used to evaluate the known site conditions and to assist in determining the threshold limits:

- State of California Leaking Underground Fuel Tank Field Manual
This document provides regulatory agencies with guidelines in dealing with leaking fuel tank problems. The manual is intended to assist in assessing fuel leaks, by providing a framework for determining required investigation of sites and of cleanup levels, of screening sites, and for determining remedial actions. It provides general guidance, and is not a standard or specific guideline.
- State of California Regional Water Quality Control Board Tri-Regional Guidelines
These documents present recommendations for the initial investigation of Underground Storage Tank (UST) releases and tank removal processes. The reports describe fuel leak indicators, and present the requirements for site investigations (soil and ground water).
- California Code of Regulations - Title 22
Presents environmental health standards for the classification and management of hazardous waste. The document also establishes drinking water standards, waste treatment standards, and threshold limit concentrations for hazardous materials.
- Resource Conservation and Recovery Act
Provides framework for federal regulation of hazardous waste and controls the generations, transportation, treatment, storage, and disposal of hazardous waste. RCRA established the "cradle to grave" aspect of hazardous waste management and disposal.
- ASTM E-1739-95 Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites
Provides a decision making process for the assessment and response to subsurface (soil and ground water) contamination based on risk to human health and environmental resources. The Risk-Based Corrective Action (RBCA) process recognizes the variability in complexity, physical and chemical characteristics and risk to human health and environmental resources of sites and utilizes a tiered approach to match appropriate assessments and remedial activities in consideration of more cost-effective remedial action.

- EPA SW846
Provides sampling and analytical testing methodology for solid waste.
- Federal OSHA and CAL OSHA guidelines
Documents provide guidelines, standards, and regulations to protect workers from occupational hazards, including mandating training in various aspects of hazardous materials handling and exposure.
- NIOSH and ACGIH Threshold Limit Values
Documents present published information on health effects and standards or guidelines for protection of workers from exposure to various chemicals and compounds.

6.0 EVALUATION OF APPLICABLE CRITERIA

The principal guidance document applicable to estimating the human health and environmental risk of site contaminants is the ASTM Risk-Based Corrective Action (RBCA) document. The ASTM-RBCA document outlines general assessment criteria based on the risk of exposure to the contaminated soil (by off-gassing and/or direct contact), by the potential for contaminants to leach to the ground water, by off-gassing from ground water, and from ground water ingestion.

6.1 SITE-SPECIFIC EVALUATION CRITERIA

Although the Tri-Regional Guidelines and State of California Drinking Water Standards have been used a standard for petroleum hydrocarbon clean-up activities throughout the San Francisco Bay Area, the ASTM-RBCA criteria provide a conservative level of assurance that potential risks have been mitigated. Using the ASTM-RBCA approach, the following site conditions and assumptions were used to assess the project site:

- (1) the project site is a commercial/industrial land use site and is surrounded by commercial and industrial properties;
- (2) the site is planned for continued commercial/industrial use and is not anticipated to be developed in the future for residential use;
- (3) ground water is at a depth of 8- to 13-feet below the ground surface;
- (4) the existing soil contamination does not extend beneath the existing building;
- (5) the ground water contaminant plume is located beneath paved open space areas and does not extend beneath the existing building; and
- (6) domestic ground water wells do not exist within 500-feet from the property.

Based on the above factors, use of a commercial cancer risk of 1×10^{-4} as outlined in the ASTM-RBCA document is considered to be conservative and applicable for the development of petroleum related evaluation levels for the project site. The risk-based analysis required establishing Tier-II Evaluation Risk-Based Site Specific Threshold Levels (SSTL's) for the contaminants of concern.

but 8.5 to 12.5' bgs is below GW elevation

should all onsite MWS be used for RBCA?
using only MW 2 = worst case scenario

To assess the potential health risk of the project site, a Tier II Risk Based Corrective Action analysis was performed in accordance with the procedures presented in ASTM E 1739-95 using a commercially available, automated process known as "Tier 2 RBCA Tool Kit" published by Groundwater Services, Inc. using a "commercial" health risk of 1×10^{-4} as established and included the petroleum constituents known to be present. The results of the analysis are included as Appendix C.

6.2 REPRESENTATIVE DATA SELECTION

The soil contaminant data set was derived from the previous soil borings/geoprobes EB-9, EB-10, EB-11, and EB-12 to represent the "source area" at a depth of 8.5- to 12.5-feet. The contaminant concentrations were averaged from each sample for each individual constituent. The actual values used for the soil are presented on Input Screen 7 in Appendix C.

Similarly, the ground water contaminant data set was derived from averaging the last five (5) sample events for Monitoring Well MW-2 (also to represent the "source area"). The actual values used for the ground water are also presented on Input Screen 7 in Appendix C.

6.3 SITE-SPECIFIC DATA SET RESULTS

The analysis did not identify the shallow soils (less than 3-feet) to be a source of contaminant risk for: (1) soil contaminant leaching to the underlying ground water resources, or (2) for dermal contact or ingestion with the soil.

The analysis indicated that the concentrations of Benzene and MTBE in the subsurface soils (below 3-feet) represented a risk for impacting the underlying ground water and that the concentrations of Benzene and Ethylbenzene in the subsurface soils represented a risk for generation of gas to indoor air.

The analysis further indicated that the concentrations of Benzene present in the ground water exceed the SSTL's for drinking water and for generation of gas to indoor air.

7.0 SUMMARY OF FINDINGS

The analytical test data from previous investigation activities indicate that low to moderate concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (BTEX) remain in the soil in the immediate vicinity of the former tanks; however, the extent of soil contamination is limited. There is no significant presence of MTBE in the soil. The highest concentrations of gasoline were detected in Borings EB-9, 10, and 11 which are located down-gradient of the former tanks and dispenser pump. The remaining samples indicate that the soil contamination extends in a radial pattern (cross- and down-gradient) from the former tank area.

These values can be for GW vapor to outdoor air.
Whereas SV data can be compared w/ RWACB draft #5,
for GW vapor to indoor air

The monitoring wells continue to exhibit low to moderate concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene) suggesting that the source of these compounds is the former underground storage tanks. However, the concentrations reduce significantly with distance from the source area and there is no detectable presence of MTBE in the ground water.

The concentrations of Benzene in the soil exceed the Tier-II SSTL's for contaminant leaching to ground water and gas migration to indoor air; however, the concentrations are not significantly elevated from the SSTL's (less than one order of magnitude difference). Furthermore, the contaminant area is located beneath paved parking areas and not located beneath structures. It is our opinion that the concentrations and extent of contaminants present do not warrant soil remediation.

The concentrations of Benzene in the ground water exceed the Tier-II SSTL's for ground water ingestion and gas migration to indoor air; however, the shallow ground water is not used for human consumption and that there are no buildings existing or planned within the boundaries of the plume. Noting that the concentrations of Benzene are below the Tier-II SSTL's for gas migration to outdoor air, the two previous exposure pathways are of limited concern for the site conditions and ground water remediation is not warranted.

The analytical testing of the soil gas probe samples did not indicate the presence of significant volatile organic vapors within the upper 3-feet of soil at the "source area". This confirms that, although there is some soil and ground water contaminants remaining, the extent of off-gassing through the upper soils is very low and does not represent a significant health risk.

RECOMMENDATIONS

It is our opinion that the project site should be considered for closure as a "low risk" site without further investigation or remediation.

LIMITATIONS

This report has been prepared for the exclusive use of Good Chevrolet and their authorized representatives. No reliance on this report shall be made by anyone other than the client for whom it was prepared.

We have only observed a small portion of the pertinent subsurface and ground water conditions present at the site. The conclusions and recommendations made herein are based on the assumption that subsurface and ground water conditions do not deviate appreciably from those described in the reports and observed during the field investigation.

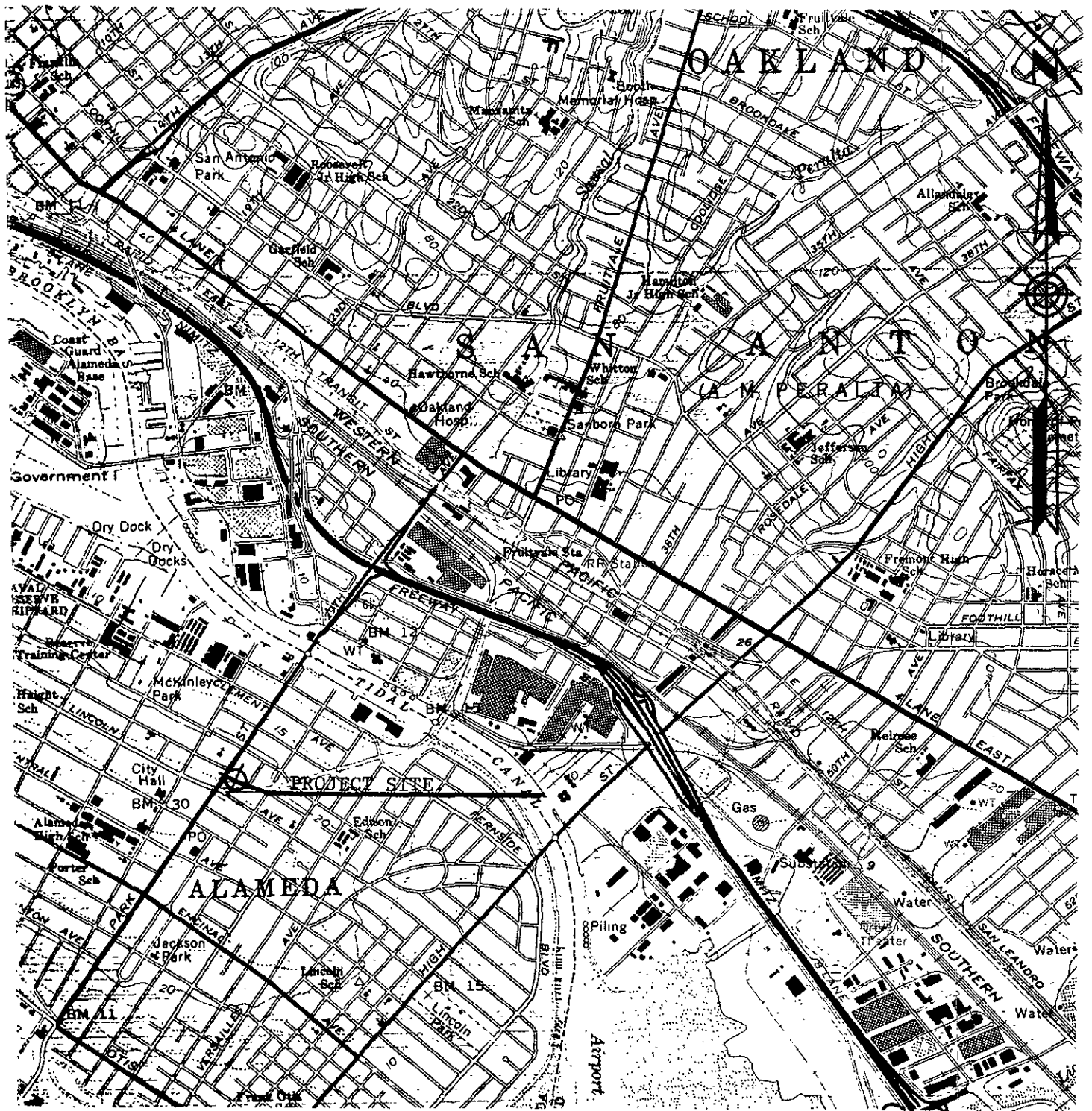
This report provides neither certification nor guarantee that the property is free of hazardous substance contamination.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the published information prepared by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

Geo Plexus, Incorporated



GOOD CHEVROLET		
DATE	SCALE	DRAWN BY
10-9-92	1"=2000'	dgc
LOCATION MAP		
		Figure 1

MW-3

GOOD CHEVROLET
SHOW ROOM

EB5

MW-2

EB4

APPROXIMATE
LIMITS OF
PREVIOUS
EXCAVATION

SB4

EB6

EB3

APPROXIMATE
LOCATION OF
FORMER
STORAGE
TANKS

MW-1

EB2

EB1

PROPERTY FENCE LINE

SERVICE CENTER

EB7

GOOD CHEVROLET		
DATE 10/25/93	SCALE 1"=10'	DRAWN BY dgc
SITE PLAN		
		Figure 2

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

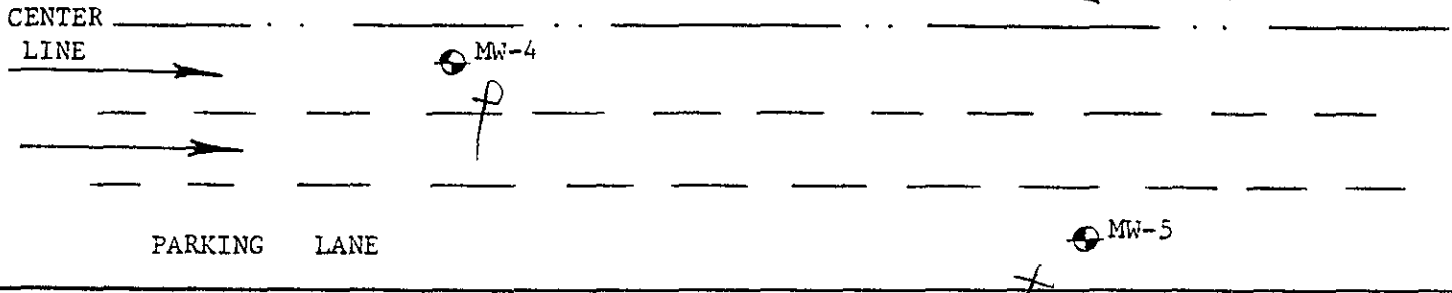
APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

- ⊕ Monitoring Wells
- Borings Previous Studies
- ⊙ Borings Previous Study 1/97

GeoPlexus, Inc.

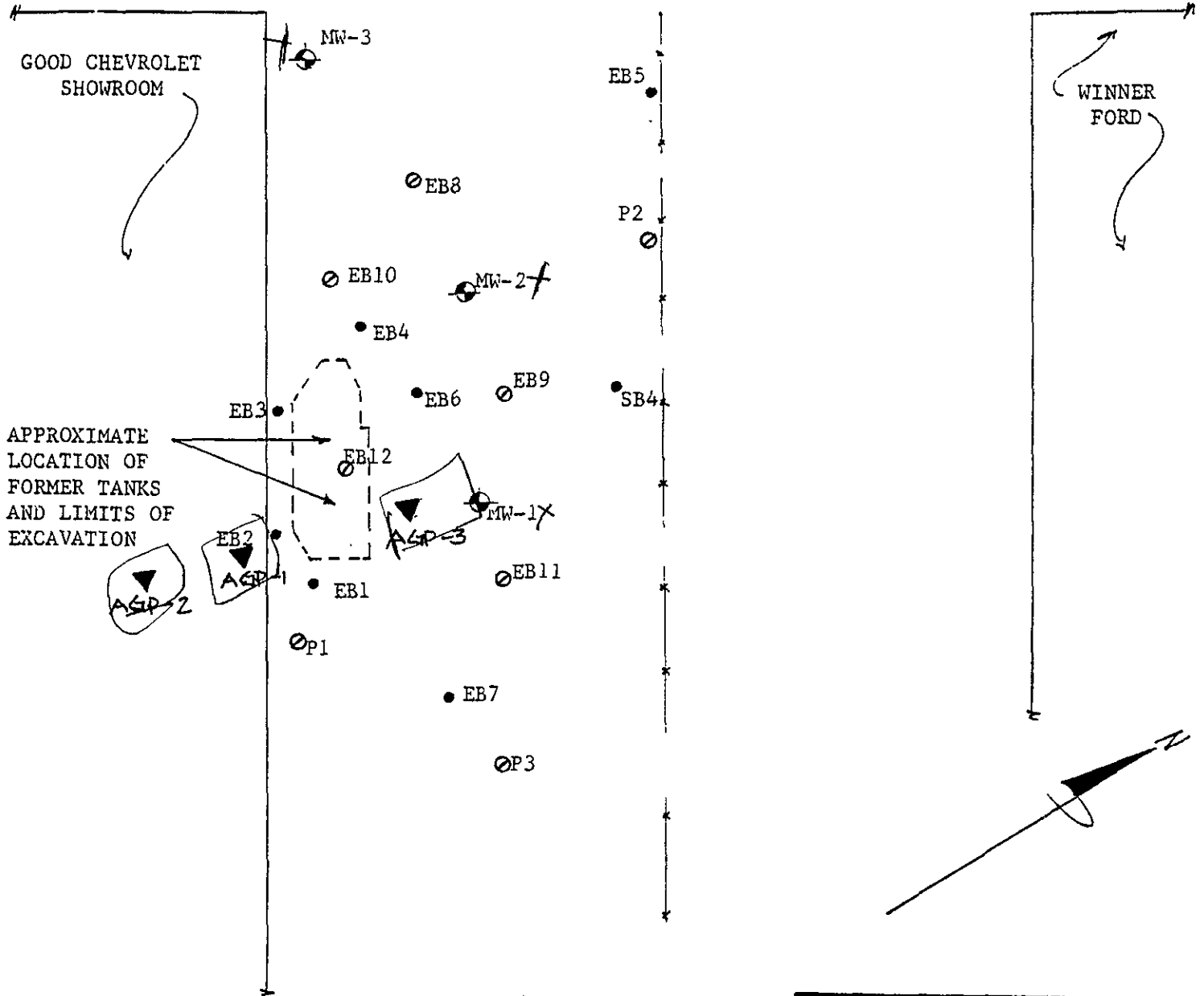
GOOD CHEVROLET		
DATE 12/5/98	SCALE 1"=20'	DRAWN BY dgc
BORING LOCATION PLAN		
		Figure 3

ARROW INDICATES DIRECTION OF TRAFFIC FLOW



SIDEWALK

SIDEWALK



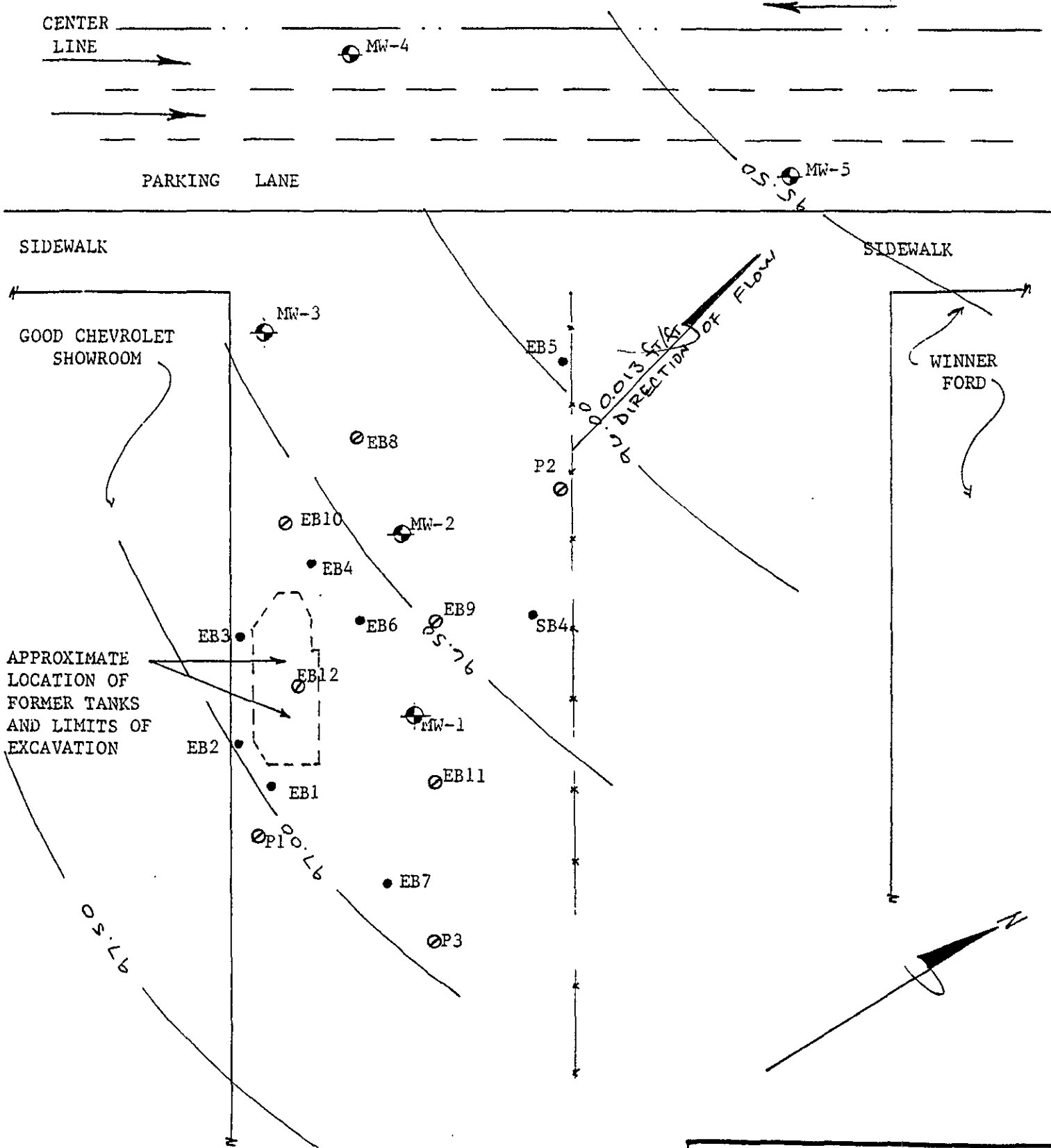
APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

- ⊕ Monitoring Wells
- Borings Previous Studies
- Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE 12/5/98	SCALE 1"=20'	DRAWN BY dgc
SOIL GAS PROBE LOCATION PLAN		
		Figure 4

ARROW INDICATES DIRECTION OF TRAFFIC FLOW



APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

- ⊕ Monitoring Wells
- Borings Previous Studies
- Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE 12-5-98	SCALE 1"=20'	DRAWN BY dcb
GROUNDWATER GRADIENT PLAN		
		Figure 5

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE
PARKING LANE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

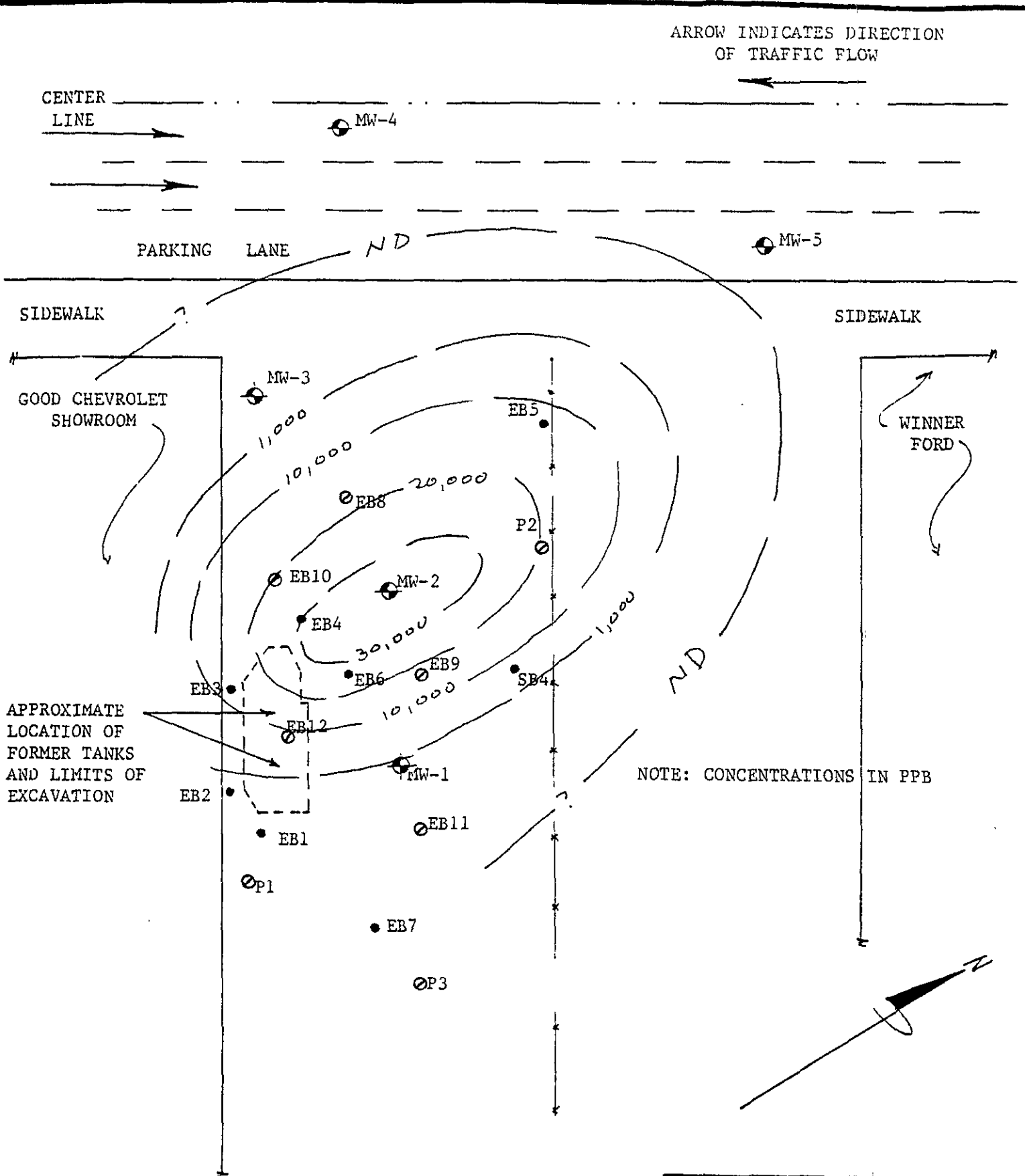
APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

NOTE: CONCENTRATIONS IN PPB

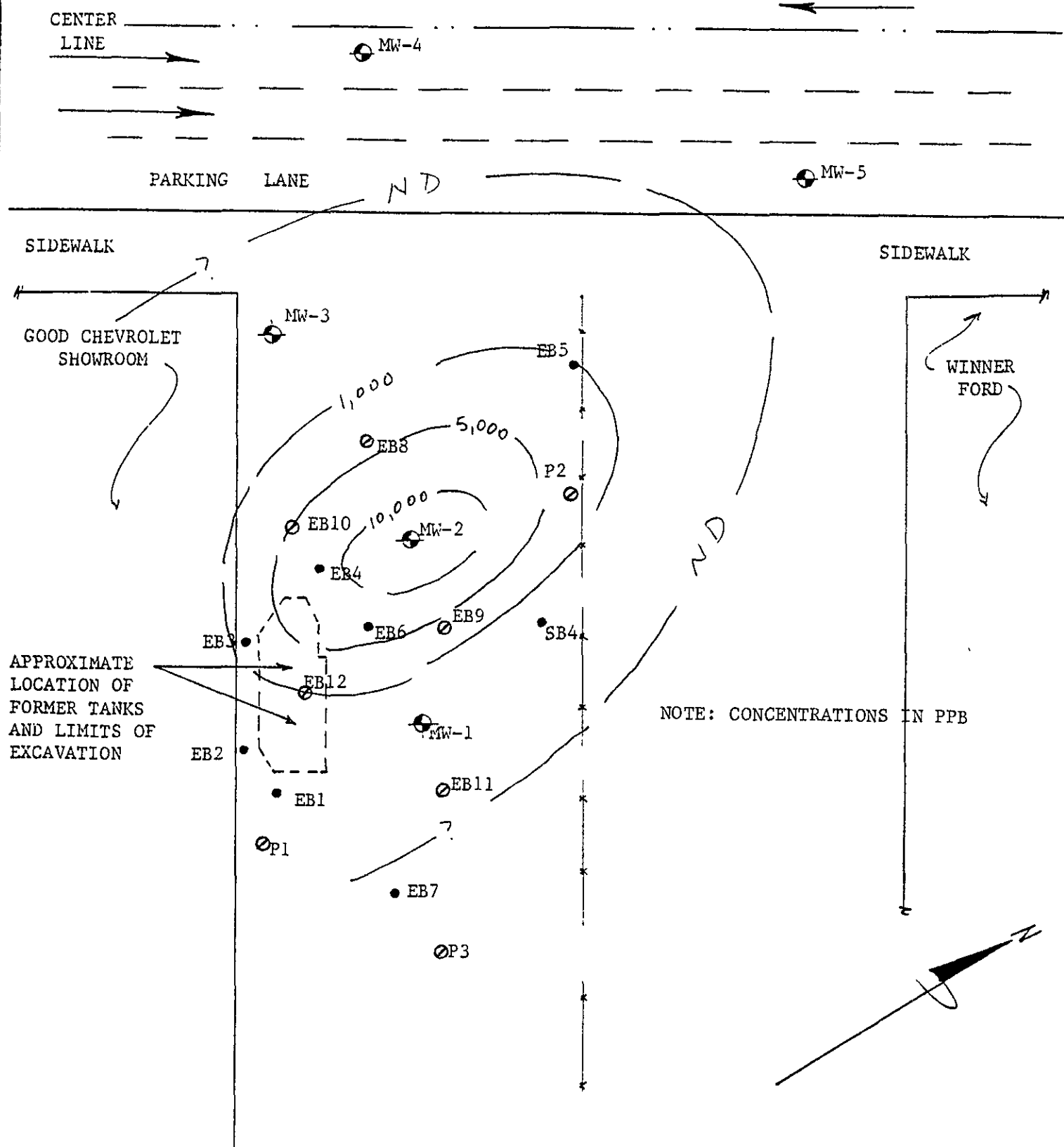
- ⊕ Monitoring Wells
- Borings Previous Studies
- ⊙ Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE 12-5-98	SCALE 1"=20'	DRAWN BY dcg
TPHgas IN GROUND WATER		
Figure 6		



ARROW INDICATES DIRECTION OF TRAFFIC FLOW



APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

NOTE: CONCENTRATIONS IN PPB

- ⊕ Monitoring Wells
- Borings Previous Studies
- Borings Previous Study 1/97

GeoPlexus, Inc.

GOOD CHEVROLET		
DATE 12-6-98	SCALE 1"=20'	DRAWN BY dcg
BENZENE IN GROUND WATER		
Figure 7		

APPENDIX A
CHAIN-OF-CUSTODY FORM
AND
ANALYTICAL TEST DATA

@AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9811243

Work Order Summary

CLIENT: Ms. Cathrene Glick
GeoPlexus
1900 Wyett Drive, Suite #1
Santa Clara, CA 95054

BILL TO: Same

PHONE: 408-987-0210
FAX: 408-988-0815
DATE RECEIVED: 11/13/98
DATE COMPLETED: 11/30/98

P.O. # NR
PROJECT # C93013 Good Chevrolet

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	AGP1 21018	TO-3	4.5 "Hg
02A	AGP2 12365	TO-3	20.5 "Hg
03A	AGP3 24403	TO-3	24.5 "Hg
04A	Lab Blank	TO-3	NA

LAB NARRATIVE:

Compounds detected between the detection limit and the low point on the curve are "J" flagged.

CERTIFIED BY: *Amal J. Fuman*
Laboratory Director

DATE: 12/3/98

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : AGP1 21018

ID#: 9811243-01A

EPA Method TO-3 GC/PID/FID

File Name:	6112419	Date of Collection:	11/12/98
Dil. Factor:	2.38	Date of Analysis:	11/24/98

Compound	Det. Limit (ppmv)	Det. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0024	0.0077	0.012	0.038
Toluene	0.0024	0.0091	0.030	0.11
Ethyl Benzene	0.0024	0.011	0.0041 J	0.018 J
Total Xylenes	0.0024	0.011	0.022 J	0.096 J
Methyl tert-Butyl Ether	0.0024	0.0087	0.0058 J	0.021 J
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.024	0.099	0.46 B	1.9 B
C2-C4 Hydrocarbons ref. to Gasoline	0.024	0.044	0.029 J	0.053 J

B = Compound present in laboratory blank, background subtraction not performed.

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Fluorobenzene (PID)	86	50-150
Fluorobenzene (FID)	96	50-150

AIR TOXICS LTD.

SAMPLE NAME : AGP2 12365

ID#: 9811243-02A

EPA Method TO-3 GC/PID/FID

File Name:	6112420	Date of Collection:	11/12/98
Dil. Factor:	6.38	Date of Analysis:	11/24/98

Compound	Det. Limit (ppmv)	Det. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0064	0.021	0.011 J	0.036 J
Toluene	0.0064	0.024	0.091	0.35
Ethyl Benzene	0.0064	0.028	0.011 J	0.050 J
Total Xylenes	0.0064	0.028	0.055 J	0.24 J
Methyl tert-Butyl Ether	0.0064	0.023	0.032	0.12
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.064	0.27	0.73 B	3.0 B
C2-C4 Hydrocarbons ref. to Gasoline	0.064	0.12	Not Detected	Not Detected

B = Compound present in laboratory blank, background subtraction not performed.

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Fluorobenzene (PID)	99	50-150
Fluorobenzene (FID)	108	50-150

AIR TOXICS LTD.

SAMPLE NAME : AGP3 24403

ID#: 9811243-03A

EPA Method TO-3 GC/PID/FID

File Name:	6112421	Date of Collection:	11/12/98
Dil. Factor:	11.0	Date of Analysis:	11/24/98

Compound	Det. Limit (ppmv)	Det. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.011	0.036	Not Detected	Not Detected
Toluene	0.011	0.042	0.045 J	0.17 J
Ethyl Benzene	0.011	0.049	0.013 J	0.056 J
Total Xylenes	0.011	0.049	0.020 J	0.090 J
Methyl tert-Butyl Ether	0.011	0.040	0.014 J	0.053 J
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.11	0.46	0.42 J,B	1.7 J,B
C2-C4 Hydrocarbons ref. to Gasoline	0.11	0.20	Not Detected	Not Detected

B = Compound present in laboratory blank, background subtraction not performed.

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Fluorobenzene (PID)	100	50-150
Fluorobenzene (FID)	109	50-150

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9811243-04A

EPA Method TO-3 GC/PID/FID

File Name:	6112404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/24/98

Compound	Det. Limit (ppmv)	Det. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0044	Not Detected	Not Detected
Total Xylenes	0.0010	0.0044	Not Detected	Not Detected
Methyl tert-Butyl Ether	0.0010	0.0037	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.010	0.042	0.017 J	0.071 J
C2-C4 Hydrocarbons ref. to Gasoline	0.010	0.018	Not Detected	Not Detected

J = Estimated value.

Container Type: NA

Surrogates	% Recovery	Method Limits
Fluorobenzene (PID)	87	50-150
Fluorobenzene (FID)	95	50-150

APPENDIX B
CHAIN-OF-CUSTODY FORM
AND
ANALYTICAL TEST DATA



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Geo Plexus, Inc. 1900 Wyatt Drive, Suite 1 Santa Clara, CA 95054	Client Project ID: #C93013; Good Chevrolet	Date Sampled: 11/12/98
	Client Contact: Cathrene Glick	Date Received: 11/13/98
	Client P.O:	Date Analyzed: 11/13-11/18/98
		Date Extracted: 11/13/98

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	Ethylbenzene	Xylenes	% Recovery Surrogate
98589	MW1-WS1A,B	W	1000,a	ND<30	280	3.0	3.3	7.9	104
98590	MW2-WS1A,B	W	31,000,a	ND<900	11,000	750	1500	2300	95
98591	MW3-WS1A,B	W	180,c	ND<20	44	0.51	ND	0.92	94
98592	MW5-WS1A,B	W	ND	ND	2.2	ND	ND	ND	91
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	0.5	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	0.005	

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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/13/98-11/14/98

Matrix: SOIL

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample (#95603)	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.788	1.761	2.03	88	87	1.5
Benzene	0.000	0.208	0.208	0.2	104	104	0.0
Toluene	0.000	0.210	0.214	0.2	105	107	1.9
Ethylbenzene	0.000	0.212	0.212	0.2	106	106	0.0
Xylenes	0.000	0.638	0.640	0.6	106	107	0.3
TPH(diesel)	0	331	331	300	110	110	0.1
TRPH (oil and grease)	0.0	19.3	19.6	20.8	93	94	1.5

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

APPENDIX C

ASTM RBCA TIER-1 DATA

Output Table 1

Site Name: Good Chevrolet
 Site Location: 1630 Park Street, Alameda, CA
 Job Identification: 12/10/98
 Date Completed: Completed By: Cathrene Glick

Software: GSI RBCA Spreadsheet
 Version: v 1 0

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined

DEFAULT PARAMETERS

Exposure Parameter	Definition (Units)	Residential			Commercial/Industrial	
		Adult	(1-6yrs)	(1-16 yrs)	Chronic	Constructn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (l/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing rate (mg-yr/kg-d)	1 1E+02			9 4E+01	
IRa in	Inhalation rate indoor (m ³ /day)	15			20	
IRa out	Inhalation rate outdoor (m ³ /day)	20			20	10
SA	Skin surface area (dermal) (cm ²)	5 8E+03		2 0E+03	5 8E+03	5 8E+03
SAadj	Adjusted dermal area (cm ² -yr/kg)	2 1E+03			1 7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	<u>TRUE</u>			<u>TRUE</u>	
AAFd	Age adjustment on skin surface area	<u>TRUE</u>			<u>TRUE</u>	
tox	Use EPA tox data for air (or PEL based)	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways	Residential			Commercial/Industrial	
	Chronic	Constructn		Chronic	Constructn
Groundwater Pathways:					
GW i	Groundwater Ingestion	TRUE		TRUE	
GW v	Volatilization to Outdoor Air	TRUE		TRUE	
GW b	Vapor Intrusion to Buildings	FALSE		TRUE	
Soil Pathways					
S v	Volatiles from Subsurface Soils	TRUE		TRUE	
SS v	Volatiles and Particulate Inhalation	TRUE		TRUE	TRUE
SS d	Direct Ingestion and Dermal Contact	FALSE		TRUE	TRUE
S l	Leaching to Groundwater from all Soils	TRUE		TRUE	
S b	Intrusion to Buildings - Subsurface Soils	FALSE		TRUE	

Matrix of Receptor Distance and Location on- or off-site	Residential			Commercial/Industrial	
	Distance	On-Site		Distance	On-Site
GW	Groundwater receptor (cm)	4 6E+04	FALSE		TRUE
S	Inhalation receptor (cm)	4 6E+04	FALSE		TRUE

Matrix of Target Risks	Residential	
	Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	<u>1.0E-04</u> 1 0E-04
TRc	Target Risk (class C carcinogens)	<u>1.0E-04</u> 1 0E+00
THQ	Target Hazard Quotient	1 0E+00 1 0E+00
Opt	Calculation Option (1, 2, or 3)	3
Tier	RBCA Tier	2

Surface Parameters	Definition (Units)	Commercial/Industrial		
		Residential	Chronic	Construction
t	Exposure duration (yr)	30	25	1
A	Contaminated soil area (cm ²)	<u>6.5E+06</u>		<u>9.3E+05</u>
W	Length of affected soil parallel to wind (cm)	<u>2.4E+03</u>		<u>1.5E+03</u>
W gw	Length of affected soil parallel to groundwater (c)	<u>3.0E+03</u>		
Uair	Ambient air velocity in mixing zone (cm/s)	2 3E+02		
delta	Air mixing zone height (cm)	2 0E+02		
Lss	Definition of surficial soils (cm)	<u>9.1E+01</u>		
Pe	Particulate areal emission rate (g/cm ² /s)	2 2E-10		

Groundwater Parameters	Definition (Units)	Value
delta gw	Groundwater mixing zone depth (cm)	<u>2.6E+02</u>
l	Groundwater infiltration rate (cm/yr)	<u>1.5E+01</u>
Ugw	Groundwater Darcy velocity (cm/yr)	<u>1.5E+03</u>
Ugw tr	Groundwater Transport velocity (cm/yr)	6 6E+03
Ks	Saturated Hydraulic Conductivity (cm/s)	
grad	Groundwater Gradient (cm/cm)	
Sw	Width of groundwater source zone (cm)	
Sd	Depth of groundwater source zone (cm)	
BC	Biodegradation Capacity (mg/L)	
BIO?	Is Bioattenuation Considered	TRUE
phi eff	Effective Porosity in Water-Bearing Unit	3.8E-01
foc sat	Fraction organic carbon in water-bearing unit	1 0E-03

Soil Parameters	Definition (Units)	Value
hc	Capillary zone thickness (cm)	<u>4.6E+00</u>
hv	Vadose zone thickness (cm)	<u>2.4E+02</u>
rho	Soil density (g/cm ³)	1 7
foc	Fraction of organic carbon in vadose zone	0 01
phi	Soil porosity in vadose zone	0 38
lgw	Depth to groundwater (cm)	<u>2.4E+02</u>
Ls	Depth to top of affected soil (cm)	<u>9.1E+01</u>
Lsubs	Thickness of affected subsurface soils (cm)	<u>3.7E+02</u>
pH	Soil/groundwater pH	6 5
		capillary vadose foundation
phi w	Volumetric water content	0 342 0 12 0 12
phi a	Volumetric air content	0 038 0 26 0 26

Building Parameters	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s ⁻¹)	1 4E-04	2 3E-04
Lcrk	Foundation crack thickness (cm)	1 5E+01	
ela	Foundation crack fraction	0 01	

Dispersive Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersion coefficient (cm)		
ay	Transverse dispersion coefficient (cm)		
az	Vertical dispersion coefficient (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

Toxicity Data

CAS Number	Constituent	Reference Dose (mg/kg/day)				Slope Factors 1/(mg/kg/day)				EPA Weight of Evidence	Is Constituent Carcinogenic ?
		Oral RfD_oral	ref	Inhalation RfD_inhal	re	Oral SF_oral	ref	Inhalation SF_inhal	ref		
71-43-2	Benzene	-	R	1.70E-03	R	2.90E-02	A	2.90E-02	A	A	TRUE
100-41-4	Ethylbenzene	1.00E-01	A	2.86E-01	A	-	R	-	R	D	FALSE
1634-04-4	Methyl t-Butyl Ether	5.00E-03	R	8.57E-01	R	-	R	-	R	D	FALSE
108-88-3	Toluene	2.00E-01	A,R	1.14E-01	,	-	R	-	R	D	FALSE
1330-20-7	Xylene (mixed isomers)	2.00E+00	A,R	2.00E+00	A	-	R	-	R	D	FALSE

Site Name: Good Chevrol Site Location: 1630 Park Street, Ala Completed By: Cathrene Glick Date Completed: 12/10/1998

Physical Property Data

CAS Number	Constituent	type	Molecular Weight		Diffusion Coefficients				log (Koc) or log(Kd)		Henry's Law Constant		Vapor Pressure		Solubility		acid pKa	base pKb
			(g/mole)	ref	in air (cm2/s)	in water (cm2/s)	Dair	re	Dwat	re	(@ 20 - 25 C) (l/kg)	Koc	ref	(@ 20 - 25 C) (atm-m3/mol)	(unitless)	(@ 20 - 25 C) (mm Hg)		
71-43-2	Benzene	A	78.1	5	9.30E-02	A	1.10E-05	A	1.58	A	5.29E-03	2.20E-01	A	9.52E+01	4	1.75E+03	A	
100-41-4	Ethylbenzene	A	106.2	5	7.60E-02	A	8.50E-06	A	1.98	A	7.69E-03	3.20E-01	A	1.00E+01	4	1.52E+02	5	
1634-04-4	Methyl t-Butyl Ether	O	88	146	5	7.92E-02	6	9.41E-05	7	1.08	A	5.77E-04	2.40E-02	A	2.49E+02	4.80E+04	A	
108-88-3	Toluene	A	92.4	5	8.50E-02	A	9.40E-06	A	2.13	A	6.25E-03	2.60E-01	A	3.00E+01	4	5.15E+02	29	
1330-20-7	Xylene (mixed isomers)	A	106.2	5	7.20E-02	A	8.50E-06	A	2.38	A	6.97E-03	2.90E-01	A	7.00E+00	4	1.98E+02	5	

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Al Completed By: Cathrene Glick

Date Completed: 12/10/1998

Miscellaneous Chemical Data

CAS Number	Constituent	Maximum Contaminant Level		Permissible Exposure Limit PEL/TLV		Relative Absorption Factors		Detection Limits			Half Life (First-Order Decay)			
		MCL (mg/L)	reference	(mg/m ³)	ref	Oral	Dermal	Groundwater (mg/L)	Soil (mg/kg)	ref	re	Saturated	Unsaturated	ref
71-43-2	Benzene	5.00E-03	52 FR 25690	3.20E+00	OSHA	1	0.5	0.002	C	0.005	S	720	720	H
100-41-4	Ethylbenzene	7.00E-01	6 FR 3526 (30 Jan 91)	4.34E+02	ACGIH	1	0.5	0.002	C	0.005	S	228	228	H
1634-04-4	Methyl t-Butyl Ether			1.44E+02	ACGIH	1	0.5					360	360	H
108-88-3	Toluene	1.00E+00	6 FR 3526 (30 Jan 91)	1.47E+02	ACGIH	1	0.5	0.002	C	0.005	S	28	28	H
1330-20-7	Xylene (mixed isomers)	1.00E+01	6 FR 3526 (30 Jan 91)	4.34E+02	ACGIH	1	0.5	0.005	C	0.005	S	360	360	H

Site Name: Good Chevron Site Location: 1630 Park Street, Alameda, CA

Completed By: Cathrene Glick Date Completed: 12/10/1998

CONSTITUENT MOLE FRACTIONS

(Complete the following table)

CONSTITUENT	Mole Fraction of Constituent in Source Material
Benzene	
Ethylbenzene	
Methyl t-Butyl Ether	
Toluene	
Xylene (mixed isomers)	

Site Name: Good Chevrolet

Completed By: Cathrene Glick

Site Location: 1630 Park Street, Alameda Date Completed: 12/10/1998



EXPOSURE LIMITS IN GROUNDWATER AND AIR

CONSTITUENT	Exposure Limits Applied to Receptors	
	Groundwater (MCL) (mg/L)	Air (Comm. only) (PEL/TLV) (mg/m ³)
Benzene		
Ethylbenzene		
Methyl t-Butyl Ether		
Toluene		
Xylene (mixed isomers)		

Site Name: Good Chevrolet
Site Location: 1630 Park Street, Alameda, CA

Completed By: Cathrene Glick
Date Completed: 12/10/1998

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

Representative COC Concentration

CONSTITUENT	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	4.5E+0		7.1E-2		8.6E+0	
Ethylbenzene	5.7E-1		2.6E-2		5.1E+1	
Methyl t-Butyl Ether	2.0E-2		1.0E-2		3.1E+0	
Toluene	4.5E-1		5.2E-2		9.0E+1	
Xylene (mixed isomers)	1.0E+0		7.4E-2		2.3E+2	

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA

Completed By: Cathrene Glick

Date Completed: 12/10/1998

CONSTITUENT HALF-LIFE VALUES

(Complete the following table)

CONSTITUENT	Half-Life of Constituent (day)
Benzene	720
Ethylbenzene	228
Methyl t-Butyl Ether	360
Toluene	28
Xylene (mixed isomers)	360

Site Name: Good Chevrolet

Completed By: Cathrene Glick

Site Location: 1630 Park Street, Alameda Date Completed: 12/10/1998

GROUNDWATER DAF VALUES

(Enter DAF values in the grey area of the following table)

Dilution Attenuation Factor
(DAF) in Groundwater

CONSTITUENT	Residential	Comm./Ind.
	Receptor	Receptor
Benzene	1.0E+0	1.0E+0
Ethylbenzene	1.0E+0	1.0E+0
Methyl t-Butyl Ether	1.0E+0	1.0E+0
Toluene	1.0E+0	1.0E+0
Xylene (mixed isomers)	1.0E+0	1.0E+0

Site Name: Good Chevrolet

Completed By: Cathrene Glick

Site Location: 1630 Park Street, Alameda, CA

Date Completed: 12/10/1998

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA Completed By: Cathrene Glick

Date Completed: 12/10/1998

1 OF 6

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

AIR EXPOSURE PATHWAYS

 (CHECKED IF PATHWAY IS ACTIVE)SURFACE SOILS: VAPOR AND
DUST INHALATION

Exposure Concentration

Constituents of Concern	1) Source Medium		2) NAF Value (m ³ /kg) Receptor		3) Exposure Medium Air: POE Conc (mg/m ³) (1) / (2)		4) Exposure Multiplier (IR×ET×EF×ED)/(BW×AT) (m ³ /kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
	Surface Soil Conc (mg/kg)		On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential
	Benzene	7.1E-2		9.3E+4	1.1E+5	7.6E-7	6.3E-7	7.0E-2	1.2E-1	5.3E-8
Ethylbenzene	2.6E-2		9.3E+4	1.1E+5	2.8E-7	2.3E-7	2.0E-1	2.7E-1	5.4E-8	6.4E-8
Methyl t-Butyl Ether	1.0E-2		9.3E+4	1.1E+5	1.1E-7	8.9E-8	2.0E-1	2.7E-1	2.1E-8	2.4E-8
Toluene	5.2E-2		9.3E+4	1.1E+5	5.6E-7	4.6E-7	2.0E-1	2.7E-1	1.1E-7	1.3E-7
Xylene (mixed isomers)	7.4E-2		9.3E+4	1.1E+5	7.9E-7	6.6E-7	2.0E-1	2.7E-1	1.5E-7	1.8E-7

NOTE

ABS = Dermal absorption factor (dim)
 AF = Adherence factor
 AT = Averaging time (days)

BW = Body Weight (kg)
 CF = Units conversion factor
 ED = Exp duration (yrs)

EF = Exposure frequency (days/yr)
 ET = Exposure time (hrs/day)
 IR = Intake rate (L/day or mg/day)

POE = Point of exposure
 SA = Skin surface area (cm²)

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA Completed By: Cathrene Glick

Date Completed: 12/10/1998

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TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

AIR EXPOSURE PATHWAYS: (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS: VAPOR INHALATION	Exposure Concentration										TOTAL PATHWAY INTAKE (mg/kg-day)	
	1) Source Medium	2) NAF Value (m ³ /kg) Receptor		3) Exposure Medium Air POE Conc. (mg/m ³) (1) / (2)		4) Exposure Multiplier (IR x ET x EF x ED) / (BW x AT) (m ³ /kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)		(Sum Intake values from surface & subsurface routes.)		
	Subsurface Soil Conc. (mg/kg)	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	
Benzene	8.6E+0	2.3E+4	2.8E+4	3.7E-4	3.0E-4	7.0E-2	1.2E-1	2.6E-5	3.6E-5	2.6E-5	3.6E-5	
Ethylbenzene	5.1E+1	2.3E+4	2.8E+4	2.2E-3	1.8E-3	2.0E-1	2.7E-1	4.3E-4	5.0E-4	4.3E-4	5.0E-4	
Methyl t-Butyl Ether	3.1E+0	2.3E+4	2.8E+4	1.3E-4	1.1E-4	2.0E-1	2.7E-1	2.6E-5	3.0E-5	2.6E-5	3.0E-5	
Toluene	9.0E+1	2.3E+4	2.8E+4	3.8E-3	3.2E-3	2.0E-1	2.7E-1	7.5E-4	8.8E-4	7.5E-4	8.8E-4	
Xylene (mixed isomers)	2.3E+2	2.3E+4	2.8E+4	1.0E-2	8.3E-3	2.0E-1	2.7E-1	2.0E-3	2.3E-3	2.0E-3	2.3E-3	

NOTE. ABS = Dermal absorption factor (dim)
AF = Adherence factor
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day or mg/day)

POE = Point of exposure
SA = Skin surface area (cm²)

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda Completed By: Cathrene Glick

Date Completed: 12/10/1998

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TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS: (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

Exposure Concentration

Constituents of Concern	1) Source Medium	4) Exposure Multiplier (SA×AF×ABS×CF×EF×ED)/(BW×AT) (1/day)		5) Average Daily Intake Rate (mg/kg-day)	
	Surface Soil Conc (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Benzene	7.1E-2		8.2E-6		5.8E-7
Ethylbenzene	2.6E-2		2.3E-5		5.9E-7
Methyl t-Butyl Ether	1.0E-2		2.3E-5		2.3E-7
Toluene	5.2E-2		2.3E-5		1.2E-6
Xylene (mixed isomers)	7.4E-2		2.3E-5		1.7E-6

NOTE

ABS = Dermal absorption factor (dim)

AF = Adherence factor

AT = Averaging time (days)

BW = Body Weight (kg)

CF = Units conversion factor

ED = Exp duration (yrs)

EF = Exposure frequency (days/yr)

ET = Exposure time (hrs/day)

IR = Intake rate (L/day or mg/day)

POE = Point of exposure

SA = Skin surface area (cm²)

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA Completed By: Cathrene Glick Date Completed: 12/10/1998

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TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS [CHECKED IF PATHWAY IS ACTIVE]

SURFACE SOILS OR SEDIMENTS:

INGESTION

Exposure Concentration

1) Source Medium

4) Exposure Multiplier
(IRxCxExED)/(BWxAT) (1/day)5) Average Daily Intake Rate
(mg/kg-day)

TOTAL PATHWAY INTAKE (mg/kg-day)

(Sum Intake values from
dermal & ingestion routes.)

Constituents of Concern

Surface Soil Conc (mg/kg)

On-Site Residential

On-Site Commercial

On-Site Residential

On-Site Commercial

On-Site Residential

On-Site Commercial

Benzene

7.1E-2

9.2E-7

6.5E-8

6.5E-7

Ethylbenzene

2.6E-2

2.6E-6

6.7E-8

6.6E-7

Methyl t-Butyl Ether

1.0E-2

2.6E-6

2.6E-8

2.5E-7

Toluene

5.2E-2

2.6E-6

1.3E-7

1.3E-6

Xylene (mixed isomers)

7.4E-2

2.6E-6

1.9E-7

1.9E-6

NOTE

ABS = Dermal absorption factor (dim)

BW = Body Weight (kg)

EF = Exposure frequency (days/yr)

POE = Point of exposure

AF = Adherence factor

CF = Units conversion factor

ET = Exposure time (hrs/day)

SA = Skin surface area (cm²)

AT = Averaging time (days)

ED = Exp duration (yrs)

IR = Intake rate (L/day or mg/day)

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA Completed By: Cathrene Glick

Date Completed: 12/10/1998

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TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS (CHECKED IF PATHWAY IS ACTIVE)SOIL: LEACHING TO GROUNDWATER/
INGESTION

Exposure Concentration

Constituents of Concern	1) Source Medium		2) NAF Value (L/kg) Receptor		3) Exposure Medium Groundwater = Soil (mg/L) (1)/(2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day)		5) Average Daily Intake Rate (mg/kg-day)	
	Soil Concentration (mg/kg)		On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential
	Benzene	8.6E+0		4.6E+0	4.6E+0	1.9E+0	1.9E+0	3.5E-3	1.2E-2	6.5E-3
Ethylbenzene	5.1E+1		1.0E+1	1.0E+1	5.0E+0	5.0E+0	9.8E-3	2.7E-2	4.9E-2	1.4E-1
Methyl t-Butyl Ether	3.1E+0		1.8E+0	1.8E+0	1.7E+0	1.7E+0	9.8E-3	2.7E-2	1.6E-2	4.6E-2
Toluene	9.0E+1		1.4E+1	1.4E+1	6.5E+0	6.5E+0	9.8E-3	2.7E-2	6.4E-2	1.8E-1
Xylene (mixed isomers)	2.3E+2		2.4E+1	2.4E+1	9.8E+0	9.8E+0	9.8E-3	2.7E-2	9.6E-2	2.7E-1

NOTE AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp duration (yrs)EF = Exposure frequency (days/yr)
IR = Intake rate (L/day)

POE = Point of exposure

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, CA Completed By: Cathrene Glick

Date Completed: 12/10/1998

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TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS: (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration						4) Exposure Multiplier (IRxEFxED)/(BWxAT) (U/kg-day)				5) Average Daily Intake Rate (mg/kg-day)		MAX. PATHWAY INTAKE (mg/kg-day) <i>(Maximum Intake of active pathways soil leaching & groundwater routes.)</i>	
	1) Source Medium		2) NAF Value (dim) Receptor		3) Exposure Medium Groundwater: POE Conc. (mg/L) (1)/(2)		Off-Site Residential		Off-Site Residential		On-Site Commercial		Off-Site Residential	
	Groundwater Concentration (mg/L)	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	
Benzene	4.5E+0	1.0E+0	1.0E+0	4.5E+0	4.5E+0	3.5E-3	1.2E-2	1.6E-2	5.3E-2	1.6E-2	5.3E-2	1.6E-2	5.3E-2	
Ethylbenzene	5.7E-1	1.0E+0	1.0E+0	5.7E-1	5.7E-1	9.8E-3	2.7E-2	5.5E-3	1.5E-2	4.9E-2	1.4E-1	4.9E-2	1.4E-1	
Methyl t-Butyl Ether	2.0E-2	1.0E+0	1.0E+0	2.0E-2	2.0E-2	9.8E-3	2.7E-2	2.0E-4	5.5E-4	1.6E-2	4.6E-2	1.6E-2	4.6E-2	
Toluene	4.5E-1	1.0E+0	1.0E+0	4.5E-1	4.5E-1	9.8E-3	2.7E-2	4.4E-3	1.2E-2	6.4E-2	1.8E-1	6.4E-2	1.8E-1	
Xylene (mixed isomers)	1.0E+0	1.0E+0	1.0E+0	1.0E+0	1.0E+0	9.8E-3	2.7E-2	1.0E-2	2.8E-2	9.6E-2	2.7E-1	9.6E-2	2.7E-1	

NOTE AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp duration (yrs)

EF = Exposure frequency (days/yr)
IR = Intake rate (L/day or mg/day)

POE = Point of exposure

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alamed Completed By: Calhrene Glick

Date Completed: 12/10/1998

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TIER 2 PATHWAY RISK CALCULATION

AIR EXPOSURE PATHWAYS: [CHECKED IF PATHWAYS ARE ACTIVE]

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK				TOXIC EFFECTS					
		(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Inhalation Slope Factor (mg/kg-day) ⁻¹	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
		On-Site Commercial	Off-Site Residential		On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential		On-Site Commercial	Off-Site Residential
Benzene	A	2.6E-5	3.6E-5	2.9E-2	7.4E-7	1.0E-6	7.2E-5	8.4E-5	1.7E-3	4.2E-2	4.9E-2
Ethylbenzene	D						4.3E-4	5.0E-4	2.9E-1	1.5E-3	1.7E-3
Methyl t-Butyl Ether							2.6E-5	3.0E-5	8.6E-1	3.0E-5	3.5E-5
Toluene	D						7.5E-4	8.8E-4	1.1E-1	6.6E-3	7.7E-3
Xylene (mixed isomers)	D						2.0E-3	2.3E-3	2.0E+0	9.8E-4	1.1E-3

Total Pathway Carcinogenic Risk = 7.4E-7 1.0E-6

Total Pathway Hazard Index = 5.1E-2 6.0E-2

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alameda, Completed By: Cathrene Glick

Date Completed: 12/10/1998

2 OF 3

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK				TOXIC EFFECTS					
		(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose	(7) Individual COC Hazard Quotient (5) / (6)	
		On-Site Residential	On-Site Commercial	(mg/kg-day) ⁻¹	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial	(mg/kg-day)	On-Site Residential	On-Site Commercial
Benzene	A		6.5E-7	2.9E-2		1.9E-8					
Ethylbenzene	D						6.6E-7	1.0E-1		6.6E-6	
Methyl t-Butyl Ether							2.5E-7	5.0E-3		5.1E-5	
Toluene	D						1.3E-6	2.0E-1		6.6E-6	
Xylene (mixed isomers)	D						1.9E-6	2.0E+0		9.4E-7	
Total Pathway Carcinogenic Risk =		0.0E+0		1.9E-8		Total Pathway Hazard Index =		0.0E+0		6.5E-5	

Site Name: Good Chevrolet

Site Location: 1630 Park Street, Alamed Completed By: Cathrene Glick

Date Completed: 12/10/1998

3 OF 3

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK					TOXIC EFFECTS					
		(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose	(7) Individual COC Hazard Quotient (5) / (6)		
		On-Site Commercial	Off-Site Residential	(mg/kg-day) ⁻¹	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	(mg/kg-day)	On-Site Commercial	Off-Site Residential	
Benzene	A	1.6E-2	5.3E-2	2.9E-2	4.6E-4	1.5E-3						
Ethylbenzene	D						4.9E-2	1.4E-1	1.0E-1	4.9E-1	1.4E+0	
Methyl 1-Butyl Ether							1.6E-2	4.6E-2	5.0E-3	3.3E+0	9.2E+0	
Toluene	D						6.4E-2	1.8E-1	2.0E-1	3.2E-1	8.9E-1	
Xylene (mixed isomers)	D						9.6E-2	2.7E-1	2.0E+0	4.8E-2	1.3E-1	

Total Pathway Carcinogenic Risk = 4.6E-4 1.5E-3

Total Pathway Hazard Index = 4.1E+0 1.2E+1

Site Name: Good Chevrolet

Completed By: Cathrene Glick

Site Location: 1630 Park Street, Alameda, CA

Date Completed: 12/10/1998

1 OF 1

**SURFACE SOIL SSTL VALUES
(< 3 FT BGS)**

Target Risk (Class A & B) 1.0E-4

 MCL exposure limit?

Calculation Option: 3

Target Risk (Class C) 1.0E-4

 PEL exposure limit?

Target Hazard Quotient 1.0E+0

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/kg)	Soil Leaching to Groundwater			Ingestion, Inhalation and Dermal Contact		Construction Worker	Applicable SSTL (mg/kg)	SSTL Exceeded ? *■* If yes	Required CRF
			X	Residential 1500 feet	Commercial (on-site)	Regulatory(MCL) (on-site)	X	Residential 1500 feet			
71-43-2	Benzene	7.1E-2	1.4E+0	4.5E+0	NA	>Res	3.5E+2	>Res	1.4E+0	<input type="checkbox"/>	<1
100-41-4	Ethylbenzene	2.6E-2	3.7E+1	1.0E+2	NA	>Res	>Res	>Res	3.7E+1	<input type="checkbox"/>	<1
1634-04-4	Methyl t-Butyl Ether	1.0E-2	3.4E-1	9.4E-1	NA	>Res	2.0E+2	2.4E+2	3.4E-1	<input type="checkbox"/>	<1
108-88-3	Toluene	5.2E-2	1.0E+2	2.8E+2	NA	>Res	>Res	>Res	1.0E+2	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	7.4E-2	>Res	>Res	NA	>Res	>Res	>Res	>Res	<input type="checkbox"/>	<1

Site Name: Good Chevrolet

Completed By: Cathrene Glick

Site Location: 1630 Park Street, Alameda, CA

Date Completed: 12/10/1998

1 OF 1

**SUBSURFACE SOIL SSTL VALUES
(> 3 FT BGS)**

Target Risk (Class A & B) 1.0E-4

 MCL exposure limit?

Calculation Option: 3

Target Risk (Class C) 1.0E-4

 PEL exposure limit?

Target Hazard Quotient 1.0E+0

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential 1500 feet	Commercial (on-site)	Regulatory (MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential 1500 feet	Commercial (on-site)	(mg/kg)	"■" if yes	Only if "yes" left
71-43-2	Benzene	8.6E+0	1.4E+0	4.5E+0	NA	NA	7.6E-1	1.7E+2	2.0E+2	7.6E-1	■	1.1E+01
100-41-4	Ethylbenzene	5.1E+1	3.7E+1	1.0E+2	NA	NA	1.3E+2	>Res	>Res	3.7E+1	■	1.0E+00
1634-04-4	Methyl t-Butyl Ether	3.1E+0	3.4E-1	9.4E-1	NA	NA	6.3E+2	>Res	>Res	3.4E-1	■	9.0E+00
108-88-3	Toluene	9.0E+1	1.0E+2	2.8E+2	NA	NA	5.4E+1	>Res	>Res	5.4E+1	■	2.0E+00
1330-20-7	Xylene (mixed isomers)	2.3E+2	>Res	>Res	NA	NA	>Res	>Res	>Res	>Res	□	<1

Site Name: Good Chevrolet
 Site Location: 1630 Park Street, Alameda, CA

Completed By: Cathrene Glick
 Date Completed: 12/10/1998

1 OF 1

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-4
 Target Risk (Class C) 1.0E-4
 Target Hazard Quotient 1.0E+0

MCL exposure limit?
 PEL exposure limit?

Calculation Option: 3

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded?	Required CRF
CAS No.	Name	(mg/L)	Residential 1500 feet	Commercial (on-site)	Regulatory(MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)	(mg/L)	<input type="checkbox"/> "If yes"	Only if "yes" left
71-43-2	Benzene	4.5E+0	2.9E-1	9.9E-1	NA	NA	1.2E+0	NA	1.8E+2	2.9E-1	<input checked="" type="checkbox"/>	1.5E+01
100-41-4	Ethylbenzene	5.7E-1	3.7E+0	1.0E+1	NA	NA	>Sol	NA	>Sol	3.7E+0	<input type="checkbox"/>	<1
1634-04-4	Methyl t-Butyl Ether	2.0E-2	1.8E-1	5.1E-1	NA	NA	3.6E+3	NA	>Sol	1.8E-1	<input type="checkbox"/>	<1
108-88-3	Toluene	4.5E-1	7.3E+0	2.0E+1	NA	NA	8.0E+1	NA	>Sol	7.3E+0	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	1.0E+0	7.3E+1	>Sol	NA	NA	>Sol	NA	>Sol	7.3E+1	<input type="checkbox"/>	<1

*Not a constituent
 12/10/98
 Cathrene Glick*