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Remedial Investigation Report
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9C.0 NATURAL ATTENUATION

PSC has evaluated the potential for natural attenuation of organic compounds to occur in conjunction with the evaluation of the fate and transport characteristics of select chemicals of potential concern (COPCs), including petroleum hydrocarbons, chlorinated ethenes, chlorinated ethanes, and chlorinated methanes. The purpose of this appendix is to provide an overview of the natural attenuation processes acting to reduce COPC concentrations in groundwater in the RI Study Area, as defined in Section 7. An understanding of these processes facilitates the interpretation of the nature and extent of groundwater contamination as well as the past and potential future fate and transport of the groundwater contamination. This appendix presents the following topics:

- a brief overview of the principles of natural attenuation
- the lines of evidence required to demonstrate that natural attenuation is occurring
- the scope of work for evaluation of natural attenuation during the RI
- the results of the natural attenuation evaluation for the RI Study Area
- a summary of the natural attenuation evaluation.

9C.1 *Overview of Natural Attenuation*

Natural attenuation is defined as "naturally occurring processes in the environment that act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants" (Waters et al. 1998). Natural attenuation processes include both non-destructive processes such as dilution, dispersion, sorption, barometric pumping, and volatilization; and destructive processes such as biodegradation, and to a lesser extent, abiotic, physical, and/or chemical transformations such as hydrolysis, photolysis, and direct oxidation. While all of these processes act to reduce COPC concentrations, only destructive processes reduce the mass of contaminants. Consequently, destructive processes are the focus of the natural attenuation evaluation for the RI. Specifically, for natural attenuation to be effective as a component of the final remedial action, biodegradation processes must be occurring, and at rates that will reduce the mass of contamination faster than the non-destructive natural attenuation processes. Therefore, the natural attenuation evaluation is focused on the lines of evidence that will indicate whether and to what extent biodegradation is occurring.

9C.2 *Biodegradation Processes*

Biodegradation is the process by which organic compounds are broken down into simpler compounds by naturally occurring microorganisms. Like many organisms, microbes obtain energy required for growth and activity through a series of coupled oxidation and reduction reactions, collectively described as reduction/oxidation (redox) reactions. Redox reactions involve the transfer of electrons from electron donor compounds to electron acceptor compounds, resulting in the release of energy. When a compound donates an electron, it is considered oxidized and when it accepts an electron, it is considered reduced. Electron donors are compounds in relatively reduced states, such as organic matter, petroleum hydrocarbons, chlorinated solvents, and dissolved hydrogen; while electron acceptors are compounds in relatively oxidized states such as dissolved oxygen, nitrate, ferric iron (Fe[III]), manganese (Mn[IV]), sulfate, and carbon dioxide.

The ability of microorganisms to break down organic compounds depends on the availability of electron acceptors and donors as well as the chemical condition of their environment. Organic compounds are biodegraded by four general mechanisms: oxidation, reduction, fermentation, and cometabolism. The organic compound can be used as an electron donor and oxidized, or can be used as an electron acceptor and reduced. The organic compound may also be used as both an electron acceptor and electron donor in a process called fermentation. These three reactions are considered to be "growth-promoting" reactions, as microbes obtain energy for growth by mediating these reactions. Finally, an organic compound may be broken down fortuitously by microbial extracellular enzymes produced for other purposes in a process called cometabolism. The microbe obtains no energy or source of carbon from the cometabolic reaction, and in some cases, the degradation products are actually harmful to the microbe (Wiedemeier et al. 1999). Cometabolic reactions may occur in the presence of simple aromatic ring compounds such as toluene or phenol, methane, ethane and other short-chained alkanes.

The redox potential of the groundwater dictates the dominant biodegradation mechanisms that occur. Redox potential is a measure of electron activity and indicates the relative tendency of a solution to accept or transfer electrons. Electron acceptors are used in order of decreasing oxidizing capacity, which indicates the amount of energy released when they are involved in a redox reaction. As the reserve of electron acceptors is depleted by microbial activity, the redox potential decreases indicating a reducing environment. Conversely, a high concentration of electron acceptors results in a high redox potential indicative of an oxidizing environment. Because oxygen is one of the most energetic electron acceptors, it is consumed first. As a result, redox potential can indicate whether the environment is aerobic or anaerobic.

After oxygen, the next most energetic electron acceptor is nitrate (NO_3^-), followed by ferric iron (Fe(III)), manganese (Mn(IV)), sulfate (SO_4^{3-}) and carbon dioxide (CO_2). Figure 9C-1 describes the reduction of each of these electron acceptors. The process of using nitrate as an electron acceptor is called denitrification and proceeds along the following pathway:

$$NO_3^- \rightarrow NO_2^- \rightarrow NO \rightarrow N_2O \rightarrow NH_4^+ \rightarrow N_2$$

Each reaction in the process is mediated by different microbes.

After available oxygen and nitrate have been depleted, biologically available Fe(III) and/or Mn(IV) can be used as electron acceptors resulting in iron/manganese reduction. Soluble ferrous iron (Fe[II]) results from the reduction of insoluble ferric iron (Fe[III]) whereas soluble manganese (Mn[II]) results from the reduction of insoluble Mn(IV).

After available oxygen and nitrate have been depleted, sulfate-reducing bacteria may be able to use sulfate as an electron acceptor resulting in the production of sulfide. Under the most reducing conditions, a process called methanogenesis can occur. Methanogenesis is the process by which carbon dioxide and/or acetate (CH_3COOH) act as an electron acceptor resulting in the production of methane (CH_4) and hydrogen. Methanogenesis is a two-step process in which an organic compound is fermented, first producing acetate and hydrogen:

$$\text{Organic compound} + H_2O \rightarrow CH_3COOH + H_2$$

Then acetate is used as an electron acceptor by a different organism and is transformed to methane and carbon dioxide:

$$CH_3COOH + e^- \rightarrow CH_4 + CO_2$$

$$CO_2 + e^- \rightarrow CH_4$$

The carbon dioxide also can be used as an electron acceptor resulting in the production of methane.

9C.2.1 Degradation Mechanisms

The primary groundwater COPCs in the RI Study Area, BTEX and chlorinated organic compounds, will be degraded via different mechanisms depending on the local redox conditions. The dominant biodegradation mechanisms for BTEX and chlorinated solvents include direct aerobic and anaerobic oxidation and reductive dechlorination. The conditions required for optimum biodegradation differ for each mechanism. Each mechanism and its required conditions are summarized in this section.

9C.2.1.1 *Direct Aerobic or Anaerobic Oxidation*

Under aerobic conditions, microbes can degrade contaminants through direct aerobic oxidation when an organic compound is used as an electron donor and oxygen is used as an electron acceptor. The microbe gains both energy and carbon from the reaction, and the contaminant is transformed. Similarly, these compounds also can be directly oxidized under anaerobic conditions when an alternate electron acceptor such as Fe(III) is used. This mechanism has been shown to be particularly effective for the biodegradation of petroleum hydrocarbons, 1,2-dichloroethane (1,2-DCA) and vinyl chloride, and may also be a significant degradation mechanism for dichloroethene (DCE) (Wiedemeier *et al.*, 1999). Direct oxidation requires the presence of external electron acceptors such as oxygen, nitrate, Fe(III), carbon dioxide, Mn(IV) and sulfate.

9C.2.1.2 *Reductive Dechlorination/Halorespiration*

Direct reduction is a significant biodegradation mechanism for a number of compounds, including most notably, highly chlorinated organic compounds such as tetrachloroethene (PCE), trichloroethene (TCE), carbon tetrachloride and 1,1,1-trichloroethane (1,1,1-TCA) (Wiedemeier *et al.*, 1999). In the reduction of chlorinated solvents, the solvent acts as an electron acceptor on which the chlorine atom is replaced by a hydrogen atom in a process called reductive dechlorination. Figure 7-4 shows the reductive dechlorination of PCE, to TCE which in turn is reductively dechlorinated to DCE and vinyl chloride and finally ethene. The biodegradation pathways of 1,1,1-TCA and carbon tetrachloride are also shown. Reductive dechlorination is thought to be the primary degradation mechanism for PCE, TCE and other highly chlorinated compounds. The rate of the reductive dechlorination reaction slows with the decreasing chlorination of the compound. However, the less chlorinated compounds such as vinyl chloride and ethene may also be degraded via oxidation. Reductive dechlorination requires a reducing environment in which oxygen and nitrate have been depleted and in which fermentation may occur in order to provide an adequate source of dissolved hydrogen.

9C.2.1.3 *Fermentation*

A number of organic compounds including petroleum hydrocarbons and naturally occurring organic matter can be degraded through a process called fermentation. Fermentation is a balanced redox reaction in which different portions of a single substrate are oxidized and reduced, yielding energy. Dissolved hydrogen is a by-product of the fermentation reaction. The energy released during fermentation is significantly less than that derived from oxidation reactions, and thus, fermentation does not typically occur until all external electron acceptors have been used. Field observations indicate that fermentation occurs at nearly all sites where BTEX is found in groundwater (Wiedemeier et al., 1999). Fermentation reactions require the presence of microbes which will utilize hydrogen to keep the hydrogen concentration sufficiently low so that the production of hydrogen is still an energetically favorable reaction.

9C.3 *Lines of Evidence for Evaluation of Natural Attenuation*

The potential for natural attenuation can be demonstrated using a variety of methods. One of the more common methods is by providing several lines of evidence which typically include (EPA 1998):

- Historical groundwater data showing decreasing concentrations of COPCs along the flow path indicating plume stabilization and COPC mass loss;
- Geochemical data showing that the conditions for biodegradation exist and that biodegradation is likely occurring; and
- Microbiological data showing that biota known to be responsible for biodegradation are present at the site.

The first line of evidence shows that the COPCs are being attenuated without distinguishing non-destructive from destructive processes. The second line of evidence shows that the conditions exist for biodegradation and that the COPC mass is being reduced by destructive processes. The third line of evidence is used to show that indigenous microbes are present and capable of degrading contaminants at the site. The third line of evidence is generally used only to demonstrate a preponderance of evidence in support of the first two lines of evidence.

The first line of evidence will consider the distribution of groundwater COPCs, as described in Section 9, and the potential attenuation of COPCs over time and along groundwater flow paths. Geochemical data on the electron donors, electron acceptors, metabolic byproducts of biodegradation processes, and parent to degradation product ratios are used to evaluate the second line of evidence. The electron donors include total organic carbon (TOC) and petroleum hydrocarbons. The electron acceptors include dissolved oxygen, nitrate, Fe(III), Mn(IV), sulfate, and carbon dioxide. Metabolic byproducts include methane, ethane, ethene, Fe(II), Mn(II), chloride, sulfide, nitrite, and alkalinity as a measure of the amount of carbon dioxide produced. Several other geochemical parameters, including dissolved oxygen, redox potential, temperature and pH, were used to assess whether the subsurface environment is conducive to the biodegradation processes:

- ***Dissolved Oxygen*** – Dissolved oxygen is utilized as an electron receptor, and is an indicator of whether subsurface conditions are predominantly aerobic or anaerobic. Strictly anaerobic bacteria cannot function at dissolved oxygen concentrations above 0.5 mg/L (Weidemeier et.al. 1999). As a result, at dissolved oxygen concentrations above 0.5 mg/l, iron reduction, sulfate reduction, methanogenesis, and reductive dechlorination cannot occur. However, these processes occur when aerobic respiration decreases oxygen concentrations in groundwater to below 0.5 mg/l. Dissolved oxygen concentrations within the contaminant plume that are below area background provide positive evidence of active aerobic respiration. Dissolved oxygen concentrations vary in groundwater due to a variety of conditions, including the presence of organic carbon, but should be below 13 mg/l (Weidemeier et al. 1999).

- ***Redox potential*** - Redox potential is a measure of electron activity and indicates the relative tendency of a solution to accept or transfer electrons. As the reserve of electron acceptors is depleted by microbial activity, redox potential decreases, indicating a reducing environment. Conversely, a high concentration of electron acceptors results in a high redox potential indicative of an oxidizing environment. Because oxygen is one of the most energetic electron acceptors, it is consumed first, and thus, redox potential can also indicate whether the environment is aerobic or anaerobic. Redox potentials in groundwater typically range between -400 millivolts (mV) and 800 mV. Redox potentials greater than approximately 750 mV correspond to oxidizing or aerobic environments. While reductive dechlorination can occur in anaerobic conditions, the optimum range for this process is below a redox potential of approximately -150 mV, where sulfate reduction and methanogenesis occur (Weidemeier et al. 1999). The measured redox potential represents the dominant environment within the sample area; however, more oxidizing or reducing conditions may be occurring within microsites in the same area.

- ***pH*** - Bacteria typically prefer environments with neutral to slightly alkaline pH values with the optimum pH range for most microbes between six and eight. However, many microbes can tolerate levels of pH outside this range, and pH is not likely to completely prohibit biodegradation. Acids produced during aerobic and anaerobic biodegradation processes may locally increase the groundwater pH if the buffering capacity of the system is low. While changes in pH are not likely to significantly affect metabolic processes directly, the availability of certain electron acceptors may be influenced significantly by pH. For example, Fe(III) is soluble only at more acidic pH levels (Drever 1988).

- ***Temperature*** - Groundwater temperature directly affects the solubility of oxygen, with greater solubility at cooler temperatures. Groundwater temperatures also affect the metabolic rate of the microorgamisms with a doubling of biological activity rates with every 10 °C increase in temperature between the temperatures of 5 and 25 °C (Wiedemeier et al., 1999).

- PCE → TCE → cis 1,2-DCE, trans 1,2-DCE, and/or 1,1-DCE (collectively referenced as DCE isomers herein) → vinyl chloride → ethene → ethane

- 1,1,1-TCA →1,1-DCA→ chloroethane → acetic acid or ethane

- Carbon tetrachloride → chloroform → methylene chloride → chloromethane → methane

- 1,2-DCA → chloroethane → acetic acid or ethane

- Petroleum hydrocarbons, including BTEX → carbon dioxide (aerobic) or methane (anaerobic).

9C.4 *Assessment of Natural Attenuation for the RI*

PSC prepared a detailed *Natural Attenuation Monitoring Plan,* dated March 2002, that was approved by Ecology with revisions incorporated by PSC. The plan contains more detailed information on the natural attenuation processes, data quality objectives, basis of the monitoring well selection, frequency of sampling, sampling and analysis parameters, and quality assurance/quality control parameters. This section summarizes the selection of the monitoring wells and sampling and analysis performed. Specific details regarding the sampling and analysis program are provided in the *Natural Attenuation Monitoring Plan*.

The monitoring wells selected for the natural attenuation evaluation are a subset of the total number of monitoring wells utilized in the RI. The monitoring wells selected are representative of the various water-bearing zones identified during the RI. The monitoring wells are located at the PSC facility, Area 2, and Area 3 and include the following monitoring wells from the four sample intervals identified in the RI:

- ***Water Table Sample Interval*** - This interval extends from 0 to 20 feet bgs. Monitoring wells from this interval include CG-101-S1, CG-104-S1, CG-105-S1, CG-106-WT, CG-107-WT, CG-113-S1, CG-11-S1, CG-122-WT, CG-124-WT, CG-127-WT, CG-130-WT, CG-134-WT, CG-140-WT, CG-141-WT, CG-143-WT and CG-3.

- ***Shallow Sample Interval*** - This interval extends from 21 to 40 feet bgs. Monitoring wells from this interval include CG-101-S2, CG-104-S2, CG-105-S2, CG-121-40, CG-124-40, CG-127-40, CG-134-40, CG-135-40, CG-140-40, CG-141-40, CG-143-40, CG-144-35 and CG-145-35.

- ***Intermediate Sample Interval*** - This interval extends from 41 feet bgs to the top of the Silt Aquitard. Monitoring wells from this interval include CG-104-I, CG-105-I, CG-106-I, CG-111-I, CG-121-70, CG-122-60, CG-123-90, CG-124-70 and CG-128-70.

- ***Deep Aquifer*** - This interval includes monitoring wells screened below the Silt Aquitard. Monitoring wells from this interval include CG-104-D and CG-106-D.

Monitoring wells CG-101-S1, CG-101-S2, CG-3, CG-106-WT, CG-106-I, CG-106-D, CG-111-I, and CG-107-WT have been designated as the background monitoring wells for the natural attenuation evaluation. These monitoring wells are located in areas that have not been affected by historic releases of COPCs at the PSC facility, and in most cases, appear to have been affected only minimally by other sources. The geochemistry at most of these wells is not likely to have been affected significantly by the low COPC concentrations detected in these wells. The background monitoring wells provide a point of reference for natural background conditions to gauge what natural attenuation processes may be occurring at the source areas and downgradient within each water-bearing interval. Although monitoring well CG-107-WT has been designated a background monitoring well, the groundwater analytical data indicate that GRO and BTEX have been detected at this location. Therefore, this monitoring well was excluded from consideration as a background monitoring well in the discussion of the natural attenuation of petroleum hydrocarbons.

The groundwater samples from the monitoring wells listed above included measurement or analysis of the following natural attenuation parameters in addition to the COPC analyses:

- Dissolved oxygen;
- Redox potential;
- PH;
- Temperature;
- Sulfate/sulfide;

- Nitrate/nitrite;
- Fe(III)/Fe(II);
- Alkalinity (total, hydroxide, bicarbonate, and carbonate);
- TOC;
- Chloride;
- Methane, ethane, and ethane;
- Carbon dioxide; and
- Ammonia.

The summaries of the data are presented in Table 9C-1 through 9C-20. The sample collection protocols were presented in Section 4. The statistical average value of select natural attenuation parameters collected during the last four quarterly groundwater sampling events performed between second quarter 2002 and first quarter 2003 have been used to develop isoconcentration maps for selected parameters including dissolved oxygen, redox potential, nitrate, ferrous iron, sulfate, methane, ethene, and ethane in the three water-bearing intervals above the silt aquitard. Because the deep aquifer included only two sampling locations for the natural attenuation evaluation, the data were not mapped.

Groundwater samples collected on August 6, 2002 from monitoring wells CG-104-S1 and CG-104-I, located in the water table sample interval and intermediate sample interval, respectively, were submitted for the Gene-Trac™ Dehalococcoides bacterial analysis. The purpose of this analysis was to assess whether biota capable of biodegrading the chlorinated COPCs were present at the RI Study Area. The results of this analysis support the assessment of the third line of evidence of natural attenuation at the RI Study Area.

In addition to the natural attenuation parameters discussed above, the nature and extent assessment results (Section 8.2) and fate and transport evaluation results (Section 9.7) have been used to evaluate the potential for natural attenuation. The hydrogeologic characteristics of the water-bearing intervals, including the assessment of hydraulic conductivity, hydraulic gradient, and groundwater seepage velocity, described in more detail in Section 3, were considered during the evaluation of the effects of dispersion and dilution for the first line of evidence. The average fraction organic carbon (foc) of 0.001, also described in more detail in Section 3, was used to evaluate the sorptive capacity of the water-bearing intervals and was also considered during the evaluation of the effects of sorption for the first line of evidence.

9C.5 *Evaluation of Natural Attenuation in Areas 1, 2 and 3*

This section presents a discussion of the criteria used to evaluate the natural attenuation processes occurring near the facility. The discussion includes consideration of the three lines of evidence of natural attenuation as applicable to the water table, shallow and intermediate sample intervals, and deep aquifer. The discussion of natural attenuation herein is presented with respect to the primary COPC groups present in each water-bearing interval, petroleum hydrocarbons, chlorinated ethenes, chlorinated ethanes, and chlorinated methanes.

9C.6 *Water Table Sample Interval*

The water table sample interval includes the upper portion of the shallow aquifer extending from 0 to 20 feet bgs. The direction of groundwater flow is to the southwest, as discussed in Section 3. The measured foc data, summarized in Section 3, suggest that the sorptive capacity of soil is low. Based on a weak affinity for soil exhibited by most of the groundwater COPCs in this evaluation, the retardation of the COPCs is expected to be minimal. These data will be considered in the evaluation of natural attenuation for the specific COPC groups discussed below.

The groundwater geochemical parameters, summarized in Tables 9C-1 through 9C-20, and depicted on Figures 9C-2 through 9C-7, indicate that the water table sample interval is generally mildly anaerobic with stronger reducing conditions in Area 2 and the eastern edge of Area 3. Less reducing conditions appear to exist in the upgradient, background areas east of Area 1, as indicated by the higher dissolved oxygen concentrations and redox potentials, and the lower methane concentrations. The dissolved oxygen (Figure 9C-2), redox potential (Figure 9C-3), and sulfate (Figure 9C-6) distribution suggest that the environment is not sufficiently reducing for widespread sulfate reduction to be occurring, although sulfide was detected in the water table sample interval at CG-105-S1 in the northern portion of Area 2. Methanogenesis appears to be occurring in the northern parts of Areas 1 and 2 extending into the eastern portion of Area 3 and in several locations in the western portion of Area 3 close to the Duwamish Waterway at the intersection of East Marginal Way S and S Fidalgo Street (CG-140-WT) and near the intersection of East Marginal Way S and S Lucile Street (CG-143-WT). The methane distribution (Figure 9C-7) in the water table sample interval suggests that strongly reducing conditions do exist in localized areas even if they are not predominant enough to depress the redox potential measured in samples from the area. Although the water table sample interval is overall moderately reducing, there also appear to be localized areas of strongly reducing conditions, indicated by the production of sulfide and methane.

Although DO (Figure 9C-2) and nitrate (Figure 9C-4) were detected in most areas of the water table sample interval, the lowest concentrations of these most energetic electron acceptors were detected in Areas 1 and 2 and in the eastern edge of Area 3. Fe(II) (Figure 9C-5) was detected in most areas of the water table sample interval, but was not detected in the water table sample interval background wells. The widespread distribution of Fe(II) does not exactly match the distribution of groundwater COPCs detected in the area, indicating that the reducing conditions that exist across the area may be due in part to natural conditions. The lack of Fe(II) in the background wells could be a result of more oxygenated water associated with recharge along the valley wall. However, the highest Fe(II) concentrations were detected in the northern parts of Areas 1 and 2, where the highest concentrations of carbon dioxide, a by-product of microbial respiration, were also detected, consistent with the highest COPC concentrations in the water table sample interval. The average temperatures and pHs measured in the water table sample interval are conducive to biodegradation of the COPCs.

9C.6.1 Petroleum Hydrocarbons

The petroleum hydrocarbons constituents that are COPCs for the RI include gasoline range organics (GRO) and benzene, toluene, ethylbenzene and xylenes (BTEX). Concentrations of diesel range organics (DRO) and oil range organics (ORO) have not been detected in the groundwater sampling performed between second quarter 2002 and first quarter 2003 and were not considered for the natural attenuation evaluation.

The isoconcentration maps for GRO and BTEX for the water table sample interval are provided on Figures 9-7 through 9-10 and 9-40. Historical groundwater analytical data for GRO and BTEX do not indicate an overall decrease in COPC concentrations at the monitoring wells sampled, as summarized in Appendix 5B. On average, the concentrations of GRO and all BTEX compounds in Area 1 wells have fluctuated without a consistent decreasing trend, but the concentrations of these compounds in Area 3 wells appear to be decreasing. The isoconcentration maps indicate that the plume(s) associated with each of the petroleum compounds evaluated extend less than 700 feet downgradient of Area 1, not extending beyond 6th Avenue S. In addition, the concentrations along the flow path decrease significantly. These data indicate that natural attenuation of petroleum hydrocarbons in the water table sample interval is likely occurring through both non-destructive and destructive processes.

The groundwater geochemical parameters were evaluated to assess whether conditions in the water table sample interval are conducive to natural attenuation of the petroleum hydrocarbons. Comparison of the geochemical data from background monitoring wells and natural attenuation monitoring wells at and near the facility indicates that concentrations of the electron receptors utilized for biodegradation of petroleum hydrocarbons; including dissolved oxygen, nitrate, and sulfate; are lower in the plume areas than in the background monitoring wells.

Concentrations of other metabolic byproducts including methane and carbon dioxide are also higher in the plume area than in the background monitoring wells, indicating that biodegradation of petroleum hydrocarbons may be occurring. The geochemical data support the second line of evidence of natural attenuation, and indicate that conditions in the water table sample interval are conducive to the biodegradation of petroleum hydrocarbons. There was no evaluation of the third line of evidence of natural attenuation performed for Areas 1, 2 and 3, but microbes capable of biodegrading petroleum hydrocarbons are thought to be ubiquitous. In addition, the first two lines of evidence clearly indicate that natural attenuation the petroleum hydrocarbons is occurring through both non-destructive and destructive processes in the water table sample interval.

9C.6.2 Chlorinated Ethenes

The chlorinated ethenes considered in the evaluation of natural attenuation include PCE; TCE; cis-1,2-DCE, trans-1,2-DCE , and 1,1-DCE (referred to as the DCE isomers); and vinyl chloride. The isoconcentration maps for these compounds for the water table sample interval include Figures 9-18 through 9-21, for PCE, TCE, DCE, and vinyl chloride.

The presence of the full suite of the products of PCE and TCE biodegradation, including the ultimate metabolic byproducts chloride, ethene (Figure 9C-8), ethane (Figure 9C-9) and carbon dioxide are strong indicators that natural attenuation via biodegradation is occurring in the water table sample interval in Areas 1, 2 and 3. An evaluation of historical groundwater analytical data, summarized in Appendix 5B, does not indicate a significant and consistent reduction in the concentrations of parent or degradation products over time. However, the isoconcentration maps indicate a decrease in the concentrations of both parent and degradation products in the direction of groundwater flow in all three Areas. A decrease in concentrations along the flow path is common to all plume areas, as described in Section 9, and supports the first line of evidence for natural attenuation.

Groundwater geochemical data were used to evaluate the second line of evidence of natural attenuation. The mildly reducing subsurface environment in the water table sample interval is conducive to anaerobic degradation processes, such as the biodegradation of PCE and TCE, particularly in the areas of stronger reducing conditions. Because this biodegradation pathway occurs almost exclusively under anaerobic conditions, the presence of the DCE isomers and vinyl chloride indicates that a reducing environment exists. The concentrations of dissolved oxygen (Figure 9C-2) and nitrate (Figure 9C-4) and increased concentrations of Fe(II) (Figure 9C-5) are reduced relative to background in Areas 1 and 2, where the highest concentrations of vinyl chloride and other COPCs are present, indicating that reductive dechlorination is occurring. An area of strongly reducing conditions, indicated by the production of sulfide and methane, exists in the northern part of Area 2 where some of the highest vinyl chloride, ethene (Figure 9C-8) and ethane (Figure 9C-9) concentrations are also detected, providing evidence of complete reductive dechlorination. Chloride, a final metabolic byproduct of the dechlorination process, is also present at greater concentrations relative to background where the highest concentrations of chlorinated ethenes were detected. These geochemical data support the second line of evidence that natural attenuation of chlorinated ethenes is occurring.

The distribution of ethane in the northern part of the water table sample interval is more widespread than the distribution of ethene and vinyl chloride, its parent compounds. Methane was also detected at elevated concentrations in the same area as ethane suggesting that extensive biodegradation, resulting in the production of excess methane, has occurred in this area. These data suggest that the northern portion of the chlorinated ethene groundwater plume emanating from Areas 1 and 2 in the water table sample interval has stabilized and may be shrinking. Ethane and ethene were not detected in the water table sample interval in Area 3 beyond 5^{th} Avenue S and Maynard Avenue S, respectively. In the water table sample interval, these compounds were not detected with chlorinated ethenes in any of the non-PSC sources identified in Area 3. Although the environment in Area 3 is generally less conducive to reductive dechlorination processes, the presence of cis-1,2-DCE and vinyl chloride with PCE and TCE suggests that reductive dechlorination is still occurring in the water table sample interval.

An evaluation of the third line of evidence for the natural attenuation of chlorinated ethenes was performed for the RI. Groundwater samples collected on August 6, 2002 from monitoring well CG-104-S1 in the WTSI were submitted for the Gene-Trac™ Dehalococcoides analysis. The results of the analysis confirmed the presence of biota capable of biodegrading chlorinated compounds within the water table sample interval. This supports the third line of evidence of natural attenuation.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethenes is occurring through both non-destructive and destructive processes in the water table sample interval in Areas 1, 2 and 3. Although a significant reduction of contaminant mass has not been observed, the co-located presence of both parent and degradation products along with appropriate geochemical conditions indicates that biodegradation is occurring.

9C.6.3 Chlorinated Ethanes

The chlorinated ethanes included in the evaluation of natural attenuation included 1,1,1-trichloroethane (TCA), 1,1-dichloroethane (DCA), chloroethane, and 1,2-DCA. 1,1,1-TCA and 1,2-DCA are parent compounds whereas 1,1-DCA and chloroethane are degradation products of 1,1,1-TCA, and chloroethane is a degradation product of 1,2-DCA. The natural attenuation degradation pathways of these parent compounds are complex, including aerobic and anaerobic processes that are biotic and abiotic resulting in intermediate compounds that were not assessed for the RI. The parent and degradation products listed above include the expected byproducts of reductive dechlorination and the ultimate metabolic byproducts include ethane, chloride, and carbon dioxide. However, the absence of the degradation products identified above does not preclude the possibility that natural attenuation is occurring. For example, the degradation of 1,2-DCA may include intermediate compounds such as chloroethanol, chloroacetate, ethanol, ethene, or vinyl chloride, depending on the degradation process. Similarly, 1,1,1-TCA may degrade to 1,1-DCE which then follows the degradation pathways of the chlorinated ethenes. The distribution of 1,1-DCE, vinyl chloride, and ethene have been discussed previously with respect to chlorinated ethenes, and may also provide supporting evidence for the natural attenuation of 1,2-DCA or 1,1,1-TCA. Furthermore, chloroethane, one of the intermediate degradation products degrades much more quickly by abiotic hydrolysis than as a result of biodegradation (Wiedemeier et al., 1999).

The isoconcentration maps for 1,1,1-TCA and 1,1-DCA in the water table sample interval are provided on Figures 9-30 and 9-31. The presence of the parent and potential degradation products including 1,1-DCA, chloroethane, 1,1-DCE, and vinyl chloride suggest that natural attenuation of chlorinated ethane compounds is occurring within Areas 1, 2 and 3. Historical groundwater analytical results, summarized graphically in Appendix 5B, do not indicate a consistent downward trend in concentrations of both the parent and degradation compounds, but the isoconcentration maps indicate that the plumes(s) attenuate along the flow path in Area 3. The chemical evidence and apparent decreases in concentrations along the flow path support the first line of evidence for natural attenuation.

Geochemical parameters used to evaluate the second line of evidence for natural attenuation indicate that the appropriate conditions exist for the reductive dechlorination of chlorinated ethanes in the water table sample interval in Areas 1, 2 and 3. This is confirmed by the presence of degradation poriducts 1,1-DCA and chloroethane. The presence of the metabolites ethane, chloride, and carbon dioxide also indicates that the reductive dechlorination pathway is complete for chlorinated ethenes and/or ethanes. The reduction of 1,1-DCA to chloroethane and ethane occurs under sulfate reducing and methanogenic conditions only, indicating that the subsurface environment may be more reducing than the dissolved oxygen and redox potential data suggest. While the other biotic and abiotic natural attenuation processes that may be occurring to reduce chloroethane concentrations cannot be distinguished from those for the chlorinated ethenes, the presence of 1,1-DCE, vinyl chloride, ethene, and carbon dioxide indicate that additional natural attenuation processes are occurring. These geochemical data support the second line of evidence of natural attenuation.

As discussed in Section 1.2.1.2 of this Appendix, the presence of the dehalococcoides microbes indicates that biota capable of biodegrading the chlorinated ethanes are present in the water table sample interval, supporting the third line of evidence of natural attenuation.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethanes is occurring through both non-destructive and destructive processes in the water table sample interval in Areas 1, 2 and 3. Although a significant reduction of contaminant mass has not been observed, the co-located presence of both parent and degradation products along with appropriate geochemical conditions indicates that biodegradation is occurring.

9C.6.4 Chlorinated Methanes

The chlorinated methane compounds identified in the water table sample interval of Areas 1, 2 and 3 include chloroform and methylene chloride (dichloromethane), and in Areas 1 and 2, chloromethane. These compounds are products of the degradation of carbon tetrachloride, but carbon tetrachloride has not been identified as a COPC, indicating that either chloroform or dichloromethane may be the parent products. The discussion of the natural attenuation evaluation for the chlorinated methanes focuses on those COPCs present, and the natural attenuation processes that are affecting their degradation.

The destructive natural attenuation processes that have been reported to affect chloroform include direct biotic anaerobic degradation to carbon dioxide and carbon disulfide and reductive dechlorination under nitrate through sulfate reducing conditions, or methanogenic conditions in which the degradation products dichloromethane, chloromethane, and methane are produced. However, the anaerobic and aerobic degradation processes occur more rapidly than reductive dechlorination and will supersede the reductive dechlorination pathway if conditions are favorable. Chloroform may also degrade by cometabolic reactions with methane to carbon dioxide.

The destructive natural attenuation processes that affect dichloromethane and chloromethane include

- direct biotic aerobic oxidation to carbon dioxide;

- direct biotic anaerobic degradation to carbon dioxide and/or acetate and formic acid; and

- and reductive dechlorination under nitrate through sulfate reducing conditions or methanogenic conditions in which methane is produced.

As stated previously, the reductive dechlorination pathway is not as rapid as direct aerobic or anaerobic degradation.

An evaluation of the distribution of chloroform indicates that the highest concentrations present are at background monitoring wells CG-101-S1 and CG-106-WT, and attenuate rapidly to concentrations near or below the laboratory reporting limits in Areas 1 and 2. The highest concentrations of dichloromethane are located near monitoring wells CG-104-S1 and CG-105-S1 and chloromethane has been detected at monitoring well CG-105-S1 only. Chlorinated methanes were not detected in significant concentrations in the water table sample interval in Area 3. The chemical evidence and rapid attenuation of chlorinated methanes along the groundwater flow path support the first line of evidence for natural attenuation.

The geochemical data used to evaluate the second line of evidence for natural attenuation of chlorinated methanes indicate that the subsurface environment at the facility and Area 2 are conducive to the various natural attenuation pathways applicable to chloroform and dichloromethane. The exception is at the background monitoring wells, where the mildly reducing environment is not conducive to biodegradation of chloroform. With the exception of the background monitoring wells, concentrations of the metabolic byproducts carbon dioxide, chloride, and methane are also higher in the areas where the chlorinated methanes are present, but the potential contribution of metabolic products from degradation of the petroleum hydrocarbons, chlorinated ethenes, chlorinated ethanes, and chlorinated methanes can not be distinguished from one another. However, the conditions in the water table sample interval in Areas 1 and 2 are conducive to reductive dechlorination of chlorinated methanes, and thus, the second line of evidence for natural attenuation is supported by the existing data. In addition, the evaluation of the third line of evidence indicates that microbial populations capable of degrading the chlorinated methanes are present in the water table sample interval.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated methanes is occurring through both non-destructive and destructive processes in the water table sample interval in Areas 1 and 2. The co-located presence of both parent and degradation products, a limited plume area and appropriate geochemical conditions indicate that biodegradation of chlorinated methanes is occurring.

9C.7 *Shallow Sample Interval*

The shallow sample interval includes the water-bearing interval extending from 21 to 40 feet bgs. The direction of groundwater flow in the shallow sample interval is to the southwest, as discussed in Section 3. The measured foc data, summarized in Section 3, suggest that the sorptive capacity of soil is low. Based on a weak affinity for soil exhibited by most of the groundwater COPCs in this evaluation, the retardation of the COPCs is expected to be minimal. These data will be considered in the natural attenuation evaluation for the specific COPC groups discussed below.

Groundwater geochemical parameters, summarized in Tables 9C-1 through 9C-20, and used to evaluate the second line of evidence of natural attenuation, indicate reducing conditions across the shallow sample interval in Areas 1, 2 and 3, with an area of stronger reducing conditions in Areas 1 and 2, extending westward into the eastern portion of Area 3 and in a separate area in the southern portion of Area 3. Nitrate (Figure 9C-12) was detected only at a background sampling location upgradient of Area 1 and Fe (II) (Figure 9C-13) was detected in nearly all shallow sample interval groundwater samples for which it was analyzed, indicating reducing conditions across Areas 1, 2 and 3 as well as upgradient of Area 1. Although sulfate (Figure 9C-14) was detected at shallow sample interval sample locations upgradient of the facility and in the southern part of Area 3; however, the distribution of methane (Figure 9C-15) indicates extremely strong reducing conditions between the facility and approximately 3rd Avenue S, and possibly to the Waterway. Groundwater pH and temperature in the shallow sample interval are conducive to biodegradation processes.

Petroleum Hydrocarbons

The isoconcentration maps for BTEX for the shallow sample interval are provided on Figures 9-11 through 9-14. Historical groundwater analytical data for GRO and BTEX were evaluated as the first line of evidence for natural attenuation. On average, the concentrations of GRO and all BTEX compounds have been decreasing over time within the SSI, as summarized in Appendix

5B. With the exception of benzene, the isoconcentration maps indicate that the plume(s) associated with each of the petroleum compounds evaluated do not extend beyond Denver Avenue and benzene concentrations decrease significantly west of 5th Avenue S. BTEX and GRO concentrations along the groundwater flow path decrease significantly with distance from the source area. The concentrations of petroleum hydrocarbons are lower in the shallow sample interval than those in the water table sample interval. These data indicate that natural attenuation is occurring through the non-destructive processes of dispersion and dilution. Destructive natural attenuation processes also appear to be occurring, and are further evaluated for the second line of evidence for natural attenuation.

The groundwater geochemical parameters indicate that conditions in the shallow sample interval are conducive to natural attenuation of petroleum hydrocarbons. Comparison of the geochemical data from background monitoring well CG-101-S2, and the natural attenuation monitoring wells at and near the facility indicate that, with the exception of dissolved oxygen, the concentrations of the electron receptors nitrate and sulfate utilized for biodegradation are lower in the plume area than in the background monitoring well and that concentrations of Fe(II) (Figure 9C-13) in the PSC plume area is slightly higher than the background monitoring wells, suggesting that significant biodegradation has already occurred. Concentrations of other metabolic byproducts including methane and carbon dioxide are higher in the plume area than the background monitoring well, also indicating that biodegradation of petroleum hydrocarbons and/or other COPCs may be occurring. The geochemical data support the second line of evidence for natural attenuation, and indicate that conditions in the shallow sample interval are conducive to the biodegradation of petroleum hydrocarbons. There was no evaluation of the third line of evidence of natural attenuation performed for petroleum hydrocarbons in the shallow sample interval.

The evaluation of the potential for natural attenuation of the petroleum hydrocarbons in the shallow sample interval indicates that natural attenuation is occurring in Areas 1, 2 and 3 through both non-destructive and destructive processes. The historical groundwater analytical results suggest that biodegradation of petroleum hydrocarbons is occurring based on the reduction in concentrations of GRO and BTEX along groundwater flow lines without significant downgradient dispersion.

Chlorinated Ethenes

The isoconcentration maps for chlorinated ethenes in the shallow sample interval are presented in Figures 9-22 through 9-25 for PCE, TCE, DCE and vinyl chloride, respectively. The presence of the full suite of degradation products of PCE and TCE biodegradation, including the ultimate metabolic byproducts ethene, ethane, chloride and carbon dioxide, are indicators that natural attenuation via biodegradation is occurring in the shallow sample interval in Areas 1 and 2. The concentrations of chlorinated ethenes in the SSI have not showed a consistent decreasing trend in Areas 1 and 2, as summarized in Appendix 5B, but appear to be decreasing in Area 3. The isoconcentration maps indicate a decrease in concentrations of parent and daughter products along the flow path in all plume areas. The presence of break down products and decrease in concentrations along the flow path support the first line of evidence of natural attenuation. The geochemical data used to evaluate the second line of evidence of natural attenuation indicate that the subsurface environment in the shallow sample interval is conducive to the biodegradation of chlorinated ethenes. The presence of the degradation products, including the DCE isomers, vinyl chloride, ethene (Figure 9C-16) and ethane (Figure 9C-17) indicate that biodegradation is occurring while the higher concentrations of vinyl chloride relative to PCE and TCE suggest that biodegradation has been occurring for some time. Concentrations of the metabolic byproduct carbon dioxide are also higher in the plume areas than the background monitoring well indicating that biodegradation may be occurring. Ethene was not detected in shallow sample interval groundwater in Areas 1 and 2 but the distribution of ethane suggests that the absence of ethene is due to complete biodegradation of ethene to ethane. In the shallow sample interval, ethene was detected only in the western part of Area 3, associated with an area of elevated vinyl chloride concentrations, indicating that reductive dechlorination of vinyl chloride is also occurring in this area. The reduction of petroleum hydrocarbons in the shallow sample interval may be indicative of cometabolic biodegradation, as methane has been detected across Area 2 extending into Area 3. The geochemical data indicate support the second line of evidence of natural attenuation, and clearly indicate that conditions in the shallow sample interval are conducive to the biodegradation of the chlorinated ethenes.

Although groundwater samples from the shallow sample interval were not submitted for analysis to determine the presence of dehalorespirators, these biota were detected in both the water table sample interval and the intermediate sample interval. Consequently, dehalorespirers are assumed to be present in the shallow sample interval, providing the third line of evidence of natural attenuation of chlorinated ethenes in the shallow sample interval.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethenes is occurring through both non-destructive and destructive processes in the shallow sample interval in Areas 1, 2 and 3. The co-located presence of both parent and degradation products, a limited plume area and appropriate geochemical conditions indicate that biodegradation of chlorinated ethenes is occurring.

Chlorinated Ethanes

The isoconcentration maps for 1,1,1-TCA, and 1,2-DCA for the shallow sample interval are presented in Figures 9-32 and 9-33. The presence of the parent and potential degradation products 1,1-DCA, chloroethane, 1,1-DCE, and vinyl chloride indicate that natural attenuation is occurring in Areas 1 and 2. The historical analytical results indicate that chlorinated ethanes are present in the shallow sample interval at significantly lower concentrations than in the overlying water table sample interval, but the concentrations have not exhibited a consistent decreasing trend over time. The data also indicate that concentrations of the parent compounds are significantly lower than the degradation products in Areas 1 and 2, suggesting that significant biodegradation has already occurred. The isoconcentration maps indicate that concentrations of the parent and degradation products decrease along the flow path extending into Area 3, supporting the first line of evidence of natural attenuation.

The geochemical data used to evaluate the second line of evidence of natural attenuation indicate that similar to chlorinated ethenes, the conditions are also conducive to the reductive dechlorination of chlorinated ethanes. In addition, as discussed above, dehalorespirers are assumed to be present in the shallow sample interval, providing support for the third line of evidence that natural attenuation of chlorinated ethanes is occurring.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethanes is occurring through both non-destructive and destructive processes in the shallow sample interval in Areas 1, 2 and 3. The co-located presence of both parent and degradation products, a limited plume area and appropriate geochemical conditions indicate that biodegradation of chlorinated ethanes is occurring.

Chlorinated Methanes

Dichloromethane is the only chlorinated methane compound detected in shallow sample interval groundwater in Areas 1, 2 and 3. No other chlorinated methanes were detected in the shallow sample interval.

9C.8 *Intermediate Sample Interval*

The intermediate sample interval includes the water-bearing interval extending from 41 feet bgs to the top of the Silt Aquitard. The direction of groundwater flow in the intermediate sample interval is to the southwest, as described in Section 3. The measured foc data, summarized in Section 3, suggest that the sorptive capacity of soil is low. Based on a weak affinity for soil exhibited by most of the groundwater COPCs in this evaluation, the retardation of the COPCs is expected to be minimal. These data will be considered in the natural attenuation evaluation for the specific COPC groups discussed below.

Groundwater geochemical parameters, summarized in Tables 9C-1 through 9C-20, were evaluated to assess whether conditions in the intermediate sample interval are conducive to natural attenuation. These data indicate that groundwater in the intermediate sample interval in Areas 1, 2 and the eastern portion of Area 3 is strongly anaerobic, with an area of stronger reducing conditions in Areas 1, 2 and in the eastern part of Area 3. The distributions of average redox potential and dissolved oxygen for groundwater samples from the intermediate sample interval are presented in Figures 9C-19 and 9C-18, respectively. The strong reducing conditions are indicated by the lack of nitrate (Figure 9C-20) and sulfate (Figure 9C-22) and the high concentrations of methane (Figure 9C-23) detected in groundwater in this area. The highest methane concentrations were detected in the eastern portion of Area 3 between Denver Avenue S and S Maynard Street, beyond the western extent of the PSC plume. The concentrations of other metabolic byproducts, including methane and carbon dioxide, are similar in the plume area and in the background monitoring wells, indicating that the reducing condition detected in the intermediate sample interval are related at least in part to natural conditions in the unit. The pH and temperature of the groundwater in the intermediate sample interval are conducive to natural attenuation.

Petroleum Hydrocarbons

The isoconcentration maps for BTEX for the intermediate sample interval are provided on Figures 9-15 though 9-17. In general, the concentrations of GRO and all BTEX compounds in the intermediate sample interval have been decreasing over time, as illustrated in figures in Appendix 5B. However, the concentrations of these constituents fluctuate at monitoring wells CG-104-I and CG-105-I. The isoconcentration maps associated with each of the petroleum compounds indicate that the plume(s) in the intermediate sample interval do not extend further west than Denver Avenue. In addition, the concentrations along the flow path decrease significantly with distance from the source. These data indicate that natural attenuation is occurring through non-destructive processes including dispersion and dilution and constitute the first line of evidence that natural attenuation of petroleum hydrocarbons is occurring in the intermediate sample interval.

The groundwater geochemical parameters indicate that conditions in the intermediate sample interval are conducive to natural attenuation of the petroleum hydrocarbons. These data indicate that the intermediate sample interval is strongly anaerobic, as demonstrated by the high concentrations of methane. The highest methane concentrations were detected in the eastern portion of Area 3 between Denver Avenue S and S Maynard Street, beyond the current western extent of the PSC plume. Comparison of the geochemical data from background monitoring wells CG-106-I and CG-111-I to that in monitoring wells in Areas 1, 2 and 3 indicates that the concentrations of the electron receptors utilized for biodegradation of petroleum hydrocarbons including dissolved oxygen, nitrate, and sulfate are lower in the plume area than in the background monitoring wells, indicating that biodegradation of organic compounds has occurred in these areas. The geochemical data support the second line of evidence of natural attenuation that conditions in the intermediate sample interval are conducive to the anaerobic biodegradation of petroleum hydrocarbons. There was no direct evaluation of the third line of evidence of natural attenuation performed for petroleum hydrocarbons in the intermediate sample interval; however, microbes capable of biodegrading petroleum hydrocarbons are thought to be ubiquitous in the subsurface environment.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the petroleum hydrocarbons is occurring through both non-destructive and destructive processes in the intermediate sample interval in Areas 1, 2 and 3.

Chlorinated Ethenes

The isoconcentration maps for chlorinated ethenes for the intermediate sample interval include Figures 9-26 through 9-29. The presence of the full suite of the biodegradation products of PCE and TCE, including the ultimate metabolic byproducts chloride, ethene, ethane, and carbon dioxide are indicators that natural attenuation via biodegradation is occurring in Areas 1, 2 and 3. The analytical results indicate that the concentrations of PCE and TCE are much higher in the intermediate sample interval than the overlying shallow sample interval and water table sample interval suggesting that the source of this contamination was DNAPL. The concentrations of the degradation products are greater than those of the parent products, indicating that the contaminant mass of the parent products is being reduced and that significant biodegradation has already occurred. The isoconcentration maps reveal a decrease in concentrations of both parent and degradation products along the flow path for most plumes. For the PSC plume in particular, there have been significant decreases in concentration as the plume(s) disperse into Area 3. The presence of degradation products and decrease in concentrations of both parent and degradation products along the flow path support the first line of evidence of natural attenuation.

The geochemical data indicate that the subsurface environment of the intermediate sample interval appears to be strongly anaerobic and is conducive to biodegradation of chlorinated ethenes. The metabolic byproducts chloride, ethene (Figure 9C-24), and ethane (Figure 9C-25) are present at greater concentrations in the areas of the COPC plume(s) than the background monitoring wells indicating that reductive dechlorination is occurring. In the intermediate sample interval, ethene (Figure 9C-24) was detected in Areas 1 and 2 and in the eastern-most portion of Area 3 in the same distribution as vinyl chloride, indicating that reductive dechlorination of vinyl chloride is occurring. Ethane (Figure 9C-25) was also detected in this same area of the intermediate sample interval and extending further west in Area 3 to approximately 6th Avenue S. The distribution of ethane detected in the intermediate sample interval indicates that complete reductive dechlorination of chlorinated ethenes to ethane is occurring by the time constituents reach approximately 6th Avenue S. The geochemical data support the second line of evidence of natural attenuation of chlorinated ethenes in the intermediate sample interval.

An evaluation of the third line of evidence of natural attenuation was performed. Groundwater samples collected on August 6, 2002 from monitoring well CG-104-I in the intermediate sample interval, were submitted for the Gene-Trac™ Dehalococcoides analysis. The results of the analysis confirmed the presence of biota capable of biodegrading chlorinated ethenes and support the third line of evidence for natural attenuation.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethenes is occurring through both non-destructive and destructive processes in the intermediate sample interval in Areas 1, 2, and 3. The co-located presence of both parent and degradation products, a limited plume area and appropriate geochemical conditions indicate that biodegradation of chlorinated ethenes is occurring in the intermediate sample interval.

Chlorinated Ethanes

The isoconcentration maps for chlorinated ethanes for the intermediate sample interval include Figures 9-34 and 9-35. The presence of the parent and potential degradation products, including 1,1-DCA, chloroethane, and vinyl chloride, indicate that natural attenuation is occurring in Areas 1 and 2. The historical analytical results indicate a general decreasing trend in both parent and degradation product concentrations in wells in Areas 1 and 2 and that the concentrations of the parent compounds are significantly lower than those of the degradation products, suggesting that significant biodegradation has already occurred. The isoconcentration maps indicate that concentrations of the parent and degradation products decrease along the flow path from Areas 1 and 2, with only chloroethane extending into Area 3. The presence of biodegradation products and the decrease in concentrations along the flow path support the first line of evidence of natural attenuation.

Similar to chlorinated ethenes, the geochemical data indicate that the subsurface environment in the intermediate sample interval is strongly anaerobic and is conducive to the reductive dechlorination of chlorinated ethanes. The groundwater in the intermediate sample interval is sufficiently reducing for the reductive dechlorination to ethane. The geochemical data support the second line of evidence of natural attenuation of chlorinated ethanes in the intermediate sample interval.

The third line of evidence was discussed with respect to the chlorinated ethenes in the intermediate sample interval. The presence of the dehalococcoides bacterial populations indicates that biota capable of biodegrading the chlorinated ethanes are present, supporting the third line of evidence of natural attenuation.

The three lines of evidence clearly show that natural attenuation, including biodegradation, of the chlorinated ethanes is occurring through both non-destructive and destructive processes in the intermediate sample interval in Areas 1, 2, and 3. The co-located presence of both parent and degradation products, a limited plume area and appropriate geochemical conditions indicate that biodegradation of chlorinated ethanes is occurring in the intermediate sample interval.

Chlorinated Methanes

Dichloromethane was detected on only one occasion at monitoring well CG-104-I and chloromethane was also detected only once at monitoring well CG-105-I. No additional detections of chlorinated methanes have been reported in the intermediate sample interval, suggesting that the reductive dechlorination pathway has been viable for chlorinated methanes in the intermediate sample interval. No further evaluation of the chlorinated methanes in the ISI was performed.

9C.9 *Deep Aquifer*

COPC concentrations in groundwater in the deep aquifer are significantly lower than those detected in the overlying sampling intervals. Petroleum hydrocarbons, chlorinated ethanes and chlorinated methanes were detected only sporadically, and thus, natural attenuation evaluations were not performed for these compound classes.

A limited evaluation of natural attenuation of the chlorinated ethenes in the Deep Aquifer was performed. Low concentrations of TCE and vinyl chloride have been detected in groundwater samples collected from monitoring wells CG-102-D and CG-104-D, but the available data do not indicate a consistent downward trend. The geochemical data indicate that the environment appears to be strongly anaerobic and conducive to biodegradation of chlorinated ethenes. The data indicate the electron receptors nitrate and sulfate are depleted. The carbon dioxide and methane concentrations at monitoring well CG-104-D is significantly higher than at background monitoring well CG-106-D (Table 9C-3), indicating that carbon dioxide is present as a metabolic byproduct of biodegradation processes. Chloride concentrations are also significantly higher at monitoring well CG-104-D than the background monitoring well, likely as a result of naturally brackish water in this unit. The metabolic byproducts ethene and ethane have not been detected above reporting limits indicating that the concentrations of chlorinated ethenes in the deep aquifer have never been significantly higher.

9C.10 *Summary of Natural Attenuation Assessment*

This section summarizes the natural attenuation assessment conducted for petroleum hydrocarbons, chlorinated ethenes, chlorinated ethanes, and chlorinated methanes in the water table, shallow, and intermediate sample intervals and the deep aquifer in Areas 1, 2 and 3. The natural attenuation assessment indicates that the non-destructive processes of dispersion and dilution are occurring in all areas. The measured foc data, summarized in Section 3, suggest that the sorptive capacity of soil is low and based on a weak affinity for soil exhibited by most of the groundwater COPCs in this evaluation, the retardation of the COPCs is expected to be minimal. The analytical results identified concentrations of both parent and associated degradation products of each COPC group. The focus of this evaluation was on biodegradation processes that may be occurring.

9C.10.1 Water Table Sample Interval

In Areas 1, 2, and 3, BTEX and other petroleum related COPCs and chlorinated ethenes, ethanes, and methanes have been detected at concentrations exceeding applicable cleanup levels in groundwater in the water table sample interval. The concentrations of these COPCs have not exhibited any distinct decreasing trends over time and thus, do not confirm that biodegradation is occurring. However, the isoconcentration maps indicate a general decrease in the concentrations of both parent and degradation products in the direction of groundwater flow throughout the RI Study Area, indicating that the concentrations are attenuating. Furthermore, the presence of degradation products, such as cis-1,2-DCE and vinyl chloride, provide clear evidence that biodegradation is one of the natural attenuation processes reducing COPC concentrations.

Groundwater geochemical data from the water table sample interval indicate moderately reducing conditions in Areas 1 and 2, with stronger reducing conditions in the eastern-most part of Area 3. Although the biodegradation of petroleum hydrocarbons cannot be demonstrated through the presence of breakdown products, reducing conditions and depletion of nitrate and Fe(III), as indicated by the presence of Fe(II), in areas of elevated concentrations of petroleum hydrocarbons indicates that biodegradation is occurring. The complete biodegradation of chlorinated ethenes, ethanes, and methanes is also likely occurring in the water table sample interval as ethene and ethane were detected in groundwater in both Areas 1 and 2 and the eastern portion of Area 3. The distribution of ethene and ethane in the water table sample interval suggest that the northern portion of the chlorinated ethene groundwater plume emanating from Areas 1 and 2 in the water table sample interval has stabilized and may be shrinking.

Biodegradation is likely occurring as the elevated concentrations of vinyl chloride were detected in the same areas as elevated concentrations of TCE.

The presence of halogen-respiring microorganisms in groundwater collected from the water table sample interval was documented using gene-probe assays. The results of these assays provide data in support of the presence of biota capable of driving the reductive dechlorination process. No evaluation of petroleum-degrading biota was performed for the RI; however, numerous studies have reported that petroleum hydrocarbon-degrading microorganisms are ubiquitous in the subsurface environment.

9C.10.2 Shallow Sample Interval

In the shallow sample interval, chlorinated ethenes, ethanes, and methanes have been detected at concentrations exceeding applicable cleanup levels in groundwater in Areas 1, 2 and 3 while elevated concentrations of BTEX and petroleum hydrocarbons are limited to Areas 1 and 2. As in the water table sample interval, the concentrations of these COPCs in the shallow sample interval have not exhibited distinct decreasing trends over time and thus, do not confirm that biodegradation is occurring. However, the isoconcentration maps show a general decrease in the concentrations of both parent and degradation products in the direction of groundwater flow throughout the RI Study Area, indicating that the concentrations are attenuating. Furthermore, the presence of degradation products, such as cis-1,2-DCE and vinyl chloride, provide clear evidence that biodegradation is one of the natural attenuation processes reducing COPC concentrations.

Groundwater geochemical data from the shallow sample interval indicate reducing conditions across Areas 1, 2, and 3. Methane production indicates extremely strong reducing conditions between the facility and approximately 3rd Avenue S. Reducing conditions and depletion of nitrate and Fe(III) in areas of elevated concentrations of petroleum hydrocarbons suggests that biodegradation of petroleum hydrocarbons is occurring. The complete biodegradation of chlorinated ethenes, ethanes, and methanes is also likely occurring in the shallow sample interval as ethene and ethane were detected in groundwater. Ethane was detected in Area 2 west to at least 4th Avenue S in Area 3 while ethene was detected downgradient of 5th Avenue S to E

Marginal Way S. Vinyl chloride was detected in the same area of the shallow sample interval as ethene suggesting that the ethene is directly related to the biodegradation of vinyl chloride. Although no gene-probe assays were conducted on groundwater from the shallow sample interval, this interval is hydraulically connected to the water table and intermediate sample intervals where the presence of halogen-respiring microorganisms was confirmed. Therefore, it is assumed that halogen-respiring organisms are also present in groundwater in the shallow sample interval. Petroleum hydrocarbon-degrading microorganisms are also assumed to be present in the intermediate sample interval due to their ubiquity in subsurface environments.

9C.10.3 Intermediate Sample Interval

In the intermediate sample interval, chlorinated ethenes, ethanes, and methanes have been detected at concentrations exceeding applicable cleanup levels in groundwater in Areas 1, 2, and 3 whereas elevated concentrations of BTEX and petroleum hydrocarbons are limited to Areas 1 and 2. As in the water table sample interval, the concentrations of these COPCs in the intermediate sample interval have not exhibited any distinct decreasing trends over time and thus, do not confirm that biodegradation is occurring. However, the isoconcentration maps show a general decrease in the concentrations of both parent and degradation products in the direction of groundwater flow throughout the RI Study Area, indicating that the concentrations are attenuating. Furthermore, the presence of degradation products, such as cis-1,2-DCE and vinyl chloride, provide clear evidence that biodegradation is one of the natural attenuation processes reducing COPC concentrations.

Groundwater geochemical data from the intermediate sample interval indicate reducing conditions across Areas 1, 2, and 3, with the most reducing conditions centered in Area 2 and the eastern-most edge of Area 3. This most strongly reducing area corresponds to the area where BTEX, TCE, and vinyl chloride were detected in the intermediate sample interval and the area of the highest ethene concentrations. Ethane was also detected in this area and also extending westward as far as 6th Avenue S. The highest concentrations of ethane, which coincide with the highest detected concentrations of methane, were located just downgradient of the highest concentrations of ethene, suggesting that the ethane is likely a degradation product of the upgradient ethene plume. The distribution of ethane detected in the intermediate sample interval indicates that complete reductive dechlorination of chlorinated ethenes is occurring by the time constituents reach approximately 6th Avenue S. Ethene and ethane may also be present in more western parts of Area 3; however, intermediate sample interval groundwater from these areas was not analyzed for these constituents. These data clearly illustrate that reductive dechlorination is occurring in Areas 1, 2, and 3 in the intermediate sample interval.

The presence of halogen-respiring microorganisms was confirmed in groundwater in the intermediate sample interval. Petroleum hydrocarbon-degrading microorganisms are also assumed to be present in the shallow sample interval.

Table 9C-1
Average Concentrations of Ammonia from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Ammonia (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				1.371	1.1365
CG-3	CG-3-0502	0.722				
CG-3	CG-3-0802		1.731			
CG-3	CG-3-1102			0.722		
101-S-2	CG-101-S2-0203				0.993	1.63575
101-S-2	CG-101-S2-0502	1.45				
101-S-2	CG-101-S2-0702		2.89			
101-S-2	CG-101-S2-1102			1.21		
102-I	CG-102-I-0802		1.73			1.73
104-D	CG-104-D-0203				19.8	11.725
104-D	CG-104-D-0502	9.29				
104-D	CG-104-D-0802		13.8			
104-D	CG-104-D-1102			4.01		
104-I	CG-104-I-0203				1.848	1.597
104-I	CG-104-I-0502	1.02				
104-I	CG-104-I-0802		1.54			
104-I	CG-104-I-1102			1.98		
104-S-1	CG-104-S1-0203				0.438	0.46325
104-S-1	CG-104-S1-0502	0.401				
104-S-1	CG-104-S1-0802		0.392			
104-S-1	CG-104-S1-1102			0.622		
104-S-2	CG-104-S2-0203				0.178	0.23025
104-S-2	CG-104-S2-0502	0.31				
104-S-2	CG-104-S2-0802		0.231			
104-S-2	CG-104-S2-1102			0.202		
105-I	CG-105-I-0203				6.51	4.3825
105-I	CG-105-I-0502	3.57				
105-I	CG-105-I-0802		3.69			
105-I	CG-105-I-1102			3.76		
105-S-1	CG-105-S1-0203				0.348	0.424
105-S-1	CG-105-S1-0502	0.398				
105-S-1	CG-105-S1-0802		0.486			
105-S-1	CG-105-S1-1102			0.464		
105-S-2	CG-105-S2-0203				1.13	1.7625
105-S-2	CG-105-S2-0502	2.84				
105-S-2	CG-105-S2-0802		1.96			
105-S-2	CG-105-S2-1102			1.12		
CG-106-D	CG-106-D-0203				0.28	0.3625
CG-106-D	CG-106-D-0502	0.454				
CG-106-D	CG-106-D-0702		0.506			
CG-106-D	CG-106-D-1102			0.21		
CG-106-I	CG-106-I-0203				3.42	3.4575
CG-106-I	CG-106-I-0502	3.64				
CG-106-I	CG-106-I-0702		3.21			
CG-106-I	CG-106-I-1102			3.56		
CG-106-WT	CG-106-WT-0702		0.258			0.241
CG-106-WT	CG-106-WT-1102			0.224		
CG-107-WT	CG-107-WT-0502	0.653				0.542333333
CG-107-WT	CG-107-WT-0702		0.413			
CG-107-WT	CG-107-WT-1102			0.561		
111-I	CG-111-I-0203				4.73	9.39
111-I	CG-111-I-0502	9.67				
111-I	CG-111-I-0702		15.56			
111-I	CG-111-I-1102			7.6		
113-S-1	CG-113-S1-0203				1.32	0.84075
113-S-1	CG-113-S1-0502	0.234				
113-S-1	CG-113-S1-0802		1.07			
113-S-1	CG-113-S1-1102			0.739		
11-S-1	CG-11-S1-0502	3.33				3.33
CG-121-40	CG-121-40-0203				0.961	0.987
CG-121-40	CG-121-40-0502	1.2				
CG-121-40	CG-121-40-0702		0.852			
CG-121-40	CG-121-40-1102			0.935		
CG-121-70	CG-121-70-0203				0.746	0.933
CG-121-70	CG-121-70-0502	1.13				
CG-121-70	CG-121-70-0702		0.816			
CG-121-70	CG-121-70-1102			1.04		
CG-122-60	CG-122-60-0203				2.79	3.6425
CG-122-60	CG-122-60-0502	4.77				
CG-122-60	CG-122-60-0802		3.89			

Table 9C-1
Average Concentrations of Ammonia from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Ammonia (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-122-60	CG-122-60-1102			3.12		
CG-122-WT	CG-122-WT-0203				0.183	0.18875
CG-122-WT	CG-122-WT-0502	0.233				
CG-122-WT	CG-122-WT-0802		0.167			
CG-122-WT	CG-122-WT-1102			0.172		
CG-123-90	CG-123-90-0203				23.8	16.025
CG-123-90	CG-123-90-0502	13.1				
CG-123-90	CG-123-90-0802		12.8			
CG-123-90	CG-123-90-1102			14.4		
CG-124-40	CG-124-40-0203				0.216	0.32225
CG-124-40	CG-124-40-0502	0.27				
CG-124-40	CG-124-40-0702		0.513			
CG-124-40	CG-124-40-1102			0.29		
CG-124-70	CG-124-70-0203				7.81	14.1025
CG-124-70	CG-124-70-0502	26.8				
CG-124-70	CG-124-70-0702		12.5			
CG-124-70	CG-124-70-1102			9.3		
CG-124-WT	CG-124-WT-0203				0.6	0.8715
CG-124-WT	CG-124-WT-0502	1.11				
CG-124-WT	CG-124-WT-0702		1.02			
CG-124-WT	CG-124-WT-1102			0.756		
CG-127-40	CG-127-40-0203				1.09	1.28
CG-127-40	CG-127-40-0502	1.57				
CG-127-40	CG-127-40-0802		1.35			
CG-127-40	CG-127-40-1102			1.11		
CG-127-WT	CG-127-WT-0502	0.205				0.205
CG-128-70	CG-128-70-0203				6.03	8.6
CG-128-70	CG-128-70-0502	8.89				
CG-128-70	CG-128-70-0802		12.84			
CG-128-70	CG-128-70-1102			6.64		
CG-130-WT	CG-130-WT-0502	0.448				
CG-134-40	CG-134-40-0203				0.806	0.97575
CG-134-40	CG-134-40-0502	1.53				
CG-134-40	CG-134-40-0702		0.811			
CG-134-40	CG-134-40-1102			0.756		
CG-134-WT	CG-134-WT-0502	0.129				0.4075
CG-134-WT	CG-134-WT-0702		0.686			
CG-135-40	CG-135-40-0203				1.857	0.95875
CG-135-40	CG-135-40-0502	0.791				
CG-135-40	CG-135-40-0802		0.55			
CG-135-40	CG-135-40-1102			0.637		
CG-140-40	CG-140-40-0203				0.659	0.834
CG-140-40	CG-140-40-0502	1.06				
CG-140-40	CG-140-40-0802		0.724			
CG-140-40	CG-140-40-1102			0.893		
CG-140-WT	CG-140-WT-0203				0.79	4.435
CG-140-WT	CG-140-WT-0502	7.56				
CG-140-WT	CG-140-WT-0802		6.26			
CG-140-WT	CG-140-WT-1102			3.13		
CG-141-40	CG-141-40-0203				0.594	0.891
CG-141-40	CG-141-40-0502	1.44				
CG-141-40	CG-141-40-0802		0.806			
CG-141-40	CG-141-40-1102			0.724		
CG-141-WT	CG-141-WT-0502	0.293				0.293
CG-143-40	CG-143-40-0203				1.79	1.835
CG-143-40	CG-143-40-0502	1.58				
CG-143-40	CG-143-40-0802		2.17			
CG-143-40	CG-143-40-1102			1.8		
CG-143-WT	CG-143-WT-0203				1.78	1.865
CG-143-WT	CG-143-WT-0502	1.3				
CG-143-WT	CG-143-WT-0802		2.21			
CG-143-WT	CG-143-WT-1102			2.17		
CG-144-35	CG-144-35-0203				0.747	1.12
CG-144-35	CG-144-35-0502	1.14				
CG-144-35	CG-144-35-0802		1.677			
CG-144-35	CG-144-35-1102			0.916		
CG-145-35	CG-145-35-0203				2.64	2.18
CG-145-35	CG-145-35-0502	3.14				
CG-145-35	CG-145-35-0802		1.42			
CG-145-35	CG-145-35-1102			1.52		

Table 9C-1
Average Concentrations of Ammonia from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Ammonia (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]

Notes:
[1] Analyzed by EPA Method 350.3

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

EPA = United States Environmental Protection Agency

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit

Table 9C-2
Average Concentrations of Bicarbonate Alkalinity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Bicarbonate Alkalinity (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0502	16				23.20
CG-3	CG-3-0802		26			
CG-3	CG-3-1102			27.6		
CG-11-S1	CG-11-S1-0502	181				181.00
CG-101-S1	CG-101-S1-0203				15.5	16.38
CG-101-S1	CG-101-S1-0502	14.2				
CG-101-S1	CG-101-S1-0702		17.4			
CG-101-S1	CG-101-S1-1102			18.4		
CG-101-S2	CG-101-S2-0203				58	81.55
CG-101-S2	CG-101-S2-0502	107				
CG-101-S2	CG-101-S2-0702		98			
CG-101-S2	CG-101-S2-1102			63.2		
CG-104-D	CG-104-D-0203				840	2477.50
CG-104-D	CG-104-D-0502	3020				
CG-104-D	CG-104-D-0802		2950			
CG-104-D	CG-104-D-1102			3100		
CG-104-I	CG-104-I-0203				115	145.50
CG-104-I	CG-104-I-0502	146				
CG-104-I	CG-104-I-0802		157			
CG-104-I	CG-104-I-1102			164		
CG-104-S1	CG-104-S1-0203				153	162.75
CG-104-S1	CG-104-S1-0502	147				
CG-104-S1	CG-104-S1-0802		153			
CG-104-S1	CG-104-S1-1102			198		
CG-104-S2	CG-104-S2-0203				43.4	55.80
CG-104-S2	CG-104-S2-0502	57				
CG-104-S2	CG-104-S2-0802		80.4			
CG-104-S2	CG-104-S2-1102			42.4		
CG-105-I	CG-105-I-0203				56.2	182.30
CG-105-I	CG-105-I-0502	219				
CG-105-I	CG-105-I-0802		228			
CG-105-I	CG-105-I-1102			226		
CG-105-S1	CG-105-S1-0203				21.4	69.50
CG-105-S1	CG-105-S1-0502	43.6				
CG-105-S1	CG-105-S1-0802		103			
CG-105-S1	CG-105-S1-1102			110		
CG-105-S2	CG-105-S2-0203				15.1	52.53
CG-105-S2	CG-105-S2-0502	80				
CG-105-S2	CG-105-S2-0802		61			
CG-105-S2	CG-105-S2-1102			54		
CG-106-D	CG-106-D-0203				236	761.25
CG-106-D	CG-106-D-0502	891				
CG-106-D	CG-106-D-0702		953			
CG-106-D	CG-106-D-1102			965		
CG-106-I	CG-106-I-0203				71.6	244.65
CG-106-I	CG-106-I-0502	287				
CG-106-I	CG-106-I-0702		308			
CG-106-I	CG-106-I-1102			312		
CG-106-WT	CG-106-WT-0203				21.2	28.00
CG-106-WT	CG-106-WT-0502	28				
CG-106-WT	CG-106-WT-0702		25.4			
CG-106-WT	CG-106-WT-1102			37.4		
CG-107-WT	CG-107-WT-0203				154	171.75
CG-107-WT	CG-107-WT-0502	138				
CG-107-WT	CG-107-WT-0702		180			
CG-107-WT	CG-107-WT-1102			215		
CG-111-I	CG-111-I-0203				112	354.50
CG-111-I	CG-111-I-0502	413				
CG-111-I	CG-111-I-0702		424			
CG-111-I	CG-111-I-1102			469		
CG-113-S1	CG-113-S1-0203				147	152.75
CG-113-S1	CG-113-S1-0502	144				
CG-113-S1	CG-113-S1-0802		148			
CG-113-S1	CG-113-S1-1102			172		
CG-121-40	CG-121-40-0203				525	524.75
CG-121-40	CG-121-40-0502	531				
CG-121-40	CG-121-40-0702		506			
CG-121-40	CG-121-40-1102			537		
CG-121-70	CG-121-70-0203				301	307.50
CG-121-70	CG-121-70-0502	313				
CG-121-70	CG-121-70-0702		309			
CG-121-70	CG-121-70-1102			307		
CG-122-60	CG-122-60-0203				638	634.75
CG-122-60	CG-122-60-0502	609				
CG-122-60	CG-122-60-0802		630			
CG-122-60	CG-122-60-1102			662		
CG-122-WT	CG-122-WT-0203				157	158.50
CG-122-WT	CG-122-WT-0502	165				
CG-122-WT	CG-122-WT-0802		158			
CG-122-WT	CG-122-WT-1102			154		
CG-123-90	CG-123-90-0203				231	243.00
CG-123-90	CG-123-90-0502	229				
CG-123-90	CG-123-90-0802		244			
CG-123-90	CG-123-90-1102			268		
CG-124-40	CG-124-40-0203				105	108.00

Table 9C-2
Average Concentrations of Bicarbonate Alkalinity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Bicarbonate Alkalinity (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-124-40	CG-124-40-0502	106				
CG-124-40	CG-124-40-0702		110			
CG-124-40	CG-124-40-1102			111		
CG-124-70	CG-124-70-0203				238	235.50
CG-124-70	CG-124-70-0502	233				
CG-124-70	CG-124-70-0702		238			
CG-124-70	CG-124-70-1102			233		
CG-124-WT	CG-124-WT-0203				78.4	80.80
CG-124-WT	CG-124-WT-0502	79.2				
CG-124-WT	CG-124-WT-0702		75.2			
CG-124-WT	CG-124-WT-1102			90.4		
CG-127-40	CG-127-40-0203				286	281.75
CG-127-40	CG-127-40-0502	270				
CG-127-40	CG-127-40-0802		285			
CG-127-40	CG-127-40-1102			286		
CG-127-WT	CG-127-WT-0203				104	107.25
CG-127-WT	CG-127-WT-0502	108				
CG-127-WT	CG-127-WT-0802		109			
CG-127-WT	CG-127-WT-1102			108		
CG-128-70	CG-128-70-0203				373	369.25
CG-128-70	CG-128-70-0502	359				
CG-128-70	CG-128-70-0802		372			
CG-128-70	CG-128-70-1102			373		
CG-130-WT	CG-130-WT-0203				77.2	73.90
CG-130-WT	CG-130-WT-0502	72				
CG-130-WT	CG-130-WT-0802		80.4			
CG-130-WT	CG-130-WT-1102			66		
CG-134-40	CG-134-40-0203				193	192.25
CG-134-40	CG-134-40-0502	183				
CG-134-40	CG-134-40-0702		197			
CG-134-40	CG-134-40-1102			196		
CG-134-WT	CG-134-WT-0203				110	115.00
CG-134-WT	CG-134-WT-0502	123				
CG-134-WT	CG-134-WT-0702		116			
CG-134-WT	CG-134-WT-1102			111		
CG-135-40	CG-135-40-0203				241	222.00
CG-135-40	CG-135-40-0502	202				
CG-135-40	CG-135-40-0802		210			
CG-135-40	CG-135-40-1102			235		
CG-140-40	CG-140-40-0203				167	170.50
CG-140-40	CG-140-40-0502	171				
CG-140-40	CG-140-40-0802		168			
CG-140-40	CG-140-40-1102			176		
CG-140-WT	CG-140-WT-0203				72.8	117.45
CG-140-WT	CG-140-WT-0502	85				
CG-140-WT	CG-140-WT-0802		140			
CG-140-WT	CG-140-WT-1102			172		
CG-141-40	CG-141-40-0203				163	158.75
CG-141-40	CG-141-40-0502	150				
CG-141-40	CG-141-40-0802		157			
CG-141-40	CG-141-40-1102			165		
CG-141-WT	CG-141-WT-0203				63	96.45
CG-141-WT	CG-141-WT-0502	99.6				
CG-141-WT	CG-141-WT-0802		97.2			
CG-141-WT	CG-141-WT-1102			126		
CG-143-40	CG-143-40-0203				181	182.75
CG-143-40	CG-143-40-0502	179				
CG-143-40	CG-143-40-0802		184			
CG-143-40	CG-143-40-1102			187		
CG-143-WT	CG-143-WT-0203				107	95.45
CG-143-WT	CG-143-WT-0502	72.6				
CG-143-WT	CG-143-WT-0802		83.2			
CG-143-WT	CG-143-WT-1102			119		
CG-144-35	CG-144-35-0203				224	223.00
CG-144-35	CG-144-35-0502	211				
CG-144-35	CG-144-35-0802		221			
CG-144-35	CG-144-35-1102			236		
CG-145-35	CG-145-35-0203				221	222.00
CG-145-35	CG-145-35-0502	217				
CG-145-35	CG-145-35-0802		218			
CG-145-35	CG-145-35-1102			232		

Notes:
[1] Analyzed by EPA Method 2320B
[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-3
Average Concentrations of Carbon Dioxide from Groundwater Monitoring Wells
PSC Georgetown Facility

		Concentration of Carbon Dioxide (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				16.55	10.78
CG-3	CG-3-0203					
CG-3	CG-3-0502	7.39				
CG-3	CG-3-0802		13.03			
CG-3	CG-3-1102			6.16		
11-S-1	CG-11-S1-0502	107				107.00
101-S-1	CG-101-S1-0203				11.97	11.97
101-S-1	CG-101-S1-0502	5.46				
101-S-1	CG-101-S1-0702		15.84			
101-S-1	CG-101-S1-1102			26.1		
101-S-2	CG-101-S2-0203				7.92	7.92
101-S-2	CG-101-S2-0502	13.6				
101-S-2	CG-101-S2-0702		20.2			
101-S-2	CG-101-S2-1102			5.63		
104-D	CG-104-D-0203				189	189.00
104-D	CG-104-D-0502	381				
104-D	CG-104-D-0802		194			
104-D	CG-104-D-1102			201		
104-I	CG-104-I-0203				36.9	36.90
104-I	CG-104-I-0502	37.3				
104-I	CG-104-I-0802		29			
104-I	CG-104-I-1102			18.1		
104-S-1	CG-104-S1-0203				122	122.00
104-S-1	CG-104-S1-0502	209.1				
104-S-1	CG-104-S1-0802		134			
104-S-1	CG-104-S1-1102			126		
104-S-2	CG-104-S2-0203				23.4	23.40
104-S-2	CG-104-S2-0502	25.2				
104-S-2	CG-104-S2-0802		102.1			
104-S-2	CG-104-S2-1102			32.6		
105-I	CG-105-I-0203				55.8	55.80
105-I	CG-105-I-0502	18.5				
105-I	CG-105-I-0802		37.1			
105-I	CG-105-I-1102			30.8		
105-S-1	CG-105-S1-0203				118	118.00
105-S-1	CG-105-S1-0502	98.9				
105-S-1	CG-105-S1-0802		261			
105-S-1	CG-105-S1-1102			30.3		
105-S-2	CG-105-S2-0203				30.3	30.30
105-S-2	CG-105-S2-0502	136.4				
105-S-2	CG-105-S2-0802		20.6			
105-S-2	CG-105-S2-1102			22.9		
CG-106-D	CG-106-D-0203				15.3	18.01
CG-106-D	CG-106-D-0502	7.92				
CG-106-D	CG-106-D-0702		30.8			
CG-106-I	CG-106-I-0203				11.6	11.60
CG-106-I	CG-106-I-0502	19.68				
CG-106-I	CG-106-I-0702		17.6			
CG-106-I	CG-106-I-1102			8.62		
CG-106-WT	CG-106-WT-0203				39.6	39.60
CG-106-WT	CG-106-WT-0502	22				
CG-106-WT	CG-106-WT-0702		10.6			
CG-106-WT	CG-106-WT-1102			11.1		
CG-107-WT	CG-107-WT-0203				45.4	45.40
CG-107-WT	CG-107-WT-0502	120				
CG-107-WT	CG-107-WT-0702		119			
CG-107-WT	CG-107-WT-1102			132		
111-I	CG-111-I-0203				19.7	19.70
111-I	CG-111-I-0502	21.1				
111-I	CG-111-I-0702		71.3			
111-I	CG-111-I-1102			76.1		
113-S-1	CG-113-S1-0203				173.4	173.40
113-S-1	CG-113-S1-0502	78.3				
113-S-1	CG-113-S1-0802		141.5			
113-S-1	CG-113-S1-1102			110		
CG-121-40	CG-121-40-0203				329	329.00
CG-121-40	CG-121-40-0502	169				
CG-121-40	CG-121-40-0702		133			
CG-121-40	CG-121-40-1102			159		
CG-121-70	CG-121-70-0203				38.2	38.20
CG-121-70	CG-121-70-0502	44				
CG-121-70	CG-121-70-0702		35.2			
CG-121-70	CG-121-70-1102			25.2		
CG-122-60	CG-122-60-0203				46.3	46.30
CG-122-60	CG-122-60-0502	29.4				
CG-122-60	CG-122-60-0802		41.4			
CG-122-60	CG-122-60-1102			5.81		
CG-122-WT	CG-122-WT-0203				105	105.00
CG-122-WT	CG-122-WT-0502	32.9				
CG-122-WT	CG-122-WT-0802		102			
CG-122-WT	CG-122-WT-1102			92		
CG-123-90	CG-123-90-0203				98	98.00

Table 9C-3
Average Concentrations of Carbon Dioxide from Groundwater Monitoring Wells
PSC Georgetown Facility

		Concentration of Carbon Dioxide (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-0502	112.6				
CG-123-90	CG-123-90-0802		85.3			
CG-123-90	CG-123-90-1102			95.6		
CG-124-40	CG-124-40-0203				25.9	25.90
CG-124-40	CG-124-40-0502	30.8				
CG-124-40	CG-124-40-0702		30.8			
CG-124-40	CG-124-40-1102			18.5		
CG-124-70	CG-124-70-0203				34.5	34.50
CG-124-70	CG-124-70-0502	43.3				
CG-124-70	CG-124-70-0702		24.6			
CG-124-70	CG-124-70-1102			29.9		
CG-124-WT	CG-124-WT-0203				104.2	104.20
CG-124-WT	CG-124-WT-0502	55.4				
CG-124-WT	CG-124-WT-0702		88.9			
CG-124-WT	CG-124-WT-1102			54.9		
CG-127-40	CG-127-40-0203				97.2	97.20
CG-127-40	CG-127-40-0502	50.7				
CG-127-40	CG-127-40-0802		70.8			
CG-127-40	CG-127-40-1102			147.8		
CG-127-WT	CG-127-WT-0203				57.4	57.40
CG-127-WT	CG-127-WT-0502	41.5				
CG-127-WT	CG-127-WT-0802		72.7			
CG-127-WT	CG-127-WT-1102			77.4		
CG-128-70	CG-128-70-0203				16.2	16.20
CG-128-70	CG-128-70-0502	10.7				
CG-128-70	CG-128-70-0802		63.9			
CG-128-70	CG-128-70-1102			28.5		
CG-130-WT	CG-130-WT-0203				34.7	34.70
CG-130-WT	CG-130-WT-0502	23.4				
CG-130-WT	CG-130-WT-0802		42.8			
CG-130-WT	CG-130-WT-1102			30.6		
CG-134-40	CG-134-40-0203				70.4	70.40
CG-134-40	CG-134-40-0502	47.2				
CG-134-40	CG-134-40-0702		106			
CG-134-40	CG-134-40-1102			103		
CG-134-WT	CG-134-WT-0203				31.7	31.70
CG-134-WT	CG-134-WT-0502	30.1				
CG-134-WT	CG-134-WT-0702		42.2			
CG-134-WT	CG-134-WT-1102			81.3		
CG-135-40	CG-135-40-0203				272.4	272.40
CG-135-40	CG-135-40-0502	150				
CG-135-40	CG-135-40-0802		296			
CG-135-40	CG-135-40-1102			131		
CG-140-40	CG-140-40-0203				48.9	48.90
CG-140-40	CG-140-40-0502	36.4				
CG-140-40	CG-140-40-0802		76.2			
CG-140-40	CG-140-40-1102			36.4		
CG-140-WT	CG-140-WT-0203				302	302.00
CG-140-WT	CG-140-WT-0502	142				
CG-140-WT	CG-140-WT-0802		227			
CG-140-WT	CG-140-WT-1102			166		
CG-141-40	CG-141-40-0203				79.6	79.60
CG-141-40	CG-141-40-0502	57.2				
CG-141-40	CG-141-40-0802		100			
CG-141-40	CG-141-40-1102			66		
CG-141-WT	CG-141-WT-0203				25.9	25.90
CG-141-WT	CG-141-WT-0502	44.9				
CG-141-WT	CG-141-WT-0802		58.6			
CG-141-WT	CG-141-WT-1102			139		
CG-143-40	CG-143-40-0203				21.1	21.10
CG-143-40	CG-143-40-0502	37.1				
CG-143-40	CG-143-40-0802		19.7			
CG-143-40	CG-143-40-1102			43.5		
CG-143-WT	CG-143-WT-0203				178.3	178.30
CG-143-WT	CG-143-WT-0502	64.1				
CG-143-WT	CG-143-WT-0802		75.3			
CG-143-WT	CG-143-WT-1102			41.4		
CG-144-35	CG-144-35-0203				49.3	49.30
CG-144-35	CG-144-35-0502	30.8				
CG-144-35	CG-144-35-0802		30.4			
CG-144-35	CG-144-35-1102			83.7		
CG-145-35	CG-145-35-0203				18.8	#REF!
CG-145-35	CG-145-35-0502	20.2				
CG-145-35	CG-145-35-0802		68.1			
CG-145-35	CG-145-35-1102			13		

Notes:
[1] Analyzed by EPA Method 6020 or 6010

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-4
Average Concentrations of Chloride from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Chloride (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				4.84	4.55
CG-3	CG-3-0502	4.07				
CG-3	CG-3-0802		4.22			
CG-3	CG-3-1102			5.08		
CG-11-S1	CG-11-S1-0502	36.9				36.90
CG-101-S1	CG-101-S1-0203				5.04	5.01
CG-101-S1	CG-101-S1-0502	5.51				
CG-101-S1	CG-101-S1-0702		5.65			
CG-101-S1	CG-101-S1-1102			3.82		
CG-101-S2	CG-101-S2-0203				5.06	4.91
CG-101-S2	CG-101-S2-0502	4.42				
CG-101-S2	CG-101-S2-0702		4.92			
CG-101-S2	CG-101-S2-1102			5.22		
CG-104-D	CG-104-D-0203				6810	6855.00
CG-104-D	CG-104-D-0502	6930				
CG-104-D	CG-104-D-0802		7410			
CG-104-D	CG-104-D-1102			6270		
CG-104-I	CG-104-I-0203				16.8	23.15
CG-104-I	CG-104-I-0502	23.8				
CG-104-I	CG-104-I-0802		24.9			
CG-104-I	CG-104-I-1102			27.1		
CG-104-S1	CG-104-S1-0203				18.9	23.80
CG-104-S1	CG-104-S1-0502	21.6				
CG-104-S1	CG-104-S1-0802		26.8			
CG-104-S1	CG-104-S1-1102			27.9		
CG-104-S2	CG-104-S2-0203				5.26	5.59
CG-104-S2	CG-104-S2-0502	6.88				
CG-104-S2	CG-104-S2-0802		5.41			
CG-104-S2	CG-104-S2-1102			4.81		
CG-105-I	CG-105-I-0203				45	46.20
CG-105-I	CG-105-I-0502	47.3				
CG-105-I	CG-105-I-0802		48.1			
CG-105-I	CG-105-I-1102			44.4		
CG-105-S1	CG-105-S1-0203				13.9	19.25
CG-105-S1	CG-105-S1-0502	15.2				
CG-105-S1	CG-105-S1-0802		26.3			
CG-105-S1	CG-105-S1-1102			21.6		
CG-105-S2	CG-105-S2-0203				5.66	7.52
CG-105-S2	CG-105-S2-0502	13				
CG-105-S2	CG-105-S2-0802		5.18			
CG-105-S2	CG-105-S2-1102			6.25		
CG-106-D	CG-106-D-0203				234	211.75
CG-106-D	CG-106-D-0502	231				
CG-106-D	CG-106-D-0702		202			
CG-106-D	CG-106-D-1102			180		
CG-106-I	CG-106-I-0203				34.4	33.30
CG-106-I	CG-106-I-0502	31.8				
CG-106-I	CG-106-I-0702		34			
CG-106-I	CG-106-I-1102			33		
CG-106-WT	CG-106-WT-0203				4.99	4.72
CG-106-WT	CG-106-WT-0502	3.86				
CG-106-WT	CG-106-WT-0702		4.75			
CG-106-WT	CG-106-WT-1102			5.28		
CG-107-WT	CG-107-WT-0203				8.21	8.47
CG-107-WT	CG-107-WT-0502	9.14				
CG-107-WT	CG-107-WT-0702		7.63			
CG-107-WT	CG-107-WT-1102			8.88		
CG-111-I	CG-111-I-0203				249	259.50
CG-111-I	CG-111-I-0502	246				
CG-111-I	CG-111-I-0702		263			
CG-111-I	CG-111-I-1102			280		
CG-113-S1	CG-113-S1-0203				16.9	14.70
CG-113-S1	CG-113-S1-0502	10.9				
CG-113-S1	CG-113-S1-0802		10.2			
CG-113-S1	CG-113-S1-1102			20.8		
CG-121-40	CG-121-40-0203				19.6	21.85
CG-121-40	CG-121-40-0502	27				
CG-121-40	CG-121-40-0702		21			
CG-121-40	CG-121-40-1102			19.8		
CG-121-70	CG-121-70-0203				10.6	10.39
CG-121-70	CG-121-70-0502	10.5				
CG-121-70	CG-121-70-0702		9.84			
CG-121-70	CG-121-70-1102			10.6		
CG-122-60	CG-122-60-0203				68.9	76.90
CG-122-60	CG-122-60-0502	93				
CG-122-60	CG-122-60-0802		74.6			
CG-122-60	CG-122-60-1102			71.1		
CG-122-WT	CG-122-WT-0203				13.3	13.48
CG-122-WT	CG-122-WT-0502	14.6				
CG-122-WT	CG-122-WT-0802		13			
CG-122-WT	CG-122-WT-1102			13		
CG-123-90	CG-123-90-0203				1100	1087.50

Table 9C-4
Average Concentrations of Chloride from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Chloride (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-0502	1020				
CG-123-90	CG-123-90-0802		1180			
CG-123-90	CG-123-90-1102			1050		
CG-124-40	CG-124-40-0203				5.6	5.83
CG-124-40	CG-124-40-0502	6.9				
CG-124-40	CG-124-40-0702		6.1			
CG-124-40	CG-124-40-1102			4.72		
CG-124-70	CG-124-70-0203				473	503.75
CG-124-70	CG-124-70-0502	489				
CG-124-70	CG-124-70-0702		492			
CG-124-70	CG-124-70-1102			561		
CG-124-WT	CG-124-WT-0203				6.54	8.42
CG-124-WT	CG-124-WT-0502	5.82				
CG-124-WT	CG-124-WT-0702		10.9			
CG-124-WT	CG-124-WT-1102			10.4		
CG-127-40	CG-127-40-0203				79.2	81.20
CG-127-40	CG-127-40-0502	83.9				
CG-127-40	CG-127-40-0802		83.2			
CG-127-40	CG-127-40-1102			78.5		
CG-127-WT	CG-127-WT-0203				13	11.95
CG-127-WT	CG-127-WT-0502	12.3				
CG-127-WT	CG-127-WT-0802		11.4			
CG-127-WT	CG-127-WT-1102			11.1		
CG-128-70	CG-128-70-0203				71.1	68.53
CG-128-70	CG-128-70-0502	68.2				
CG-128-70	CG-128-70-0802		68			
CG-128-70	CG-128-70-1102			66.8		
CG-130-WT	CG-130-WT-0203				13.9	10.94
CG-130-WT	CG-130-WT-0502	10				
CG-130-WT	CG-130-WT-0802		10.4			
CG-130-WT	CG-130-WT-1102			9.47		
CG-134-40	CG-134-40-0203				31.6	30.48
CG-134-40	CG-134-40-0502	32.8				
CG-134-40	CG-134-40-0702		30.5			
CG-134-40	CG-134-40-1102			27		
CG-134-WT	CG-134-WT-0203				9.14	9.96
CG-134-WT	CG-134-WT-0502	8.6				
CG-134-WT	CG-134-WT-0702		11			
CG-134-WT	CG-134-WT-1102			11.1		
CG-135-40	CG-135-40-0203				30.6	31.50
CG-135-40	CG-135-40-0502	30.8				
CG-135-40	CG-135-40-0802		31.6			
CG-135-40	CG-135-40-1102			33		
CG-140-40	CG-140-40-0203				14.8	14.70
CG-140-40	CG-140-40-0502	15.7				
CG-140-40	CG-140-40-0802		14			
CG-140-40	CG-140-40-1102			14.3		
CG-140-WT	CG-140-WT-0203				19.8	15.88
CG-140-WT	CG-140-WT-0502	16.3				
CG-140-WT	CG-140-WT-0802		13			
CG-140-WT	CG-140-WT-1102			14.4		
CG-141-40	CG-141-40-0203				20.8	20.63
CG-141-40	CG-141-40-0502	21.9				
CG-141-40	CG-141-40-0802		20.4			
CG-141-40	CG-141-40-1102			19.4		
CG-141-WT	CG-141-WT-0203				3.32	5.86
CG-141-WT	CG-141-WT-0502	7.22				
CG-141-WT	CG-141-WT-0802		6.25			
CG-141-WT	CG-141-WT-1102			6.65		
CG-143-40	CG-143-40-0203				17.6	18.15
CG-143-40	CG-143-40-0502	19.8				
CG-143-40	CG-143-40-0802		17.3			
CG-143-40	CG-143-40-1102			17.9		
CG-143-WT	CG-143-WT-0203				10.5	7.98
CG-143-WT	CG-143-WT-0502	5.17				
CG-143-WT	CG-143-WT-0802		6.41			
CG-143-WT	CG-143-WT-1102			9.85		
CG-144-35	CG-144-35-0203				17	19.45
CG-144-35	CG-144-35-0502	22.7				
CG-144-35	CG-144-35-0802		19.5			
CG-144-35	CG-144-35-1102			18.6		
CG-145-35	CG-145-35-0203				68.6	72.45
CG-145-35	CG-145-35-0502	73.8				
CG-145-35	CG-145-35-0802		75.9			
CG-145-35	CG-145-35-1102			71.5		

Notes:
[1] Analyzed by EPA Method 300
[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

EPA = United States Environmental Protection Agency

Table 9C-5
Average Concentrations of Dissolved Oxygen from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample Date	Measurement of Dissolved Oxygen (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-1-S1	2/3/03				0.28	0.28
CG-2-S1	2/4/03				0.33	0.33
CG-3	2/4/03				0.35	2.74
CG-3	11/12/2002			4.03		
CG-3	5/1/02	5.84				
CG-3	8/7/02		0.73			
CG-9-S1	2/4/03				0.39	0.39
CG-10-S1	2/4/03				0.32	
CG-11-S1	2/4/03				0.43	1.87
CG-11-S1	5/1/02	0				
CG-11-S1	8/6/02		5.18			
CG-101-S1	2/5/03				8.88	6.07
CG-101-S1	11/13/02			8.16		
CG-101-S1	5/1/02	6.32				
CG-101-S1	7/31/02		3.01			
CG-101-S2	2/5/03				0.39	0.35
CG-101-S2	11/13/02			0.5		
CG-101-S2	5/1/02	0.00				
CG-101-S2	7/31/02		0.5			
CG-102-D	2/3/03				0.27	1.21
CG-102-D	11/11/02			0.3		
CG-102-D	5/1/02	3.39				
CG-102-D	8/8/02		0.88			
CG-102-I	2/3/03				0.33	3.45
CG-102-I	11/4/2002			5.01		
CG-102-I	5/1/02	7.78				
CG-102-I	8/7/02		0.67			
CG-102-S1	2/3/03				0.57	2.12
CG-102-S1	11/11/02			0.35		
CG-102-S1	5/1/02	6.50				
CG-102-S1	8/7/02		1.05			
CG-102-S2	2/3/03				0.36	2.75
CG-102-S2	11/11/02			0.42		
CG-102-S2	5/1/02	9.17				
CG-102-S2	8/7/02		1.03			
CG-103-I	2/5/03				0.27	0.79
CG-103-I	11/6/2002			1.3		
CG-103-I	5/1/02	0.77				
CG-103-I	8/5/02		0.83			
CG-103-S1	2/4/03				0.3	2.02
CG-103-S1	11/6/2002			1.37		
CG-103-S1	5/1/02	0				
CG-103-S1	8/7/02		6.39			
CG-103-S2	2/5/03				0.64	0.91
CG-103-S2	11/6/2002			1.48		
CG-103-S2	5/1/02	0				
CG-103-S2	8/5/02		1.53			
CG-104-D	2/6/03				0.26	1.56
CG-104-D	11/7/2002			3.15		
CG-104-D	5/1/02	1.66				
CG-104-D	8/7/02		1.17			
CG-104-I	2/6/03				0.64	2.80
CG-104-I	11/11/2002			3.03		
CG-104-I	5/1/02	7.12				
CG-104-I	8/6/02		0.42			
CG-104-S1	2/5/03				0.58	1.97
CG-104-S1	11/7/2002			1.87		
CG-104-S1	5/1/02	4.63				
CG-104-S1	8/6/02		0.79			
CG-104-S2	2/5/03				0.44	2.36
CG-104-S2	11/7/2002			1.62		
CG-104-S2	5/1/02	6.43				
CG-104-S2	8/8/02		0.93			
CG-105-I	2/6/03				0.27	0.82
CG-105-I	11/11/2002			2.78		
CG-105-I	5/1/02	0.00				
CG-105-I	8/6/02		0.22			
CG-105-S1	2/6/03				0.28	0.94
CG-105-S1	11/11/2002			2.79		
CG-105-S1	5/1/02	0.00				
CG-105-S1	8/6/02		0.7			
CG-105-S2	2/6/03				0.35	2.76
CG-105-S2	11/11/2002			2.54		
CG-105-S2	5/1/02	0.95				
CG-105-S2	8/7/02		7.21			
CG-106-D	2/7/03				0.4	0.29
CG-106-D	11/12/02			0.33		
CG-106-D	5/1/02	0.00				
CG-106-D	7/30/02		0.42			
CG-106-I	2/7/03				0.29	0.29
CG-106-I	11/12/02			0.31		
CG-106-I	5/1/02	0.00				
CG-106-I	7/30/02		0.56			

Table 9C-5
Average Concentrations of Dissolved Oxygen from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample Date	Measurement of Dissolved Oxygen (milligrams per liter)[1] 2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-106-WT	2/7/03				4.64	3.08
CG-106-WT	11/12/02			3.58		
CG-106-WT	5/1/02	0.27				
CG-106-WT	7/30/02		3.82			
CG-107-WT	2/7/03				0.35	1.70
CG-107-WT	11/11/02			0.35		
CG-107-WT	5/1/02	0.00				
CG-107-WT	7/30/02		6.09			
CG-111-I	2/7/03				0.28	3.46
CG-111-I	11/11/02			0.31		
CG-111-I	5/1/02	6.97				
CG-111-I	7/30/02		6.28			
CG-112-S1	2/10/03				0.61	1.97
CG-112-S1	11/13/2002			5.67		
CG-112-S1	5/1/02	0.00				
CG-112-S1	8/2/02		1.58			
CG-113-S1	2/10/03				1.2	3.05
CG-113-S1	11/7/2002			4.06		
CG-113-S1	5/1/02	6.24				
CG-113-S1	8/2/02		0.7			
CG-114-75	2/10/03				0.29	0.81
CG-114-75	11/8/2002			2.31		
CG-114-75	5/1/02	0.00				
CG-114-75	8/1/02		0.62			
CG-115-75	2/10/03				0.39	0.81
CG-115-75	11/8/2002			2.36		
CG-115-75	5/1/02	0.00				
CG-115-75	8/1/02		0.49			
CG-115-WT	2/10/03				0.39	0.88
CG-115-WT	11/8/2002			1.89		
CG-115-WT	5/1/02	0.77				
CG-115-WT	8/1/02		0.45			
CG-119-40	2/10/03				0.65	1.72
CG-119-40	11/12/2002			4.72		
CG-119-40	5/1/02	0.99				
CG-119-40	8/2/02		0.52			
CG120-75	8/1/02		0.46			0.37
CG-120-75	2/11/03				0.8	
CG-120-75	11/8/02			0.22		
CG-120-75	5/1/02	0				
CG-121-40	2/11/03				0.57	0.37
CG-121-40	11/7/02			0.36		
CG-121-40	5/1/02	0.00				
CG-121-40	7/31/02		0.55			
CG-121-70	2/11/03				0.51	0.33
CG-121-70	11/7/02			0.27		
CG-121-70	5/1/02	0.00				
CG-121-70	7/31/02		0.53			
CG-122-60	2/11/03				0.43	2.49
CG-122-60	11/6/02			0.24		
CG-122-60	5/1/02	2.54				
CG-122-60	8/1/02		6.73			
CG-122-WT	2/11/03				0.83	2.35
CG-122-WT	11/6/02			0.29		
CG-122-WT	5/1/02	2.56				
CG-122-WT	8/1/02		5.71			
CG-123-90	2/11/03				0.52	2.39
CG-123-90	11/8/2002			1.93		
CG-123-90	5/1/02	0.00				
CG-123-90	8/1/02		7.09			
CG-124-40	2/12/03				0.7	1.70
CG-124-40	11/7/02			0.47		
CG-124-40	5/1/02	0.00				
CG-124-40	7/31/02		5.64			
CG-124-70	2/12/03				0.37	2.29
CG-124-70	11/7/02			0.31		
CG-124-70	5/1/02	0.00				
CG-124-70	7/31/02		6.49			
CG-124-WT	2/12/03				1.36	1.79
CG-124-WT	11/7/02			0.45		
CG-124-WT	5/1/02	0.00				
CG-124-WT	7/31/02		5.33			
CG-125-40	2/12/03				0.33	3.29
CG-125-40	11/8/02			0.24		
CG-125-40	5/1/02	5.65				
CG-125-40	8/8/02		6.95			
CG126-WT	11/8/02			0.3		3.26
CG-126-WT	2/12/03				0.65	
CG-126-WT	5/1/02	6.09				
CG-126-WT	8/1/02		6			
CG-127-40	2/12/03				0.49	1.76
CG-127-40	11/6/02			0.26		
CG-127-40	5/1/02	0.00				

Table 9C-5
Average Concentrations of Dissolved Oxygen from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Measurement of Dissolved Oxygen (milligrams per liter)[1]				
Sample Location	Sample Date	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-127-40	8/2/02		6.29			
CG-127-WT	2/12/03				1.01	2.04
CG-127-WT	11/6/02			0.46		
CG-127-WT	5/1/02	0.00				
CG-127-WT	8/2/02		6.69			
CG-128-70	2/17/03				0.58	2.00
CG-128-70	11/8/02			0.31		
CG-128-70	5/1/02	0.00				
CG-128-70	8/8/02		7.11			
CG-128-WT	2/17/03				8.16	7.68
CG-128-WT	11/8/02			2.02		
CG-128-WT	5/1/02	12.97				
CG-128-WT	8/8/02		7.58			
CG-129-40	2/17/03				0.57	4.87
CG-129-40	11/5/2002			1.95		
CG-129-40	5/1/02	10.49				
CG-129-40	7/31/02		6.46			
CG-129-WT	2/17/03				0.75	4.96
CG-129-WT	11/5/2002			1.64		
CG-129-WT	5/1/02	11.28				
CG-129-WT	7/31/02		6.18			
CG-130-WT	2/17/03				0.76	5.85
CG-130-WT	11/5/02			6.81		
CG-130-WT	5/1/02	10.55				
CG-130-WT	8/8/02		5.29			
CG-131-40	2/17/03				0.51	1.99
CG-131-40	11/6/2002			1.64		
CG-131-40	5/1/02	0.00				
CG-131-40	8/6/02		5.82			
CG-131-WT	2/17/03				0.89	2.61
CG-131-WT	11/6/2002			1.74		
CG-131-WT	5/1/02	7.26				
CG-131-WT	8/1/02		0.55			
CG-132-40	2/18/03				0.74	2.67
CG-132-40	11/5/2002			1.79		
CG-132-40	5/1/02	7.68				
CG-132-40	7/31/02		0.45			
CG-132-WT	2/18/03				2.12	3.61
CG-132-WT	11/5/2002			2.98		
CG-132-WT	5/1/02	8.02				
CG-132-WT	7/31/02		1.33			
CG-133-40	2/18/03				0.51	4.91
CG-133-40	11/13/2002			5.4		
CG-133-40	5/1/02	6.41				
CG-133-40	8/5/02		7.33			
CG-134-40	2/18/03				0.52	1.69
CG-134-40	11/5/02			0.51		
CG-134-40	5/1/02	0.00				
CG-134-40	7/30/02		5.74			
CG-134-WT	2/18/03				0.63	1.58
CG-134-WT	11/5/02			0.35		
CG-134-WT	5/1/02	0.00				
CG-134-WT	7/30/02		5.35			
CG-135-40	2/19/03				0.84	4.28
CG-135-40	11/13/02			10.33		
CG-135-40	5/1/02	0.00				
CG-135-40	8/6/02		5.95			
CG-135-50	2/19/03				0.47	3.69
CG-135-50	11/13/02			0.35		
CG-135-50	5/1/02	7.43				
CG-135-50	8/6/02		6.51			
CG-136-40	2/19/03				0.37	3.54
CG-136-40	11/13/2002			5.67		
CG-136-40	5/1/02	0.00				
CG-136-40	8/5/02		8.1			
CG-136-WT	2/19/03				0.63	3.51
CG-136-WT	11/13/2002			6.05		
CG-136-WT	5/1/02	0.88				
CG-136-WT	8/5/02		6.49			
CG-137-40	2/19/03				0.54	3.15
CG-137-40	11/13/02			0.58		
CG-137-40	5/1/02	5.99				
CG-137-40	7/30/02		5.48			
CG-137-WT	2/19/03				0.5	2.78
CG-137-WT	11/13/02			0.35		
CG-137-WT	5/1/02	4.93				
CG-137-WT	7/30/02		5.32			
CG-138-40	2/19/03				0.44	1.00
CG-138-40	11/5/2002			1.71		
CG-138-40	5/1/02	1.02				
CG-138-40	8/5/02		0.84			
CG-138-70	2/19/03				0.43	0.94
CG-138-70	11/5/2002			1.7		

Table 9C-5
Average Concentrations of Dissolved Oxygen from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Measurement of Dissolved Oxygen (milligrams per liter)[1]				
Sample Location	Sample Date	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-138-70	5/1/02	0.93				
CG-138-70	8/5/02		0.68			
CG-138-WT	2/19/03				0.58	2.00
CG-138-WT	11/5/2002			1.81		
CG-138-WT	5/1/02	5.05				
CG-138-WT	8/5/02		0.54			
CG-139-40	2/20/03				0.64	1.49
CG-139-40	11/5/2002			1.82		
CG-139-40	5/1/02	2.87				
CG-139-40	7/30/02		0.63			
CG-140-40	2/20/03				0.44	4.29
CG-140-40	11/5/02			0.4		
CG-140-40	5/1/02	6.3				
CG-140-40	8/5/02		6.12			
CG-140-WT	2/20/03				2.09	3.95
CG-140-WT	11/5/02			0.37		
CG-140-WT	5/1/02	6.34				
CG-140-WT	8/5/02		7			
CG-141-40	2/20/03				0.62	1.05
CG-141-40	11/5/02			0.36		
CG-141-40	5/1/02	2.5				
CG-141-40	8/5/02		0.7			
CG-141-50	2/20/03				0.49	2.55
CG-141-50	11/5/02			7.88		
CG-141-50	5/1/02	1.21				
CG-141-50	8/5/02		0.6			
CG-141-WT	2/20/03				2.01	3.39
CG-141-WT	11/5/02			0.46		
CG-141-WT	5/1/02	10.27				
CG-141-WT	8/5/02		0.82			
CG-142-40	2/21/03				0.65	2.05
CG-142-40	11/11/02			0.39		
CG-142-40	5/1/02	5.87				
CG-142-40	8/8/02		1.28			
CG-142-WT	2/21/03				1.14	2.21
CG-142-WT	11/11/02			0.55		
CG-142-WT	5/1/02	6.65				
CG-142-WT	7/29/02		0.49			
CG-143-40	2/21/03				0.54	2.80
CG-143-40	11/12/2002			4.59		
CG-143-40	5/1/02	0.00				
CG-143-40	8/2/02		6.05			
CG-143-WT	2/21/03				0.7	2.58
CG-143-WT	11/12/2002			3.82		
CG-143-WT	5/1/02	0.00				
CG-143-WT	8/2/02		5.79			
CG-144-35	2/21/03				0.58	2.07
CG-144-35	11/4/02			6.44		
CG-144-35	5/1/02	0.00				
CG-144-35	8/8/02		1.26			
CG-145-35	2/21/03				0.5	0.56
CG-145-35	11/4/02			0.65		
CG-145-35	5/1/02	0				
CG-145-35	8/8/02		1.09			
V-1	2/21/03				0.79	2.28
V-1	11/13/2002			4.66		
V-1	5/1/02	0				
V-1	8/6/02		3.67			

Notes:
[1] Dissolved Oxygen concentration measured during field sampling.

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-6
Average Concentrations of Ethane from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ethane (micrograms per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				< 10	<10
CG-3	CG-3-0502	< 10				
CG-3	CG-3-0802		< 10			
CG-3	CG-3-1102			< 10		
CG-11-S1	CG-11-S1-0502	< 10				<10
CG-101-S1	CG-101-S1-0203				< 10	<10
CG-101-S1	CG-101-S1-0502	< 10				
CG-101-S1	CG-101-S1-0702		< 10			
CG-101-S1	CG-101-S1-1102			< 10		
CG-101-S2	CG-101-S2-0203				< 10	<10
CG-101-S2	CG-101-S2-0502	< 10				
CG-101-S2	CG-101-S2-0702		< 10			
CG-101-S2	CG-101-S2-1102			< 10		
CG-104-D	CG-104-D-0203				< 10	<10
CG-104-D	CG-104-D-0502	< 10				
CG-104-D	CG-104-D-0802		< 10			
CG-104-D	CG-104-D-1102			< 10		
CG-104-I	CG-104-I-0203				641	635.25
CG-104-I	CG-104-I-0502	942				
CG-104-I	CG-104-I-0802		676			
CG-104-I	CG-104-I-1102			282		
CG-104-S1	CG-104-S1-0203				92.4	62.30
CG-104-S1	CG-104-S1-0502	32.2				
CG-104-S1	CG-104-S1-0802		< 10			
CG-104-S1	CG-104-S1-1102			< 10		
CG-104-S2	CG-104-S2-0203				64.2	151.28
CG-104-S2	CG-104-S2-0502	309				
CG-104-S2	CG-104-S2-0802		174			
CG-104-S2	CG-104-S2-1102			57.9		
CG-105-I	CG-105-I-0203				< 10	<10
CG-105-I	CG-105-I-0502	< 10				
CG-105-I	CG-105-I-0802		< 10			
CG-105-I	CG-105-I-1102			< 200		
CG-105-S1	CG-105-S1-0203				167	103.27
CG-105-S1	CG-105-S1-0502	81.6				
CG-105-S1	CG-105-S1-0802		< 50			
CG-105-S1	CG-105-S1-1102			61.2		
CG-105-S2	CG-105-S2-0203				34.8	54.88
CG-105-S2	CG-105-S2-0502	63.2				
CG-105-S2	CG-105-S2-0802		93.5			
CG-105-S2	CG-105-S2-1102			28		
CG-106-D	CG-106-D-0203				< 10	<10
CG-106-D	CG-106-D-0502	< 10				
CG-106-D	CG-106-D-0702		< 10			
CG-106-D	CG-106-D-1102			< 10		
CG-106-I	CG-106-I-0203				< 10	<10
CG-106-I	CG-106-I-0502	< 10				
CG-106-I	CG-106-I-0702		< 10			
CG-106-I	CG-106-I-1102			< 10		
CG-106-WT	CG-106-WT-0203				< 10	<10
CG-106-WT	CG-106-WT-0502	< 10				
CG-106-WT	CG-106-WT-0702		< 10			
CG-106-WT	CG-106-WT-1102			< 10		
CG-107-WT	CG-107-WT-0203				< 10	<10
CG-107-WT	CG-107-WT-0502	< 10				
CG-107-WT	CG-107-WT-0702		< 10			
CG-107-WT	CG-107-WT-1102			< 10		
CG-111-I	CG-111-I-0203				< 10	<10
CG-111-I	CG-111-I-0502	< 10				
CG-111-I	CG-111-I-0702		< 10			
CG-111-I	CG-111-I-1102			< 200		
CG-113-S1	CG-113-S1-0203				126	111.78
CG-113-S1	CG-113-S1-0502	98.1				
CG-113-S1	CG-113-S1-0802		103			
CG-113-S1	CG-113-S1-1102			120		
CG-121-40	CG-121-40-0203				662	472.75
CG-121-40	CG-121-40-0502	290				
CG-121-40	CG-121-40-0702		423			
CG-121-40	CG-121-40-1102			516		
CG-121-70	CG-121-70-0203				< 433	181.00
CG-121-70	CG-121-70-0502	73				
CG-121-70	CG-121-70-0702		214			
CG-121-70	CG-121-70-1102			256		
CG-122-60	CG-122-60-0203				2270	2045.00
CG-122-60	CG-122-60-0502	2140				
CG-122-60	CG-122-60-0802		1940			
CG-122-60	CG-122-60-1102			1830		
CG-122-WT	CG-122-WT-0203				782	497.00
CG-122-WT	CG-122-WT-0502	498				
CG-122-WT	CG-122-WT-0802		381			
CG-122-WT	CG-122-WT-1102			327		
CG-123-90	CG-123-90-0203				174	82.00
CG-123-90	CG-123-90-0502	13.4				
CG-123-90	CG-123-90-0802		58.6			
CG-123-90	CG-123-90-1102			< 10		

Table 9C-6
Average Concentrations of Ethane from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ethane (micrograms per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-124-40	CG-124-40-0203				17.4	12.93
CG-124-40	CG-124-40-0502	10.2				
CG-124-40	CG-124-40-0702		< 10			
CG-124-40	CG-124-40-1102			11.2		
CG-124-70	CG-124-70-0203				< 100	168.00
CG-124-70	CG-124-70-0502	194				
CG-124-70	CG-124-70-0702		< 100			
CG-124-70	CG-124-70-1102			142		
CG-124-WT	CG-124-WT-0203				< 10	<10
CG-124-WT	CG-124-WT-0502	< 10				
CG-124-WT	CG-124-WT-0702		< 10			
CG-124-WT	CG-124-WT-1102			< 10		
CG-127-40	CG-127-40-0203				1730	1662.50
CG-127-40	CG-127-40-0502	1870				
CG-127-40	CG-127-40-0802		1640			
CG-127-40	CG-127-40-1102			1410		
CG-127-WT	CG-127-WT-0203				< 10	<10
CG-127-WT	CG-127-WT-0502	< 10				
CG-127-WT	CG-127-WT-0802		< 10			
CG-127-WT	CG-127-WT-1102			< 10		
CG-128-70	CG-128-70-0203				< 665	64.80
CG-128-70	CG-128-70-0502	< 10				
CG-128-70	CG-128-70-0802		72.4			
CG-128-70	CG-128-70-1102			57.2		
CG-130-WT	CG-130-WT-0203				117	73.10
CG-130-WT	CG-130-WT-0502	29.2				
CG-130-WT	CG-130-WT-0802		< 10			
CG-130-WT	CG-130-WT-1102			< 10		
CG-134-40	CG-134-40-0203				< 433	267.67
CG-134-40	CG-134-40-0502	323				
CG-134-40	CG-134-40-0702		248			
CG-134-40	CG-134-40-1102			232		
CG-134-WT	CG-134-WT-0203				< 10	<10
CG-134-WT	CG-134-WT-0502	< 10				
CG-134-WT	CG-134-WT-0702		< 10			
CG-134-WT	CG-134-WT-1102			< 10		
CG-135-40	CG-135-40-0203				549	430.50
CG-135-40	CG-135-40-0502	400				
CG-135-40	CG-135-40-0802		398			
CG-135-40	CG-135-40-1102			375		
CG-140-40	CG-140-40-0203				< 100	13.20
CG-140-40	CG-140-40-0502	< 10				
CG-140-40	CG-140-40-0802		13.2			
CG-140-40	CG-140-40-1102			< 10		
CG-140-WT	CG-140-WT-0203				< 10	<10
CG-140-WT	CG-140-WT-0502	< 10				
CG-140-WT	CG-140-WT-0802		< 10			
CG-140-WT	CG-140-WT-1102			< 10		
CG-141-40	CG-141-40-0203				< 10	38.67
CG-141-40	CG-141-40-0502	32.6				
CG-141-40	CG-141-40-0802		42.4			
CG-141-40	CG-141-40-1102			41		
CG-141-WT	CG-141-WT-0203				< 10	<10
CG-141-WT	CG-141-WT-0502	< 10				
CG-141-WT	CG-141-WT-0802		< 10			
CG-141-WT	CG-141-WT-1102			< 10		
CG-143-40	CG-143-40-0203				< 10	10.20
CG-143-40	CG-143-40-0502	< 10				
CG-143-40	CG-143-40-0802		10.2			
CG-143-40	CG-143-40-1102			< 10		
CG-143-WT	CG-143-WT-0203				< 433	<10
CG-143-WT	CG-143-WT-0502	< 10				
CG-143-WT	CG-143-WT-0802		< 200			
CG-143-WT	CG-143-WT-1102			< 10		
CG-144-35	CG-144-35-0203				< 10	24.40
CG-144-35	CG-144-35-0502	< 10				
CG-144-35	CG-144-35-0802		24.4			
CG-144-35	CG-144-35-1102			< 50		
CG-145-35	CG-145-35-0203				< 10	<10
CG-145-35	CG-145-35-0502	< 10				
CG-145-35	CG-145-35-0802		< 200			
CG-145-35	CG-145-35-1102			< 10		

Notes:
[1] Analyzed by EPA Method 8015

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

EPA = United States Environmental Protection Agency
MTCA = Model Toxics Control Act

Table 9C-7
Average Concentrations of Ethene from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ethene (micrograms per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				< 10	<10
CG-3	CG-3-0502	< 10				
CG-3	CG-3-0802		< 10			
CG-3	CG-3-1102			< 10		
CG-11-S1	CG-11-S1-0502	< 10				<10
CG-101-S1	CG-101-S1-0203				< 10	<10
CG-101-S1	CG-101-S1-0502	< 10				
CG-101-S1	CG-101-S1-0702		< 10			
CG-101-S1	CG-101-S1-1102			< 10		
CG-101-S2	CG-101-S2-0203				< 10	<10
CG-101-S2	CG-101-S2-0502	< 10				
CG-101-S2	CG-101-S2-0702		< 10			
CG-101-S2	CG-101-S2-1102			< 10		
CG-104-D	CG-104-D-0203				< 10	<10
CG-104-D	CG-104-D-0502	< 10				
CG-104-D	CG-104-D-0802		< 10			
CG-104-D	CG-104-D-1102			< 10		
CG-104-I	CG-104-I-0203				832	1245.50
CG-104-I	CG-104-I-0502	1120				
CG-104-I	CG-104-I-0802		1380			
CG-104-I	CG-104-I-1102			1650		
CG-104-S1	CG-104-S1-0203				577	607.00
CG-104-S1	CG-104-S1-0502	527				
CG-104-S1	CG-104-S1-0802		598			
CG-104-S1	CG-104-S1-1102			726		
CG-104-S2	CG-104-S2-0203				< 10	<10
CG-104-S2	CG-104-S2-0502	< 20				
CG-104-S2	CG-104-S2-0802		< 10			
CG-104-S2	CG-104-S2-1102			< 10		
CG-105-I	CG-105-I-0203				< 10	58.30
CG-105-I	CG-105-I-0502	58.3				
CG-105-I	CG-105-I-0802		< 10			
CG-105-I	CG-105-I-1102			< 200		
CG-105-S1	CG-105-S1-0203				263	368.00
CG-105-S1	CG-105-S1-0502	364				
CG-105-S1	CG-105-S1-0802		581			
CG-105-S1	CG-105-S1-1102			264		
CG-105-S2	CG-105-S2-0203				< 10	<10
CG-105-S2	CG-105-S2-0502	< 50				
CG-105-S2	CG-105-S2-0802		< 10			
CG-105-S2	CG-105-S2-1102			< 10		
CG-106-D	CG-106-D-0203				< 10	<10
CG-106-D	CG-106-D-0502	< 10				
CG-106-D	CG-106-D-0702		< 10			
CG-106-D	CG-106-D-1102			< 10		
CG-106-I	CG-106-I-0203				< 10	<10
CG-106-I	CG-106-I-0502	< 10				
CG-106-I	CG-106-I-0702		< 10			
CG-106-I	CG-106-I-1102			< 10		
CG-106-WT	CG-106-WT-0203				< 10	<10
CG-106-WT	CG-106-WT-0502	< 10				
CG-106-WT	CG-106-WT-0702		< 10			
CG-106-WT	CG-106-WT-1102			< 10		
CG-107-WT	CG-107-WT-0203				< 10	<10
CG-107-WT	CG-107-WT-0502	< 10				
CG-107-WT	CG-107-WT-0702		< 10			
CG-107-WT	CG-107-WT-1102			< 10		
CG-111-I	CG-111-I-0203				< 10	245.00
CG-111-I	CG-111-I-0502	< 10				
CG-111-I	CG-111-I-0702		< 10			
CG-111-I	CG-111-I-1102			245		
CG-113-S1	CG-113-S1-0203				272	369.00
CG-113-S1	CG-113-S1-0502	445				
CG-113-S1	CG-113-S1-0802		278			
CG-113-S1	CG-113-S1-1102			481		
CG-121-40	CG-121-40-0203				< 100	<10
CG-121-40	CG-121-40-0502	< 10				
CG-121-40	CG-121-40-0702		< 10			
CG-121-40	CG-121-40-1102			< 10		
CG-121-70	CG-121-70-0203				< 433	<10
CG-121-70	CG-121-70-0502	< 10				
CG-121-70	CG-121-70-0702					
CG-121-70	CG-121-70-1102			< 10		
CG-122-60	CG-122-60-0203				< 665	<10
CG-122-60	CG-122-60-0502	< 10				
CG-122-60	CG-122-60-0802		< 10			
CG-122-60	CG-122-60-1102			< 10		
CG-122-WT	CG-122-WT-0203				< 100	<10
CG-122-WT	CG-122-WT-0502	< 10				
CG-122-WT	CG-122-WT-0802		< 10			
CG-122-WT	CG-122-WT-1102			< 10		
CG-123-90	CG-123-90-0203				< 100	<10
CG-123-90	CG-123-90-0502	< 10				
CG-123-90	CG-123-90-0802		< 10			
CG-123-90	CG-123-90-1102			< 10		
CG-124-40	CG-124-40-0203				< 10	<10

Table 9C-7
Average Concentrations of Ethene from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ethene (micrograms per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-124-40	CG-124-40-0502	< 10				
CG-124-40	CG-124-40-0702		< 10			
CG-124-40	CG-124-40-1102			< 10		
CG-124-70	CG-124-70-0203				120	120.00
CG-124-70	CG-124-70-0502	< 10				
CG-124-70	CG-124-70-0702		< 100			
CG-124-70	CG-124-70-1102			< 200		
CG-124-WT	CG-124-WT-0203				35.2	35.20
CG-124-WT	CG-124-WT-0502	< 10				
CG-124-WT	CG-124-WT-0702		< 10			
CG-124-WT	CG-124-WT-1102			< 10		
CG-127-40	CG-127-40-0203				101	101.00
CG-127-40	CG-127-40-0502	< 200				
CG-127-40	CG-127-40-0802		< 100			
CG-127-40	CG-127-40-1102			< 100		
CG-127-WT	CG-127-WT-0203				< 10	<10
CG-127-WT	CG-127-WT-0502	< 10				
CG-127-WT	CG-127-WT-0802		< 10			
CG-127-WT	CG-127-WT-1102			< 10		
CG-128-70	CG-128-70-0203				< 665	<10
CG-128-70	CG-128-70-0502	< 10				
CG-128-70	CG-128-70-0802		< 10			
CG-128-70	CG-128-70-1102			< 10		
CG-130-WT	CG-130-WT-0203				< 10	<10
CG-130-WT	CG-130-WT-0502	< 10				
CG-130-WT	CG-130-WT-0802		< 10			
CG-130-WT	CG-130-WT-1102			< 10		
CG-134-40	CG-134-40-0203				< 433	200.67
CG-134-40	CG-134-40-0502	258				
CG-134-40	CG-134-40-0702		160			
CG-134-40	CG-134-40-1102			184		
CG-134-WT	CG-134-WT-0203				< 10	<10
CG-134-WT	CG-134-WT-0502	< 10				
CG-134-WT	CG-134-WT-0702		< 10			
CG-134-WT	CG-134-WT-1102			< 10		
CG-135-40	CG-135-40-0203				641	461.25
CG-135-40	CG-135-40-0502	444				
CG-135-40	CG-135-40-0802		321			
CG-135-40	CG-135-40-1102			439		
CG-140-40	CG-140-40-0203				< 100	<10
CG-140-40	CG-140-40-0502	< 10				
CG-140-40	CG-140-40-0802		< 20			
CG-140-40	CG-140-40-1102			< 20		
CG-140-WT	CG-140-WT-0203				< 10	35.00
CG-140-WT	CG-140-WT-0502	< 10				
CG-140-WT	CG-140-WT-0802		< 10			
CG-140-WT	CG-140-WT-1102			35		
CG-141-40	CG-141-40-0203				684	378.00
CG-141-40	CG-141-40-0502	245				
CG-141-40	CG-141-40-0802		256			
CG-141-40	CG-141-40-1102			327		
CG-141-WT	CG-141-WT-0203				< 10	<10
CG-141-WT	CG-141-WT-0502	< 10				
CG-141-WT	CG-141-WT-0802		< 10			
CG-141-WT	CG-141-WT-1102			< 10		
CG-143-40	CG-143-40-0203				< 10	<10
CG-143-40	CG-143-40-0502	< 10				
CG-143-40	CG-143-40-0802		< 10			
CG-143-40	CG-143-40-1102			< 10		
CG-143-WT	CG-143-WT-0203				< 433	<10
CG-143-WT	CG-143-WT-0502	< 10				
CG-143-WT	CG-143-WT-0802		< 10			
CG-143-WT	CG-143-WT-1102			< 10		
CG-144-35	CG-144-35-0203				< 10	<10
CG-144-35	CG-144-35-0502	< 10				
CG-144-35	CG-144-35-0802		< 10			
CG-144-35	CG-144-35-1102			< 10		
CG-145-35	CG-145-35-0203				< 10	<10
CG-145-35	CG-145-35-0502	< 10				
CG-145-35	CG-145-35-0802		< 10			
CG-145-35	CG-145-35-1102			< 10		

Notes:
[1] Analyzed by EPA Method 8015

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-8
Average Concentrations of Ferrous Iron from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ferrous Iron (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				0.955	1.06
CG-3	CG-3-0502	< 0.5				
CG-3	CG-3-0802		1.06			
CG-3	CG-3-1102			1.15		
CG-11-S1	CG-11-S1-0502	36.7				36.70
CG-101-S1	CG-101-S1-0203				< 0.5	<0.5
CG-101-S1	CG-101-S1-0502	< 0.5				
CG-101-S1	CG-101-S1-0702		< 0.5			
CG-101-S1	CG-101-S1-1102			< 0.5		
CG-101-S2	CG-101-S2-0203				< 0.5	1.14
CG-101-S2	CG-101-S2-0502	1.24				
CG-101-S2	CG-101-S2-0702		1.04			
CG-101-S2	CG-101-S2-1102			< 0.5		
CG-104-D	CG-104-D-0203				< 0.5	<0.5
CG-104-D	CG-104-D-0502	< 0.5				
CG-104-D	CG-104-D-0802		< 0.5			
CG-104-D	CG-104-D-1102			< 0.5		
CG-104-I	CG-104-I-0203				0.514	0.51
CG-104-I	CG-104-I-0502	< 0.5				
CG-104-I	CG-104-I-0802		< 0.5			
CG-104-I	CG-104-I-1102			< 0.5		
CG-104-S1	CG-104-S1-0203				14.3	16.63
CG-104-S1	CG-104-S1-0502	14.8				
CG-104-S1	CG-104-S1-0802		17.6			
CG-104-S1	CG-104-S1-1102			19.8		
CG-104-S2	CG-104-S2-0203				2	1.42
CG-104-S2	CG-104-S2-0502	1.99				
CG-104-S2	CG-104-S2-0802		0.509			
CG-104-S2	CG-104-S2-1102			1.17		
CG-105-I	CG-105-I-0203				0.913	0.91
CG-105-I	CG-105-I-0502	< 0.5				
CG-105-I	CG-105-I-0802		< 0.5			
CG-105-I	CG-105-I-1102			< 0.5		
CG-105-S1	CG-105-S1-0203				20.5	47.43
CG-105-S1	CG-105-S1-0502	31.6				
CG-105-S1	CG-105-S1-0802		68			
CG-105-S1	CG-105-S1-1102			69.6		
CG-105-S2	CG-105-S2-0203				1.95	3.07
CG-105-S2	CG-105-S2-0502	4.18				
CG-105-S2	CG-105-S2-0802		< 0.5			
CG-105-S2	CG-105-S2-1102			< 5		
CG-106-D	CG-106-D-0203				< 0.5	<0.5
CG-106-D	CG-106-D-0502	< 0.5				
CG-106-D	CG-106-D-0702		< 0.5			
CG-106-I	CG-106-I-0203				< 0.5	<0.5
CG-106-I	CG-106-I-0502	< 0.5				
CG-106-I	CG-106-I-0702		< 0.5			
CG-106-WT	CG-106-WT-0203				< 0.5	<0.5
CG-106-WT	CG-106-WT-0502	< 0.5				
CG-106-WT	CG-106-WT-0702		< 0.5			
CG-107-WT	CG-107-WT-0203				2.95	9.06
CG-107-WT	CG-107-WT-0502	7.58				
CG-107-WT	CG-107-WT-0702		8.69			
CG-107-WT	CG-107-WT-1102			17		
CG-111-I	CG-111-I-0203				0.514	0.51
CG-111-I	CG-111-I-0502	< 0.5				
CG-111-I	CG-111-I-0702		< 0.5			
CG-111-I	CG-111-I-1102			< 0.5		
CG-113-S1	CG-113-S1-0203				< 10	7.28
CG-113-S1	CG-113-S1-0502	6.08				
CG-113-S1	CG-113-S1-0802		6.47			
CG-113-S1	CG-113-S1-1102			9.28		
CG-121-40	CG-121-40-0203				< 5	8.97
CG-121-40	CG-121-40-0502	14.1				
CG-121-40	CG-121-40-0702		5.59			
CG-121-40	CG-121-40-1102			7.22		
CG-121-70	CG-121-70-0203				1.45	1.48
CG-121-70	CG-121-70-0502	1.51				
CG-121-70	CG-121-70-1102			< 0.5		
CG-122-60	CG-122-60-0203				< 0.5	<0.5
CG-122-60	CG-122-60-0502	< 0.5				
CG-122-60	CG-122-60-0802		< 0.5			
CG-122-60	CG-122-60-1102			< 0.5		
CG-122-WT	CG-122-WT-0203				16.9	15.23
CG-122-WT	CG-122-WT-0502	10.8				
CG-122-WT	CG-122-WT-0802		14.2			
CG-122-WT	CG-122-WT-1102			19		
CG-123-90	CG-123-90-0203				< 2.5	4.03
CG-123-90	CG-123-90-0502	4.63				

Table 9C-8
Average Concentrations of Ferrous Iron from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Ferrous Iron (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-0802		0.87			
CG-123-90	CG-123-90-1102			6.58		
CG-124-40	CG-124-40-0203				1.51	1.47
CG-124-40	CG-124-40-0502	1.37				
CG-124-40	CG-124-40-0702		< 0.5			
CG-124-40	CG-124-40-1102			1.52		
CG-124-70	CG-124-70-0203				< 0.5	0.71
CG-124-70	CG-124-70-0502	< 0.5				
CG-124-70	CG-124-70-0702		< 0.5			
CG-124-70	CG-124-70-1102			0.708		
CG-124-WT	CG-124-WT-0203				2.4	2.26
CG-124-WT	CG-124-WT-0502	2.83				
CG-124-WT	CG-124-WT-0702		0.797			
CG-124-WT	CG-124-WT-1102			3		
CG-127-40	CG-127-40-0203				11.9	9.67
CG-127-40	CG-127-40-0502	9.02				
CG-127-40	CG-127-40-0802		10.7			
CG-127-40	CG-127-40-1102			7.05		
CG-127-WT	CG-127-WT-0203				< 0.5	<0.5
CG-127-WT	CG-127-WT-0502	< 0.5				
CG-127-WT	CG-127-WT-0802		< 0.5			
CG-127-WT	CG-127-WT-1102			< 0.5		
CG-128-70	CG-128-70-0203				0.553	0.93
CG-128-70	CG-128-70-0502	< 0.5				
CG-128-70	CG-128-70-0802		< 0.5			
CG-128-70	CG-128-70-1102			1.3		
CG-130-WT	CG-130-WT-0203				0.586	1.51
CG-130-WT	CG-130-WT-0502	< 0.5				
CG-130-WT	CG-130-WT-0802		0.502			
CG-130-WT	CG-130-WT-1102			3.44		
CG-134-40	CG-134-40-0203				14.5	13.60
CG-134-40	CG-134-40-0502	12.7				
CG-134-40	CG-134-40-0702		17.3			
CG-134-WT	CG-134-WT-0203				< 0.5	<0.5
CG-134-WT	CG-134-WT-0502	< 0.5				
CG-134-WT	CG-134-WT-0702		< 0.5			
CG-135-40	CG-135-40-0203				14.4	20.53
CG-135-40	CG-135-40-0502	21.8				
CG-135-40	CG-135-40-0802		27.3			
CG-135-40	CG-135-40-1102			18.6		
CG-140-40	CG-140-40-0203				< 0.5	2.50
CG-140-40	CG-140-40-0502	2.5				
CG-140-40	CG-140-40-0802		3.49			
CG-140-WT	CG-140-WT-0203				1.14	3.97
CG-140-WT	CG-140-WT-0502	6.8				
CG-140-WT	CG-140-WT-0802		18.9			
CG-141-40	CG-141-40-0203				7.92	8.22
CG-141-40	CG-141-40-0502	8.52				
CG-141-40	CG-141-40-0802		14.2			
CG-141-WT	CG-141-WT-0203				< 0.5	2.06
CG-141-WT	CG-141-WT-0502	2.65				
CG-141-WT	CG-141-WT-0802		1.58			
CG-141-WT	CG-141-WT-1102			1.94		
CG-143-40	CG-143-40-0203				< 0.5	0.82
CG-143-40	CG-143-40-0502	< 0.5				
CG-143-40	CG-143-40-0802		0.821			
CG-143-40	CG-143-40-1102			< 0.5		
CG-143-WT	CG-143-WT-0203				15.3	8.28
CG-143-WT	CG-143-WT-0502	1.15				
CG-143-WT	CG-143-WT-0802		6.82			
CG-143-WT	CG-143-WT-1102			9.85		
CG-144-35	CG-144-35-0203				1.54	4.57
CG-144-35	CG-144-35-0502	< 0.5				
CG-144-35	CG-144-35-0802		< 0.5			
CG-144-35	CG-144-35-1102			7.6		
CG-145-35	CG-145-35-0203				< 0.5	<0.5
CG-145-35	CG-145-35-0502	< 0.5				
CG-145-35	CG-145-35-0802		< 0.5			
CG-145-35	CG-145-35-1102			< 0.5		

Notes:
[1] Analyzed by EPA Method SM3500-FE

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-9
Average Concentrations of Hydroxide Alkalinity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Hydroxide Alkalinity (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				<5.00	<5.00
CG-3	CG-3-0502	<5.00				
CG-3	CG-3-0802		<5.00			
CG-3	CG-3-1102			<5.00		
11-S-1	CG-11-S1-0502	<5.00				<5.00
101-S-1	CG-101-S1-0203				<5.00	<5.00
101-S-1	CG-101-S1-0502	<5.00				
101-S-1	CG-101-S1-0702		<5.00			
101-S-1	CG-101-S1-1102			<5.00		
101-S-2	CG-101-S2-0203				<5.00	<5.00
101-S-2	CG-101-S2-0502	<5.00				
101-S-2	CG-101-S2-0702		<5.00			
101-S-2	CG-101-S2-1102			<5.00		
104-D	CG-104-D-0203				<5.00	<5.00
104-D	CG-104-D-0502	<5.00				
104-D	CG-104-D-0802		<5.00			
104-D	CG-104-D-1102			<5.00		
104-I	CG-104-I-0203				<5.00	<5.00
104-I	CG-104-I-0502	<5.00				
104-I	CG-104-I-0802		<5.00			
104-I	CG-104-I-1102			<5.00		
104-S-1	CG-104-S1-0203				<5.00	<5.00
104-S-1	CG-104-S1-0502	<5.00				
104-S-1	CG-104-S1-0802		<5.00			
104-S-1	CG-104-S1-1102			<5.00		
104-S-2	CG-104-S2-0203				<5.00	<5.00
104-S-2	CG-104-S2-0502	<5.00				
104-S-2	CG-104-S2-0802		<5.00			
104-S-2	CG-104-S2-1102			<5.00		
105-I	CG-105-I-0203				<5.00	<5.00
105-I	CG-105-I-0502	<5.00				
105-I	CG-105-I-0802		<5.00			
105-I	CG-105-I-1102			<5.00		
105-S-1	CG-105-S1-0203				<5.00	<5.00
105-S-1	CG-105-S1-0502	<5.00				
105-S-1	CG-105-S1-0802		<5.00			
105-S-1	CG-105-S1-1102			<5.00		
105-S-2	CG-105-S2-0203				<5.00	<5.00
105-S-2	CG-105-S2-0502	<5.00				
105-S-2	CG-105-S2-0802		<5.00			
105-S-2	CG-105-S2-1102			<5.00		
CG-106-D	CG-106-D-0203				<5.00	<5.00
CG-106-D	CG-106-D-0502	<5.00				
CG-106-D	CG-106-D-0702		<5.00			
CG-106-D	CG-106-D-1102			<5.00		
CG-106-I	CG-106-I-0203				<5.00	<5.00
CG-106-I	CG-106-I-0502	<5.00				
CG-106-I	CG-106-I-0702		<5.00			
CG-106-I	CG-106-I-1102			<5.00		
CG-106-WT	CG-106-WT-0203				<5.00	<5.00
CG-106-WT	CG-106-WT-0502	<5.00				
CG-106-WT	CG-106-WT-0702		<5.00			
CG-106-WT	CG-106-WT-1102			<5.00		
CG-107-WT	CG-107-WT-0203				<5.00	<5.00
CG-107-WT	CG-107-WT-0502	<5.00				
CG-107-WT	CG-107-WT-0702		<5.00			
CG-107-WT	CG-107-WT-1102			<5.00		
111-I	CG-111-I-0203				<5.00	<5.00
111-I	CG-111-I-0502	<5.00				
111-I	CG-111-I-0702		<5.00			
111-I	CG-111-I-1102			<5.00		
113-S-1	CG-113-S1-0203				<5.00	<5.00
113-S-1	CG-113-S1-0502	<5.00				
113-S-1	CG-113-S1-0802		<5.00			
113-S-1	CG-113-S1-1102			<5.00		
CG-121-40	CG-121-40-0203				<5.00	<5.00
CG-121-40	CG-121-40-0502	<5.00				
CG-121-40	CG-121-40-0702		<5.00			
CG-121-40	CG-121-40-1102			<5.00		
CG-121-70	CG-121-70-0203				<5.00	<5.00
CG-121-70	CG-121-70-0502	<5.00				
CG-121-70	CG-121-70-0702		<5.00			
CG-121-70	CG-121-70-1102			<5.00		
CG-122-60	CG-122-60-0203				<5.00	<5.00
CG-122-60	CG-122-60-0502	<5.00				
CG-122-60	CG-122-60-0802		<5.00			
CG-122-60	CG-122-60-1102			<5.00		
CG-122-WT	CG-122-WT-0203				<5.00	<5.00
CG-122-WT	CG-122-WT-0502	<5.00				
CG-122-WT	CG-122-WT-0802		<5.00			
CG-122-WT	CG-122-WT-1102			<5.00		
CG-123-90	CG-123-90-0203				<5.00	<5.00
CG-123-90	CG-123-90-0502	<5.00				
CG-123-90	CG-123-90-0802		<5.00			

		Concentration of Hydroxide Alkalinity (milligrams per liter)[1]				
Sample Location	Sample ID	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-1102			<5.00		
CG-124-40	CG-124-40-0203				<5.00	<5.00
CG-124-40	CG-124-40-0502	<5.00				
CG-124-40	CG-124-40-0702		<5.00			
CG-124-40	CG-124-40-1102			<5.00		
CG-124-70	CG-124-70-0203				<5.00	<5.00
CG-124-70	CG-124-70-0502	<5.00				
CG-124-70	CG-124-70-0702		<5.00			
CG-124-70	CG-124-70-1102			<5.00		
CG-124-WT	CG-124-WT-0203				<5.00	<5.00
CG-124-WT	CG-124-WT-0502	<5.00				
CG-124-WT	CG-124-WT-0702		<5.00			
CG-124-WT	CG-124-WT-1102			<5.00		
CG-127-40	CG-127-40-0203				<5.00	<5.00
CG-127-40	CG-127-40-0502	<5.00				
CG-127-40	CG-127-40-0802		<5.00			
CG-127-40	CG-127-40-1102			<5.00		
CG-127-WT	CG-127-WT-0203				<5.00	<5.00
CG-127-WT	CG-127-WT-0502	<5.00				
CG-127-WT	CG-127-WT-0802		<5.00			
CG-127-WT	CG-127-WT-1102			<5.00		
CG-128-70	CG-128-70-0203				<5.00	<5.00
CG-128-70	CG-128-70-0502	<5.00				
CG-128-70	CG-128-70-0802		<5.00			
CG-128-70	CG-128-70-1102			<5.00		
CG-130-WT	CG-130-WT-0203				<5.00	<5.00
CG-130-WT	CG-130-WT-0502	<5.00				
CG-130-WT	CG-130-WT-0802		<5.00			
CG-130-WT	CG-130-WT-1102			<5.00		
CG-134-40	CG-134-40-0203				<5.00	<5.00
CG-134-40	CG-134-40-0502	<5.00				
CG-134-40	CG-134-40-0702		<5.00			
CG-134-40	CG-134-40-1102			<5.00		
CG-134-WT	CG-134-WT-0203				<5.00	<5.00
CG-134-WT	CG-134-WT-0502	<5.00				
CG-134-WT	CG-134-WT-0702		<5.00			
CG-134-WT	CG-134-WT-1102			<5.00		
CG-135-40	CG-135-40-0203				<5.00	<5.00
CG-135-40	CG-135-40-0502	<5.00				
CG-135-40	CG-135-40-0802		<5.00			
CG-135-40	CG-135-40-1102			<5.00		
CG-140-40	CG-140-40-0203				<5.00	<5.00
CG-140-40	CG-140-40-0502	<5.00				
CG-140-40	CG-140-40-0802		<5.00			
CG-140-40	CG-140-40-1102			<5.00		
CG-140-WT	CG-140-WT-0203				<5.00	<5.00
CG-140-WT	CG-140-WT-0502	<5.00				
CG-140-WT	CG-140-WT-0802		<5.00			
CG-140-WT	CG-140-WT-1102			<5.00		
CG-141-40	CG-141-40-0203				<5.00	<5.00
CG-141-40	CG-141-40-0502	<5.00				
CG-141-40	CG-141-40-0802		<5.00			
CG-141-40	CG-141-40-1102			<5.00		
CG-141-WT	CG-141-WT-0203				<5.00	<5.00
CG-141-WT	CG-141-WT-0502	<5.00				
CG-141-WT	CG-141-WT-0802		<5.00			
CG-141-WT	CG-141-WT-1102			<5.00		
CG-143-40	CG-143-40-0203				<5.00	<5.00
CG-143-40	CG-143-40-0502	<5.00				
CG-143-40	CG-143-40-0802		<5.00			
CG-143-40	CG-143-40-1102			<5.00		
CG-143-WT	CG-143-WT-0203				<5.00	<5.00
CG-143-WT	CG-143-WT-0502	<5.00				
CG-143-WT	CG-143-WT-0802		<5.00			
CG-143-WT	CG-143-WT-1102			<5.00		
CG-144-35	CG-144-35-0203				<5.00	<5.00
CG-144-35	CG-144-35-0502	<5.00				
CG-144-35	CG-144-35-0802		<5.00			
CG-144-35	CG-144-35-1102			<5.00		
CG-145-35	CG-145-35-0203				<5.00	<5.00
CG-145-35	CG-145-35-0502	<5.00				
CG-145-35	CG-145-35-0802		<5.00			
CG-145-35	CG-145-35-1102			<5.00		

Notes:
[1] Analyzed by EPA Method 2320B

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-10
Average Concentrations of Manganese from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Concentration of Manganese (milligrams per liter)[1]						
Sample Location	Sample ID	2nd Quarter 2002	July 2002 Background Sampling	3rd Quarter 2002	4th Quarter 2002	January 2003 Background Sampling	1st Quarter 2003	Average[2]
101-S-1	CG-101-S1-0103					<0.02		0.014
101-S-1	CG-101-S1-0203						<0.01	
101-S-1	CG-101-S1-0502				<0.02			
101-S-1	CG-101-S1-0702		0.0156					
101-S-1	CG-101-S1-0902			0.0122				
101-S-1	CG-101-S1-1102	<0.01						
101-S-2	CG-101-S2-0103					0.194		0.412
101-S-2	CG-101-S2-0203						0.241	
101-S-2	CG-101-S2-0502	0.68						
101-S-2	CG-101-S2-0702		0.577					
101-S-2	CG-101-S2-0902			0.496				
101-S-2	CG-101-S2-1102				0.282			
102-D	CG-102-D-0203						0.679	0.892
102-D	CG-102-D-0502	0.83						
102-D	CG-102-D-0802			1.395				
102-D	CG-102-D-1102				0.663			
102-I	CG-102-I-0203						0.0557	0.054
102-I	CG-102-I-0502	0.0487						
102-I	CG-102-I-0802			0.0582				
102-I	CG-102-I-1102				0.0537			
102-S-1	CG-102-S1-0203						0.0731	0.089
102-S-1	CG-102-S1-0502	0.1159						
102-S-1	CG-102-S1-0802			0.0765				
102-S-1	CG-102-S1-1102				0.0897			
102-S-2	CG-102-S2-0203						0.385	0.420
102-S-2	CG-102-S2-0502	0.465						
102-S-2	CG-102-S2-0802			0.435				
102-S-2	CG-102-S2-1102				0.395			
103-I	CG-103-I-0203						0.232	0.268
103-I	CG-103-I-0502	0.302						
103-I	CG-103-I-0802			0.302				
103-I	CG-103-I-1102				0.234			
103-S-1	CG-103-S1-0203						0.353	0.360
103-S-1	CG-103-S1-0502	0.295						
103-S-1	CG-103-S1-0802			0.619				
103-S-1	CG-103-S1-1102				0.171			
103-S-2	CG-103-S2-0203						0.287	0.356
103-S-2	CG-103-S2-0502	0.466						
103-S-2	CG-103-S2-0802			0.362				
103-S-2	CG-103-S2-1102				0.307			
104-D	CG-104-D-0203						0.422	0.546
104-D	CG-104-D-0502	0.519						
104-D	CG-104-D-0802			0.816				
104-D	CG-104-D-1102				0.425			
104-I	CG-104-I-0203						0.313	0.270
104-I	CG-104-I-0502	0.298						
104-I	CG-104-I-0802			0.27				
104-I	CG-104-I-1102				0.2			
104-S-1	CG-104-S1-0203						0.468	0.491
104-S-1	CG-104-S1-0502	0.554						
104-S-1	CG-104-S1-0802			0.446				
104-S-1	CG-104-S1-1102				0.494			
104-S-2	CG-104-S2-0203						0.0834	0.101
104-S-2	CG-104-S2-0502	0.108						
104-S-2	CG-104-S2-0802			0.14				
104-S-2	CG-104-S2-1102				0.0706			
105-I	CG-105-I-0203						0.102	0.062
105-I	CG-105-I-0502	0.05						
105-I	CG-105-I-0802			0.0477				
105-I	CG-105-I-1102				0.05			
105-S-1	CG-105-S1-0203						0.298	0.416
105-S-1	CG-105-S1-0502	0.343						
105-S-1	CG-105-S1-0802			0.587				
105-S-1	CG-105-S1-1102				0.437			
105-S-2	CG-105-S2-0203						0.164	0.198
105-S-2	CG-105-S2-0502	0.351						
105-S-2	CG-105-S2-0802			0.146				
105-S-2	CG-105-S2-1102				0.131			
CG-106-D	CG-106-D-0103					0.15		0.188
CG-106-D	CG-106-D-0203						0.149	

Table 9C-10
Average Concentrations of Manganese from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Manganese (milligrams per liter)[1]						
		2nd Quarter 2002	July 2002 Background Sampling	3rd Quarter 2002	4th Quarter 2002	January 2003 Background Sampling	1st Quarter 2003	Average[2]
CG-106-D	CG-106-D-0502	0.257						
CG-106-D	CG-106-D-0702		0.305					
CG-106-D	CG-106-D-0902			0.142				
CG-106-D	CG-106-D-1102				0.126			
CG-106-I	CG-106-I-0103					0.115		0.145
CG-106-I	CG-106-I-0203						0.116	
CG-106-I	CG-106-I-0502	0.188						
CG-106-I	CG-106-I-0702		0.154					
CG-106-I	CG-106-I-0902			0.161				
CG-106-I	CG-106-I-1102				0.133			
CG-106-WT	CG-106-WT-0103					0.0184		0.031
CG-106-WT	CG-106-WT-0203						0.0135	
CG-106-WT	CG-106-WT-0502	0.0376						
CG-106-WT	CG-106-WT-0702		0.0275					
CG-106-WT	CG-106-WT-0902			0.0254				
CG-106-WT	CG-106-WT-1102				0.0636			
CG-107-WT	CG-107-WT-0203						0.456	0.578
CG-107-WT	CG-107-WT-0502	0.504						
CG-107-WT	CG-107-WT-0702			0.625				
CG-107-WT	CG-107-WT-1102				0.726			
111-I	CG-111-I-0103					0.137		0.160
111-I	CG-111-I-0203						0.131	
111-I	CG-111-I-0502	0.158						
111-I	CG-111-I-0702		0.171					
111-I	CG-111-I-0902			0.189				
111-I	CG-111-I-1102				0.174			
112-S-1	CG-112-S1-0203						0.279	0.416
112-S-1	CG-112-S1-0502	0.363						
112-S-1	CG-112-S1-0802			0.692				
112-S-1	CG-112-S1-1102				0.328			
113-S-1	CG-113-S1-0203						0.125	0.127
113-S-1	CG-113-S1-0502	0.129						
113-S-1	CG-113-S1-0802			0.111				
113-S-1	CG-113-S1-1102				0.143			
CG-114-75	CG-114-75-0203						0.312	0.333
CG-114-75	CG-114-75-0502	0.384						
CG-114-75	CG-114-75-0802			0.287				
CG-114-75	CG-114-75-1102				0.348			
CG-115-75	CG-115-75-0203						0.37	0.669
CG-115-75	CG-115-75-0502	0.711						
CG-115-75	CG-115-75-0802			1.058				
CG-115-75	CG-115-75-1102				0.535			
CG-115-WT	CG-115-WT--0203						0.313	0.391
CG-115-WT	CG-115-WT-0502	0.466						
CG-115-WT	CG-115-WT-0802			0.531				
CG-115-WT	CG-115-WT-1102				0.253			
CG-119-40	CG-119-40-0203						0.248	0.271
CG-119-40	CG-119-40-0502	0.321						
CG-119-40	CG-119-40-0802			0.284				
CG-119-40	CG-119-40-1102				0.23			
11-S-1	CG-11-S1-0502	1.39						1.390
CG-120-75	CG-120-75-0203						0.103	0.162
CG-120-75	CG-120-75-0502	0.268						
CG-120-75	CG-120-75-0802			0.146				
CG-120-75	CG-120-75-1102				0.132			
CG-121-40	CG-121-40-0203						3.41	3.443
CG-121-40	CG-121-40-0502	3.76						
CG-121-40	CG-121-40-0702			3.33				
CG-121-40	CG-121-40-1102				3.27			
CG-121-70	CG-121-70-0203						0.906	0.894
CG-121-70	CG-121-70-0502	1.02						
CG-121-70	CG-121-70-0702			0.852				
CG-121-70	CG-121-70-1102				0.796			
CG-122-60	CG-122-60-0203						0.412	0.578
CG-122-60	CG-122-60-0502	0.586						
CG-122-60	CG-122-60-0802			0.875				
CG-122-60	CG-122-60-1102				0.44			
CG-122-WT	CG-122-WT-0203						0.451	0.511
CG-122-WT	CG-122-WT-0502	0.466						
CG-122-WT	CG-122-WT-0802			0.577				
CG-122-WT	CG-122-WT-1102				0.548			
CG-123-90	CG-123-90-0203						0.972	1597.996
CG-123-90	CG-123-90-0502	6390						

Table 9C-10
Average Concentrations of Manganese from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Manganese (milligrams per liter)[1]						
		2nd Quarter 2002	July 2002 Background Sampling	3rd Quarter 2002	4th Quarter 2002	January 2003 Background Sampling	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-0802			0.555				
CG-123-90	CG-123-90-1102				0.456			
CG-124-40	CG-124-40-0203						0.236	0.248
CG-124-40	CG-124-40-0502	0.27						
CG-124-40	CG-124-40-0702			0.25				
CG-124-40	CG-124-40-1102				0.235			
CG-124-70	CG-124-70-0203						0.285	0.318
CG-124-70	CG-124-70-0502	0.371						
CG-124-70	CG-124-70-0702			0.312				
CG-124-70	CG-124-70-1102				0.304			
CG-124-WT	CG-124-WT-0203						0.255	0.259
CG-124-WT	CG-124-WT-0502	0.282						
CG-124-WT	CG-124-WT-0702			0.24				
CG-124-WT	CG-124-WT-1102				0.257			
CG-125-40	CG-125-40-0203						0.12	0.131
CG-125-40	CG-125-40-0502	0.145						
CG-125-40	CG-125-40-0802			0.134				
CG-125-40	CG-125-40-1102				0.126			
CG-126-WT	CG-126-WT-0203						0.134	0.160
CG-126-WT	CG-126-WT-0502	0.163						
CG-126-WT	CG-126-WT-0802			0.186				
CG-126-WT	CG-126-WT-1102				0.157			
CG-127-40	CG-127-40-0203						1.37	1.378
CG-127-40	CG-127-40-0502	1.39						
CG-127-40	CG-127-40-0802			1.39				
CG-127-40	CG-127-40-1102				1.36			
CG-127-WT	CG-127-WT-0203						0.116	0.126
CG-127-WT	CG-127-WT-0502	0.114						
CG-127-WT	CG-127-WT-0802			0.146				
CG-127-WT	CG-127-WT-1102				0.129			
CG-128-70	CG-128-70-0203						0.306	0.395
CG-128-70	CG-128-70-0502	0.318						
CG-128-70	CG-128-70-0802			0.649				
CG-128-70	CG-128-70-1102				0.308			
CG-130-WT	CG-130-WT-0203						0.0552	0.070
CG-130-WT	CG-130-WT-0502	0.0844						
CG-130-WT	CG-130-WT-0802			0.0746				
CG-130-WT	CG-130-WT-1102				0.0649			
CG-134-40	CG-134-40-0203						0.77	0.806
CG-134-40	CG-134-40-0502	0.845						
CG-134-40	CG-134-40-0702			0.786				
CG-134-40	CG-134-40-1102				0.823			
CG-134-WT	CG-134-WT-0203						0.11	0.106
CG-134-WT	CG-134-WT-0502	0.117						
CG-134-WT	CG-134-WT-0702			0.106				
CG-134-WT	CG-134-WT-1102				0.0898			
CG-135-40	CG-135-40-0203						2.32	1.385
CG-135-40	CG-135-40-0502	1.1						
CG-135-40	CG-135-40-0802			1.08				
CG-135-40	CG-135-40-1102				1.04			
CG-140-40	CG-140-40-0203						0.454	0.441
CG-140-40	CG-140-40-0502	0.45						
CG-140-40	CG-140-40-0802			0.451				
CG-140-40	CG-140-40-1102				0.407			
CG-140-WT	CG-140-WT-0203						0.285	0.669
CG-140-WT	CG-140-WT-0502	0.864						
CG-140-WT	CG-140-WT-0802			0.903				
CG-140-WT	CG-140-WT-1102				0.625			
CG-141-40	CG-141-40-0203						0.663	0.683
CG-141-40	CG-141-40-0502	0.719						
CG-141-40	CG-141-40-0802			0.72				
CG-141-40	CG-141-40-1102				0.628			
CG-141-WT	CG-141-WT-0203						0.0397	0.096
CG-141-WT	CG-141-WT-0502	0.125						
CG-141-WT	CG-141-WT-0802			0.0879				
CG-141-WT	CG-141-WT-1102				0.13			
CG-143-40	CG-143-40-0203						0.472	0.466
CG-143-40	CG-143-40-0502	0.486						
CG-143-40	CG-143-40-0802			0.474				
CG-143-40	CG-143-40-1102				0.43			

Table 9C-10
Average Concentrations of Manganese from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Manganese (milligrams per liter)[1]						
		2nd Quarter 2002	July 2002 Background Sampling	3rd Quarter 2002	4th Quarter 2002	January 2003 Background Sampling	1st Quarter 2003	Average[2]
CG-143-WT	CG-143-WT-0203						0.418	0.509
CG-143-WT	CG-143-WT-0502	0.305						
CG-143-WT	CG-143-WT-0802			0.873				
CG-143-WT	CG-143-WT-1102				0.441			
CG-144-35	CG-144-35-0203						0.491	0.461
CG-144-35	CG-144-35-0502	0.398						
CG-144-35	CG-144-35-0802			0.496				
CG-144-35	CG-144-35-1102				0.459			
CG-145-35	CG-145-35-0203						0.275	0.268
CG-145-35	CG-145-35-0502	0.282						
CG-145-35	CG-145-35-0802			0.273				
CG-145-35	CG-145-35-1102				0.242			
CG-3	CG-3-0203						0.133	0.132
CG-3	CG-3-0502	0.151						
CG-3	CG-3-0802			0.152				
CG-3	CG-3-1102				0.0903			

Notes
[1] Analyzed by EPA Method 6010 or 6020

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit

Table 9C-13
Average Concentrations of Nitrite from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Nitrite (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				< 0.2	<0.2
CG-3	CG-3-0502	< 0.2				
CG-3	CG-3-0802		< 0.2			
CG-3	CG-3-1102			< 0.2		
CG-11-S1	CG-11-S1-0502	< 0.2				<0.2
CG-101-S1	CG-101-S1-0203				< 0.2	<0.2
CG-101-S1	CG-101-S1-0502	< 0.2				
CG-101-S1	CG-101-S1-0702		< 0.2			
CG-101-S1	CG-101-S1-1102			< 0.2		
CG-101-S2	CG-101-S2-0203				< 0.2	<0.2
CG-101-S2	CG-101-S2-0502	< 0.2				
CG-101-S2	CG-101-S2-0702		< 0.2			
CG-101-S2	CG-101-S2-1102			< 0.2		
CG-104-D	CG-104-D-0203				< 5	<5
CG-104-D	CG-104-D-0502	< 200				
CG-104-D	CG-104-D-0802		< 20			
CG-104-D	CG-104-D-1102			< 20		
CG-104-I	CG-104-I-0203				< 0.2	<0.2
CG-104-I	CG-104-I-0502	< 0.2				
CG-104-I	CG-104-I-0802		< 0.2			
CG-104-I	CG-104-I-1102			< 0.2		
CG-104-S1	CG-104-S1-0203				< 0.2	<0.2
CG-104-S1	CG-104-S1-0502	< 0.2				
CG-104-S1	CG-104-S1-0802		< 0.2			
CG-104-S1	CG-104-S1-1102			< 0.2		
CG-104-S2	CG-104-S2-0203				< 0.2	<0.2
CG-104-S2	CG-104-S2-0502	< 0.2				
CG-104-S2	CG-104-S2-0802		< 0.2			
CG-104-S2	CG-104-S2-1102			< 0.2		
CG-105-I	CG-105-I-0203				< 0.2	<0.2
CG-105-I	CG-105-I-0502	< 0.2				
CG-105-I	CG-105-I-0802		< 0.2			
CG-105-I	CG-105-I-1102			< 0.2		
CG-105-S1	CG-105-S1-0203				< 0.2	<0.2
CG-105-S1	CG-105-S1-0502	< 0.2				
CG-105-S1	CG-105-S1-0802		< 0.2			
CG-105-S1	CG-105-S1-1102			< 0.2		
CG-105-S2	CG-105-S2-0203				< 0.2	<0.2
CG-105-S2	CG-105-S2-0502	< 0.2				
CG-105-S2	CG-105-S2-0802		< 0.2			
CG-105-S2	CG-105-S2-1102			< 0.2		
CG-106-D	CG-106-D-0203				< 0.2	<0.2
CG-106-D	CG-106-D-0502	< 0.2				
CG-106-D	CG-106-D-0702		< 0.2			
CG-106-D	CG-106-D-1102			< 0.2		
CG-106-I	CG-106-I-0203				< 0.2	<0.2
CG-106-I	CG-106-I-0502	< 0.2				
CG-106-I	CG-106-I-0702		< 0.2			
CG-106-I	CG-106-I-1102			< 0.2		
CG-106-WT	CG-106-WT-0203				< 0.2	<0.2
CG-106-WT	CG-106-WT-0502	< 0.2				
CG-106-WT	CG-106-WT-0702		< 0.2			
CG-106-WT	CG-106-WT-1102			< 0.2		
CG-107-WT	CG-107-WT-0203				< 0.2	<0.2
CG-107-WT	CG-107-WT-0502	< 0.2				
CG-107-WT	CG-107-WT-0702		< 0.2			
CG-107-WT	CG-107-WT-1102			< 0.2		
CG-111-I	CG-111-I-0203				< 0.2	<0.2
CG-111-I	CG-111-I-0502	< 0.2				
CG-111-I	CG-111-I-0702		< 0.2			
CG-111-I	CG-111-I-1102			< 0.4		
CG-113-S1	CG-113-S1-0203				< 0.2	<0.2
CG-113-S1	CG-113-S1-0502	< 0.2				
CG-113-S1	CG-113-S1-0802		< 0.2			
CG-113-S1	CG-113-S1-1102			< 0.2		
CG-121-40	CG-121-40-0203				< 0.2	<0.2
CG-121-40	CG-121-40-0502	< 0.2				
CG-121-40	CG-121-40-0702		< 0.2			
CG-121-40	CG-121-40-1102			< 0.8		
CG-121-70	CG-121-70-0203				< 0.2	<0.2
CG-121-70	CG-121-70-0502	< 0.2				
CG-121-70	CG-121-70-1102			< 0.2		
CG-122-60	CG-122-60-0203				< 0.2	<0.2
CG-122-60	CG-122-60-0502	< 0.2				
CG-122-60	CG-122-60-0802		< 0.2			
CG-122-60	CG-122-60-1102			< 0.2		
CG-122-WT	CG-122-WT-0203				< 0.2	<0.2
CG-122-WT	CG-122-WT-0502	< 0.2				
CG-122-WT	CG-122-WT-0802		< 0.2			
CG-122-WT	CG-122-WT-1102			< 0.2		
CG-123-90	CG-123-90-0203				< 1	<1

Table 9C-13
Average Concentrations of Nitrite from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Nitrite (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-123-90	CG-123-90-0502	< 10				
CG-123-90	CG-123-90-0802		< 1			
CG-123-90	CG-123-90-1102			< 2		
CG-124-40	CG-124-40-0203				< 0.2	<0.2
CG-124-40	CG-124-40-0502	< 0.2				
CG-124-40	CG-124-40-0702		< 0.2			
CG-124-40	CG-124-40-1102			< 0.2		
CG-124-70	CG-124-70-0203				< 1	<0.4
CG-124-70	CG-124-70-0502	< 0.4				
CG-124-70	CG-124-70-0702		< 0.4			
CG-124-70	CG-124-70-1102			< 4		
CG-124-WT	CG-124-WT-0203				< 0.2	<0.2
CG-124-WT	CG-124-WT-0502	< 0.2				
CG-124-WT	CG-124-WT-0702		< 0.2			
CG-124-WT	CG-124-WT-1102			< 0.2		
CG-127-40	CG-127-40-0203				< 0.2	<0.2
CG-127-40	CG-127-40-0502	< 0.2				
CG-127-40	CG-127-40-0802		< 0.2			
CG-127-40	CG-127-40-1102			< 0.2		
CG-127-WT	CG-127-WT-0203				< 0.2	<0.2
CG-127-WT	CG-127-WT-0502	< 0.2				
CG-127-WT	CG-127-WT-0802		< 0.2			
CG-127-WT	CG-127-WT-1102			< 0.2		
CG-128-70	CG-128-70-0203				< 0.2	<0.2
CG-128-70	CG-128-70-0502	< 0.2				
CG-128-70	CG-128-70-0802		< 0.2			
CG-128-70	CG-128-70-1102			< 0.2		
CG-130-WT	CG-130-WT-0203				< 0.2	<0.2
CG-130-WT	CG-130-WT-0502	< 0.2				
CG-130-WT	CG-130-WT-0802		< 0.2			
CG-130-WT	CG-130-WT-1102			< 0.2		
CG-134-40	CG-134-40-0203				< 0.2	<0.2
CG-134-40	CG-134-40-0502	< 0.2				
CG-134-40	CG-134-40-0702		< 0.2			
CG-134-40	CG-134-40-1102			< 0.2		
CG-134-WT	CG-134-WT-0203				< 0.2	<0.2
CG-134-WT	CG-134-WT-0502	< 0.2				
CG-134-WT	CG-134-WT-0702		< 0.2			
CG-134-WT	CG-134-WT-1102			< 0.2		
CG-135-40	CG-135-40-0203				< 0.2	<0.2
CG-135-40	CG-135-40-0502	< 0.2				
CG-135-40	CG-135-40-0802		< 0.2			
CG-135-40	CG-135-40-1102			< 0.2		
CG-140-40	CG-140-40-0203				< 0.2	<0.2
CG-140-40	CG-140-40-0502	< 0.2				
CG-140-40	CG-140-40-0802		< 0.2			
CG-140-40	CG-140-40-1102			< 0.2		
CG-140-WT	CG-140-WT-0203				< 0.2	<0.2
CG-140-WT	CG-140-WT-0502	< 0.2				
CG-140-WT	CG-140-WT-0802		< 0.2			
CG-140-WT	CG-140-WT-1102			< 0.2		
CG-141-40	CG-141-40-0203				< 0.2	<0.2
CG-141-40	CG-141-40-0502	< 0.2				
CG-141-40	CG-141-40-0802		< 0.2			
CG-141-40	CG-141-40-1102			< 0.2		
CG-141-WT	CG-141-WT-0203				< 0.2	<0.2
CG-141-WT	CG-141-WT-0502	< 0.2				
CG-141-WT	CG-141-WT-0802		< 0.2			
CG-141-WT	CG-141-WT-1102			< 0.2		
CG-143-40	CG-143-40-0203				< 0.2	<0.2
CG-143-40	CG-143-40-0502	< 0.2				
CG-143-40	CG-143-40-0802		< 0.2			
CG-143-40	CG-143-40-1102			< 0.2		
CG-143-WT	CG-143-WT-0203				< 0.2	<0.2
CG-143-WT	CG-143-WT-0502	< 0.2				
CG-143-WT	CG-143-WT-0802		< 0.2			
CG-143-WT	CG-143-WT-1102			< 0.2		
CG-144-35	CG-144-35-0203				< 0.2	<0.2
CG-144-35	CG-144-35-0502	< 0.2				
CG-144-35	CG-144-35-0802		< 0.2			
CG-144-35	CG-144-35-1102			< 0.2		
CG-145-35	CG-145-35-0203				< 0.2	<0.2
CG-145-35	CG-145-35-0502	< 0.2				
CG-145-35	CG-145-35-0802		< 0.2			
CG-145-35	CG-145-35-1102			< 0.2		

Notes:
[1] Analyzed by EPA Method 300
EPA = United States Environmental Protection Agency
[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.
< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-14
Average Concentrations of pH from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement of pH (percent Hydrogen)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-1-S1				6.41	6.41
CG-2-S1				6.49	6.41
CG-3			7.49		6.91
CG-3		6.58			
CG-3	6.75				
CG-3				6.82	
CG-9-S1				6.34	6.34
CG-10-S1				6.1	
CG-11-S1		5.9			
CG-11-S1	6				
CG-11-S1				6.33	
CG-101-S1			6.32		6.26
CG-101-S1		6.1			
CG-101-S1	6.02				
CG-101-S1				6.58	
CG-101-S2			6.82		6.66
CG-101-S2		6.5			
CG-101-S2	6.23				
CG-101-S2				7.09	
CG-102-D			7.29		7.08
CG-102-D		6.94			
CG-102-D	6.88				
CG-102-D				7.2	
CG-102-I			8.63		8.05
CG-102-I		8.04			
CG-102-I	7.53				
CG-102-I				8	
CG-102-S1			6.31		6.36
CG-102-S1		6.51			
CG-102-S1	6.23				
CG-102-S1				6.37	
CG-102-S2			7		6.92
CG-102-S2		6.94			
CG-102-S2	6.68				
CG-102-S2				7.07	
CG-103-I			7.91		7.23
CG-103-I		6.9			
CG-103-I	6.97				
CG-103-I				7.13	
CG-103-S1			7.83		6.79
CG-103-S1		6.36			
CG-103-S1	6.45				
CG-103-S1				6.51	
CG-103-S2			7.96		7.02
CG-103-S2		6.61			
CG-103-S2	6.63				
CG-103-S2				6.86	
CG-104-D			8.43		7.70
CG-104-D		7.29			
CG-104-D	7.57				
CG-104-D				7.5	
CG-104-I			8.17		7.35
CG-104-I		7.02			
CG-104-I	7.25				
CG-104-I				6.95	
CG-104-S1			7.42		6.66
CG-104-S1		6.41			
CG-104-S1	6.3				
CG-104-S1				6.49	
CG-104-S2			7.72		6.87
CG-104-S2		6.35			
CG-104-S2	6.57				
CG-104-S2				6.85	
CG-105-I			7.99		7.06
CG-105-I		6.76			
CG-105-I	6.51				
CG-105-I				6.98	
CG-105-S1			7.01		6.27
CG-105-S1		6			
CG-105-S1	5.82				
CG-105-S1				6.25	
CG-105-S2			7.6		7.00
CG-105-S2		7.19			
CG-105-S2	6.43				
CG-105-S2				6.78	
CG-106-D			7.84		7.77
CG-106-D		7.9			
CG-106-D	7.39				
CG-106-D				7.96	
CG-106-I			7.43		7.39
CG-106-I		7.5			
CG-106-I	7.02				
CG-106-I				7.59	
CG-106-WT			6.03		6.05

Table 9C-14
Average Concentrations of pH from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement of pH (percent Hydrogen)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-106-WT		6.2			
CG-106-WT	5.73				
CG-106-WT				6.23	
CG-107-WT			6.3		6.15
CG-107-WT		5.88			
CG-107-WT	5.91				
CG-107-WT				6.5	
CG-111-I			7.29		7.22
CG-111-I		6.87			
CG-111-I	7.23				
CG-111-I				7.5	
CG-112-S1			7.21		6.38
CG-112-S1		6.1			
CG-112-S1	5.94				
CG-112-S1				6.27	
CG-113-S1			7.81		6.75
CG-113-S1		6.3			
CG-113-S1	6.48				
CG-113-S1				6.41	
CG-114-75			8.53		7.65
CG-114-75		7.3			
CG-114-75	7.29				
CG-114-75				7.48	
CG-115-75			7.97		7.25
CG-115-75		7			
CG-115-75	7.02				
CG-115-75				7	
CG-115-WT			7.53		6.65
CG-115-WT		6.4			
CG-115-WT	6.30				
CG-115-WT				6.37	
CG-119-40			7.56		6.93
CG-119-40		6.6			
CG-119-40	6.66				
CG-119-40				6.89	
CG120-75		7.4			7.39
CG-120-75			7.36		
CG-120-75	7.30				
CG-120-75				7.48	
CG-121-40			6.7		6.60
CG-121-40		6.6			
CG-121-40	6.37				
CG-121-40				6.73	
CG-121-70			7.1		6.97
CG-121-70		7			
CG-121-70	6.68				
CG-121-70				7.1	
CG-122-60			7.23		7.20
CG-122-60		6.86			
CG-122-60	7.4				
CG-122-60				7.3	
CG-122-WT			6.49		6.44
CG-122-WT		6.06			
CG-122-WT	6.61				
CG-122-WT				6.61	
CG-123-90			8.09		7.10
CG-123-90		6.61			
CG-123-90	6.67				
CG-123-90				7.02	
CG-124-40			6.72		6.64
CG-124-40		6.29			
CG-124-40	6.67				
CG-124-40				6.86	
CG-124-70			7.1		7.00
CG-124-70		6.72			
CG-124-70	6.98				
CG-124-70				7.18	
CG-124-WT			6.12		6.05
CG-124-WT		5.51			
CG-124-WT	6.19				
CG-124-WT				6.36	
CG-125-40			7.34		7.41
CG-125-40		7.21			
CG-125-40	7.63				
CG-125-40				7.46	
CG126-WT			6.28		6.28
CG-126-WT		5.97			
CG-126-WT	6.47				
CG-126-WT				6.41	
CG-127-40			6.6		6.53
CG-127-40		6.28			
CG-127-40	6.54				
CG-127-40				6.71	
CG-127-WT			6.02		5.94

Table 9C-14
Average Concentrations of pH from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement of pH (percent Hydrogen)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-127-WT		5.61			
CG-127-WT	6.06				
CG-127-WT				6.08	
CG-128-70			7.15		7.08
CG-128-70		7			
CG-128-70	7.02				
CG-128-70				7.16	
CG-128-WT			6.11		6.13
CG-128-WT		5.85			
CG-128-WT	6.24				
CG-128-WT				6.32	
CG-129-40			8.02		7.06
CG-129-40		6.44			
CG-129-40	6.98				
CG-129-40				6.79	
CG-129-WT			7.63		6.72
CG-129-WT		6.11			
CG-129-WT	6.65				
CG-129-WT				6.47	
CG-130-WT			6.06		6.11
CG-130-WT		5.87			
CG-130-WT	6.39				
CG-130-WT				6.12	
CG-131-40			7.61		6.71
CG-131-40		6.33			
CG-131-40	6.25				
CG-131-40				6.64	
CG-131-WT			7.39		6.67
CG-131-WT		6.4			
CG-131-WT	6.51				
CG-131-WT				6.36	
CG-132-40			7.57		6.96
CG-132-40		6.7			
CG-132-40	6.86				
CG-132-40				6.71	
CG-132-WT			7.11		6.36
CG-132-WT		6			
CG-132-WT	6.26				
CG-132-WT				6.08	
CG-133-40			7.67		6.96
CG-133-40		6.51			
CG-133-40	6.92				
CG-133-40				6.72	
CG-134-40			6.48		6.45
CG-134-40		6.3			
CG-134-40	6.5				
CG-134-40				6.52	
CG-134-WT			6.09		6.05
CG-134-WT		5.84			
CG-134-WT	6.16				
CG-134-WT				6.11	
CG-135-40			4.02		5.73
CG-135-40		6.22			
CG-135-40	6.12				
CG-135-40				6.54	
CG-135-50			6.53		6.52
CG-135-50		6.25			
CG-135-50	6.74				
CG-135-50				6.57	
CG-136-40			7.51		6.80
CG-136-40		6.54			
CG-136-40	6.58				
CG-136-40				6.56	
CG-136-WT			7.53		6.61
CG-136-WT		6.38			
CG-136-WT	6.27				
CG-136-WT				6.26	
CG-137-40			6.7		6.57
CG-137-40		6.23			
CG-137-40	6.71				
CG-137-40				6.63	
CG-137-WT			6.32		6.28
CG-137-WT		5.95			
CG-137-WT	6.43				
CG-137-WT				6.4	
CG-138-40			7.54		6.72
CG-138-40		6.3			
CG-138-40	6.54				
CG-138-40				6.48	
CG-138-70			7.92		7.06
CG-138-70		6.7			
CG-138-70	6.87				
CG-138-70				6.76	
CG-138-WT			7.42		6.61

Table 9C-14
Average Concentrations of pH from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement of pH (percent Hydrogen)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-138-WT		6.3			
CG-138-WT	6.4				
CG-138-WT				6.32	
CG-139-40			8.05		7.18
CG-139-40		6.9			
CG-139-40	6.85				
CG-139-40				6.91	
CG-140-40			6.86		6.75
CG-140-40		6.5			
CG-140-40	6.91				
CG-140-40				6.72	
CG-140-WT			6.02		5.87
CG-140-WT		5.64			
CG-140-WT	6				
CG-140-WT				5.8	
CG-141-40			6.45		6.36
CG-141-40		6.4			
CG-141-40	6.13				
CG-141-40				6.47	
CG-141-50			6.6		6.81
CG-141-50		6.8			
CG-141-50	6.95				
CG-141-50				6.9	
CG-141-WT			6.19		6.20
CG-141-WT		6.2			
CG-141-WT	5.99				
CG-141-WT				6.41	
CG-142-40			7.1		6.95
CG-142-40		6.78			
CG-142-40	7.05				
CG-142-40				6.88	
CG-142-WT			6.41		6.14
CG-142-WT		6.1			
CG-142-WT	5.94				
CG-142-WT				6.1	
CG-143-40			7.85		6.91
CG-143-40		6.48			
CG-143-40	6.40				
CG-143-40				6.89	
CG-143-WT			6.99		6.07
CG-143-WT		5.4			
CG-143-WT	5.74				
CG-143-WT				6.13	
CG-144-35			6.55		6.46
CG-144-35		6.44			
CG-144-35	6.34				
CG-144-35				6.5	
CG-145-35			6.97		6.88
CG-145-35		6.93			
CG-145-35	6.54				
CG-145-35				7.06	
V-1			7.26		6.45
V-1		6.16			
V-1	5.97				
V-1				6.42	

Notes:
[1] Measurements collected in field

Table 9C-15
Average Concentrations of REDOX from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample Date	Measurement of Redox Potential (milliVolts)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-1-S1	2/3/03				223	223
CG-2-S1	2/4/03				231	231
CG-3	2/4/03				274	57
CG-3	11/12/2002			-380		
CG-3	1/20/00	245				
CG-3	8/7/02		88			
CG-9-S1	2/4/03				226	226
CG-10-S1	2/4/03				356	356
CG-11-S1	2/4/03				234	122
CG-11-S1	1/21/00	-13				
CG-11-S1	8/6/02		146			
CG-101-S1	2/5/03				529	278
CG-101-S1	11/13/02			248		
CG-101-S1	5/2/03	180				
CG-101-S1	7/31/02		155			
CG-101-S2	2/5/03				385	109
CG-101-S2	11/13/02			7		
CG-101-S2	1/22/00	34				
CG-101-S2	7/31/02		11			
CG-102-D	2/3/03				109	-57
CG-102-D	11/11/02			-149		
CG-102-D	1/16/00	-75				
CG-102-D	8/8/02		-111			
CG-102-I	2/3/03				68	-19
CG-102-I	11/4/2002			-183		
CG-102-I	1/16/00	179				
CG-102-I	8/7/02		-138			
CG-102-S1	2/3/03				511	203
CG-102-S1	11/11/02			42		
CG-102-S1	1/16/00	234.7				
CG-102-S1	8/7/02		23			
CG-102-S2	2/3/03				191	78
CG-102-S2	11/11/02			-57		
CG-102-S2	1/16/00	208				
CG-102-S2	8/7/02		-30			
CG-103-I	2/5/03				119	-188
CG-103-I	11/6/2002			-351		
CG-103-I	1/10/00	-113				
CG-103-I	8/5/02		-100			
CG-103-S1	2/4/03				196	-61
CG-103-S1	11/6/2002			-359		
CG-103-S1	1/9/00	-56				
CG-103-S1	8/7/02		-24			
CG-103-S2	2/5/03				203	-65
CG-103-S2	11/6/2002			-356		
CG-103-S2	1/9/00	-66				
CG-103-S2	8/5/02		-40			
CG-104-D	2/6/03				67	-158
CG-104-D	11/7/2002			-355		
CG-104-D	1/8/00	-220				
CG-104-D	8/7/02		-125			
CG-104-I	2/6/03				192	-94
CG-104-I	11/11/2002			-387		
CG-104-I	1/20/00	-105				
CG-104-I	8/6/02		-75			
CG-104-S1	2/5/03				177	-50
CG-104-S1	11/7/2002			-373		
CG-104-S1	1/17/00	48				
CG-104-S1	8/6/02		-51			
CG-104-S2	2/5/03				162	-56
CG-104-S2	11/7/2002			-379		
CG-104-S2	1/17/00	-2.4				
CG-104-S2	8/8/02		-6			
CG-105-I	2/6/03				193	-68
CG-105-I	11/11/2002			-406		
CG-105-I	1/22/00	-56				
CG-105-I	8/6/02		-3			
CG-105-S1	2/6/03				217	-43
CG-105-S1	11/11/2002			-379		
CG-105-S1	1/22/00	-21				
CG-105-S1	8/6/02		11			
CG-105-S2	2/6/03				195	-83
CG-105-S2	11/11/2002			-365		
CG-105-S2	1/13/00	-51				
CG-105-S2	8/7/02		-110			
CG-106-D	2/7/03				216	13
CG-106-D	11/12/02			-58		
CG-106-D	1/22/00	-22				
CG-106-D	7/30/02		-86			
CG-106-I	2/7/03				117	-42
CG-106-I	11/12/02			-109		
CG-106-I	1/21/00	-77				

Table 9C-15
Average Concentrations of REDOX from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample Date	Measurement of Redox Potential (milliVolts)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-106-I	7/30/02		-98			
CG-106-WT	2/7/03				492	244
CG-106-WT	11/12/02			120		
CG-106-WT	1/20/00	167				
CG-106-WT	7/30/02		197			
CG-107-WT	2/7/03				264	124
CG-107-WT	11/11/02			12		
CG-107-WT	1/16/00	54				
CG-107-WT	7/30/02		167			
CG-111-I	2/7/03				103	36
CG-111-I	11/11/02			-119		
CG-111-I	1/15/00	-43				
CG-111-I	7/30/02		203			
CG-112-SI	2/10/03				480	60
CG-112-SI	11/13/2002			-352		
CG-112-SI	1/17/00	40				
CG-112-SI	8/2/02		70			
CG-113-SI	2/10/03				384	39
CG-113-SI	11/7/2002			-375		
CG-113-SI	1/20/00	177				
CG-113-SI	8/2/02		-29			
CG-114-75	2/10/03				165	-100
CG-114-75	11/8/2002			-400		
CG-114-75	1/15/00	-99				
CG-114-75	8/1/02		-66			
CG-115-75	2/10/03				196	-99
CG-115-75	11/8/2002			-416		
CG-115-75	1/9/00	-110				
CG-115-75	8/1/02		-65			
CG-115-WT	2/10/03				231	-66
CG-115-WT	11/8/2002			-403		
CG-115-WT	1/13/00	-42				
CG-115-WT	8/1/02		-50			
CG-119-40	2/10/03				259	-33
CG-119-40	11/12/2002			-370		
CG-119-40	1/13/00	-34				
CG-119-40	8/2/02		15			
CG-120-75	8/1/02		-84			26
CG-120-75	2/11/03				402	
CG-120-75	11/8/02			-105		
CG-120-75	1/8/00	-108				
CG-121-40	2/11/03				305	41
CG-121-40	11/7/02			-59		
CG-121-40	1/16/00	-45				
CG-121-40	7/31/02		-37			
CG-121-70	2/11/03				226	-5
CG-121-70	11/7/02			-92		
CG-121-70	1/16/00	-76				
CG-121-70	7/31/02		-79			
CG-122-60	2/11/03				162	51
CG-122-60	11/6/02			-114		
CG-122-60	1/14/00	-33				
CG-122-60	8/1/02		188			
CG-122-WT	2/11/03				210	60
CG-122-WT	11/6/02			-86		
CG-122-WT	1/14/00	110				
CG-122-WT	8/1/02		5			
CG-123-90	2/11/03				147	-128
CG-123-90	11/8/2002			-392		
CG-123-90	1/16/00	-116				
CG-123-90	8/1/02		-152			
CG-124-40	2/12/03				416	106
CG-124-40	11/7/02			-63		
CG-124-40	1/15/00	-43				
CG-124-40	7/31/02		115			
CG-124-70	2/12/03				162	-32
CG-124-70	11/7/02			-129		
CG-124-70	1/15/00	-94				
CG-124-70	7/31/02		-65			
CG-124-WT	2/12/03				458	207
CG-124-WT	11/7/02			54		
CG-124-WT	1/15/00	71				
CG-124-WT	7/31/02		245			
CG-125-40	2/12/03				170	122
CG-125-40	11/8/02			-102		
CG-125-40	1/10/00	278				
CG-125-40	8/8/02		140			
CG126-WT	11/8/02			58		151
CG-126-WT	2/12/03				303	
CG-126-WT	1/10/00	299				
CG-126-WT	8/1/02		-58			
CG-127-40	2/12/03				230	16

Table 9C-15
Average Concentrations of REDOX from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample Date	Measurement of Redox Potential (milliVolts)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-127-40	11/6/02			-82		
CG-127-40	1/14/00	-59				
CG-127-40	8/2/02		-27			
CG-127-WT	2/12/03				339	168
CG-127-WT	11/6/02			70		
CG-127-WT	1/14/00	85				
CG-127-WT	8/2/02		179			
CG-128-70	2/17/03				488	114
CG-128-70	11/8/02			-105		
CG-128-70	1/14/00	-98				
CG-128-70	8/8/02		169			
CG-128-WT	2/17/03				517	316
CG-128-WT	11/8/02			86		
CG-128-WT	1/8/00	300				
CG-128-WT	8/8/02		359			
CG-129-40	2/17/03				336	10
CG-129-40	11/5/2002			-275		
CG-129-40	1/8/00	7				
CG-129-40	7/31/02		-28			
CG-129-WT	2/17/03				362	41
CG-129-WT	11/5/2002			-348		
CG-129-WT	1/8/00	120				
CG-129-WT	7/31/02		28			
CG-130-WT	2/17/03				365	221
CG-130-WT	11/5/02			63		
CG-130-WT	1/8/00	208				
CG-130-WT	8/8/02		246			
CG-131-40	2/17/03				256	-14
CG-131-40	11/6/2002			-357		
CG-131-40	1/17/00	-38				
CG-131-40	8/6/02		85			
CG-131-WT	2/17/03				438	98
CG-131-WT	11/6/2002			-359		
CG-131-WT	1/9/00	260				
CG-131-WT	8/1/02		51			
CG-132-40	2/18/03				490	71
CG-132-40	11/5/2002			-369		
CG-132-40	1/9/00	191				
CG-132-40	7/31/02		-29			
CG-132-WT	2/18/03				488	119
CG-132-WT	11/5/2002			-355		
CG-132-WT	1/9/00	243				
CG-132-WT	7/31/02		100			
CG-133-40	2/18/03				221	22
CG-133-40	11/13/2002			-348		
CG-133-40	1/9/00	108				
CG-133-40	8/5/02		107			
CG-134-40	2/18/03				344	50
CG-134-40	11/5/02			-54		
CG-134-40	1/14/00	-59				
CG-134-40	7/30/02		-32			
CG-134-WT	2/18/03				312	153
CG-134-WT	11/5/02			120		
CG-134-WT	1/14/00	52				
CG-134-WT	7/30/02		128			
CG-135-40	2/19/03				426	153
CG-135-40	11/13/02			181		
CG-135-40	1/17/00	-25				
CG-135-40	8/6/02		31			
CG-135-50	2/19/03				258	67
CG-135-50	11/13/02			-67		
CG-135-50	1/9/00	63				
CG-135-50	8/6/02		14			
CG-136-40	2/19/03				245	-47
CG-136-40	11/13/2002			-357		
CG-136-40	1/15/00	-54				
CG-136-40	8/5/02		-22			
CG-136-WT	2/19/03				335	48
CG-136-WT	11/13/2002			-238		
CG-136-WT	1/13/00	37				
CG-136-WT	8/5/02		58			
CG-137-40	2/19/03				320	135
CG-137-40	11/13/02			-40		
CG-137-40	1/13/00	244				
CG-137-40	7/30/02		17			
CG-137-WT	2/19/03				317	178
CG-137-WT	11/13/02			16		
CG-137-WT	1/13/00	207				
CG-137-WT	7/30/02		171			
CG-138-40	2/19/03				348	70
CG-138-40	11/5/2002			-364		
CG-138-40	1/14/00	281				

Table 9C-15
Average Concentrations of REDOX from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

		Measurement of Redox Potential (milliVolts)[1]				
Sample Location	Sample Date	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-138-40	8/5/02		15			
CG-138-70	2/19/03				282	6
CG-138-70	11/5/2002			-367		
CG-138-70	1/14/00	123				
CG-138-70	8/5/02		-13			
CG-138-WT	2/19/03				338	60
CG-138-WT	11/5/2002			-363		
CG-138-WT	1/13/00	242				
CG-138-WT	8/5/02		22			
CG-139-40	2/20/03				463	-1
CG-139-40	11/5/2002			-362		
CG-139-40	1/15/00	-68				
CG-139-40	7/30/02		-35			
CG-140-40	2/20/03				422	144
CG-140-40	11/5/02			-69		
CG-140-40	1/13/00	200				
CG-140-40	8/5/02		21			
CG-140-WT	2/20/03				457	216
CG-140-WT	11/5/02			16		
CG-140-WT	1/13/00	283				
CG-140-WT	8/5/02		106			
CG-141-40	2/20/03				431	98
CG-141-40	11/5/02			-46		
CG-141-40	1/15/00	-18				
CG-141-40	8/5/02		25			
CG-141-50	2/20/03				337	83
CG-141-50	11/5/02			-16		
CG-141-50	1/15/00	-29				
CG-141-50	8/5/02		40			
CG-141-WT	2/20/03				418	186
CG-141-WT	11/5/02			62		
CG-141-WT	1/15/00	186				
CG-141-WT	8/5/02		79			
CG-142-40	2/21/03				471	156
CG-142-40	11/11/02			-96		
CG-142-40	1/10/00	240				
CG-142-40	8/8/02		8			
CG-142-WT	2/21/03				479	190
CG-142-WT	11/11/02			-30		
CG-142-WT	1/10/00	277				
CG-142-WT	7/29/02		34			
CG-143-40	2/21/03				391	27
CG-143-40	11/12/2002			-370		
CG-143-40	1/20/00	-4				
CG-143-40	8/2/02		92			
CG-143-WT	2/21/03				427	106
CG-143-WT	11/12/2002			-370		
CG-143-WT	1/20/00	185				
CG-143-WT	CG-143-WT		182			
CG-144-35	2/21/03				376	94
CG-144-35	11/4/02			-52		
CG-144-35	1/21/00	-7				
CG-144-35	8/8/02		57			
CG-145-35	2/21/03				357	75
CG-145-35	11/4/02			-63		
CG-145-35	1/21/00	-9				
CG-145-35	8/8/02		14			
V-1	2/21/03				358	41
V-1	11/13/2002			-355		
V-1	1/20/00	11				
V-1	8/6/02		150			

Notes:

[1] REDOX Potential Measured in the field during sampling

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-16
Average Concentrations of Sulfide from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Sulfide (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				< 20	<20
CG-3	CG-3-0502	< 20				
CG-3,	CG-3-0802		< 20			
CG-3	CG-3-1102			< 50		
CG-11-S1	CG-11-S1-0502	< 20				<20
CG-101-S1	CG-101-S1-0203				< 20	<20
CG-101-S1	CG-101-S1-0502	< 20				
CG-101-S1	CG-101-S1-0702		< 20			
CG-101-S1	CG-101-S1-1102			< 50		
CG-101-S2	CG-101-S2-0203				< 20	<20
CG-101-S2	CG-101-S2-0502	< 20				
CG-101-S2	CG-101-S2-0702		< 20			
CG-101-S2	CG-101-S2-1102			< 50		
CG-102-D	CG-102-D-0502	< 20				<20
CG-102-D	CG-102-D-0802		< 20			
CG-102-I	CG-102-I-0502	< 20				<20
CG-102-I	CG-102-I-0802		< 20			
CG-102-S1	CG-102-S1-0502	< 20				<20
CG-102-S1	CG-102-S1-0802		< 20			
CG-102-S2	CG-102-S2-0502	< 20				<20
CG-102-S2	CG-102-S2-0802		< 20			
CG-103-I	CG-103-I-0502	< 20				<20
CG-103-I	CG-103-I-0802		< 20			
CG-103-S1	CG-103-S1-0502	< 20				<20
CG-103-S1	CG-103-S1-0802		< 20			
CG-103-S2	CG-103-S2-0502	< 20				<20
CG-103-S2	CG-103-S2-0802		< 20			
CG-104-D	CG-104-D-0203				< 20	<20
CG-104-D	CG-104-D-0502	< 20				
CG-104-D	CG-104-D-0802		< 20			
CG-104-D	CG-104-D-1102			< 50		
CG-104-I	CG-104-I-0203				< 20	<20
CG-104-I	CG-104-I-0502	< 20				
CG-104-I	CG-104-I-0802		< 20			
CG-104-I	CG-104-I-1102			< 20		
CG-104-S1	CG-104-S1-0203				< 20	<20
CG-104-S1	CG-104-S1-0502	< 20				
CG-104-S1	CG-104-S1-0802		< 20			
CG-104-S1	CG-104-S1-1102			< 50		
CG-104-S2	CG-104-S2-0203				< 20	<20
CG-104-S2	CG-104-S2-0502	< 20				
CG-104-S2	CG-104-S2-0802		< 20			
CG-104-S2	CG-104-S2-1102			< 50		
CG-105-I	CG-105-I-0203				< 20	<20
CG-105-I	CG-105-I-0502	< 20				
CG-105-I	CG-105-I-0802		< 20			
CG-105-I	CG-105-I-1102			< 20		
CG-105-S1	CG-105-S1-0203				< 20	<20
CG-105-S1	CG-105-S1-0502	< 20				
CG-105-S1	CG-105-S1-0802		< 20			
CG-105-S1	CG-105-S1-1102			< 20		
CG-105-S2	CG-105-S2-0203				< 20	<20
CG-105-S2	CG-105-S2-0502	< 20				
CG-105-S2	CG-105-S2-0802		< 20			
CG-105-S2	CG-105-S2-1102			< 20		
CG-106-D	CG-106-D-0203				< 20	<20
CG-106-D	CG-106-D-0502	< 20				
CG-106-D	CG-106-D-0702		< 20			
CG-106-D	CG-106-D-1102			< 50		
CG-106-I	CG-106-I-0203				< 20	<20
CG-106-I	CG-106-I-0502	< 20				
CG-106-I	CG-106-I-0702		< 20			
CG-106-I	CG-106-I-1102			< 50		
CG-106-WT	CG-106-WT-0203				< 20	<20
CG-106-WT	CG-106-WT-0502	< 20				
CG-106-WT	CG-106-WT-0702		< 20			
CG-106-WT	CG-106-WT-1102			< 50		
CG-107-WT	CG-107-WT-0203				< 20	<20
CG-107-WT	CG-107-WT-0502	< 20				
CG-107-WT	CG-107-WT-0702		< 20			
CG-107-WT	CG-107-WT-1102			< 20		
CG-111-I	CG-111-I-0203				< 20	<20
CG-111-I	CG-111-I-0502	< 20				
CG-111-I	CG-111-I-0702		< 20			
CG-111-I	CG-111-I-1102			< 50		
CG-112-S1	CG-112-S1-0502	< 20				<20
CG-112-S1	CG-112-S1-0802		< 20			
CG-113-S1	CG-113-S1-0203				< 20	<20
CG-113-S1	CG-113-S1-0502	< 20				
CG-113-S1	CG-113-S1-0802		< 20			
CG-113-S1	CG-113-S1-1102			< 50		
CG-114-75	CG-114-75-0502	< 20				<20
CG-114-75	CG-114-75-0802		< 20			
CG-115-75	CG-115-75-0502	< 20				

Table 9C-16
Average Concentrations of Sulfide from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Sulfide (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-115-75	CG-115-75-0802		< 20			<20
CG-115-WT	CG-115-WT-0502	< 20				<20
CG-115-WT	CG-115-WT-0802		< 20			
CG-119-40	CG-119-40-0502	< 20				<20
CG-119-40	CG-119-40-0802		< 20			
CG-120-75	CG-120-75-0502	< 20				<20
CG-120-75	CG-120-75-0802		< 20			
CG-121-40	CG-121-40-0203				< 20	<20
CG-121-40	CG-121-40-0502	< 20				
CG-121-40	CG-121-40-0702		< 20			
CG-121-40	CG-121-40-1102			< 50		
CG-121-70	CG-121-70-0203				< 20	<20
CG-121-70	CG-121-70-0502	< 20				
CG-121-70	CG-121-70-1102			< 50		
CG-122-60	CG-122-60-0203				< 20	<20
CG-122-60	CG-122-60-0502	< 20				
CG-122-60	CG-122-60-0802		< 20			
CG-122-60	CG-122-60-1102			< 50		
CG-122-WT	CG-122-WT-0203				< 20	<20
CG-122-WT	CG-122-WT-0502	< 20				
CG-122-WT	CG-122-WT-0802		< 20			
CG-122-WT	CG-122-WT-1102			< 50		
CG-123-90	CG-123-90-0203				< 20	<20
CG-123-90	CG-123-90-0502	< 20				
CG-123-90	CG-123-90-0802		< 20			
CG-123-90	CG-123-90-1102			< 50		
CG-124-40	CG-124-40-0203				< 20	<20
CG-124-40	CG-124-40-0502	< 20				
CG-124-40	CG-124-40-0702		< 20			
CG-124-40	CG-124-40-1102			< 50		
CG-124-70	CG-124-70-0203				< 20	<20
CG-124-70	CG-124-70-0502	< 20				
CG-124-70	CG-124-70-0702		< 20			
CG-124-70	CG-124-70-1102			< 50		
CG-124-WT	CG-124-WT-0203				< 20	<20
CG-124-WT	CG-124-WT-0502	< 20				
CG-124-WT	CG-124-WT-0702		< 20			
CG-124-WT	CG-124-WT-1102			< 50		
CG-125-40	CG-125-40-0502	< 20				<20
CG-125-40	CG-125-40-0802		< 20			
CG-126-WT	CG-126-WT-0502	< 20				<20
CG-126-WT	CG-126-WT-0802		< 20			
CG-127-40	CG-127-40-0203				< 20	<20
CG-127-40	CG-127-40-0502	< 20				
CG-127-40	CG-127-40-0802		< 20			
CG-127-40	CG-127-40-1102			< 50		
CG-127-WT	CG-127-WT-0203				< 20	<20
CG-127-WT	CG-127-WT-0502	< 20				
CG-127-WT	CG-127-WT-0802		< 20			
CG-127-WT	CG-127-WT-1102			< 50		
CG-128-70	CG-128-70-0203				< 20	<20
CG-128-70	CG-128-70-0502	< 20				
CG-128-70	CG-128-70-0802		< 20			
CG-128-70	CG-128-70-1102			< 50		
CG-130-WT	CG-130-WT-0203				< 20	<20
CG-130-WT	CG-130-WT-0502	< 20				
CG-130-WT	CG-130-WT-0802		< 20			
CG-130-WT	CG-130-WT-1102			< 50		
CG-134-40	CG-134-40-0203				< 20	<20
CG-134-40	CG-134-40-0502	< 20				
CG-134-40	CG-134-40-0702		< 20			
CG-134-40	CG-134-40-1102			< 50		
CG-134-WT	CG-134-WT-0203				< 20	<20
CG-134-WT	CG-134-WT-0502	< 20				
CG-134-WT	CG-134-WT-0702		< 20			
CG-134-WT	CG-134-WT-1102			< 50		
CG-135-40	CG-135-40-0203				< 20	<20
CG-135-40	CG-135-40-0502	< 20				
CG-135-40	CG-135-40-0802		< 20			
CG-135-40	CG-135-40-1102			< 50		
CG-140-40	CG-140-40-0203				< 20	<20
CG-140-40	CG-140-40-0502	< 20				
CG-140-40	CG-140-40-0802		< 20			
CG-140-40	CG-140-40-1102			< 50		
CG-140-WT	CG-140-WT-0203				< 20	<20
CG-140-WT	CG-140-WT-0502	< 20				
CG-140-WT	CG-140-WT-0802		< 20			
CG-140-WT	CG-140-WT-1102			< 50		
CG-141-40	CG-141-40-0203				< 20	<20
CG-141-40	CG-141-40-0502	< 20				
CG-141-40	CG-141-40-0802		< 20			
CG-141-40	CG-141-40-1102			< 50		
CG-141-WT	CG-141-WT-0203				< 20	<20
CG-141-WT	CG-141-WT-0502	< 20				

Table 9C-16
Average Concentrations of Sulfide from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Sulfide (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-141-WT	CG-141-WT-0802		< 20			
CG-141-WT	CG-141-WT-1102			< 50		
CG-143-40	CG-143-40-0203				< 20	<20
CG-143-40	CG-143-40-0502	< 20				
CG-143-40	CG-143-40-0802		< 20			
CG-143-40	CG-143-40-1102			< 50		
CG-143-WT	CG-143-WT-0203				< 20	<20
CG-143-WT	CG-143-WT-0502	< 20				
CG-143-WT	CG-143-WT-0802		< 20			
CG-143-WT	CG-143-WT-1102			< 50		
CG-144-35	CG-144-35-0203				< 20	<20
CG-144-35	CG-144-35-0502	< 20				
CG-144-35	CG-144-35-0802		< 20			
CG-144-35	CG-144-35-1102			< 50		
CG-145-35	CG-145-35-0203				< 20	<20
CG-145-35	CG-145-35-0502	< 20				
CG-145-35	CG-145-35-0802		< 20			
CG-145-35	CG-145-35-1102			< 50		

Notes:
[1] Analyzed by EPA Method 9030B

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-17
Average Concentrations of Sulfate from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Sulfate (milligrams per liter)[1] 2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-3	CG-3-0203				7.5	12.80
CG-3	CG-3-0502	16.7				
CG-3	CG-3-0802		16.5			
CG-3	CG-3-1102			10.5		
CG-11-S1	CG-11-S1-0502	1.05				1.05
CG-101-S1	CG-101-S1-0203				5.05	4.19
CG-101-S1	CG-101-S1-0502	5.25				
CG-101-S1	CG-101-S1-0702		3.31			
CG-101-S1	CG-101-S1-1102			3.15		
CG-101-S2	CG-101-S2-0203				5	16.85
CG-101-S2	CG-101-S2-0502	19.8				
CG-101-S2	CG-101-S2-0702		28.1			
CG-101-S2	CG-101-S2-1102			14.5		
CG-104-D	CG-104-D-0203				<0.4	<0.4
CG-104-D	CG-104-D-0502	<0.8				
CG-104-D	CG-104-D-0802		<0.8			
CG-104-D	CG-104-D-1102			<0.4		
CG-104-I	CG-104-I-0203				<0.4	<0.4
CG-104-I	CG-104-I-0502	<0.4				
CG-104-I	CG-104-I-0802		<0.4			
CG-104-I	CG-104-I-1102			<0.4		
CG-104-S1	CG-104-S1-0203				5.44	4.44
CG-104-S1	CG-104-S1-0502	3.37				
CG-104-S1	CG-104-S1-0802		3.45			
CG-104-S1	CG-104-S1-1102			5.51		
CG-104-S2	CG-104-S2-0203				<0.4	<0.4
CG-104-S2	CG-104-S2-0502	<0.4				
CG-104-S2	CG-104-S2-0802		<0.4			
CG-104-S2	CG-104-S2-1102			<0.4		
CG-105-I	CG-105-I-0203				<0.4	0.89
CG-105-I	CG-105-I-0502	<0.4				
CG-105-I	CG-105-I-0802		<0.4			
CG-105-I	CG-105-I-1102			0.885		
CG-105-S1	CG-105-S1-0203				<0.4	<0.4
CG-105-S1	CG-105-S1-0502	<0.4				
CG-105-S1	CG-105-S1-0802		<0.4			
CG-105-S1	CG-105-S1-1102			<0.4		
CG-105-S2	CG-105-S2-0203				<0.4	<0.4
CG-105-S2	CG-105-S2-0502	<0.4				
CG-105-S2	CG-105-S2-0802		<0.4			
CG-105-S2	CG-105-S2-1102			<0.4		
CG-106-D	CG-106-D-0203				5.63	6.87
CG-106-D	CG-106-D-0502	7.15				
CG-106-D	CG-106-D-0702		7.13			
CG-106-D	CG-106-D-1102			7.56		
CG-106-I	CG-106-I-0203				6.55	2.91
CG-106-I	CG-106-I-0502	0.613				
CG-106-I	CG-106-I-0702		<0.4			
CG-106-I	CG-106-I-1102			1.58		
CG-106-WT	CG-106-WT-0203				18.7	10.31
CG-106-WT	CG-106-WT-0502	10.3				
CG-106-WT	CG-106-WT-0702		8.34			
CG-106-WT	CG-106-WT-1102			3.91		
CG-107-WT	CG-107-WT-0203				5.81	12.93
CG-107-WT	CG-107-WT-0502	19.2				
CG-107-WT	CG-107-WT-0702		19			
CG-107-WT	CG-107-WT-1102			7.72		
CG-111-I	CG-111-I-0203				<0.4	0.45
CG-111-I	CG-111-I-0502	<0.4				
CG-111-I	CG-111-I-0702		<0.4			
CG-111-I	CG-111-I-1102			0.449		
CG-113-S1	CG-113-S1-0203				7.1	8.32
CG-113-S1	CG-113-S1-0502	10.7				
CG-113-S1	CG-113-S1-0802		9.29			
CG-113-S1	CG-113-S1-1102			6.19		
CG-121-40	CG-121-40-0203				<0.4	0.48
CG-121-40	CG-121-40-0502	0.543				
CG-121-40	CG-121-40-0702		0.417			
CG-121-40	CG-121-40-1102			<0.4		
CG-121-70	CG-121-70-0203				<0.4	<0.4
CG-121-70	CG-121-70-0502	<0.4				
CG-121-70	CG-121-70-1102			<0.4		
CG-122-60	CG-122-60-0203				<0.4	<0.4
CG-122-60	CG-122-60-0502	<0.4				
CG-122-60	CG-122-60-0802		<0.4			
CG-122-60	CG-122-60-1102			<0.4		
CG-122-WT	CG-122-WT-0203				5.31	9.70
CG-122-WT	CG-122-WT-0502	12				
CG-122-WT	CG-122-WT-0802		17			
CG-122-WT	CG-122-WT-1102			4.48		
CG-123-90	CG-123-90-0203				<0.4	<0.4
CG-123-90	CG-123-90-0502	<0.4				
CG-123-90	CG-123-90-0802		<0.4			

Table 9C-17
Average Concentrations of Sulfate from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Sulfate (milligrams per liter)[1]								
		2nd Quarter 2002		3rd Quarter 2002		4th Quarter 2002		1st Quarter 2003		Average[2]
CG-123-90	CG-123-90-1102					<	0.4			
CG-124-40	CG-124-40-0203							1.72		2.54
CG-124-40	CG-124-40-0502	2.46								
CG-124-40	CG-124-40-0702			2.6						
CG-124-40	CG-124-40-1102					3.39				
CG-124-70	CG-124-70-0203							<	0.4	<0.4
CG-124-70	CG-124-70-0502	<	0.4							
CG-124-70	CG-124-70-0702			<	0.4					
CG-124-70	CG-124-70-1102					<	0.4			
CG-124-WT	CG-124-WT-0203							9.81		16.35
CG-124-WT	CG-124-WT-0502	11.5								
CG-124-WT	CG-124-WT-0702			21.7						
CG-124-WT	CG-124-WT-1102					22.4				
CG-127-40	CG-127-40-0203							3.77		3.50
CG-127-40	CG-127-40-0502	3.01								
CG-127-40	CG-127-40-0802			3.06						
CG-127-40	CG-127-40-1102					4.16				
CG-127-WT	CG-127-WT-0203							101		115.65
CG-127-WT	CG-127-WT-0502	139								
CG-127-WT	CG-127-WT-0802			125						
CG-127-WT	CG-127-WT-1102					97.6				
CG-128-70	CG-128-70-0203							<	0.4	<0.4
CG-128-70	CG-128-70-0502	<	0.4							
CG-128-70	CG-128-70-0802			<	0.4					
CG-128-70	CG-128-70-1102					<	0.4			
CG-130-WT	CG-130-WT-0203							28.4		33.78
CG-130-WT	CG-130-WT-0502	32.7								
CG-130-WT	CG-130-WT-0802			34.5						
CG-130-WT	CG-130-WT-1102					39.5				
CG-134-40	CG-134-40-0203							24.9		21.00
CG-134-40	CG-134-40-0502	15.6								
CG-134-40	CG-134-40-0702			17.7						
CG-134-40	CG-134-40-1102					25.8				
CG-134-WT	CG-134-WT-0203							57.8		51.05
CG-134-WT	CG-134-WT-0502	69								
CG-134-WT	CG-134-WT-0702			36.5						
CG-134-WT	CG-134-WT-1102					40.9				
CG-135-40	CG-135-40-0203							<	0.4	<0.4
CG-135-40	CG-135-40-0502	<	0.4							
CG-135-40	CG-135-40-0802			<	0.4					
CG-135-40	CG-135-40-1102					<	0.4			
CG-140-40	CG-140-40-0203							1.99		1.34
CG-140-40	CG-140-40-0502	0.693								
CG-140-40	CG-140-40-0802			1.78						
CG-140-40	CG-140-40-1102					0.897				
CG-140-WT	CG-140-WT-0203							315		396.50
CG-140-WT	CG-140-WT-0502	448								
CG-140-WT	CG-140-WT-0802			451						
CG-140-WT	CG-140-WT-1102					372				
CG-141-40	CG-141-40-0203							11.4		15.88
CG-141-40	CG-141-40-0502	27.9								
CG-141-40	CG-141-40-0802			13.2						
CG-141-40	CG-141-40-1102					11				
CG-141-WT	CG-141-WT-0203							14.8		21.00
CG-141-WT	CG-141-WT-0502	27.8								
CG-141-WT	CG-141-WT-0802			19.4						
CG-141-WT	CG-141-WT-1102					22				
CG-143-40	CG-143-40-0203							<	0.4	<0.4
CG-143-40	CG-143-40-0502	<	0.4							
CG-143-40	CG-143-40-0802			<	0.4					
CG-143-40	CG-143-40-1102					<	0.4			
CG-143-WT	CG-143-WT-0203							32.3		31.83
CG-143-WT	CG-143-WT-0502	34.3								
CG-143-WT	CG-143-WT-0802			37.5						
CG-143-WT	CG-143-WT-1102					23.2				
CG-144-35	CG-144-35-0203							<	0.4	<0.4
CG-144-35	CG-144-35-0502	<	0.4							
CG-144-35	CG-144-35-0802			<	0.4					
CG-144-35	CG-144-35-1102					<	0.4			
CG-145-35	CG-145-35-0203							<	0.4	<0.4
CG-145-35	CG-145-35-0502	<	0.4							
CG-145-35	CG-145-35-0802			<	0.4					
CG-145-35	CG-145-35-1102					<	0.4			

Notes:

[1] Analyzed by EPA Method 300.0

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.

Table 9C-18
Average Concentrations of Specific Conductivity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Specific Conductivity (microSiemens per centimeter)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-1-S1				214.2	214.2
CG-2-S1				283.7	283.7
CG-3			67		105.1
CG-3		99			
CG-3	160				
CG-3				94.2	
CG-9-S1				368.4	368.4
CG-10-S1				182.4	182.4
CG-11-S1		475			430.2
CG-11-S1	424				
CG-11-S1				391.7	
CG-101-S1			65		58.4
CG-101-S1		60			
CG-101-S1	46				
CG-101-S1				62.5	
CG-101-S2			143		170.6
CG-101-S2		181			
CG-101-S2	198				
CG-101-S2				160.3	
CG-102-D			22,000		27,149.0
CG-102-D		25,515			
CG-102-D	32,531				
CG-102-D				28,550.0	
CG-102-I			453		525.1
CG-102-I		496			
CG-102-I	595				
CG-102-I				556.2	
CG-102-S1			88		115.4
CG-102-S1		122			
CG-102-S1	134				
CG-102-S1				117.7	
CG-102-S2			343		410.2
CG-102-S2		413			
CG-102-S2	486				
CG-102-S2				398.8	
CG-103-I			1,092		1,211.3
CG-103-I		907			
CG-103-I	1,410				
CG-103-I				1,436.0	
CG-103-S1			120		199.3
CG-103-S1		189			
CG-103-S1	194				
CG-103-S1				294.2	
CG-103-S2			231		228.0
CG-103-S2		189			
CG-103-S2	259				
CG-103-S2				233.1	
CG-104-D			19,269		21,122.3
CG-104-D		20,804			
CG-104-D	21,266				
CG-104-D				23,150.0	
CG-104-I			415		370.1
CG-104-I		237			
CG-104-I	582				
CG-104-I				246.4	
CG-104-S1			420		434.0
CG-104-S1		344			
CG-104-S1	486				
CG-104-S1				486.0	
CG-104-S2			108		137.2
CG-104-S2		119			
CG-104-S2	191				
CG-104-S2				130.6	
CG-105-I			487		472.3
CG-105-I		380			
CG-105-I	415				
CG-105-I				607.1	
CG-105-S1			279		249.0
CG-105-S1		307			
CG-105-S1	185				
CG-105-S1				224.9	
CG-105-S2			114		179.1
CG-105-S2		154			
CG-105-S2	288				
CG-105-S2				160.2	
CG-106-D			1,590		1,911.0
CG-106-D		1,860			
CG-106-D	1,840				
CG-106-D				2,354.0	
CG-106-I			508		546.0
CG-106-I		569			
CG-106-I	402				
CG-106-I				705.1	
CG-106-WT			86		98.9

Table 9C-18
Average Concentrations of Specific Conductivity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Specific Conductivity (microSiemens per centimeter)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-106-WT		84			
CG-106-WT	62				
CG-106-WT				163.5	
CG-107-WT			384		361.7
CG-107-WT		389			
CG-107-WT	315				
CG-107-WT				358.7	
CG-111-I			999		1,483.3
CG-111-I		1,390			
CG-111-I	1,814				
CG-111-I				1,730.0	
CG-112-S1			237		242.5
CG-112-S1		249			
CG-112-S1	210				
CG-112-S1				274.1	
CG-113-S1			394		480.6
CG-113-S1		385			
CG-113-S1	676				
CG-113-S1				380.7	
CG-114-75			246		249.3
CG-114-75		243			
CG-114-75	238				
CG-114-75				270.0	
CG-115-75			855		762.1
CG-115-75		830			
CG-115-75	724				
CG-115-75				639.4	
CG-115-WT			170		276.1
CG-115-WT		386			
CG-115-WT	302				
CG-115-WT				246.5	
CG-119-40			127		149.3
CG-119-40		150			
CG-119-40	170				
CG-119-40				150.3	
CG120-75		251			243.4
CG-120-75			220		
CG-120-75	190				
CG-120-75				296.7	
CG-121-40			628		803.8
CG-121-40		643			
CG-121-40	918				
CG-121-40				1,026.0	
CG-121-70			380		479.7
CG-121-70		371			
CG-121-70	557				
CG-121-70				610.7	
CG-122-60			770		1,226.8
CG-122-60		1,245			
CG-122-60	1,549				
CG-122-60				1,343.0	
CG-122-WT			262		406.1
CG-122-WT		413			
CG-122-WT	534				
CG-122-WT				415.4	
CG-123-90			3,370		3,655.8
CG-123-90		3,526			
CG-123-90	3,890				
CG-123-90				3,837.0	
CG-124-40			168		214.8
CG-124-40		230			
CG-124-40	223				
CG-124-40				238.2	
CG-124-70			1,510		2,322.5
CG-124-70		2,118			
CG-124-70	3,340				
CG-124-70				2,322.0	
CG-124-WT			196		221.0
CG-124-WT		265			
CG-124-WT	207				
CG-124-WT				215.9	
CG-125-40			397		480.5
CG-125-40		487			
CG-125-40	507				
CG-125-40				530.9	
CG126-WT			341		365.6
CG-126-WT		414			
CG-126-WT	352				
CG-126-WT				355.5	
CG-127-40			504		704.2
CG-127-40		777			
CG-127-40	723				
CG-127-40				812.7	
CG-127-WT			327		468.9

Table 9C-18
Average Concentrations of Specific Conductivity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Measurement Specific Conductivity (microSiemens per centimeter)[1]				
	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-127-WT		519			
CG-127-WT	490				
CG-127-WT				539.6	
CG-128-70			666		794.3
CG-128-70		831			
CG-128-70	772				
CG-128-70				908.0	
CG-128-WT			181		227.3
CG-128-WT		201			
CG-128-WT	244				
CG-128-WT				283.1	
CG-129-40			810		918.4
CG-129-40		930			
CG-129-40	939				
CG-129-40				994.4	
CG-129-WT			218		257.7
CG-129-WT		245			
CG-129-WT	272				
CG-129-WT				295.6	
CG-130-WT			179		231.3
CG-130-WT		241			
CG-130-WT	241				
CG-130-WT				264.1	
CG-131-40			507		527.0
CG-131-40		562			
CG-131-40	413				
CG-131-40				626.0	
CG-131-WT			474		497.0
CG-131-WT		471			
CG-131-WT	496				
CG-131-WT				547.1	
CG-132-40			734		772.8
CG-132-40		575			
CG-132-40	894				
CG-132-40				888.1	
CG-132-WT			330		344.8
CG-132-WT		245			
CG-132-WT	397				
CG-132-WT				407.0	
CG-133-40			423		465.7
CG-133-40		470			
CG-133-40	484				
CG-133-40				485.6	
CG-134-40			322		468.2
CG-134-40		499			
CG-134-40	481				
CG-134-40				570.7	
CG-134-WT			198		315.2
CG-134-WT		323			
CG-134-WT	370				
CG-134-WT				369.8	
CG-135-40			4,990		1,636.8
CG-135-40		542			
CG-135-40	402				
CG-135-40				613.2	
CG-135-50			491		585.4
CG-135-50		583			
CG-135-50	603				
CG-135-50				664.6	
CG-136-40			450		479.1
CG-136-40		484			
CG-136-40	459				
CG-136-40				523.4	
CG-136-WT			281		285.8
CG-136-WT		247			
CG-136-WT	275				
CG-136-WT				340.0	
CG-137-40			358		448.7
CG-137-40		431			
CG-137-40	536				
CG-137-40				469.9	
CG-137-WT			237		326.6
CG-137-WT		279			
CG-137-WT	486				
CG-137-WT				304.3	
CG-138-40			268		285.3
CG-138-40		191			
CG-138-40	376				
CG-138-40				306.1	
CG-138-70			368		389.7
CG-138-70		257			
CG-138-70	487				
CG-138-70				446.8	
CG-138-WT			312		338.6

Table 9C-18
Average Concentrations of Specific Conductivity from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Specific Conductivity (microSiemens per centimeter)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-138-WT		237			
CG-138-WT	440				
CG-138-WT				365.3	
CG-139-40			516		537.1
CG-139-40		538			
CG-139-40	505				
CG-139-40				589.5	
CG-140-40			225		351.3
CG-140-40		345			
CG-140-40	455				
CG-140-40				380.0	
CG-140-WT			739		1,002.9
CG-140-WT		1,089			
CG-140-WT	1,262				
CG-140-WT				921.4	
CG-141-40			245		349.0
CG-141-40		248			
CG-141-40	480				
CG-141-40				422.8	
CG-141-50			0		269.5
CG-141-50		238			
CG-141-50	432				
CG-141-50				407.8	
CG-141-WT			211		216.9
CG-141-WT		155			
CG-141-WT	348				
CG-141-WT				153.5	
CG-142-40			427		353.2
CG-142-40		239			
CG-142-40	359				
CG-142-40				387.6	
CG-142-WT			786		863.3
CG-142-WT		1,500			
CG-142-WT	536				
CG-142-WT				631.1	
CG-143-40			346		349.7
CG-143-40		379			
CG-143-40	256				
CG-143-40				417.8	
CG-143-WT			251		269.6
CG-143-WT		286			
CG-143-WT	178				
CG-143-WT				363.5	
CG-144-35			465		392.5
CG-144-35		298			
CG-144-35	312				
CG-144-35				495.1	
CG-145-35			545		517.1
CG-145-35		409			
CG-145-35	438				
CG-145-35				676.2	
V-1			114		134.8
V-1		166			
V-1	111				
V-1				148.2	

Notes:
[1] Measurements collected in field

Table 9C-19
Average Temperature from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Temperature (Fahrenheit)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-1-S1				65.17	65.17
CG-2-S1				56.08	56.08
CG-3			39.83		54.5775
CG-3		62.24			
CG-3	60.12				
CG-3				56.12	
CG-9-S1				56.50	56.5
CG-10-S1				66.70	66.7
CG-11-S1		61.1			57.67333333
CG-11-S1	56.68				
CG-11-S1				55.24	
CG-101-S1			57.38		61.425
CG-101-S1		79.34			
CG-101-S1	62.83				
CG-101-S1				46.15	
CG-101-S2			60.26		60.03
CG-101-S2		68.18			
CG-101-S2	59.97				
CG-101-S2				51.71	
CG-102-D			58.82		60.3575
CG-102-D		65.82			
CG-102-D	61.57				
CG-102-D				55.22	
CG-102-I			58.2		60.135
CG-102-I		63.68			
CG-102-I	60.04				
CG-102-I				58.62	
CG-102-S1			61.34		62.5885
CG-102-S1		70.34			
CG-102-S1	61.51				
CG-102-S1				57.16	
CG-102-S2			57.92		61.135
CG-102-S2		69.08			
CG-102-S2	60.99				
CG-102-S2				56.55	
CG-103-I			59		60.1025
CG-103-I		63.5			
CG-103-I	59.31				
CG-103-I				58.60	
CG-103-S1			59.87		58.76
CG-103-S1		61.8			
CG-103-S1	56.3				
CG-103-S1				57.07	
CG-103-S2			65.45		65.01
CG-103-S2		68.18			
CG-103-S2	63.14				
CG-103-S2				63.27	
CG-104-D			59.33		58.795
CG-104-D		62.29			
CG-104-D	57.84				
CG-104-D				55.72	
CG-104-I			59.51		61.0675
CG-104-I		63.68			
CG-104-I	63.47				
CG-104-I				57.61	
CG-104-S1			60.38		64.7525
CG-104-S1		76.82			
CG-104-S1	64.07				
CG-104-S1				57.74	
CG-104-S2			58.3		62.275
CG-104-S2		68.36			
CG-104-S2	65.2				
CG-104-S2				57.24	
CG-105-I			59.04		60.1975
CG-105-I		61.88			
CG-105-I	59.25				
CG-105-I				60.62	
CG-105-S1			59.47		64.7
CG-105-S1		71.6			
CG-105-S1	70.48				
CG-105-S1				57.25	
CG-105-S2			58.1		57.715
CG-105-S2		59.41			
CG-105-S2	56.89				
CG-105-S2				56.46	
CG-106-D			55.58		54.825
CG-106-D		55.58			
CG-106-D	54.36				
CG-106-D				53.78	
CG-106-I			56.12		55.4175
CG-106-I		56.12			
CG-106-I	54.82				
CG-106-I				54.61	
CG-106-WT			58.82		55.3875

Table 9C-19
Average Temperature from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Temperature (Fahrenheit)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-106-WT		56.66			
CG-106-WT	51.66				
CG-106-WT				54.41	
CG-107-WT			58.46		56.4875
CG-107-WT		57.59			
CG-107-WT	54.88				
CG-107-WT				55.02	
CG-111-I			58.64		59.0525
CG-111-I		60.46			
CG-111-I	60.36				
CG-111-I				56.75	
CG-112-S1			57.28		56.5725
CG-112-S1		57.38			
CG-112-S1	55.11				
CG-112-S1				56.52	
CG-113-S1			57.96		66.2675
CG-113-S1		75.74			
CG-113-S1	75.07				
CG-113-S1				56.30	
CG-114-75			57.88		57.45
CG-114-75		58.64			
CG-114-75	57.43				
CG-114-75				55.85	
CG-115-75			58.05		57.575
CG-115-75		59.9			
CG-115-75	56.48				
CG-115-75				55.87	
CG-115-WT			60.85		59.5
CG-115-WT		62.42			
CG-115-WT	57.51				
CG-115-WT				57.22	
CG-119-40			57.55		57.2075
CG-119-40		58.64			
CG-119-40	56.61				
CG-119-40				56.03	
CG120-75		57.38			55.29
CG-120-75			55.58		
CG-120-75	56.48				
CG-120-75				54.10	
CG-121-40			57.56		57.535
CG-121-40		60.26			
CG-121-40	56.61				
CG-121-40				55.71	
CG-121-70			56.84		56.845
CG-121-70		59.18			
CG-121-70	56.41				
CG-121-70				54.95	
CG-122-60			56.66		56.895
CG-122-60		58.19			
CG-122-60	56.72				
CG-122-60				56.01	
CG-122-WT			61.34		58.4475
CG-122-WT		60.09			
CG-122-WT	55.59				
CG-122-WT				56.77	
CG-123-90			56.69		46.15
CG-123-90		57.85			
CG-123-90	14.50				
CG-123-90				55.56	
CG-124-40			57.56		57.17
CG-124-40		58.32			
CG-124-40	56.82				
CG-124-40				55.98	
CG-124-70			56.84		56.6825
CG-124-70		58.77			
CG-124-70	56.21				
CG-124-70				54.91	
CG-124-WT			60.62		57.6525
CG-124-WT		58.85			
CG-124-WT	55.15				
CG-124-WT				55.99	
CG-125-40			57.38		57.2175
CG-125-40		58.11			
CG-125-40	56.85				
CG-125-40				56.53	
CG126-WT			61.88		58.995
CG-126-WT		61.2			
CG-126-WT	55.77				
CG-126-WT				57.13	
CG-127-40			58.82		58.5825
CG-127-40		60.24			
CG-127-40	57.31				
CG-127-40				57.96	
CG-127-WT			61.34		59.425

Table 9C-19
Average Temperature from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Temperature (Fahrenheit)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-127-WT		60.77			
CG-127-WT	56.3				
CG-127-WT				59.29	
CG-128-70			55.76		55.595
CG-128-70		56.46			
CG-128-70	55.44				
CG-128-70				54.72	
CG-128-WT			59.18		56.6425
CG-128-WT		57.6			
CG-128-WT	55.15				
CG-128-WT				54.64	
CG-129-40			58.29		58.53
CG-129-40		59.63			
CG-129-40	59.63				
CG-129-40				56.57	
CG-129-WT			60.41		58.6125
CG-129-WT		61.32			
CG-129-WT	56.51				
CG-129-WT				56.21	
CG-130-WT			60.26		58.4925
CG-130-WT		59.6			
CG-130-WT	57.14				
CG-130-WT				56.97	
CG-131-40			58.01		57.5525
CG-131-40		58.65			
CG-131-40	56.8				
CG-131-40				56.75	
CG-131-WT			60.24		58.6025
CG-131-WT		59			
CG-131-WT	57.59				
CG-131-WT				57.58	
CG-132-40			60.04		59.5725
CG-132-40		61.34			
CG-132-40	59.42				
CG-132-40				57.49	
CG-132-WT			62.26		60.84
CG-132-WT		63.86			
CG-132-WT	59.82				
CG-132-WT				57.42	
CG-133-40			60.16		59.645
CG-133-40		61.63			
CG-133-40	58.8				
CG-133-40				57.99	
CG-134-40			59.54		59.625
CG-134-40		60.55			
CG-134-40	59.79				
CG-134-40				58.62	
CG-134-WT			63.14		60.6325
CG-134-WT		62.13			
CG-134-WT	58.78				
CG-134-WT				58.48	
CG-135-40	--		59.54		58.635
CG-135-40		60.12			
CG-135-40	58.08				
CG-135-40				56.80	
CG-135-50			58.64		58.0725
CG-135-50		59.24			
CG-135-50	57.97				
CG-135-50				56.44	
CG-136-40			61.35		61.29
CG-136-40		63.27			
CG-136-40	60.96				
CG-136-40				59.58	
CG-136-WT			62.19		59.7875
CG-136-WT		62.24			
CG-136-WT	57.2				
CG-136-WT				57.52	
CG-137-40			61.34		60.6625
CG-137-40		63.12			
CG-137-40	58.92				
CG-137-40				59.27	
CG-137-WT			63.32		60.7
CG-137-WT		62.38			
CG-137-WT	57.61				
CG-137-WT				59.49	
CG-138-40			59.05		58.88
CG-138-40		60.8			
CG-138-40	57.84				
CG-138-40				57.83	
CG-138-70			58.07		58.1025
CG-138-70		60.44			
CG-138-70	57.28				
CG-138-70				56.62	
CG-138-WT			60.69		58

Table 9C-19
Average Temperature from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

	Measurement Temperature (Fahrenheit)[1]				
Sample Location	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average
CG-138-WT		59.36			
CG-138-WT	54.89				
CG-138-WT				57.06	
CG-139-40			60.11		59.41333333
CG-139-40		61.7			
CG-139-40	59.09				
CG-139-40				57.45	
CG-140-40			58.82		58.48
CG-140-40		60.41			
CG-140-40	58.3				
CG-140-40				56.39	
CG-140-WT			64.4		59.915
CG-140-WT		63.37			
CG-140-WT	56.4				
CG-140-WT				55.49	
CG-141-40			57.74		57.495
CG-141-40		58.46			
CG-141-40	57.89				
CG-141-40				55.89	
CG-141-50			57.92		56.9925
CG-141-50		57.38			
CG-141-50	57.13				
CG-141-50				55.54	
CG-141-WT			60.44		57.3675
CG-141-WT		60.26			
CG-141-WT	55.69				
CG-141-WT				53.08	
CG-142-40			58.1		58.27
CG-142-40		59.54			
CG-142-40	58.91				
CG-142-40				56.53	
CG-142-WT			61.88		58.5375
CG-142-WT		60.44			
CG-142-WT	56.65				
CG-142-WT				55.18	
CG-143-40			57.52		57.155
CG-143-40		58.91			
CG-143-40	56.32				
CG-143-40				55.87	
CG-143-WT			61.97		58.78
CG-143-WT		61.76			
CG-143-WT	55.51				
CG-143-WT				55.88	
CG-144-35			58.64		58.8475
CG-144-35		59.36			
CG-144-35	59.18				
CG-144-35				58.21	
CG-145-35			56.84		56.79
CG-145-35		57.56			
CG-145-35	56.73				
CG-145-35				56.03	
V-1			58.69		57.38
V-1		59.05			
V-1	56.7				
V-1				55.08	

Notes:
[1] Measurements collected in field

Table 9C-20
Average Concentrations of Total Organic Carbon from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

Sample Location	Sample ID	Concentration of Total Organic Carbon (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-101-S1	CG-101-S1-0203				<2	2.26
CG-101-S1	CG-101-S1-0502	<2				
CG-101-S1	CG-101-S1-0702		2.26			
CG-101-S1	CG-101-S1-1102			<2		
CG-101-S2	CG-101-S2-0203				3.26	5.27
CG-101-S2	CG-101-S2-0502	7.71				
CG-101-S2	CG-101-S2-0702		6.87			
CG-101-S2	CG-101-S2-1102			3.24		
CG-104-D	CG-104-D-0203				151	124.68
CG-104-D	CG-104-D-0502	115				
CG-104-D	CG-104-D-0802		186			
CG-104-D	CG-104-D-1102			46.7		
CG-104-I	CG-104-I-0203				22.1	23.13
CG-104-I	CG-104-I-0502	17				
CG-104-I	CG-104-I-0802		40.6			
CG-104-I	CG-104-I-1102			12.8		
CG-104-S1	CG-104-S1-0203				23.5	25.48
CG-104-S1	CG-104-S1-0502	18				
CG-104-S1	CG-104-S1-0802		44.3			
CG-104-S1	CG-104-S1-1102			16.1		
CG-104-S2	CG-104-S2-0203				6.85	7.26
CG-104-S2	CG-104-S2-0502	8.26				
CG-104-S2	CG-104-S2-0802		10.5			
CG-104-S2	CG-104-S2-1102			3.41		
CG-105-I	CG-105-I-0203				35.9	46.27
CG-105-I	CG-105-I-0502	77.1				
CG-105-I	CG-105-I-0802		65			
CG-105-I	CG-105-I-1102			7.08		
CG-105-S1	CG-105-S1-0203				92.6	122.75
CG-105-S1	CG-105-S1-0502	130				
CG-105-S1	CG-105-S1-0802		200			
CG-105-S1	CG-105-S1-1102			68.4		
CG-105-S2	CG-105-S2-0203				12.2	11.72
CG-105-S2	CG-105-S2-0502	16.8				
CG-105-S2	CG-105-S2-0802		14			
CG-105-S2	CG-105-S2-1102			3.88		
CG-106-D	CG-106-D-0203				53.1	48.28
CG-106-D	CG-106-D-0502	58.2				
CG-106-D	CG-106-D-0702		68.5			
CG-106-D	CG-106-D-1102			13.3		
CG-106-I	CG-106-I-0203				40.5	38.38
CG-106-I	CG-106-I-0502	58.8				
CG-106-I	CG-106-I-0702		47.8			
CG-106-I	CG-106-I-1102			6.4		
CG-106-WT	CG-106-WT-0203				4.59	4.32
CG-106-WT	CG-106-WT-0502	3.79				
CG-106-WT	CG-106-WT-0702		4.57			
CG-106-WT	CG-106-WT-1102			<1		
CG-107-WT	CG-107-WT-0203				48.8	25.22
CG-107-WT	CG-107-WT-0502	8.84				
CG-107-WT	CG-107-WT-0702		36.2			
CG-107-WT	CG-107-WT-1102			7.04		
CG-111-I	CG-111-I-0203				33.9	34.35
CG-111-I	CG-111-I-0502	32.2				
CG-111-I	CG-111-I-0702		55.5			
CG-111-I	CG-111-I-1102			15.8		
CG-113-S1	CG-113-S1-0203				25.5	18.18
CG-113-S1	CG-113-S1-0502	17.6				
CG-113-S1	CG-113-S1-0802		20.3			
CG-113-S1	CG-113-S1-1102			9.31		
CG-11-S1	CG-11-S1-0502	285				
CG-121-40	CG-121-40-0203				34.7	37.15
CG-121-40	CG-121-40-0502	64.5				
CG-121-40	CG-121-40-0702		41.4			
CG-121-40	CG-121-40-1102			8.01		
CG-121-70	CG-121-70-0203				20.1	16.45
CG-121-70	CG-121-70-0502	19.8				
CG-121-70	CG-121-70-0702		22.3			
CG-121-70	CG-121-70-1102			3.6		
CG-122-60	CG-122-60-0203				64.2	41.10
CG-122-60	CG-122-60-0502	32.6				
CG-122-60	CG-122-60-0802		61.9			
CG-122-60	CG-122-60-1102			5.68		
CG-122-WT	CG-122-WT-0203				25.4	18.33
CG-122-WT	CG-122-WT-0502	14.4				
CG-122-WT	CG-122-WT-0802		25.3			
CG-122-WT	CG-122-WT-1102			8.2		
CG-123-90	CG-123-90-0203				37.4	25.01
CG-123-90	CG-123-90-0502	23.1				
CG-123-90	CG-123-90-0802		30.1			
CG-123-90	CG-123-90-1102			9.44		
CG-124-40	CG-124-40-0203				8.34	8.14
CG-124-40	CG-124-40-0502	13				
CG-124-40	CG-124-40-0702		8.96			
CG-124-40	CG-124-40-1102			2.27		
CG-124-70	CG-124-70-0203				26.4	22.65

Table 9C-20
Average Concentrations of Total Organic Carbon from Groundwater Monitoring Wells
PSC Georgetown Facility Remedial Investigation

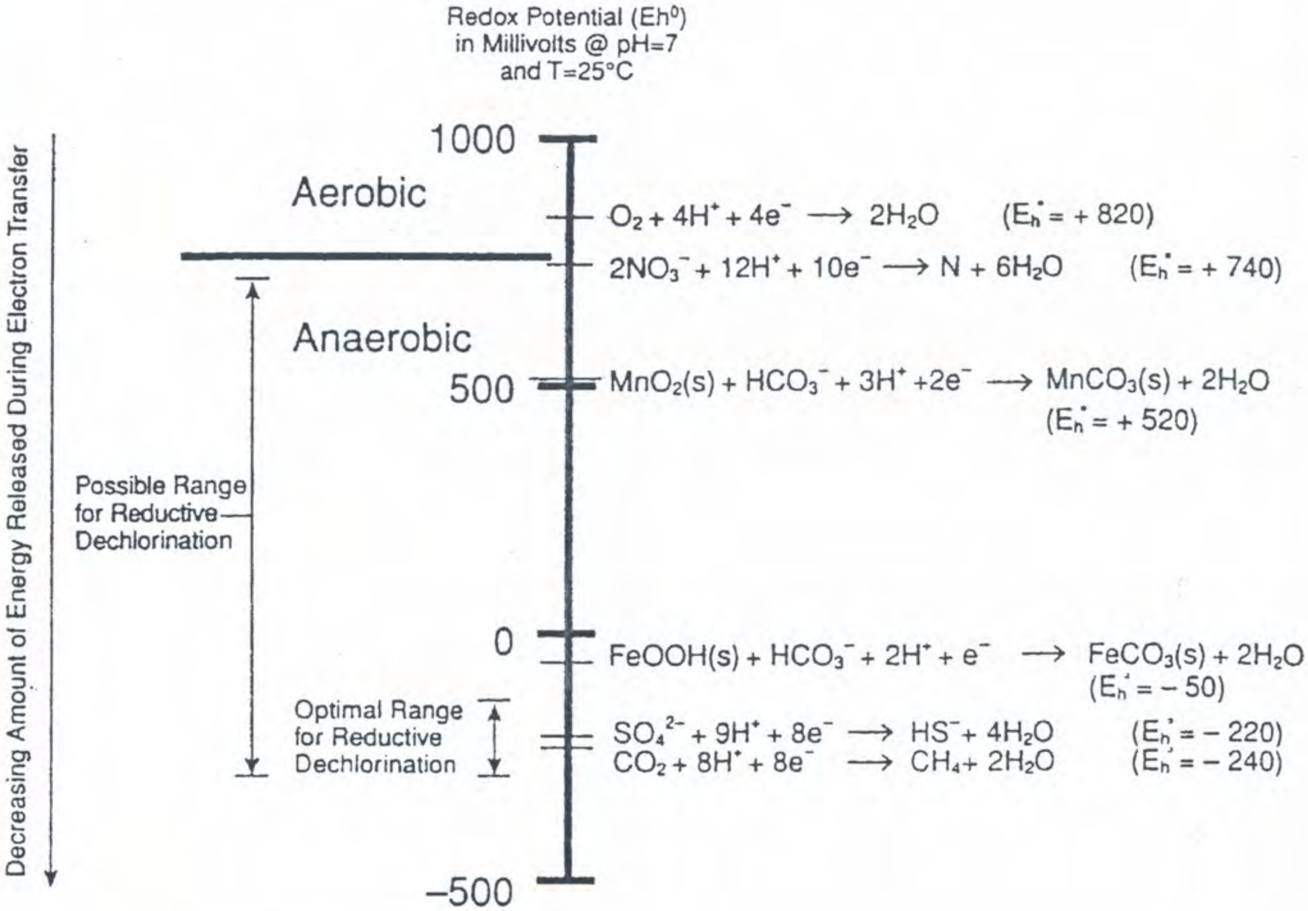
Sample Location	Sample ID	Concentration of Total Organic Carbon (milligrams per liter)[1]				
		2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	Average[2]
CG-124-70	CG-124-70-0502	33.7				
CG-124-70	CG-124-70-0702		25.3			
CG-124-70	CG-124-70-1102			5.2		
CG-124-WT	CG-124-WT-0203				9	8.89
CG-124-WT	CG-124-WT-0502	11.7				
CG-124-WT	CG-124-WT-0702		11.9			
CG-124-WT	CG-124-WT-1102			2.94		
CG-127-40	CG-127-40-0203				30.5	22.71
CG-127-40	CG-127-40-0502	23.1				
CG-127-40	CG-127-40-0802		30.4			
CG-127-40	CG-127-40-1102			6.84		
CG-127-WT	CG-127-WT-0203				16	13.25
CG-127-WT	CG-127-WT-0502	18				
CG-127-WT	CG-127-WT-0802		14.7			
CG-127-WT	CG-127-WT-1102			4.28		
CG-128-70	CG-128-70-0203				37.8	25.92
CG-128-70	CG-128-70-0502	25				
CG-128-70	CG-128-70-0802		35.5			
CG-128-70	CG-128-70-1102			5.37		
CG-130-WT	CG-130-WT-0203				9.26	7.47
CG-130-WT	CG-130-WT-0502	<10				
CG-130-WT	CG-130-WT-0802		10.8			
CG-130-WT	CG-130-WT-1102			2.36		
CG-134-40	CG-134-40-0203				21.4	22.52
CG-134-40	CG-134-40-0502	28.6				
CG-134-40	CG-134-40-0702		33.2			
CG-134-40	CG-134-40-1102			6.89		
CG-134-WT	CG-134-WT-0203				19.2	16.38
CG-134-WT	CG-134-WT-0502	16.6				
CG-134-WT	CG-134-WT-0702		23.9			
CG-134-WT	CG-134-WT-1102			5.82		
CG-135-40	CG-135-40-0203				40.5	36.70
CG-135-40	CG-135-40-0502	42.8				
CG-135-40	CG-135-40-0802		29.5			
CG-135-40	CG-135-40-1102			34		
CG-140-40	CG-140-40-0203				9.96	10.28
CG-140-40	CG-140-40-0502	15				
CG-140-40	CG-140-40-0802		12.3			
CG-140-40	CG-140-40-1102			3.87		
CG-140-WT	CG-140-WT-0203				18.3	16.46
CG-140-WT	CG-140-WT-0502	20				
CG-140-WT	CG-140-WT-0802		21.2			
CG-140-WT	CG-140-WT-1102			6.34		
CG-141-40	CG-141-40-0203				14	11.41
CG-141-40	CG-141-40-0502	17.1				
CG-141-40	CG-141-40-0802		10.6			
CG-141-40	CG-141-40-1102			3.93		
CG-141-WT	CG-141-WT-0203				6.78	10.43
CG-141-WT	CG-141-WT-0502	15.4				
CG-141-WT	CG-141-WT-0802		12.6			
CG-141-WT	CG-141-WT-1102			6.95		
CG-143-40	CG-143-40-0203				15.9	11.70
CG-143-40	CG-143-40-0502	13.3				
CG-143-40	CG-143-40-0802		13.8			
CG-143-40	CG-143-40-1102			3.8		
CG-143-WT	CG-143-WT-0203				22.9	14.23
CG-143-WT	CG-143-WT-0502	16				
CG-143-WT	CG-143-WT-0802		12.7			
CG-143-WT	CG-143-WT-1102			5.3		
CG-144-35	CG-144-35-0203				24.8	20.07
CG-144-35	CG-144-35-0502	28.1				
CG-144-35	CG-144-35-0802		20.3			
CG-144-35	CG-144-35-1102			7.09		
CG-145-35	CG-145-35-0203				25.8	22.74
CG-145-35	CG-145-35-0502	31.9				
CG-145-35	CG-145-35-0802		25.1			
CG-145-35	CG-145-35-1102			8.15		
CG-3	CG-3-0203				<2	4.53
CG-3	CG-3-0502	<2				
CG-3	CG-3-0802		<2			
CG-3	CG-3-1102			4.53		

Notes:
[1] Analyzed by EPA Method 415.1

EPA = United States Environmental Protection Agency

[2] The average concentration calculation is based on detectable concentrations only. If there was only one detectable concentration, that concentration was used; if there were two or more quarters of detectable data, the average of those detected values was used.

< denotes result is less than laboratory practical quantitation limit or analyte not detected at or above the reporting limit.



Source: Wiedemeier *et. al.*, 1999

PSC	TITLE: Oxidation-Reduction Potentials for Various Reactions	DWN: DTB	PROJECT: RI2003
		DATE: 11/7/03	FIGURE: 9C-1

TITLE:
Dissolved Oxygen Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.: 9C-2	
DATE: 10/26/03	REV.:		

TITLE:

Redox Measurement Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-3

TITLE:

Nitrate Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.: 9C-4	
DATE: 11/6/03	REV.:		

TITLE:

Ferrous Iron Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-5
DATE: 11/6/03	REV.:	

TITLE:
Sulfate Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-6
DATE: 11/6/03	REV.:	

TITLE:
Methane Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-7
DATE: 11/6/03	REV.:	

TITLE:
Ethene Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.: 9C-8	
DATE: 11/6/03	REV.:		

TITLE:
Ethane Isoconcentration Map
Water Table Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-9

TITLE:

Dissolved Oxygen Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-10

TITLE:
Redox Measurement Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-11
DATE: 11/6/03	REV.:	

PSC

TITLE:

Nitrate Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:		
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-12	

TITLE:

Ferrous Iron Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:		
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-13	

PSC	TITLE: Sulfate Isoconcentration Map Shallow Sample Interval PSC Georgetown Facility Remedial Investigation Study Area	DWN: QDD	DES.:	PROJECT NO.: RI2003
		CHKD: AS	APPD:	
		DATE: 11/6/03	REV.:	FIGURE NO.: 9C-14

TITLE:
Methane Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-15
DATE: 11/6/03	REV.:	

TITLE:
Ethene Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-16

TITLE:

Ethane Isoconcentration Map
Shallow Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.: 9C-17	
DATE: 11/6/03	REV.:		

TITLE:

Dissolved Oxygen Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN:	DES.:	PROJECT NO.:
QDD		RI2003
CHKD: AS	APPD:	FIGURE NO.:
DATE: 11/6/03	REV.:	9C-18

TITLE:
Redox Measurement Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:		PROJECT NO.: RI2003
CHKD: AS	APPD:		FIGURE NO.: 9C-19
DATE: 11/6/03	REV.:		

LEGEND

CG-136-WT — MONITORING WELL

600 — CONCENTRATION OF NITRATE IN MILLIGRAMS PER LITER (mg/L). VALUE IS AVERAGE CONCENTRATION AT MONITORING WELL DURING PERIOD FROM APRIL 2002 TO MARCH 2003. SEE REPORT TEXT FOR EXPLANATION.

12 — POTENTIOMETRIC SURFACE CONTOUR IN FEET, DASHED WHERE INFERRED.

10 — ISOCONCENTRATION CONTOUR IN mg/L.

NA — NITRATE NOT ANALYZED AT THIS SAMPLE LOCATION.

<1 — CONCENTRATION NOT DETECTED ABOVE THE LABORATORY METHOD REPORTING LIMIT SHOWN.

NOTES:
SAMPLE INTERVAL EXTENDS FROM 41 FEET BELOW GROUND SURFACE TO THE TOP OF THE SILT LAYER (GENERALLY GREATER THAN 75 FEET BELOW THE GROUND SURFACE) EXCEPT AT MONITORING WELL CG-106-I WHICH IS SCREENED FROM 26 to 36 FEET BELOW GROUND SURFACE.

VERTICAL DATUM FOR GROUNDWATER LEVELS IS BASED ON NAVD88

PSC

TITLE:
Nitrate Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-20

TITLE:

Ferrous Iron Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.: 9C-21	
DATE: 11/6/03	REV.:		

PSC

TITLE:
Sulfate Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-22
DATE: 11/6/03	REV.:	

TITLE:

Methane Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	
DATE: 11/6/03	REV.:	FIGURE NO.: 9C-23

PSC

TITLE:

Ethene Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

PSC

DWN: QDD	DES.:	PROJECT NO.: RI2003	
CHKD: AS	APPD:	FIGURE NO.:	
DATE: 11/6/03	REV.:	9C-24	

TITLE:
Ethane Isoconcentration Map
Intermediate Sample Interval
PSC Georgetown Facility Remedial Investigation Study Area

DWN: QDD	DES.:	PROJECT NO.: RI2003
CHKD: AS	APPD:	FIGURE NO.: 9C-25
DATE: 11/6/03	REV.:	

SiREM
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Guelph, Ontario N1G 5G3
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Fax: (519) 822-3151

Test Results for Gene-Trac™ *Dehalococcoides* Assay

Client Name: PSC	**Test Reference Number:** DT-0021
Contact: Tasya Gray	**Report Issued:** 28-Aug-02
Site Location: Renton, Washington	**Site Sampling:** 6-Aug-02 **Sample(s) Received:** 7-Aug-02 **DNA Extraction:** 15-Aug-02
Telephone: (425) 227-6149	**Method Used:** Gene-Trac™ *Dehalococcoides* Assay
E-mail: TGray@contactpsc.com	**Positive Control (Pos. Ctrl.):** Assay with Cloned *Dehalococcoides* 16S rRNA gene
Fax: (425) 227-6191	**Negative Control (Neg. Ctrl):** Assay with DNA extraction blank

Test Results:

Client Sample ID	SiREM ID	Bacterial DNA Detected	**Dehalococcoides* Test, Intensity (% of Positive Control)	**Intensity Score	*Dehalococcoides* Genetic Material Test Result
CG-104-I-0802	DHC-0127	yes	95%	+++	Positive (3 of 3 primer sets)
CG-104-SI-0802	DHC-0128	yes	190%	++++	Positive (3 of 3 primer sets)
CG-105-I-0802	DHC-0129	yes	220%	++++	Positive (3 of 3 primer sets)
CG-105-SI-0802	DHC-0130	yes	225%	++++	Positive (3 of 3 primer sets)
CG-11-SI-0802	DHC-0131	yes	243%	++++	Positive (3 of 3 primer sets)
FB	DHC-0126	yes	20%	+	Positive (1 of 3 primer sets)
na	Pos. Ctrl.	na	100%	+++	Positive (3 of 3 primer sets)
na	Neg. Ctrl	na	20%	*+	Positive (1 of 3 primer sets) *See note in case narrative

The above results refer only to that portion of the sample tested with the Gene-Trac™ assay. The test is based on a polymerase chain reaction (PCR) test with 3 primer sets specific to DNA sequences in the 16S rRNA gene of *Dehalococcoides* organisms. A positive (+ to ++++) result indicates that genetic material (DNA) from a member of the *Dehalococcoides* group was detected. *Dehalococcoides* organisms are the only microorganisms proven to possess the necessary enzymes for the complete dechlorination of PCE or TCE to ethene. The presence of *Dehalococcoides* genetic material has been positively correlated to complete dechlorination of chlorinated ethenes at contaminated sites.

*"Dehalococcoides Test Intensity" = quantitative assessment of electrophoresis band intensity of PCR product as a percentage of the corresponding positive control reaction. This value provides a semi-quantitative assessment of the amount of *Dehalococcoides* genetic material present in the sample. While band intensity might reflect actual concentration of the target organism, Gene-Trac™ is a semi-quantitative method and is only recommended to determine the presence or absence of *Dehalococcoides* genetic material in the sample.

**"Intensity Score", categorizes PCR product quantity based on the "intensity (% of positive control)" ++++ = Very high band intensity (greater than 100% of positive control), +++ = high band intensity (67-100%), ++ moderate band intensity (34-66%) + = low band intensity (10-33%), -/+ = inconclusive (1-9%), - = no detectable band (0%)

Analyst: Ximena Druar · Authorized by: Philip D Date: Sept. 9/02

Ximena Druar, B.Sc.,
Laboratory Technologist

Philip Dennis, M.A.Sc.,
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Test Results for Gene-Trac™ *Dehalococcoides* Assay

Client Name: PSC	**Test Reference Number:** DT-0021
Contact: Tasya Gray	**Report Issued:** 06-Sept-02
Site Location: Renton, Washington	**Site Sampling:** 6-Aug-02 **Sample(s) Received:** 7-Aug-02 **DNA Extraction:** 6-Sept-02
Telephone: (425) 227-6149	**Method Used:** Gene-Trac™ *Dehalococcoides* Assay
E-mail: TGray@contactpsc.com	**Positive Control (Pos. Ctrl.):** Assay with Cloned *Dehalococcoides* 16S rRNA gene
Fax: (425) 227-6191	**Negative Control (Neg. Ctrl):** Assay with DNA extraction blank

Test Results:

Client Sample ID	SiREM ID	Bacterial DNA Detected	**Dehalococcoides* Test, Intensity (% of Positive Control)	**Intensity Score	*Dehalococcoides* Genetic Material Test Result
CG-104-I-0802	DHC-0127	yes	85%	+++	Positive (3 of 3 primer sets)
CG-104-SI-0802	DHC-0128	yes	90%	+++	Positive (3 of 3 primer sets)
na	Pos. Ctrl.	na	100%	+++	Positive (3 of 3 primer sets)
na	Neg. Ctrl	na	0%	-	Negative (3 of 3 primer sets)

The above results refer only to that portion of the sample tested with the Gene-Trac™ assay. The test is based on a polymerase chain reaction (PCR) test with 3 primer sets specific to DNA sequences in the 16S rRNA gene of *Dehalococcoides* organisms. A positive (+ to ++++) result indicates that genetic material (DNA) from a member of the *Dehalococcoides* group was detected. *Dehalococcoides* organisms are the only microorganisms proven to possess the necessary enzymes for the complete dechlorination of PCE or TCE to ethene. The presence of *Dehalococcoides* genetic material has been positively correlated to complete dechlorination of chlorinated ethenes at contaminated sites.

*"Dehalococcoides Test Intensity" = quantitative assessment of electrophoresis band intensity of PCR product as a percentage of the corresponding positive control reaction. This value provides a semi-quantitative assessment of the amount of *Dehalococcoides* genetic material present in the sample. While band intensity might reflect actual concentration of the target organism, Gene-Trac™ is a semi-quantitative method and is only recommended to determine the presence or absence of *Dehalococcoides* genetic material in the sample

**"Intensity Score", categorizes PCR product quantity based on the "intensity (% of positive control)". ++++ = Very high band intensity (greater than 100% of positive control), +++ = high band intensity (67-100%), ++ moderate band intensity (34-66%) + = low band intensity (10-33%), -/+ = inconclusive (1-9%). - = no detectable band (0%)

Analyst: Ximena Druar **Authorized by:** Philip **Date:** Sept. 9/02

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Gene-Trac™ *Dehalococcoides* Case Narrative, Test DT-0021

Sample Condition:
SiREM received 5 - 2 L ground water samples from "Georgetown-3Q" the samples were acceptably packaged and arrived cool and double bagged with wet ice melt-water present in the cooler one day after sampling. They were stored at 4 °C upon arrival in the laboratory.

Test Results:
All field samples tested strongly positive for *Dehalococcoides* genetic material with three *Dehalococcoides*-specific primer sets. The positive control was normal, whereas the *negative control exhibited a slight band with one of the three primer sets. This band was only 1/5 the intensity of the weakest positive and only 1/10 the intensity of most of the other positives. The field blank exhibited a similar weak positive, which might reflect the same contamination source as the negative control and may not be associated with contamination in the field. While not ideal the magnitude of the weak positive reaction in the negative control is well below the level where it is cause for concern, considering the strong positive found in all of the samples. The weak positive in the negative control is likely the result of carry-over of trace amounts of DNA from previous samples during the DNA extraction or during the PCR setup process. In order to rule out the unlikely possibility that any of the field samples were significantly contaminated in this way DNA will be re-extracted from the two weakest samples and the tests repeated. This rework will be reflected in an additional Test Certificate that will accompany the hard copy containing the final results for the current test.

PD

Gene-Trac™ *Dehalococcoides* Case Narrative, Test DT-0021 (addendum)

Sample Condition:
SiREM received five - 2 L ground water samples from "Georgetown-3Q" on Aug 7, 2002. The samples were acceptably packaged and arrived cool and double bagged with wet ice melt-water present in the cooler one day after sampling. The Samples were stored at 4 °C upon arrival in the laboratory.

Test Results:
Due to mild concerns with the negative control reactions in a previous test result with these samples (As stated in the original case narrative for test DT-0021) DNA was re-extracted from the two weakest samples (CG-104-I and CG-104-SI) and the Gene-Trac™ test was repeated. A new DNA blank negative control was also run to ensure that no contamination occurred during the DNA extraction and isolation.
Both field samples tested strongly positive for *Dehalococcoides* genetic material as before with three *Dehalococcoides*-specific primer sets. In this case both the positive and negative controls were normal, and the negative control was negative with all 3 primer sets. Therefore we can conclude with complete confidence that the results reported on the previous test and these current tests are correct and all positive, free of exogenous DNA contamination and contaminant free.

XD

AS-0033
GW-0029
PF-0040

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Chain of Custody

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Page 1 of 1

No. 0001

Project Name: GEORGETOWN-3Q
Project Number:
Project Manager: TASYA GRAY
Report CC:
Company Address: PSC
955 POWELL AVE SW RENTON, WA 98055 USA
Phone Number: (425) 227-6149
Fax Number: (425) 227-6191
Sampler's Signature: Carla E Brock
Sampler's Printed Name: CARLA E BROCK

Turnaround Requirements
*some exceptions appl please contact lab
- [x] Standard
- [ ] Priority

Preservative
1. None ☒
2. HCL ☐
3. Other ☐

Client Sample ID	Lab ID	Sampling Date	Sampling Time	Matrix	Dehalococcoides Assay	VOC	DGGE	Anions	Microcosm Study	Chemical Oxidation			pH	Temperature °C	Redox mV	DO mg/L	Remarks / Alternate Description
													5.9	16.2	146	5,180	
CG-11-S1-0802	AS-0033-1	8/6/02	1000	W	X	X							6.4	24.9	-52	473	
CG-104-S1-0802	-2	↓	1530	↓	X	X							7.0	17.6	-77	299	
CG-104-I-0802	-3	↓	1410	↓	X	X							6.0	22.1	11	538	
CG-105-S1-0802	-4	↓	1145	↓	X	X							6.8	16.7	-8	381	
CG-105-~~S1~~I-0802	-5	↓	1040	↓	X	X											Custody seals on cooler
FB																	

Relinquished By:	Received By:	Relinquished By:	Received By:
Carla E Brock	Sandra Dworatzek		
Signature: CARLA E BROCK	Signature: Sandra Dworatzek	Signature	Signature
Printed Name: 8/6/02 ; 1630	Printed Name: 8/7/02 13:00	Printed Name	Printed Name
Date/Time: Federal Express	Date/Time: Samples cold, double	Date/Time	Date/Time
Method of Shipment	Condition of samples upon receipt: in wet melt water, bagged	Method of Shipment	Condition of samples upon receipt

Special Instructions/Comments:

FOR LAB USE ONLY:
Shipment ID:
Comments:

Invoice Information
P.O.# ______ Bill To ______

Distribution: White - Return to Originator, Yellow - Lab Copy

9D.0 FATE AND TRANSPORT MODELING

Fate and transport modeling was performed to predict future concentrations of constituents of potential concern (COPCs) in groundwater in the RI Study Area by developing site-specific chemical-specific dilution attenuation factors (DAFs). The primary purpose of the modeling and development of DAFs was to determine if COPCs in groundwater may reach the Duwamish Waterway, and if so, to estimate COPC concentrations at the groundwater/surface water interface.

A preliminary evaluation of the proposed methodology for fate and transport analysis of dissolved-phase chemicals in groundwater was presented in the *Remedial Investigation/Risk Assessment (RI/RA) Fate and Transport Planning Document* (Foster Wheeler, 2003). The methods presented in the Planning Document were developed to evaluate chemical fate and transport for select COPCs using groundwater analytical data collected during the second and third quarters of 2002 from the new monitoring wells installed at the RI Study Area. The fate and transport analysis described in this appendix uses the following data:

- Groundwater reconnaissance sample data collected from 2000 to 2003; and
- Four quarters of groundwater sample data collected at monitoring wells (second, third and fourth quarters 2002, and first quarter 2003)

These data best represent current site conditions. The same general methodology described in the Planning Document was used for this evaluation, although several modifications were made for the final analysis and computation of DAFs. The procedures for the fate and transport modeling and development of DAFs are described in this appendix.

PSC has monitored and evaluated numerous geochemical parameters to assess the lines of evidence for the occurrence of natural attenuation, which is a key component of the modeling described herein. The evaluation of natural attenuation at the RI Study Area is discussed in Appendix 9C.

9D.1 *Conceptual Model of Advective Transport*

Three water-bearing zones, the shallow, intermediate and deep aquifers, have been identified in the RI Study Area. The shallow and intermediate aquifers are hydraulically connected in most locations of the RI Study Area, while the Deep Aquifer is overlain by a silt aquitard that isolates it from the intermediate water-bearing zone. The subsurface hydrogeologic conditions are described in greater detail in Section 3. COPCs released at or near the ground surface in the product phase (dense non-aqueous phase liquid [DNAPL]) potentially can move vertically and transversely through the shallow aquifer and into the intermediate aquifer. If DNAPL is present, this source can then slowly dissolve and contribute COPCs (e.g., chlorinated solvents) to the aquifers. The movement of the dissolved-phase chemicals in the transverse or vertical directions is controlled by the dominance of horizontal flow and the low vertical dispersivity that exists in the shallow and intermediate water-bearing zones in the RI Study Area up-gradient of the Duwamish Waterway.

The deep aquifer is not hydraulically connected to the intermediate aquifer at the facility. Groundwater analytical data indicate that the silt aquitard has prevented the migration of most COPCs to the deep aquifer at concentrations exceeding their cleanup levels[1]. Therefore, no transport analysis was performed for the Deep Aquifer.

[1] Low concentrations of COPCs detected in the deep aquifer are thought to be attributed to the migration of contaminated water from the intermediate aquifer to the deep aquifer during the installation of several deep wells and the absence of a seal between the intermediate and deep aquifers in CG-2-D, that has since been decommissioned.

The demonstration of tidal influence in the shallow aquifer near the discharge point to the Duwamish Waterway (Section 3.6.3.4 of this report and Foster Wheeler, 2003) suggests that tidal influence is a component of advective transport from the RI Study Area to the Duwamish Waterway. Tidal influence results in greater dispersion because of (1) increased travel distances within the zone of tidal influence, and (2) the exchange of water between the water-bearing zones and surface water in the Duwamish Waterway which results in dilution from mixing (Yim and Mohsen, 1992). As summarized in Section 3, tidal influence extends as far east as CG-140 near East Marginal Way S, but does not appear to be significant in the water table sample interval. The effects of tidal influence are discussed further in subsequent sections of this appendix.

9D.2 *Previous Modeling Studies*

Several previous groundwater-modeling projects have been performed in the RI Study Area and nearby sites. These studies were performed by the University of Washington, Waterloo Hydrogeologic, and Boeing Corporation (Boeing) and are briefly summarized below. Pertinent data from these studies were used to select input parameters for the modeling conducted for the RI and to develop the current RI Study Area conceptual model.

9.2.1 Duwamish River Basin Groundwater Flow Model

The University of Washington conducted a study for the City of Seattle and King County and produced a conceptual model report (Booth and Herman 1998) that characterized geologic and hydrologic conditions for the region. As part of this study, they developed a groundwater flow model (Fabritz, Massmann, and Booth, 1998) using the MODFLOW numerical model (McDonald and Harbaugh, 1988) to help quantify groundwater pathways and predictions of groundwater movement through the Duwamish River Basin in an area extending from Lake Washington to Puget Sound. Model calibration indicated overall horizontal flow in the shallow aquifer to the west-southwest in the RI Study Area and discharge to the Duwamish Waterway.

9.2.2 Conceptual Model Report

PSC, Waterloo Hydrogeologic, and Groundwater Insight (2000) prepared a site-specific *Conceptual Model Report* to characterize conditions at the RI Study Area in support of developing numerical models for groundwater flow and contaminant transport (PSC and Waterloo Hydrogeologic, 2000a, 2000b). Previous hydrogeologic investigations in the RI Study Area, including the area from approximately Airport Way to the Duwamish Waterway and from Dawson Street South to Michigan Street, were summarized in this report. The authors of this study estimated the transverse horizontal and vertical dispersivities as 1/10 and 1/100, respectively, of the longitudinal dispersivity.

9.2.3 Boeing Electronics Manufacturing Facility (EMF) Fate and Transport Analysis

The Boeing EMF, located approximately 1 mile southeast of the facility, is situated on the same shallow aquifer as the RI Study Area and similarly lies approximately 3,700 feet east of the Duwamish Waterway. In 2001, Boeing prepared an evaluation for a release of TCE at the EMF and its migration beneath Boeing Field off Airport Way South toward the Duwamish Waterway (PPC, 2002).

Boeing calculated a biodegradation half-life for volatile organic compounds (VOCs) of 19 months. The evaluation included modeling of contaminant dilution at the discharge point of groundwater to the Duwamish Waterway. Dilution occurred as a result of dispersion and mixing from groundwater/surface water exchange as a result of tidal fluctuations in the open waterway. Based on their data, dilution from tidal fluctuations appeared to exceed a factor of 100, though to be conservative, Boeing applied a factor of 50.

9D.3 *Modeling Approach*

The fate and transport modeling approach, including selection of the model code and application to the RI/RA process, is described below.

9.3.1 Transport Model Selection

Various groundwater fate and transport models are potentially applicable to the RI Study Area and several modeling efforts have been conducted previously in the Duwamish Waterway, at the facility, and at adjacent sites (PSC and Waterloo Hydrogeologic 2000a; Fabriz et al. 1998; PSC 2002). Several of these studies employed numerical models to represent groundwater flow directions and velocities across the model study sites. PSC and Waterloo Hydrogeologic (2000a, 2000b) constructed a numerical groundwater flow model for the RI Study Area[2] using the MODFLOW code (McDonald and Harbaugh 1988).

For the RI, PSC has selected the Domenico (1987) analytical solution to chemical transport as a simpler, more conservative, analytical approach (versus a numerical approach) to estimate chemical migration and concentrations with downgradient distance from the source. The decision to use an analytical solution over a numerical model is based on the following rationale:

- The use of a one-dimensional analytical solution for the RI Study Area reflects a conservative approach to fate and transport. It also allows for a more transparent review of input parameters and assumptions than a more complex finite element or finite difference numerical model.

- Numerical models require large amounts of data and calibration to provide additional reliability with respect to model results.

- The Domenico analytical solution to chemical transport is in the public domain, has been used at hundreds of sites, and is supported by the EPA.

- The Domenico analytical solution has been incorporated into models developed and supported by the EPA such as BIOSCREEN (EPA 1996b) and BIOCHLOR (EPA 2002).

The ability to evaluate chemical concentrations using the Domenico-based BIOSCREEN and BIOCHLOR models enables the simulation of a variety of applicable transport conditions in the RI Study Area. BIOSCREEN simulates advection, dispersion, adsorption, and aerobic or anaerobic biodegradation, which have been shown to be the dominant processes for attenuation. BIOSCREEN is well suited for single-step degradation processes, which is common for aromatic hydrocarbons such as benzene.

[2] PSC and Waterloo Hydrogeologic also produced a draft flow model coupled with contaminant transport using the MT3D/RT3D code, but this was not finalized and approved by EPA and Ecology.

BIOCHLOR similarly simulates the advection, three-dimensional dispersion, linear adsorption for organics compounds (e.g., trichloroethene [TCE]), and biodegradation. In addition, BIOCHLOR simulates sequential biotransformation so that daughter products produced in one degradation step are accounted for in the next step. This process is common to reductive dechlorination of chlorinated aliphatics (such as TCE) and is the dominant biotransformation process at most chlorinated solvent contaminated sites. Reductive dechlorination is assumed to occur under anaerobic conditions, and dissolved solvent degradation is assumed to follow a sequential first-order decay process. BIOCHLOR includes three different model types:

- Solute transport without decay;
- Solute transport with biotransformation modeled as a sequential first-order decay process; and
- Solute transport with biotransformation modeled as a sequential first-order decay process with two different reaction zones (i.e., each zone has a different set of rate coefficient values).

As indicated above, the Domenico solution incorporates site-specific physical conditions and biodegradation rates, as well as the observed chemical distribution, to calculate a chemical-specific DAF. This DAF, which is the ratio of the chemical concentration at the source to the concentration at the downgradient exposure point predicted by the model, enables the prediction of chemical concentrations in groundwater at a specific distance downgradient from a source.

The DAFs are used, along with an estimate of the source concentration, to predict future exposure point concentrations (EPCs) at the groundwater/surface water interface at the Duwamish Waterway. The EPCs are then compared with surface water risk-based cleanup levels. Those COPCs with EPCs at the Duwamish Waterway that exceed the cleanup levels are evaluated further in the risk assessment.

9.3.2 Application to the RI/RA Process

Fate and transport analysis is necessary for the risk assessment to determine whether the groundwater to surface water exposure pathway is complete, and if so, to estimate the EPCs at this interface now and in the future. Modeling was also used to evaluate the potential for pulsed releases to result in COPC plumes in Area 3 that are discrete from that associated with releases from the facility. In the future, fate and transport analysis may be used to evaluate remedial alternatives that will be presented in the Feasibility Study.

An evaluation of natural attenuation, including geochemical characterization, was performed to support the modeling approach used to estimate EPCs. A description of natural attenuation processes occurring in the RI Study Area is provided in Appendix 9C.

9D.4 *Fate and Transport Model Setup and Inputs*

The setup and inputs for the fate and transport model are described in this section. Because the biodegradation rates chosen for the model are a key parameter in the estimation of the fate and transport of COPCs, considerable discussion is devoted to the calculation of these rates. Identification of COPC source terms and selection of other key model inputs is also discussed below.

9.4.1 Identification of COPCs in Surface Water Based on Migration from Groundwater

To focus the modeling effort on the "risk drivers," a tiered screening evaluation of chemicals was performed based on the risk-screening process outlined in the HHERA. A list of constituents of interest (COI) (i.e., constituents that should be evaluated further) was developed by selecting constituents that were detected in greater than five percent of the samples analyzed. COPCs were selected from the COI list by comparing the maximum detected groundwater concentration for each COI in each sample interval with the most protective human health and ecological cleanup levels for groundwater based on the protection of surface water exposures. The COPCs are presented in the HHERA in Part II of this report for several of the plumes identified in Section 9.0.

9.4.2 Tiered Modeling Approach

The fate and transport modeling was conducted using a tiered approach. As an initial step described in more detail in Section 1.5.3, source concentrations for each of the identified COPCs were estimated for several of the source areas identified in Section 9.0. As a first step, the source concentrations were compared directly to the human health and ecological cleanup levels for groundwater based on the protection of surface water exposures. This comparison assumed no dilution or attenuation prior to reaching the groundwater/surface water interface (Waterway), or in other words, a DAF of one was applied to these concentrations. This is a conservative assumption and is not representative of actual conditions, as significant dilution and attenuation of groundwater concentrations occur in groundwater in Areas 1, 2, and 3, as discussed in Appendix 9C. However, if the source concentration is less than the applicable cleanup levels, assuming no attenuation, the actual concentrations that may reach the Duwamish will be well below the applicable cleanup levels. Only COPCs whose source concentrations that exceeded the applicable cleanup levels were evaluated further with fate and transport modeling to determine if these constituents may actually be transported from upgradient groundwater plumes to surface water at concentrations of concern.

The second step[3] was to predict COPC concentrations at the groundwater/surface water interface at the Duwamish Waterway, referred to herein as exposure point concentrations (EPCs), considering dilution and dispersion as the only attenuation processes acting to reduce concentrations with downgradient migration. These EPCs are highly conservative and overestimate potential concentrations at the groundwater/surface water interface as they do not account for a number of attenuation processes acting on groundwater COPCs in the RI Study Area, as described in Appendix 9C. However, if the EPCs predicted using dilution and dispersion only are below applicable cleanup levels, there is a high degree of confidence that the actual concentrations at the groundwater/surface water interface will not be of concern. If the EPCs predicted using only dilution and dispersion exceeded applicable cleanup levels, the COPC was carried through to the third tier where the model was run again including biodegradation to determine more representative EPCs. These EPCs were compared to applicable groundwater cleanup levels. COPCs with predicted EPCs at the groundwater/surface water interface that exceeded the surface water cleanup level were further evaluated in the RA.

The fate and transport modeling was performed to characterize current and future conditions separately. In addition, modeling was performed separately for several scenarios under future conditions to account for COPC concentrations associated with the different groundwater plumes identified in Section 9.0. The following simulations were run for current scenarios:

[3] This step was not conducted for the current scenarios as available data indicate that biodegradation is currently occurring in groundwater in the RI Study Area.

- ***Current Base Case***: PSC does not believe that COPCs associated with the PSC plume have currently reached the groundwater/surface water interface. However, as discussed in Section 9, an apparent source of high COPC concentrations has been identified at sample location Q32, immediately adjacent to the Waterway. As a result, a simulation representing the best available estimate of current conditions at groundwater/surface water interface associated with all groundwater plumes identified in the area, with the exception of the Q32 Plume, was run.

- ***Current Alternate Case***: As an apparent source of high COPC concentrations has been identified at sample location Q32, immediately adjacent to the Waterway, a similar simulation representing the best available estimate of current COPC concentrations at groundwater/surface water interface associated with all groundwater plumes identified in the area, including the Q32 Plume, was run.

The following simulations were run for future scenarios:

- ***Future Base Case***: As described in Section 9, the PSC Plume appears to extend only as far west as approximately 6th Avenue S. The peak COPC concentrations potentially reaching the groundwater/surface water interface as a result of the future migration of the PSC Plume were predicted with this simulation.

- ***Future Alternate Cases***: The peak concentrations potentially reaching the groundwater/ surface water interface at the Duwamish Waterway as a result of the future migration of the M13, the K19 and the CG-136/137 Plumes were predicted separately with these simulations.

9D.4.2.1 *Source Type*

The model can be run using source terms representing either an infinite or finite source. An infinite source is appropriate if DNAPL is present in a source area, or the source has not been controlled, while a finite source is appropriate for dissolved plumes resulting from a source that no longer exists or that has been controlled. The timeframe used for each simulation depends on both the type of source selected and the objective of the simulation.

The model simulations for the current scenarios were run using infinite source terms as the sources of non-PSC plumes have not been well characterized. These simulations were run to steady state to approximate current conditions at the groundwater/ surface water interface.

For the future scenario for the PSC Plume, a finite source term was used as the HCIM barrier wall will encompass the DNAPL source area associated with the PSC Plume, and only the dissolved part of the plume currently outside of the barrier wall may continue to migrate towards the Waterway. This simulation was run over a 50-year timeframe using a decaying source with the default decay rate of 0.2 $year^{-1}$ (EPA, 2002). The 50-year timeframe was sufficient to capture the peak concentrations at the groundwater/surface water interface.

For the future scenarios for the M13, K19 and CG-136/CG-137 Plumes, an infinite source term was used as the sources associated with these plumes have not been well characterized. These simulations were run to steady state to predict the peak COPC concentrations at the groundwater/surface water interface.

9D.4.2.2 *Source Concentrations*

The COPC source concentrations selected for input into the model affect the estimate of the EPCs at the groundwater/surface water interface or any other downgradient location. The data set used as a basis for COPC source terms included monitoring well and groundwater reconnaissance boring sample analytical data collected in 2000 to 2003. The source concentrations were calculated to reflect the reasonable maximum exposure (RME) groundwater concentrations within each modeled area. RME is defined in MTCA as the highest exposure that is reasonably expected to occur at the site under current and potential future site use (WAC173-340-708 (3)). The RME groundwater concentrations were either the (Logarithmic 95% Upper Confidence Limit [Log 95%UCL] on the mean, 95% UCL on the mean, or maximum detected concentration if the Log 95%UCL or 95%UCL exceeded the maximum detected concentration). As groundwater from the water table, shallow and intermediate sample intervals in the RI Study Area likely discharge to the Duwamish Waterway, RME concentrations were calculated considering these sample intervals together. For the current scenarios, the RME groundwater concentration was calculated based concentrations detected in monitoring wells and reconnaissance borings located nearest to the Duwamish Waterway, as presented in Figure 3-3 in the HHERA.

The source concentrations for both the Current Base Case and the Current Alternate Case are summarized in Table 9D-1. For the Current Base Case and Current Alternate Case, a default source concentration of 1000 μg/L was used to calculate DAFs (Table 9D-22) as the DAFs are only a function of distance and constituent and are not dependent upon the source concentration.

For the Future Base Case associated with the PSC Plume outside the HCIM, the RME groundwater concentration was calculated using data from monitoring wells and reconnaissance borings located within Areas 1 and 2 and the leading edge of Area 3, but outside the HCIM. These concentrations are presented in Table 9D-2. For the Future Alternate Cases, the RME groundwater concentrations, summarized in Tables 9D-3 through 9D-5, were calculated using data from wells and borings associated with each of the plumes.

9.4.3 Estimation of Biodegradation Rates

Using the tiered approach described in Section 1.5.2, a number of COPCs were identified that may exceed cleanup levels at the Duwamish Waterway based on modeling that accounts for dilution and dispersion only. These include PCE, TCE, vinyl chloride, ethylbenzene, naphthalene, bis(2-ethylhexyl)phthalate, Aroclor 1016, arsenic, barium, chromium and copper. Biodegradation rates were calculated for PCE, TCE, vinyl chloride, and ethylbenzene as outlined in the following section. Because cis-1,2-DCE is a key component in the degradation pathway for chlorinated ethenes, a site-specific degradation rate was also calculated for this compound.

Selection of biodegradation rates is a key component of the modeling process because it strongly affects the simulated COPCs results. Degradation rates based on site-specific data are considered the most representative values for use in modeling. As stated in EPA's *Technical Protocol for Evaluating Natural Attenuation in Groundwater* (1998): "Whenever possible, use site-specific biodegradation rates estimated from field data... If it is not possible to determine site-specific biodegradation rates, then literature values may be used in a sensitivity analysis". This document further states: "Although literature values may be used to estimate biodegradation rates in the bioattenuation screening process...additional site information should be collected to determine biodegradation rates for the site when refining the site conceptual model... Literature values should not be used during the more detailed analysis" (EPA, 1998). Based on these guidelines, site-specific data were used to calculate biodegradation rates for this modeling effort, although literature rates were also obtained for comparison purposes.

Various methods can be used to calculate site-specific biodegradation rates. To determine the most applicable approach for determining site-specific biodegradation rates, PSC applied three methodologies and then compared the resultant degradation rates with each other and literature values. One of the methodologies listed below, well trend-line analysis, does not result in the direct calculation of a biodegradation rate but is a necessary component of biodegradation rate calculations for the three quantitative methodologies. Each of the methods used to determine chemical-specific biodegradation rates for the RI Study Area are discussed and summarized briefly below.

9D.4.3.1 *Trend Line Analysis*

This method involved the identification of wells and groundwater reconnaissance sample points located on a flow path at and downgradient of a source in the shallow and intermediate water-bearing zones. Once flow paths were established, concentration versus distance plots for each subset of wells and groundwater or reconnaissance sample points in the shallow and intermediate aquifer were plotted to illustrate changes in concentration along the flow paths. The applicability of this approach was demonstrated in the RI/RA planning document, and a detailed description of this approach is presented therein (Foster Wheeler, 2003).

Horizontal groundwater flow and the low vertical dispersivity limit the vertical migration of dissolved chemicals in the shallow and intermediate aquifers (PSC *et al.*, 2000a and b), particularly in the vicinity of the facility. The predominance of horizontal flow is illustrated by the distribution of TCE in the water table and shallow sample intervals as shown on Figure 9-4. Because of the limited potential for vertical migration of the chemical plume downgradient from the source area, groundwater reconnaissance sample points and wells that are screened in approximately the same depth intervals were selected to estimate attenuation along a flow path between reconnaissance points/wells.

Potentiometric surface and isoconcentration maps generated from data collected in the RI Study Area were used to select groups of groundwater reconnaissance sample points and wells that are representative of flow paths along plume centerlines. Groups of groundwater reconnaissance samples points and monitoring wells selected for evaluation of biodegradation are presented in Table 9D-6 for the water table, shallow and intermediate sample intervals. Groundwater analytical data for COPCs along the selected flow paths are shown in concentration versus distance plots for each trend line in the water table, shallow and intermediate sample intervals in Figures 9D-1 through 9D-35. These concentration/distance plots illustrate significant concentration reductions along flow paths, and also depict increases downgradient that are related to non-PSC sources. In most of the concentration/distance plots, concentrations, as plotted on a log scale, indicate significant reductions in the COPC concentrations from the source area to downgradient observation points.

In order to support the calculation of biodegradation rates using well trend analysis, it is important to select a data set from groundwater reconnaissance sample points and wells that is only affected by one source. Therefore, evaluation of concentration data for some trend line groups had to be screened to exclude wells with apparent concentration spikes that appear to be impacted by other sources. In addition, 1,2,4-TMB was excluded from this process because it is biologically recalcitrant.

Because of data limitations, it was often only possible to use a few wells in any given series for trend line analysis. If, for example, the COPC concentration declined to the method reporting limit by the third reconnaissance point/well in a grouping and the fourth and fifth reconnaissance points/wells also had concentrations at the method reporting limit, the fourth and fifth reconnaissance points/wells were excluded from that particular analysis. Where possible, the reconnaissance points/wells were extended along the plume length until concentrations at detection limits were observed. This results in a conservative estimation of biodegradation rates because it is anticipated that actual concentration at the reconnaissance point/well occurs below reporting limits, while calculations assume a concentration at the reporting limit, thereby resulting in a lower estimate of biodegradation rate (longer estimated half-life).

9D.4.3.2 *Buscheck and Alcantar Method*

The Buscheck and Alcantar (1995) method provides an average biodegradation rate for a series of wells oriented along a groundwater flow path. This method involves coupling a log-linear plot of concentrations versus downgradient distance to an analytical solution for chemical transport that includes advection, dispersion, sorption, and biodegradation. Therefore, this method applies data without normalization for dispersion. The first-order decay rate for a steady-state plume is given by the equation:

$\lambda = (Vc/4\alpha_x)(1 + (2\alpha_x(k/V_x))^2 - 1)$

Where:

λ = first-order biological decay rate

Vc = retarded chemical velocity in the downgradient direction

α_x = dispersivity

k/V_x = line slope achieved by a log-linear plot of concentrations versus downgradient distance along flow path

The natural logarithm of the concentration versus downgradient distance for each trend line and chemical was plotted. The coefficients of determination, r^2, for each trend line were also calculated. The EPA (1998) states that r^2 values greater than 0.80 are considered useful while r^2 values greater than 0.90 are considered excellent. The slope of this line was used in the equation above, along with the contaminant velocity and dispersivity, to calculate λ, the first-order degradation rate.

9D.4.3.3 *Normalization of Data using Tracers*

To calculate site-specific half-lives in years, the data set was normalized to remove the effects of dispersion, following EPA protocols for evaluating natural attenuation (EPA, 1998). By correcting for the effects of dispersion, any further diminution of downgradient contributions is attributed to biodegradation. A convenient way to do this is to use compounds or elements associated with the contaminant plume that are relatively unaffected or predictably affected by biologic processes occurring within the aquifer. Whenever possible, more than one tracer should be used to normalize the concentrations of contaminants. If the normalized concentrations agree using several different tracers, the approach can be accepted with confidence (EPA, 1998).

PSC examined analytical data from the RI Study Area to determine if certain chemicals could be used as tracers. Examination of the database for the RI Study Area shows two isomers of trimethylbenzene (TMB) available for use as tracers (1,2,4-TMB and 1,3,5-TMB) in several downgradient wells in the shallow aquifer. Under anaerobic conditions, TMB functions as a tracer because it is recalcitrant to biodegradation and is generally present in measurable quantities in spills involving fuel mixtures. The degree of recalcitrance of TMB is site-specific, and the use of this compound as a tracer must be evaluated on a case-by-case basis. Nevertheless, if any TMB mass is lost to biodegradation, this method will be conservative because the calculated mass losses and the attenuation rate constants calculated on the basis of those losses will be lower than the actual losses and attenuation rates (EPA 1998).

Once a normalized data set is created, biodegradation rates are then calculated for the normalized data set using the equation below:

$$C_{B,corr} = C_A e^{-\lambda t}$$

Where:

$C_{B,corr}$ = Normalized chemical concentration at downgradient point B

C_A = Chemical concentration at up-gradient point A, if A is the first point in the normalized data set

λ = first-order biological decay rate (1/t)

t = chemical travel time between points A and B

As indicated, because the effects of dilution and dispersion have been removed, λ is the first-order biological decay rate.

9D.4.3.4 *Model Estimated Rates Using BIOCHLOR*

BIOCHLOR can be used to determine first-order decay coefficients that best match the observed site concentrations. Data from the well trend lines extending downgradient of the facility were used in conjunction with BIOCHLOR to calculate biodegradation rates for the shallow and intermediate water-bearing zones. Biodegradation rates were calculated by adjusting the biodegradation rate for each COPC until the predictions matched site data (EPA, 2000). This process was continued until biodegradation rates were obtained for all COPCs, with the exception of 1,2,4-TMB, which is biologically recalcitrant.

9D.4.3.5 *Site-Specific Biodegradation Rate Results*

The trend line analysis concentration/distance plots illustrate the concentration reductions along groundwater flow paths and also depict concentration increases downgradient that may be the result of additional contribution to the plume from non-PSC sources.

Biodegradation rates calculated using the Buscheck and Alcantar method (1995) are presented in Table 9D-7. As explained above, no calculation was made downgradient of a reconnaissance point/well in which concentrations were below the method reporting limit, or for a reconnaissance point/well that had a sharp increase in concentration compared to the up-gradient reconnaissance point/well (suggesting a non-PSC source). Half-lives calculated using this method are consistent with those calculated using the normalized data set.

Biodegradation rates calculated using 1,2,4-TMB and 1,3,5-TMB to normalize downgradient concentrations are provided in Tables 9D-8 and 9D-9, respectively. Where possible, to calculate half-lives for selected constituents, PSC normalized chemical concentration data using both isomers of TMB as a tracer. The two tracers generally result in similar degradation rates, indicating that this approach can be accepted with confidence.

Biodegradation rates calculated using Biochlor are listed in Table 9D-10. Half-lives estimated using this approach (best fit analysis) are generally consistent with the other estimation methods.

9D.4.3.6 *Comparison of Calculated Biodegradation Rates with Literature Values*

Representative literature values were selected from sites with similar geologic and geochemical conditions, and are summarized in Table 9D-11. Table 9D-12 presents the range of biodegradation rates (half-lives) calculated using site-specific data, and presents the range of half-lives documented in the literature. This table also lists the range of half-lives cited for use as typical values in the BIOCHLOR AND BIOSCREEN programs (EPA, 1996a and 2000).

For the COPCs analyzed, the site-specific half-lives selected for use in the modeling for the water table sample interval and the shallow sample interval are within the range of values found in the literature. For most chemicals in the intermediate sample intervals, the site-specific half-lives calculated were longer than the values documented in the literature.

At the Boeing EMF (PPC, 2002), 1 mile southeast of the PSC facility, the site-specific half-lives calculated for PCE, TCE, and cis-1,2-DCE in the shallow aquifer were 0.58 years, 1.17 years, and 0.42 years, respectively. These values fall within the ranges of half-life values calculated from site-specific data for the PSC Facility. The comparison with Boeing data and literature values indicates that half-life values selected for the PSC Facility are reasonable.

9.4.4 Model Inputs

The inputs selected for fate and transport modeling, including hydraulic parameters and compound-specific transport values, are discussed below. A summary of input parameters used for modeling is presented in Tables 9D-13 through 9D-17.

9D.4.4.1 *Biodegradation Rates*

The biodegradation rates (half-lives) for each COPC, that were calculated using the various methods described previously, are summarized in Table 9D-12. The average half-lives calculated using each method, and the averages for all methods, are summarized in Table 9D-18. For calculation of DAFs, the average half-life using all methods was used for each COPC in order to remove potential extremes in any one method. The use of the average half-life results in a reasonable half-life estimate for modeling purposes based on an evaluation of site conditions, natural attenuation and literature values. The biodegradation rates for the intermediate sample interval were used to conduct the modeling as these represents the most conservative degradation scenario among the three sample intervals.

9D.4.4.2 *Hydraulic Conductivity*

The hydraulic conductivity values used for fate and transport modeling were based on available site-specific data. Hydraulic conductivity values estimated using previous aquifer testing, slug testing, and grain size analysis conducted in the RI Study Area for the shallow and intermediate aquifers are summarized in Tables 9D-19 and 9D-20. Slug testing was recently performed by PSC near the Duwamish Waterway, and the test results indicate a lower hydraulic conductivity in the shallow aquifer near the waterway. However, because slug testing and grain size analysis tend to underestimate field-scale hydraulic conductivity (Butler, 1998), data from these test methods were not included in calculations for modeling purposes.

Hydraulic conductivity estimates from aquifer testing performed previously were assigned data quality ratings ranging from 1 (highest quality) to 4 (lowest quality) by PSC. Only values rated 1 or 2 were used for this analysis. The geometric mean of these values was used as the hydraulic conductivity for DAF calculations (89.4 feet/day for the water table and shallow sample intervals, 3.2 feet/day for the intermediate sample interval). The geometric mean is considered the best approximation because hydraulic conductivity is assumed to be a log-normally distributed parameter due to variability of porous media (Freeze and Cherry, 1979), and the "average" value for a log-normal distribution is the geometric mean. Use of these hydraulic conductivity values in the model is conservative, particularly given the lower hydraulic conductivity estimated in the shallow aquifer near the Duwamish Waterway. The hydraulic conductivity value for the water table sample interval was used to conduct the modeling as this represents the most conservative transport scenario among the three sample intervals.

9D.4.4.3 *Dispersivity*

Dispersion refers to the process whereby a solute will be spatially distributed longitudinally (along the direction of groundwater flow), transversely (perpendicular to groundwater flow), and vertically (downward) because of mechanical mixing and chemical diffusion in the aquifer. These processes develop the "plume" shape that is the spatial distribution of the dissolved solute mass in the aquifer (EPA, 2000). Selection of dispersivity values is a difficult process, given the impracticability of measuring dispersion in the field. However, simple estimation techniques based on the length of the plume or distance to the measurement point ("scale") are available from a compilation of field test data (EPA, 2000).

A rule of thumb is that longitudinal dispersivity is about 10 percent of travel distance (Spitz and Moreno, 1996). Longitudinal dispersivity can also be estimated using the correlations established by Xu and Eckstein (1995). In BIOCHLOR, one may select a fixed dispersivity value (a value of 10 to 70 feet is recommended by EPA), a value may be calculated based on 10 percent of plume length, or the Xu and Eckstein method may be used. Assuming a plume length of 1000 feet for estimation purposes, a longitudinal dispersivity of 100 feet is obtained using the 10 percent rule-of-thumb, and 25 feet using the Xu and Eckstein method. A maximum value of 60 feet was selected as input for the model, which is approximately the average of these two methods. If the travel distance from the source to the Duwamish Waterway was less than 1000 feet, 6 percent of the travel distance was used for simulations. Transverse and vertical dispersivities of 10% and 1% of the longitudinal dispersivity were selected. These values were estimated for the RI Study Area by Waterloo Hydrogeologic (2000) and are commonly used as default values in fate and transport modeling.

9D.4.4.4 *Hydraulic Gradient*

The hydraulic gradient was estimated using water level maps developed from groundwater elevation data from the second quarter 2002 through the first quarter 2003. An average hydraulic gradient over this time period was calculated for input to the model. For the water table sample interval, a hydraulic gradient of 0.0017 was calculated, for the shallow sample interval a gradient of 0.0015 was calculated, and in the intermediate aquifer a gradient of 0.0016 was calculated.

The hydraulic gradient for the water table sample interval was used to conduct the modeling as this represents the most conservative transport scenario among the three sample intervals.

9D.4.4.5 *Retardation*

Adsorption to the soil matrix can reduce the concentration of dissolved contaminants moving through groundwater. The retardation factor is the ratio of the groundwater seepage velocity to the rate that organic chemicals migrate in the groundwater (EPA, 2000). The degree of retardation depends on both aquifer and constituent properties. Retardation (R) is estimated from soil and chemical data using the following equation:

$$R = 1 + Kd^*\rho_b/n$$

Where: Kd = distribution coefficient

ρ_b = bulk density

n = effective porosity

The distribution coefficient (Kd) is calculated as follows:

$$Kd = Koc^*foc$$

Where: Koc = organic carbon-water partition coefficient

foc = fraction organic carbon on uncontaminated soil

Retardation factors were calculated for the organic COPCs for which degradation rates were required as listed in Table 9D-21. Retardation was considered for inorganic compounds only under the current scenarios. As noted above, the Kd value is dependent on both Koc and foc values. Koc values were obtained from literature; preference was given to MTCA literature values (Ecology, 2001), with secondary preference given to EPA (EPA, 1996b) values if MTCA data were unavailable. Fraction organic carbon was calculated based on data collected at the RI Study Area. Four foc values were obtained from soil samples collected at a depth of approximately 30 feet below ground surface in April 2003 from relatively uncontaminated areas downgradient of the facility (K28, L18, Q17, and R22). The average of these values (0.001 grams per gram; 0.1 percent) was used in the calculation of Kd.

9D.5 *Calculation of Dilution Attenuation Factors*

The DAF is the ratio of the chemical concentration at the source to the concentration predicted at a receptor. The DAFs are distance-dependent and used to predict how chemical concentrations decrease with distance from a source. Inorganic chemicals are not influenced by the effects of biodegradation, and although other geochemical processes may alter concentrations, this evaluation assumes that inorganic chemical DAFs are equivalent to dilution/dispersion-only DAFs.

DAFs were calculated by running the fate and transport model for advective transport using the site-specific values calculated for biodegradation and including dispersion and adsorption. Model results showed decreases in concentration with distance due to adsorption, dispersion, and biodegradation. BIOCHLOR was used to estimate DAFs for all COPCs. BIOCHLOR performs the same first-order decay simulation as BIOSCREEN, but allows a more accurate assessment of travel distance. It was therefore used for all DAF calculations.

For chlorinated COPCs, the DAFs were calculated considering sequential biodegradation along with advection, dispersion, adsorption and biodegradation. Sequential degradation considers the degradation of a parent product (e.g., TCE degrades to cis-1,2-DCE) and the effect of this degradation is added to the concentration of the daughter product. The ethene biodegradation breakdown series is PCE to TCE to cis-1,2-DCE to vinyl chloride to ethene to carbon dioxide and water. Physical parameters input to the model are summarized in Tables 9D-13 through 9D-17. Source values (RME concentrations) are provided in Tables 9D-1 through 9D-5.

Although tidally-influenced dispersion and mixing have been recognized in groundwater for over 40 years (Cooper 1959; Kohout 1960), they are difficult to quantify with a high level of certainty. Therefore, in order to provide a more conservative DAF estimate at the groundwater-surface water interface, tidally-influenced dispersion and mixing were not included in the evaluation of DAFs for this evaluation. However, it should be noted that dilution and dispersion associated with tidal mixing in groundwater have been found to decrease contaminant concentrations reaching surface water bodies by a factor of 3 to 10 or more in many coastal areas. Thus, tidal influences, if considered in DAF calculations, would further decrease the predicted COPC concentrations at the Duwamish Waterway.

9D.6 *Modeling Results*

The modeling process described above resulted in DAFs that can be used to estimate groundwater concentrations at the groundwater/surface water interface at the Duwamish Waterway. As discussed previously, the DAFs were calculated for each of the simulation cases described in Section 1.5.2. Chemical-specific DAFs for the RI Study Area were used to predict maximum future concentrations at the groundwater/surface water interface at the Duwamish Waterway based on source concentrations associated with several groundwater plumes. Tables

9D-22 through 9D-27 summarize the DAFs for each of these cases and associated EPCs at the Duwamish Waterway.

The overall DAFs for the RI Study Area were calculated by combining the effects of advection and dispersion, and for organic compounds, adsorption and biodegradation. As noted previously, tidal influence was not included in the DAF analysis, although it would decrease the concentration of dissolved species discharging from the water-bearing zone to the surface water body.

Because of the variable travel distances to the Duwamish Waterway for the various simulations described above, dilution and dispersion result in DAFs for inorganic compounds ranging from about 5 to 7. These low DAFs are due to the assumption that the source is not depleting (non-PSC sources), and that no other geochemical interaction occurs between the migrating inorganic compound and the aquifer matrix. However, under favorable Eh/pH conditions, metals can adsorb to the aquifer matrix (iron hydroxides in particular) which will result in a decrease in the solute concentration. This process would increase the effective DAF, resulting in lower EPCs at the groundwater/surface water interface for arsenic and other inorganic compounds. Therefore, the DAFs for inorganics are very conservative.

DAFs and resulting EPCs predicted at the Duwamish Waterway are compared to surface water cleanup levels in Tables 9D-22 through 9D-27, and summarized in Table 9D-28. The results of the modeling indicate that:

- For the Current Base Case, no COPCs are likely present at the groundwater/surface water interface at concentrations exceeding applicable cleanup levels;

- For the Current Alternate Case, TCE and vinyl chloride are likely to be present at the groundwater/surface water interface at concentrations exceeding the applicable cleanup levels. The peak concentrations are estimated to reach the groundwater/surface water interface approximately 25-30 years in the future;

- For the Future Base Case, Aroclor 1016 and arsenic may potentially reach the groundwater/surface water interface at concentrations that slightly exceed the applicable cleanup levels. The peak concentrations are estimated to reach the groundwater/surface water interface approximately 20-25 years in the future, based on the current concentrations detected in the PSC Plume; and

- For the Future Alternate Cases for the K19 Plume and the CG-136/CG-137 Plume, barium and copper are likely to reach the groundwater/surface water interface at concentrations exceeding applicable cleanup levels. No COPCs associated with the Future Alternate Case for the M13 Plume are predicted to reach the groundwater/surface water interface at concentrations exceeding applicable cleanup levels.

The modeling indicated that Aroclor 1016 and arsenic associated with the PSC Plume might reach the groundwater/surface water interface at concentrations exceeding applicable cleanup levels. However, modeling was conducted for this scenario using a number of conservative assumptions including:

- No consideration of the effects of retardation associated with sorption which is likely to be a significant process for both constituents;

- No consideration of biodegradation of Aroclor 1016, which has been reported to biodegrade via reductive dechlorination under anaerobic conditions (HSDB, 2003);

- No consideration of the effects of changes in geochemistry over the groundwater migration pathway, which has a significant effect on arsenic, as discussed in Section 9;

- No consideration of the effects of tidal dilution; and

- Use of steady-state conditions, which effectively eliminates the effect of retardation on travel distance calculations, especially for metals that generally have a high Kd.

The use of more reasonable (i.e., less conservative) assumptions would likely be more representative of actual conditions, and would yield lower EPCs at the Duwamish Waterway than these conservative assumptions have indicated.

These modeling results represent a conservative, worst-case scenario and should be considered in relation to the empirical data available for the RI Study Area. Aroclor 1016 has been detected in groundwater at several sample locations in the water table sample interval at the facility only, and has not been detected in groundwater outside the facility. In addition, as discussed in

Section 9, the arsenic detected in groundwater is thought to be associated with background conditions.

9D.7 *Sensitivity Analysis*

A sensitivity analysis is performed to establish the effect of uncertainty on the calibrated model (Anderson & Woessner 1992). In BIOCHLOR, sensitivity analysis is recommended when literature values are used or when there is uncertainty in the model input parameters (EPA, 2000). Sensitivity analysis is performed by varying one input parameter while holding the others constant and evaluating the effect of the parameter variation on the model results. For this modeling effort, a number of input parameters were tested for sensitivity, including hydraulic conductivity, longitudinal dispersivity, solute half-life, retardation, hydraulic gradient, source thickness, and source width. These parameters were selected because they were considered most likely to have a significant impact on model results. Sensitivity analysis was completed for both the shallow water-bearing zone and intermediate water-bearing zones.

For the sensitivity analysis, cis-1,2-DCE was used as a source compound because it is found at the RI Study Area at high concentrations in both the shallow and intermediate water-bearing zones. Maximum detected concentrations in each water-bearing zone were used as source concentrations for sensitivity. Tables 9D-29 and 9D-30 lists the parameter variations used in the sensitivity analysis and the resulting impact on model results. Order of magnitude changes were made to hydraulic conductivity and hydraulic gradient for sensitivity analysis. Other parameters were varied within reasonable ranges. For the solute half-life of cis-1,2-DCE, the maximum calculated value using any of the site-specific methods was selected for the parameter increase. Both the simulated concentration at the Duwamish Waterway and the change in solute travel distance were noted for the sensitivity analysis.

As the results on Tables 9D-29 and 9D-30 indicate, the most sensitive parameters are hydraulic conductivity, solute half-life, and hydraulic gradient, each resulting in a 200 percent to 300 percent increase in solute travel distance over baseline conditions. Both hydraulic conductivity and gradient affect the results in similar ways, because they impact groundwater velocity. Both of these parameters are well established by site-specific data. In the case of hydraulic conductivity, the median value selected for modeling DAFs is conservative, given the lower hydraulic conductivity calculated recently near the Duwamish Waterway. For solute half-life, the maximum calculated value resulted in a 200 percent increase in travel distance, illustrating the high sensitivity of this parameter on model results.

9D.8 *Model Uncertainties*

Uncertainty enters into any modeling effort because of the natural randomness of real systems, sample measurement error, the limited number of observations used to characterize a natural system, and simplifying assumptions inherent in the model.

Some key assumptions that affect both model predictions and the uncertainties associated with these predictions are summarized in this section. All of these assumptions result in the under-estimation of attenuation on groundwater concentrations, resulting in a highly conservative approach for modeling fate and transport at the site. Major conservative assumptions and uncertainties are presented below.

- For half-life calculations, PSC assumed no contribution from parent products. This assumption caused the actual half-life to be overestimated (longer half-life) resulting in lower degradation rates.

- A distance of 4,000 feet to the Duwamish Waterway was used for all of the PSC Plume source DAF calculations, even if the distance was greater than 4,000 feet (i.e., assumed property boundary as limit). The actual distance to Duwamish Waterway was used for modeling non-PSC source plumes in Area 3.

- Since hydraulic conductivity values in the shallow water-bearing zone are approximately an order of magnitude higher than the intermediate zone and horizontal groundwater flow and the low vertical dispersivity limit vertical migration, contaminant transport in the shallow and intermediate water-bearing zones were modeled separately.

- The effects of retardation were not considered for a number of the simulations considered in this evaluation. Retardation associated with sorption to the aquifer matrix likely represents a significant attenuation process in the RI Study Area and its omission from the models likely results in a over-estimate of the concentrations and speed with which groundwater COPCs may reach the groundwater/surface water interface.

The deep aquifer is isolated from the intermediate water-bearing zone by an aquitard and therefore, was not considered in estimating EPCs. If the concentrations in the deep aquifer were included in the modeling it would result in less conservative results (i.e., lower EPCs and higher DAFs) because of the low concentrations of COPCs detected in the deep aquifer.

9D.9 *Summary*

Fate and transport modeling was performed to estimate future COPC concentrations in the RI Study Area associated with the PSC Plume and other non-PSC related plumes. The key components and results of this process are summarized below.

- A tiered approach was used to develop a list of COIs and subsequent list of COPCs that required further evaluation in the modeling process.

- For those COPCs that required further evaluation, modeling was performed using the EPA BIOCHLOR model to predict future COPC concentrations at the groundwater-surface water interface at the Duwamish Waterway.

- Modeling results were used to calculate DAFs and EPCs for each COPC at the Duwamish Waterway. These EPCs were compared to cleanup levels, and those COPCs that exceeded the cleanup levels are listed in Table 9D-28 and were further evaluated in the RA.

- A sensitivity analysis was performed to assess the uncertainty of model input parameters on predicted model results.

- Uncertainties in the modeling process were evaluated.

The fate and transport modeling performed for the RI Study Area indicates a low potential for PSC-related COPCs to impact the Duwamish Waterway. Most of the COPCs that modeling indicates may reach the Duwamish Waterway above cleanup levels likely originate from discrete plumes that are not associated with releases from the facility or, in the case of metals, may be related to natural background conditions.

9D.10 *References*

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Table 9D-1
Source Concentrations for Current Cases
PSC Georgetown Faciity Remedial Investigation Study Area

COPC	COPC RME Source Concentration (ug/L)	Minimum Distance to Waterway (feet)	Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)
			MTCA Fisher	Ecological Receptors	
Current Base Case (excluding Q32 Plume)					
Bis(2-ethylhexyl) phthalate	**5.47**	3000	3.56	3	Y
Arsenic	**1.28**	3000	0.098	36	Y
Manganese	**461.96**	3000	37,836	120	Y
Vinyl Chloride	**7.90**	400	3.96	11,600	Y
1,4-Dioxane	**493.00**	3000	184	---	Y
Current Alternate Case (including Q32 Plume)					
Naphthalene	0.42	100	4,938	12	N
Bis(2-ethylhexyl) phthalate	**5.47**	3000	3.56	3	Y
Arsenic	**1.28**	3000	0.098	36	Y
Manganese	**461.96**	3000	37,836	120	Y
TCE	**21.58**	100	1.53	47	Y
Vinyl Chloride	**20.86**	100	3.96	11,600	Y
1,4-Dioxane	**493.00**	3000	184	---	Y

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Bold denotes concentration exceeds one or more cleanup level.

Table 9D-2
Source Concentrations Associated with Future Base Case
PSC Plume
PSC Georgetown Facility Remedial Investigation

COPC	COPC RME Source Concentration (ug/L)	Miminum Distance From Waterway (Feet)	Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?
			MTCA Fisher	Ecological Receptors			
Inorganics							
Arsenic	**10.98**	3690	0.098	36	Y	**0.297**	Y
Barium	**8.69**	3690	287	4	N	0.236	N
Cyanide	**7.95**	3690	51,851	1	N	0.216	N
Manganese	**1276.76**	3690	37,836	120	Y	34.585	N
PCBs							
Aroclor 1016	**0.14**	3690	0.003	0.01	Y	**0.004**	Y
Semi-Volatile Organic Compounds							
Bis(2-ethylhexyl) phthalate	**21.29**	3690	3.56	3	Y	0.577	N
Pentachlorophenol	**2.75**	3690	4.91	7.9	Y	0.082	N
Volatile Organic Compounds							
Tetrachloroethene	**2.75**	3690	0.39	98.00	Y	0.075	N
Trichloroethene	**5.82**	3690	1.53	47	Y	0.158	N
Vinyl Chloride	**460.39**	3690	3.96	11,600	Y	**12.479**	Y
Ethylbenzene	**309.39**	3690	6,913	7.30	Y	**8.386**	Y
Toluene	**133.26**	3690	48,460	9.80	Y	3.612	N
2-methylnaphthalene	**4.32**	3690	2,222	2.10	Y	0.117	N
Propylbenzene	**16.30**	3690	682	7.30	Y	0.442	N
n-Hexane	**2.30**	3690	778	0.58	Y	0.062	N

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Bold denotes concentration exceeds one or more cleanup level.
Simulations performed with decaying source (0.2/year) for 50 years

Table 9D-3
Source Concentrations Associated with Future Alternate Case for K19 Plume
PSC Georgetown Facility Remedial Investigation Study Area

COPC	RME Concentrations Associated with K19 Plume		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Waterway (feet)	MTCA Fisher	Ecological Receptors			
Inorganics							
Barium	**58.38**	2050	287	4	Y	**8.71**	Y
Chromium	**51.69**	2050	---	10	Y	**7.71**	Y
Copper	**42.23**	2050	2,665	3.1	Y	**6.3**	Y
Hexavalent Chromium	**11.05**	2050	486	10	Y	1.65	N
Nickel	**18.63**	2050	1,103	8.2	Y	2.78	N
Volatile Organic Compounds							
Trichloroethene	**1120**	2050	1.53	47	Y	**167.08**	Y
Vinyl Chloride	**86.4**	2050	3.96	11,600	Y	**12.89**	Y

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Bold denotes concentration exceeds one or more cleanup level.
Simulations performed with infinite source for 10,000 years

Table 9D-4

Source Concentrations Associated with Future Alternate Case for M13 Plume

PSC Georgetown Facility Remedial Investigation Study Area

COPC	RME Concentrations Associated with M13 Plume		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Duwamish Waterway (feet)	MTCA Fisher	Ecological Receptors			
Volatile Organic Compounds							
Trichloroethene	**46**	2450	1.53	47	Y	**5.828**	Y
Vinyl Chloride	**12**	2450	3.96	11,600	N	1.520	N

Notes:

RME = Reasonable maximum exposure

EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface

COPC = Chemical of potential concern

ug/L = micrograms per liter = parts per billion (ppb)

Bold denotes concentration exceeds one or more cleanup level.

Simulations performed with infinite source for 10,000 years

Table 9D-5
Source Concentrations Associated with Future Alternate Case for CG-136/CG-137 Plume
PSC Georgetown Facility Remedial Investigation Study Area

Analyte	RME Concentrations Associated with CG-136/ CG-137 Plume		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	Predicted Peak EPC at Waterway (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Duwamish Waterway (feet)	MTCA Fisher	Ecological Receptors			
Inorganics							
Barium	**87.1**	1500	287	4	Y	**17.181**	Y
Chromium	**42.6**	1500	---	10	Y	8.403	N
Copper	**22.7**	1500	2,665	3.1	Y	**4.478**	Y
Nickel	**16.6**	1500	1,103	8.2	Y	3.275	N
Semi-Volatile Organic Compounds							
Naphthalene	**40.6**	1500	4,938	12	Y	8.01	N
Volatile Organic Compounds							
Tetrachloroethylene	**5.45**	1500	0.39	98	Y	**1.075**	Y
Trichloroethene	**666**	1500	1.53	47	Y	**131.375**	Y
Vinyl Chloride	**162.5**	1500	3.96	11,600	Y	**32.055**	Y

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
DAF = Dilution attenuation factor
COPC = Chemical of potential concern
MTCA = Model Toxics Control Act
ug/L = micrograms per liter = parts per billion (ppb)
Bold denotes concentration exceeds one or more cleanup level.
Simulations performed with infinite source for 10,000 years

Table 9D-6
Well Groupings Used to Calculate Site-Specific Biodegradation Rates
PSC Georgetown Facility Remedial Investigation Study Area

Trend Line ID	Sample Interval	Trendline Sample Points	Distance Between Initial Sample Point and Each Subsequent Sample Point in Group (feet)
B	Water Table	D23 to CG-105-S1 to D18 to D5 to CG-115-S1	28, 58, 137, 84
C	Water Table	CG-9-S1 to D9 to D2 to CG-104-S1 to CG-113-S1	30, 80, 165, 260
D	Water Table	CG-2-S1 to CG-103-S1 to D28 to CG-124-WT to F7 to F9	130,154, 270, 650, 865
B	Shallow	CG-105-S2 to CG-129-40 to K8	332, 420
C	Shallow	D9 to D2 to CG-104-S2 to CG-121-40	54, 140, 265
D	Shallow	CG-103-S2 to CG-124-40 to F7 to F9 to G10	80, 275, 385, 447
B	Intermediate	CG-105-I to CG-114-75	100
C	Intermediate	CG-104-I to CG-122-60 to CG-128-70	165, 337
D	Intermediate	CG-103-I to CG-124-70 to F7 to F9	70, 252, 377

Table 9D-7
Half-Lives Calculated Using Buscheck and Alcantar Method
PSC Georgetown Facility Remedial Investigation Study Area

Trend Line	Sample Interval	Half Lives (Years)				
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
B	Water Table	0.44	0.06	0.17	0.15	0.56
C	Water Table	0.85	0.78	0.26	0.19	0.25
D	Water Table	1.82	1.25	0.85	1.08	0.36
B	Lower Shallow	—	—	—	0.61	—
C	Lower Shallow	0.23	0.46	0.23	0.20	0.36
D	Lower Shallow	1.02	2.06	0.58	0.40	—
B	Intermediate	5.44	7.95	2.83	2.59	6.98
C	Intermediate	—	—	—	8.21	—
D	Intermediate	—	—	—	—	—

Notes:

Trend Line B Water Table = Wells/Recon Points D23_CG-105-S1_D18_D5_CG-115-S1

Trend Line C Water Table = Wells/Recon Points CG-9-S1_D9_D2_CG-104-S1_CG-113-S1

Trend Line D Water Table = Wells/Recon Points CG-2-S1_CG-103-S1_D28_CG-124-WT_F7_F9

Trend Line B Lower Shallow = Wells/Recon Points CG-105-S2_CG-129-40_K8

Trend Line C Lower Shallow = Wells/Recon Points D9_D2_CG-104-S2_CG-121-40

Trend Line D Lower Shallow = Wells/Recon Points CG-103-S2_CG-124-40_F7_F9_G10

Trend Line B Intermediate = Wells/Recon Points CG-105-I_CG-114-75

Trend Line C Intermediate = Wells/Recon Points CG-104-I_CG-122-60_CG-128-70

Trend Line D Intermediate = Wells/Recon Points CG-103-I_CG-124-70_F7_F9

— = data not available or not suitable for calculation

PCE = tetrachloroethene

TCE = trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-8
Half Lives Calculated Using 1,2,4-Trimethylbenzene Tracer
PSC Georgetown Facility Remedial Investigation Study Area

Trend Line	Sample Interval	Half Lives (Years)				
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
B	Water Table	—	0.85	0.11	0.12	1.10
C	Water Table	—	0.70	0.26	0.17	—
D	Water Table	—	—	—	—	—
B	Lower Shallow	—	—	—	—	—
C	Lower Shallow	—	—	—	—	0.70
D	Lower Shallow	—	—	—	—	—
B	Intermediate	4.56	1.04	1.25	1.17	12.02
C	Intermediate	—	—	—	—	—
D	Intermediate	—	—	—	—	—

Notes:

Trend Line B Water Table = Wells/Recon Points D23_CG-105-S1_D18_D5_CG-115-S1

Trend Line C Water Table = Wells/Recon Points CG-9-S1_D9_D2_CG-104-S1_CG-113-S1

Trend Line D Water Table = Wells/Recon Points CG-2-S1_CG-103-S1_D28_CG-124-WT_F7_F9

Trend Line B Lower Shallow = Wells/Recon Points CG-105-S2_CG-129-40_K8

Trend Line C Lower Shallow = Wells/Recon Points D9_D2_CG-104-S2_CG-121-40

Trend Line D Lower Shallow = Wells/Recon Points CG-103-S2_CG-124-40_F7_F9_G10

Trend Line B Intermediate = Wells/Recon Points CG-105-I_CG-114-75

Trend Line C Intermediate = Wells/Recon Points CG-104-I_CG-122-60_CG-128-70

Trend Line D Intermediate = Wells/Recon Points CG-103-I_CG-124-70_F7_F9

— = data not available or not suitable for calculation

PCE = tetrachloroethene

TCE = trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-9
Half Lives Calculated Using 1,3,5-Trimethylbenzene Tracer
PSC Georgetown Facility Remedial Investigation Study Area

Trend Line	Aquifer Zone	Half Lives (Years)				
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
B	Water Table	—	1.76	0.12	0.15	2.11
C	Water Table	—	0.78	0.27	0.17	—
D	Water Table	—	—	—	—	—
B	Lower Shallow	—	1.07	—	—	—
C	Lower Shallow	—	—	—	—	0.76
D	Lower Shallow	—	—	—	—	—
B	Intermediate	3.78	0.97	0.78	1.05	7.41
C	Intermediate	—	—	—	—	—
D	Intermediate	—	—	—	—	—

Notes:
Trend Line B Water Table = Wells/Recon Points D23_CG-105-S1_D18_D5_CG-115-S1
Trend Line C Water Table = Wells/Recon Points CG-9-S1_D9_D2_CG-104-S1_CG-113-S1
Trend Line D Water Table = Wells/Recon Points CG-2-S1_CG-103-S1_D28_CG-124-WT_F7_F9
Trend Line B Lower Shallow = Wells/Recon Points CG-105-S2_CG-129-40_K8
Trend Line C Lower Shallow = Wells/Recon Points D9_D2_CG-104-S2_CG-121-40
Trend Line D Lower Shallow = Wells/Recon Points CG-103-S2_CG-124-40_F7_F9_G10
Trend Line B Intermediate = Wells/Recon Points CG-105-I_CG-114-75
Trend Line C Intermediate = Wells/Recon Points CG-104-I_CG-122-60_CG-128-70
Trend Line D Intermediate = Wells/Recon Points CG-103-I_CG-124-70_F7_F9
—= data not available or not suitable for calculation

PCE = tetrachloroethene

TCE = trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-10
Half Lives Calculated Using BIOCHLOR Model
PSC Georgetown Facility Remedial Investigation Study Area

Trend Line	Sample Interval	Half Lives (Years)				
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
B	Water Table	0.05	—	0.05	0.15	0.05
C	Water Table	0.30	0.70	0.15	0.07	0.07
D	Water Table	0.60	0.65	1.40	—	0.40
B	Lower Shallow	—	—	—	—	—
C	Lower Shallow	—	—	0.05	0.06	0.05
D	Lower Shallow	—	—	0.30	0.25	—
B	Intermediate	1.30	0.40	0.70	0.70	2.90
C	Intermediate	—	—	—	2.50	—
D	Intermediate	—	—	—	—	—

Notes:
Trend Line B Water Table = Wells/Recon Points D23_CG-105-S1_D18_D5_CG-115-S1
Trend Line C Water Table = Wells/Recon Points CG-9-S1_D9_D2_CG-104-S1_CG-113-S1
Trend Line D Water Table = Wells/Recon Points CG-2-S1_CG-103-S1_D28_CG-124-WT_F7_F9
Trend Line B Lower Shallow = Wells/Recon Points CG-105-S2_CG-129-40_K8
Trend Line C Lower Shallow = Wells/Recon Points D9_D2_CG-104-S2_CG-121-40
Trend Line D Lower Shallow = Wells/Recon Points CG-103-S2_CG-124-40_F7_F9_G10
Trend Line B Intermediate = Wells/Recon Points CG-105-I_CG-114-75
Trend Line C Intermediate = Wells/Recon Points CG-104-I_CG-122-60_CG-128-70
Trend Line D Intermediate = Wells/Recon Points CG-103-I_CG-124-70_F7_F9
— = data not available or not suitable for calculation
PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-11
Range of Literature Biodegradation Rates (day-1)
PSC Georgetown Facility Remedial Investigation

Oxygen Regime	Site	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
Anaerobic	Tacoma, WA		0.00019-0.0024 a	0.00024 a		
Anaerobic	Dover AFB, DE	0.00068-0.00079 b	0.00045-0.00079 b		0.00086-0.001 b	
Anaerobic	Eielson AFB, AK		0.0005-0.0026 c			
Anaerobic	Lakehurst, NJ	0.0019 d	0.0018 d	0.001-0.0019 d	0.00068 d	
Anaerobic	Otis AFB, MA	0.00019 e	0.00017 e			
Anaerobic	Picatinny Arsenal, NJ		0.00014-0.013 f, g,h	0.0014-0.0044 f	0.00049-0.006 h	
Anaerobic	Plattsburgh AFB, NY		0.00082-0.0033 i		0.0012-0.0013 i	
Anaerobic	St. Joseph Site, MI		0.0011-0.0063 j	0.00058-0.0073 j	0.00073-0.013 j	
Anaerobic	Sleeping Bear Dunes National Lakeshore, MI					0.0024-0.011 w
Anaerobic	Norman, OK					0.0006-0.0032 k
Anaerobic	Western Processing Site, WA			0.0017 l	0.0035 l	
Anaerobic	Hawkesbury, Ontario					
Anaerobic	CFB Borden Ontario					0.025 v
Anaerobic	Jutland, Denmark	0.0097-0.034 t				
Anaerobic	Vejen, Demark					0.024 u
Mean Half life (years)		0.308	0.855	0.928	0.692	0.132
Median Half Life (years)		1.441	1.134	1.117	0.845	0.124
Overall Range Half Lives (years)		0.06-9.99	0.15-13.6	0.26-7.9	0.15-2.8	0.075-3.2
Aerobic	Lakehurst, NJ	0 d	0.0194 d	0.0004-0.00049 d		
Aerobic	California					
Aerobic	CFB Borden Ontario	0 p				0.003-0.008 p
Aerobic	Lake Superior, WI					
Aerobic	Denmark					
Mean Half life (years)			0.098	4.267		0.345
Median Half Life (years)			0.098	4.267		0.345
Overall Range Half Lives (years)			0.098	3.9-4.7		0.24-0.63
Aerobic	---	0.0019-0.0039 m	0.0019-0.0039 m	0.0039-0.025 s, m	0.0039-0.025 m	0.0693-0.23 m
Anaerobic	---	0.00042-0.0071 m	0.00042-0.007 m	0.00096-0.0062 s, m	0.00096-0.0062 m	0.003-0.004 m

References
a) sand and gravel outwash aquifer, Tacoma, WA. Silka and Wallen, 1988 cited in EPA, 1999 and Howard, 1991
b) fine-coarse sand aquifer; plume movement 150-200 ft/year. Ellis et al, 1996.
c) alluvial sand and gravel aquifer. Dupont et al, 1996.
d) sand, silt & clay aquifer. Harkness et al, 1998.
e) sand and gravel aquifer. Ala and Domenico, 1992 cited in Aronson & Howard, 1999.
f) fine to coarse sand with some gravel and dicontinuous silt & clay layers; gw flow of 0.3-1m/day. Elkhe et al, 1994 cited in EPA, 1999
g) Wilson et al 1991 cited in EPA, 1999; Elkhe & Imbrigiotta, 1996
h) Wilson, JT et al, 1995
i) fine to med sand with trace silt;avg K 11.6 ft/day; Wiedemeier et al 1996
j) med, fine, v fine glacial sands; K 7.5 m/day; Weaver et al, 1996
k)silt, sand, clay alluivial aquifer. Wilson, BH et al 1986 cited in EPA, 1999
l) interbedded sands and silts, Kent WA. Exponent, 1999
m) Howard et al, 1991
p) API, 1994 cited in Aronson et al, 1999.
s) values for total 1,2-dichloroethene
t) sand with clay & silt inhomogenities. Neilsen et al 1995
u) sandy aquifer with some clay lenses underlain by a clay confining unit. Lyngkilde and Christensen 1992
v) lacustrine sand aquifer with K of 7E-3 cm/s. Acton & Barker, 1992
w) glacial outwash sands. Wilson, JT et al. 1994.

Table 9D-12
Range of Half Lives (Years) Calculated Using Site-Specific Data and Summary of Literature Values
PSC Georgetown Facility Remedial Investigation Study Area

Sample Interval	Method	Half Lifes (Years)				
		PCE	**TCE**	**cis-1,2-DCE**	**Vinyl Chloride**	**Ethylbenzene**
Water Table	Buscheck & Alcantar	0.44 - 1.82	0.06 - 1.25	0.17 - 0.85	0.15 - 1.08	0.25 - 0.56
	1,2,4-TMB Tracer	—	0.7 - 0.85	0.11 - 0.26	0.12 - 0.17	1.10
	1,3,5-TMB Tracer	—	0.78 - 1.76	0.12 - 0.27	0.15 - 0.17	2.11
	BIOCHLOR	0.05 - 0.6	0.65 - 0.7	0.05 - 1.40	0.07 - 0.15	0.05 - 0.4
Shallow	Buscheck & Alcantar	0.23 - 1.02	0.46 - 2.06	0.23 - 0.58	0.2 - 0.61	0.36
	1,2,4-TMB Tracer	—	—	—	—	0.70
	1,3,5-TMB Tracer	—	1.07	—	—	0.76
	BIOCHLOR	—	—	.05 - 0.3	.06 - 0.25	0.05
Intermediate	Buscheck & Alcantar	5.44	7.95	2.83	2.59 - 8.21	6.98
	1,2,4-TMB Tracer	4.56	1.04	1.25	1.17	12.02
	1,3,5-TMB Tracer	3.78	0.97	0.78	1.05	7.41
	BIOCHLOR	1.30	0.40	0.70	0.7 - 2.5	2.90
Range of Values cited in Biochlor/Bioscreen Databases		0.29 - 0.87	0.29 - 2.31	0.32 - 6.93	0.14 - 1.73	0.016- 0.62
Literature Values from Anaerobic Field Studies		0.06-9.99	0.15-13.6	0.26-7.9	0.15-2.8	0.59-3.2
Literature Values from Aerobic Field Studies		—	0.098	3.9-4.7	—	0.24-0.63

Notes:

— = data not available or not suitable for calculation

PCE = tetrachloroethene

TCE = trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-13
BIOCHLOR Input Parameters for Current Scenarios
PSC Georgetown Facility Remedial Investigation

Analyte	Assumed Source Concentration (ug/L)	Hydraulic Conductivity (ft/day)	Hydraulic Gradient	Effective Porosity	Modeled Area Width (feet)	Modeled Area Length (Feet)	Simulation Time (years)	Half Life* (years)	Source Type	Source Zone Thickness (feet)	Source Zone Width (feet)	Longitudinal Dispersion (feet)	Transverse/Vertical Dispersion Ratios	Retardation
Current Base Case (excluding Q32 Plume)														
Bis(2-ethylhexyl) phthalate	1000	89.4	0.0017	0.3	200	3000	30	1.07***	Infinite	20	200	60	0.1/0.01	560
Arsenic	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	147
Manganese	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	253
Vinyl Chloride	1000	89.4	0.0017	0.3	200	400	30	1.08	Infinite	20	200	24	0.1/0.01	1.09
1,4-Dioxane	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	1.006
Current Alternate Case (including Q32 Plume)														
Naphthalene	1000	89.4	0.0017	0.3	200	100	30	6.4**	Infinite	20	200	6	0.1/0.01	7
Bis(2-ethylhexyl) phthalate	1000	89.4	0.0017	0.3	200	3000	30	1.07***	Infinite	20	200	60	0.1/0.01	560
Arsenic	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	147
Manganese	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	253
TCE	1000	89.4	0.0017	0.3	200	100	30	2.06	Infinite	20	200	6	0.1/0.01	1.47
TCE	1000	89.4	0.0017	0.3	200	400	30	2.06	Infinite	20	200	24	0.1/0.01	1.47
Vinyl Chloride	1000	89.4	0.0017	0.3	200	100	30	1.08	Infinite	20	200	6	0.1/0.01	1.09
1,4-Dioxane	1000	89.4	0.0017	0.3	200	3000	30	NA	Infinite	20	200	60	0.1/0.01	1.006

Notes:

* Maximum calculated half life for upper or lower shallow zone used unless otherwise noted

**half life calculated by Foster Wheeler for shallow aquifer using site-specific data (RI/RA Planning Document, 2002)

***based on maximum literature value half life of 389 days (1.07 years); Spitz & Moreno, 1996

Ethenes were modeled using sequential decay (RME concentration of cis-1,2-DCE was included in simulation in order to demonstrate complete ethene degradation pathway)

NA = not applicable

Table 9D-14
BIOCHLOR Input Parameters Future Base Case for PSC Plume
PSC Georgetown Facility Remedial Investigation

Analyte	COPC RME Source Concentration (ug/L)	Hydraulic Conductivity (ft/day)	Hydraulic Gradient	Effective Porosity	Modeled Area Width (feet)	Modeled Area Length (Feet)	Simulation Time (years)	Half Life (years)	Source Type/Decay Rate (1/yr)	Source Zone Thickness (feet)	Source Zone Width (feet)	Longitudinal Dispersion (feet)	Transverse/Vertical Dispersion Ratios	Retardation
Inorganics														
Arsenic	10.98	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Barium	8.69	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Cyanide	7.95	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Manganese	1276.76	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
PCBs														
Aroclor 1016	0.14	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Semi-Volatile Organic Compounds														
Bis(2-ethylhexyl) phthalate	21.29	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Pentachlorophenol	2.75	89.4	0.0017	0.3	200	3690	50	NA	Decaying/0.2	20	200	60	0.1/0.01	1
Volatile Organic Compounds														
Tetrachloroethene	2.75	89.4	0.0017	0.3	200	3690	50	3.77	Decaying/0.2	20	200	60	0.1/0.01	1
Trichloroethene	5.82	89.4	0.0017	0.3	200	3690	50	2.59	Decaying/0.2	20	200	60	0.1/0.01	1
Vinyl Chloride	460.39	89.4	0.0017	0.3	200	3690	50	2.31	Decaying/0.2	20	200	60	0.1/0.01	1
Ethylbenzene	309.39	89.4	0.0017	0.3	200	3690	50	7.33	Decaying/0.2	20	200	60	0.1/0.01	1
Toluene	133.26	89.4	0.0017	0.3	200	3690	50	3.01	Decaying/0.2	20	200	60	0.1/0.01	1
2-methylnaphthalene	4.32	89.4	0.0017	0.3	200	3690	50	5	Decaying/0.2	20	200	60	0.1/0.01	1
Propylbenzene	16.30	89.4	0.0017	0.3	200	3690	50	5	Decaying/0.2	20	200	60	0.1/0.01	1
n-Hexane	2.30	89.4	0.0017	0.3	200	3690	50	5	Decaying/0.2	20	200	60	0.1/0.01	1

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
NA = Not applicable
ug/L = micrograms per liter = parts per billion (ppb)
Ethenes were modeled using sequential decay (RME concentration of cis-1,2-DCE was included in simulation in order to demonstrate complete ethene degradation pathway)
Maximum average calculated half life from site-specific data for all aquifer zones used to calculate EPC.
Assumed half life of 5 years for 2-methylnapthalene, propylbenzene, and n-hexane
No retardation was simulated in order to provide a conservative estimate of downgradient concentrations over 50-year time frame

Table 9D-15
BIOCHLOR Input Parameters for Future Alternate Case for K19 Plume
PSC Georgetown Facility Remedial Investigation

Analyte	COPC RME Source Concentration (ug/L)	Hydraulic Conductivity (ft/day)	Hydraulic Gradient	Effective Porosity	Modeled Area Width (feet)	Modeled Area Length (Feet)	Simulation Time (years)	Half Life (years)	Source Type	Source Zone Thickness (feet)	Source Zone Width (feet)	Longitudinal Dispersion (feet)	Transverse/Vertical Dispersion Ratios	Retardation
Inorganics														
Barium	58.38	89.4	0.0017	0.3	200	2050	10000	NA	Infinite	20	200	60	0.1/0.01	1
Chromium	51.69	89.4	0.0017	0.3	200	2050	10000	NA	Infinite	20	200	60	0.1/0.01	1
Copper	42.23	89.4	0.0017	0.3	200	2050	10000	NA	Infinite	20	200	60	0.1/0.01	1
Hexavalent Chromium	11.05	89.4	0.0017	0.3	200	2050	10000	NA	Infinite	20	200	60	0.1/0.01	1
Nickel	18.63	89.4	0.0017	0.3	200	2050	10000	NA	Infinite	20	200	60	0.1/0.01	1
Volatile Organic Compounds														
Trichloroethene	1120	89.4	0.0017	0.3	200	2050	10000	0.85	Infinite	20	200	60	0.1/0.01	1.47
Vinyl Chloride	86.4	89.4	0.0017	0.3	200	2050	10000	0.22	Infinite	20	200	60	0.1/0.01	1.09

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
NA = Not applicable
ug/L = micrograms per liter = parts per billion (ppb)
Average calculated half life for Water Table Sample Interval used in simulations
No retardation of metals was simulated due to uncertainty in distribution coefficient for metals and to provide a conservative estimate of downgradient concentrations
Ethenes were modeled using sequential decay (RME concentration of PCE and cis-1,2-DCE was included in simulation in order to demonstrate complete ethene degradation pathway)

Table 9D-16
BIOCHLOR Input Parameters for Future Alternate Case for M13 Plume
PSC Georgetown Facility Remedial Investigation

Analyte	COPC RME Source Concentration (ug/L)	Hydraulic Conductivity (ft/day)	Hydraulic Gradient	Effective Porosity	Modeled Area Width (feet)	Modeled Area Length (Feet)	Simulation Time (years)	Half Life (years)	Source Type	Source Zone Thickness (feet)	Source Zone Width (feet)	Longitudinal Dispersion (feet)	Transverse/Vertical Dispersion Ratios	Retardation
Volatile Organic Compounds														
Trichloroethene	46	89.4	0.0017	0.3	200	2450	10000	0.85	Infinite	20	200	60	0.1/0.01	1.47
Vinyl Chloride	12	89.4	0.0017	0.3	200	2450	10000	0.22	Infinite	20	200	60	0.1/0.01	1.09

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Average calculated half life for Water Table Sample Interval used in simulations
No retardation of metals was simulated due to uncertainty in distribution coefficient for metals and to provide a conservative estimate of downgradient concentrations
Ethenes were modeled using sequential decay (RME concentration of PCE and cis-1,2-DCE was included in simulation in order to demonstrate complete ethene degradation pathway)

Table 9D-17
BIOCHLOR Input Parameters for Future Alternate for the CG-136/CG-137 Plume
PSC Georgetown Facility Remedial Investigation

Analyte	COPC RME Source Concentration (ug/L)	Hydraulic Conductivity (ft/day)	Hydraulic Gradient	Effective Porosity	Modeled Area Width (feet)	Modeled Area Length (Feet)	Simulation Time (years)	Half Life (years)	Source Type	Source Zone Thickness (feet)	Source Zone Width (feet)	Longitudinal Dispersion (feet)	Transverse/Vertical Dispersion Ratios	Retardation
Inorganics														
Barium	87.1	89.4	0.0017	0.3	200	1500	10000	NA	Infinite	20	200	60	0.1/0.01	1
Chromium	42.6	89.4	0.0017	0.3	200	1500	10000	NA	Infinite	20	200	60	0.1/0.01	1
Copper	22.7	89.4	0.0017	0.3	200	1500	10000	NA	Infinite	20	200	60	0.1/0.01	1
Nickel	16.6	89.4	0.0017	0.3	200	1500	10000	NA	Infinite	20	200	60	0.1/0.01	1
Semi-Volatile Organic Compounds														
Naphthalene	40.6	89.4	0.0017	0.3	200	1500	10000	NA	Infinite	20	200	60	0.1/0.01	6.99
Volatile Organic Compounds														
Tetrachloroethene	5.45	89.4	0.0017	0.3	200	1500	10000	0.68	Infinite	20	200	60	0.1/0.01	2.33
Trichloroethene	666	89.4	0.0017	0.3	200	1500	10000	0.85	Infinite	20	200	60	0.1/0.01	1.47
Vinyl Chloride	162.5	89.4	0.0017	0.3	200	1500	10000	0.22	Infinite	20	200	60	0.1/0.01	1.09

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Average calculated half life for Water Table Sample Interval used in simulations
No retardation of metals was simulated due to uncertainty in distribution coefficient for metals and to provide a conservative estimate of downgradient concentrations
Ethenes were modeled using sequential decay (RME concentration of cis-1,2-DCE was included in simulation in order to demonstrate complete ethene degradation pathway)

Table 9D-18
Average and Maximum Half Lives (Years) Calculated Using Site-Specific Data
PSC Georgetown Facility Remedial Investigation Study Area

Sample Interval	Method	Half Lives (Years)				
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Ethylbenzene
Water Table	Buscheck & Alcantar	1.04	0.70	0.42	0.47	0.39
	1,2,4-TMB Tracer	—	0.78	0.19	0.15	1.10
	1,3,5-TMB Tracer	—	1.27	0.20	0.16	2.11
	BIOCHLOR	0.32	0.68	0.53	0.11	0.17
	Average All Methods	0.68	0.85	0.33	0.22	0.94
	Maximum All Methods	1.82	1.76	1.40	1.08	2.11
Shallow	Buscheck & Alcantar	0.63	1.26	0.40	0.40	0.36
	1,2,4-TMB Tracer	—	—	—	—	0.70
	1,3,5-TMB Tracer	—	1.07	—	—	0.76
	BIOCHLOR	—	—	0.18	0.16	0.05
	Average All Methods	0.63	1.17	0.29	0.28	0.47
	Maximum All Methods	1.02	2.06	0.58	0.61	0.76
Intermediate	Buscheck & Alcantar	5.44	7.95	2.83	5.40	6.98
	1,2,4-TMB Tracer	4.56	1.04	1.25	1.17	12.02
	1,3,5-TMB Tracer	3.78	0.97	0.78	1.05	7.41
	BIOCHLOR	1.30	0.40	0.70	1.60	2.90
	Average All Methods	3.77	2.59	1.39	2.31	7.33
	Maximum All Methods	5.44	7.95	2.83	8.21	12.02
Range of Values cited in Biochlor/Bioscreen Databases		0.29 - 0.87	0.29 - 2.31	0.32 - 6.93	0.14 - 1.73	0.016 to 0.62
Literature Values from Anaerobic Field Studies		0.06-9.99	0.15-13.6	0.26-7.9	0.15-2.8	0.59-3.2
Literature Values from Aerobic Field Studies		—	0.098	3.9-4.7	—	0.24-0.63

Notes:

— = data not available or not suitable for calculation

PCE = tetrachloroethene

TCE = trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

Table 9D-19

Summary of Water Table and Shallow Sample Interval Hydraulic Conductivity Testing Results

PSC Georgetown FAcility Remedial Investigation

Test Type	Data Quality[2]	Result (cm/sec)	Result (ft/day)	Geometric Mean of Test Results, Data Quality = 1 (ft/day)
slug	3	3.00E-03	8.50	
slug	3	4.20E-03	11.91	NA
slug	3	1.50E-02	42.52	
grain size	4	3.20E-02	90.71	
grain size	4	4.00E-04	1.13	
grain size	4	4.00E-02	113.39	
grain size	4	1.00E-02	28.35	NA
grain size	4	3.00E-02	85.04	
grain size	4	3.00E-02	85.04	
grain size	4	5.00E-03	14.17	
grain size	4	3.00E-02	85.04	
pumping	1	5.30E-02	150.24	
pumping	1	3.00E-02	85.04	
pumping	1	2.60E-02	73.70	
pumping	1	3.25E-02	92.13	89.41
pumping	1	2.70E-02	76.54	
pumping	1	3.69E-02	104.60	
pumping	1	2.32E-02	65.76	
pumping	4	5.00E-03	14.17	

1. Testing performed at PSC Facility
2. Data quality interpreted by previous investigators (1 = highest quality, 4 = lowest quality)

NA = Not Applicable

Table 9D-20

Summary of Intermediate Sample Interval Hydraulic Conductivity Testing Results

PSC Georgetown Facility Remedial Investigation

Test Type	Data Quality[2]	Result (cm/sec)	Result (ft/day)	Geometric Mean of Test Results, Data Quality = 1 or 2 (ft/day)
slug	3	1.70E-05	0.05	NA
slug	3	1.50E-05	0.04	
slug	3	8.00E-04	2.27	
slug	3	8.00E-04	2.27	
slug	3	2.40E-03	6.80	
slug	3	3.40E-04	0.96	
slug	3	1.80E-04	0.51	
pumping	2	2.72E-03	7.71	3.21
pumping	1	3.65E-04	1.03	
pumping	1	8.55E-04	2.42	
pumping	1	8.52E-04	2.42	
pumping	2	1.35E-03	3.83	
pumping	1	3.65E-04	1.03	
pumping	1	8.67E-04	2.46	
pumping	1	8.86E-04	2.51	
pumping	3	4.36E-04	1.24	
pumping	3	5.07E-03	14.37	
pumping	2	4.40E-03	12.47	
pumping	2	4.38E-04	1.24	
pumping	2	2.46E-03	6.97	
pumping	2	3.41E-03	9.67	

1. Testing performed at PSC Facility
2. Data quality interpreted by previous investigators (1 = highest quality, 4 = lowest quality)

NA = Not Applicable

Table 9D-21
Estimated Retardation Values for Modeling
PSC Georgetown Facility Remedial Investigation Study Area

Compound	Koc[1] (ml/g)	foc[2]	Kd[3]	Bulk Density[4] (g/cc)	Porosity[5]	Retardation Factor[6]
Tetrachloroethene	265.000	0.001	0.265	1.510	0.300	2.33
Trichloroethene	94.000	0.001	0.094	1.510	0.300	1.47
Cis-1,2-dichloroethene	35.500	0.001	0.036	1.510	0.300	1.18
Ethylbenzene	204.000	0.001	0.204	1.510	0.300	2.03
Vinyl Chloride	18.600	0.001	0.019	1.510	0.300	1.09
Arsenic[7]	—	—	29	1.510	0.300	146.97
Manganese[8]	—	—	50	1.510	0.300	252.67
1,4-Dioxane[9]	1.23	0.001	0.001	1.510	0.300	1.01
Naphthalene	1191	0.001	1.191	1.510	0.300	6.99
Bis(2-ethylhexyl) phthalate	1.11E+05	0.001	111.100	1.510	0.300	560.20

NOTES:

[1] Organic Carbon Partition Coefficient. All Koc values (except 1,2,4-trimethylbenzene, 2-methylphenol, and 1,4-dioxane) are from Ecology, 2001; others are from EPA, 1996b or EPA, 2002b

[2] Fraction Organic Carbon; average foc value from samples collected April 2003 (shallow sample interval). Half detection limit used for averaging for samples that were non-detect for foc.

[3] Distribution Coefficient (equal to Koc*foc)

[4] Median value presented for shallow and intermediate sample intervals in Foster-Wheeler, 2003.

[5] Median value presented for shallow and intermediate sample intervals in Foster-Wheeler, 2003.

[6] Retardation = [1 + (bulk density/porosity)Kd]

[7] Kd for arsenic from Ecology, 2001

[8] Kd for manganese from ANL, 2002.

[9] Kd for Mohr, 2001.

g/cc = grams per cubic centimeter
ml/g = milliliters per gram
— = not applicable
Koc = organic compound partition coefficient
foc = fraction organic compound
Kd = distribution coefficient

Table 9D-22

Summary of DAFs and Predicted EPCs at the Groundwater/Surface Water Interface

Current Scenarios

PSC Georgetown Facility Remedial Investigation Study Area

Current Base Case (excluding Q32 Plume)								
COPC	Distance (ft) to Waterway	Retardation	Longitudinal Dispersivity (ft)	Half Life* (years)	Simulation Time (years)	Assumed Source Conc (ug/L)	End Point Conc. (ug/L)	DAF
Bis(2-ethylhexyl)phthalate	3000	560	60	1.07***	30	1000	0	1.00E+06
Arsenic	3000	147	60	NA	30	1000	0	1.00E+06
Manganese	3000	253	60	NA	30	1000	0	1.00E+06
TCE	400	1.47	24	2.06	30	1000	417.8	2.39
Vinyl Chloride	400	1.09	24	1.08	30	1000	233.38	4.28
1,4-Dioxane	3000	1.006	60	NA	30	1000	104.8	9.54

Current Alternate Case (including Q32 Plume)								
COPC	Distance (ft) to Waterway	Retardation	Longitudinal Dispersivity (ft)	Half Life* (years)	Simulation Time (years)	Assumed Source Conc (ug/L)	End Point Conc. (ug/L)	DAF
Naphthalene	100	7	6	6.4**	30	1000	994	1.01
Bis(2-ethylhexyl) phthalate	3000	560	60	1.07***	30	1000	0	1.00E+06
Arsenic	3000	147	60	NA	30	1000	0	1.00E+06
Manganese	3000	253	60	NA	30	1000	0	1.00E+06
TCE	100	1.47	6	2.06	30	1000	837.43	1.19
Vinyl Chloride	100	1.09	6	1.08	30	1000	715.1	1.40
1,4-Dioxane	3000	1.006	60	NA	30	1000	104.8	9.54

Notes:

ug/L = micrograms per liter = parts per billion (ppb)

COPC = Chemical of potential concern

DAF = Dilution attenuation factor

* Maximum calculated half life for upper or lower shallow zone

**half life calculated by Foster Wheeler for shallow aquifer using site-specific data (RI/RA Planning Document, 2002)

***based on maximum literature value half life of 389 days (1.07 years); Spitz & Moreno, 1996

Assume DAF = 1E+6 if end point concentration = 0

End point concentration is the resultant concentration at the groundwater/surface water interface given the assumed source of 1000 ug/L.

Because they are not found at concentrations exceeding applicable cleanup levels within the PSC plume, site-specific biodegradation rates were not calculated and literature values were used for naphthalene and bis(2-ethylhexyl)phthalate.

Table 9D-23
Summary of DAFs and Predicted Concentrations at the Groundwater/Surface Water Interface
Current Scenarios
PSC Georgetown Facility Remedial Investigation

COPC	COPC RME Source Concentration (ug/L)	Minimum Distance to Waterway (feet)	Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	DAF	Predicted Peak EPC at Waterway (ug/L) (Including Biodegradation)	Exceeds Cleanup Levels with Biodegradation? (Y/N)
			MTCA Fisher	Ecological Receptors				
Current Base Case (excluding Q32 Plume)								
Bis(2-ethylhexyl) phthalate	**5.47**	3000	3.56	3	Y	1000000	5.47E-06	N
Arsenic	**1.28**	3000	0.098	36	Y	1000000	1.28E-06	N
Manganese	**461.96**	3000	37,836	120	Y	1000000	4.62E-04	N
Vinyl Chloride	**7.90**	400	3.96	11,600	Y	4.28	1.84	N
1,4-Dioxane	**493.00**	3000	184	---	Y	9.54	51.67	N
Current Alternate Case (including Q32 Plume)								
Naphthalene	0.42	100	4,938	12	N	1.01	0.42	N
Bis(2-ethylhexyl) phthalate	**5.47**	3000	3.56	3	Y	1000000	5.47E-06	N
Arsenic	**1.28**	3000	0.098	36	Y	1000000	1.28E-06	N
Manganese	**461.96**	3000	37,836	120	Y	1000000	4.62E-04	N
TCE	**21.58**	100	1.53	47	Y	1.19	**18.07**	Y
Vinyl Chloride	**20.86**	100	3.96	11,600	Y	1.40	**14.91**	Y
1,4-Dioxane	**493.00**	3000	184	---	Y	9.54	51.67	N

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
DAF = Dilution attenuation factor
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
Bold denotes concentration exceeds one or more cleanup level.
Simulations include effects of retardation

Table 9D-24
Summary of DAFs and Predicted EPCs at the Groundwater/Surface Water Interface
Future Base Case
PSC Plume
PSC Georgetown Facility Remedial Investigation Report

Analyte	COPC RME Concentrations		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	DAF - Dilution/ Dispersion Only	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?	DAF - Dilution + Biodegradation	Predited EPC at Waterway (ug/L) (Dilution/ Dispersion & Biodegradation)	Exceeds Cleanup Level with Biodegradation?
	COPC RME Source Concentration (ug/L)	Miminum Distance From Waterway (Feet)	MTCA Fisher	Ecological Receptors							
Inorganics											
Arsenic	**10.98**	3690	0.098	36	Y	36.95	**0.297**	Y	—	—	—
Barium	**8.69**	3690	287	4	N	36.83	0.236	N	—	—	—
Cyanide	**7.95**	3690	51,851	1	N	36.82	0.216	N	—	—	—
Manganese	**1276.76**	3690	37,836	120	Y	36.92	34.585	N	—	—	—
PCBs											
Aroclor 1016	**0.14**	3690	0.003	0.01	Y	34.96	**0.004**	Y	—	—	—
Semi-Volatile Organic Compounds											
Bis(2-ethylhexyl) phthalat	**21.29**	3690	3.56	3	Y	36.89	0.577	N	—	—	—
Pentachlorophenol	**2.75**	3690	4.91	7.9	Y	33.55	0.082	N	—	—	—
Volatile Organic Compounds											
Tetrachloroethene	**2.75**	3690	0.39	98.00	Y	36.65	0.075	N	916.35	0.003	N
Trichloroethene	**5.82**	3690	1.53	47	Y	36.85	0.158	N	970.39	0.006	N
Vinyl Chloride	**460.39**	3690	3.96	11,600	Y	36.89	**12.479**	Y	4513.63	0.102	N
Ethylbenzene	**309.39**	3690	6,913	7.30	Y	36.89	**8.386**	Y	101.51	3.048	N
Toluene	**133.26**	3690	48,460	9.80	Y	36.89	3.612	N	1959.65	0.068	N
2-methylnaphthalene	**4.32**	3690	2,222	2.10	Y	36.92	0.117	N	432.00	0.01	N
Propylbenzene	**16.30**	3690	682	7.30	Y	36.88	0.442	N	407.50	0.040	N
n-Hexane	**2.30**	3690	778	0.58	Y	37.09	0.062	N	383.25	0.006	N

Notes:
COPC = Chemical of potential concern
RME = Reasonable maximum exposure
DAF = Dilution attenuation factor
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
ug/L = micrograms per liter = parts per billion (ppb)
Maximum average calculated half life from site-specific data used to calculate EPC.
Assumed half life of 5 years for 2-methylnapthalene, propylbenzene, and n-hexane
If predicted concentration equals 0.00, then assumed DAF of 10e+6.
Bold denotes concentration exceeds one or more cleanup level.
— = not applicable
Simulations performed with decaying source (0.2/year) for 50 years
Distance from the Waterway is based on current plume delineation

Table 9D-25
Summary of DAFs and EPCs Predicted at the Groundwater/Surface Water Interface
Future Alternate Case for K19 Plume
PSC Georgetown Facility Remedial Investigation

Analyte	RME Concentrations Associated with K19 Plume		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	DAF - Dilution/ Dispersion Only	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?	DAF - Dilution + Biodegradation	Predicted EPC at Waterway (ug/L) (Dilution/ Dispersion & Biodegradation)	Exceeds Cleanup Level with Biodegradation?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Waterway (feet)	MTCA Fisher	Ecological Receptors							
Inorganics											
Barium	**58.38**	2050	287	4	Y	6.70	**8.71**	Y	---	---	---
Chromium	**51.69**	2050	---	10	Y	6.70	7.71	N	---	---	---
Copper	**42.23**	2050	2,665	3.1	Y	6.70	**6.30**	Y	---	---	---
Hexavalent Chromium	**11.05**	2050	486	10	Y	6.70	1.65	N	---	---	---
Nickel	**18.63**	2050	1,103	8.2	Y	6.70	2.78	N	---	---	---
Volatile Organic Compounds											
Trichloroethene	**1120**	2050	1.53	47	Y	6.70	**167.08**	Y	10275	0.109	N
Vinyl Chloride	**86.4**	2050	3.96	11,600	Y	6.70	**12.89**	Y	2880	0.030	N

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
DAF = Dilution attenuation factor
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)
No detects in Intermediate aquifer
Average calculated half life for Water Table Sample Interval from site-specific data used to calculate EPC.
If predicted concentration equals 0.00, then assumed DAF of 10e+6.
Bold denotes concentration exceeds one or more cleanup level.
Simulations performed with an infinite source
Distance from the Waterway is based on current plume delineation

Table 9D-26

Summary of DAFs and Predicted Concentrations at Groundwater Surface Water Interface

M13 Plume

PSC Georgetown Facility Remedial Investigation

Analyte	RME Concentrations Associated with M13 Plume		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?	DAF - Dilution/ Dispersion Only	DAF - Dilution + Biodegradation	Predicted EPC at Waterway (ug/L) (Dilution/ Dispersion & Biodegradation)	Exceeds Cleanup Level with Biodegradation?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Waterway (feet)	MTCA Fisher	Ecological Receptors							
Volatile Organic Compounds											
Trichloroethene	**46**	2450	1.53	47	Y	**5.828**	Y	7.89	46000	0.001	N
Vinyl Chloride	**12**	2450	3.96	11,600	N	1.520	N	7.96	1.E+06	0.000	N

Notes:

RME = Reasonable maximum exposure

EPC = Exposure point concantration, used here to refer to groundwater concentrations at the groundwater/surface water interface

DAF = Dilution attenuation factor

COPC = Chemical of potential concern

MTCA = Model Toxics Control Act

ug/L = micrograms per liter = parts per billion (ppb)

No detects in Shallow or Intermediate Sample Intervals.

Average calculated half life for Water Table Sample Interval from site-specific data used to calculate EPC

If predicted concentration equals 0.00, then assumed DAF of 10e+6.

Bold denotes concentration exceeds one or more cleanup level.

Simulations performed with an infinite source

Distance from the Waterway is based on current plume delineation

Table 9D-27
Summary of DAFs and Predicted Concentreations at Groundwater/ Surface Water Interface
CG-137/CG-136 Plume
PSC Georgetown Facility Remedial Investigation

Analyte	RME Concentrations Associated with Plume CG136/137		Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Exceeds Cleanup Level with No Attenuation? (Y/N)	DAF - Dilution/ Dispersion Only	Predicted Peak EPC at Waterway (ug/L) (Dilution/ Dispersion only)	Exceeds Cleanup Levels with Dilution/ Dispersion Only?	DAF - Dilution + Biodegradation	Predicted EPC at Waterway (ug/L) (Dilution/ Dispersion & Biodegradation)	Exceeds Cleanup Level with Biodegradation?
	COPC RME Source Concentration (ug/L)	Minimum Travel Distance from Waterway (feet)	MTCA Fisher	Ecological Receptors							
Inorganics											
Barium	**87.1**	1500	287	4	Y	5.07	**17.18**	Y	---	---	---
Chromium	**42.6**	1500	---	10	Y	5.07	8.40	N	---	---	---
Copper	**22.7**	1500	2,665	3.1	Y	5.07	**4.48**	Y	---	---	---
Nickel	**16.6**	1500	1,103	8.2	Y	5.07	3.28	N	---	---	---
Semi-Volatile Organic Compounds											
Naphthalene	**40.6**	1500	4,938	12	Y	5.07	8.01	N	---	---	---
Volatile Organic Compounds											
Tetrachloroethylene	**5.45**	1500	0.39	98	Y	5.07	**1.08**	Y	2725	0.002	N
Trichloroethene	**666**	1500	1.53	47	Y	5.07	**131.38**	Y	1062	0.627	N
Vinyl Chloride	**162.5**	1500	3.96	11,600	Y	5.07	**32.06**	Y	956	0.170	N

Notes:
RME = Reasonable maximum exposure
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
DAF = Dilution attenuation factor
COPC = Chemical of potential concern
MTCA = Model Toxics Control Act
ug/L = micrograms per liter = parts per billion (ppb)
Distance from the Waterway is based on current plume delineation
No detects in Intermediate Zone.
Average calculated half life for Water Table Sample Interval from site-specific data used to calculate EPC.
If predicted concentration equals 0.00, then assumed DAF of 10e+6.
Bold denotes concentration exceeds one or more cleanup level.
Simulations performed with an infinite source

Table 9D-28
Summary of Modeling Results
PSC Georgetown Facility Remedial Investigation

Case	Scenario Represented	COPC	Predicted EPC at Waterway (ug/L)	Groundwater Cleanup Levels Based on the Protection of Surface Water (ug/L)		Assumptions Included in Simulation for Specified COPC		
				MTCA Fisher	Ecological Receptors	Dilution/ Dispersion	Retardation	Biodegradation
Current Base Case	estimated current EPCs associated with non-PSC plumes, excluding the Q32 Plume	No COPCs predicted to exceed cleanup levels at groundwater/surface water interface						
Current Alternate Case	estimated current EPCs associated with non-PSC plumes, including the Q32 Plume	TCE	18.07	1.53	47	x	x	x
		Vinyl chloride	14.91	3.96	11,600	x	x	x
Future Base Case	predicted future EPCs associated with the PSC Plume	Arsenic	0.297	0.098	36	x	---	---
		Aroclor 1016	0.004	0.003	0.01	x	---	---
Future Alternate Case: K19 Plume	predicted future EPCs associated with the K19 Plume	Barium	8.71	287	4	x	---	---
		Copper	6.30	2,665	3.1	x	---	---
Future Alternate Case: M13 Plume	predicted future EPCs associated with the M13 Plume	No COPCs predicted to exceed cleanup levels at groundwater/surface water interface						
Future Alternate Case: CG-136/CG-137 Plume	predicted future EPCs associated with the CG-136/CG-137 Plume	Barium	17.18	287	4	x	---	---
		Copper	4.48	2,665	3.1	x	---	---

Notes:
EPC = Exposure point concentration, used here to refer to groundwater concentrations at the groundwater/surface water interface
COPC = Chemical of potential concern
ug/L = micrograms per liter = parts per billion (ppb)

Table 9D-29

Sensitivity Analysis Results for BIOCHLOR Modeling in the Water Table and Shallow Sample Intervals

PSC Georgetown Facility Remedial Investigation

Input Parameter	Starting Value[1]	Revised Parameter Value for Sensitivity (Decrease)	Parameter Decrease (percent)	Revised Parameter Value for Sensitivity (Increase)	Parameter Increase (percent)	Simulated Concentration at Wateway[2]	Approx. Solute Travel Distance[3] (feet)	Change in Solute Travel Distance (feet)	Percent Decrease or Increase in Travel Distance
Baseline Results						0	1000		
Hydraulic Conductivity (feet/day)	89.4	8.9	90	894	900	0	250	-750	**-75**
						12.519	4000+	3000+	**300**
Longitudinal Dispersivity (feet)	60	6	90	120	100	0	800	-200	**-20**
						0	1200	200	**20**
Solute Half Life (years)	0.33	0.03	91	1.4[4]	324	0	250	-750	**-75**
						0.08	3000	2000	**200**
Retardation	1.18	1	15	11.8	900	0	1000	0	**0**
						0	1000	0	**0**
Hydraulic Gradient (feet/foot)	0.0017	0.0001	94	0.01	488	0	200	-800	**-80**
						0.853	3900	2900	**290**
Source Thickness (feet)	20	5	75	40	100	0	800	-200	**-20**
						0	1200	200	**20**
Source Width (feet)	200	20	90	600	200	0	750	-250	**-25**
						0	1100	100	**10**

Notes:

[1]Starting value represents inputs used in BIOCHLOR model for DAF calculations.

[2]Simulated concentration in micrograms per liter; with degradation.

[3]Travel distance estimated using simulated concentration (1 ug/l) in BIOCHLOR.

[4]Maximum half life calculated using all site-specific methods.

Used maximum cis-1,2-DCE concentration at site in Shallow Zone (D23; 10,560 ug/l; 4000' from waterway) as sample location for sensitivity.

Table 9D-30

Sensitivity Analysis Results for BIOCHLOR Modeling in the Intermediate Sample Interval

PSC Georgetown Facility Remedial Investigation

Input Parameter	Starting Value[1]	Revised Parameter Value for Sensitivity (Decrease)	Parameter Decrease (percent)	Revised Parameter Value for Sensitivity (Increase)	Parameter Increase (percent)	Simulated Concentration at Wateway[2]	Approx. Solute Travel Distance[3] (feet)	Change in Solute Travel Distance (feet)	Percent Decrease or Increase in Travel Distance
Baseline Results						0	350		
Hydraulic Conductivity (feet/day)	3.2	0.32	90	32	900	0	150	-200	-57
						0	1600	1250	357
Longitudinal Dispersivity (feet)	60	6	90	120	100	0	200	-150	-43
						0	450	100	29
Solute Half Life (years)	1.39	0.14	90	2.83 [4]	365	0	100	-250	-71
						0	600	250	71
Retardation	1.18	1	15	11.8	900	0	350	0	0
						0	350	0	0
Hydraulic Gradient (feet/foot)	0.0016	0.0001	94	0.01	525	0	100	-250	-71
						0	1150	800	229
Source Thickness (feet)	20	5	75	40	100	0	300	-50	-14
						0	350	0	0
Source Width (feet)	200	20	90	600	200	0	300	-50	-14
						0	350	0	0

Notes:

[1]Starting value represents inputs used in Biochlor model for DAF calculations.

[2]Simulated concentration in micrograms per liter; with degradation.

[3]Travel distance estimated using simulated concentration (1 ug/l) in BIOCHLOR.

[4]Maximum half life calculated using all site-specific methods.

Used maximum cis-1,2-DCE concentration at site in Intermediate Zone (D9; 85,400 ug/l; 4000' from waterway) as sample location for sensitivity.

Figure 9D-1
PCE
Trend Line B
Water Table Sample Interval

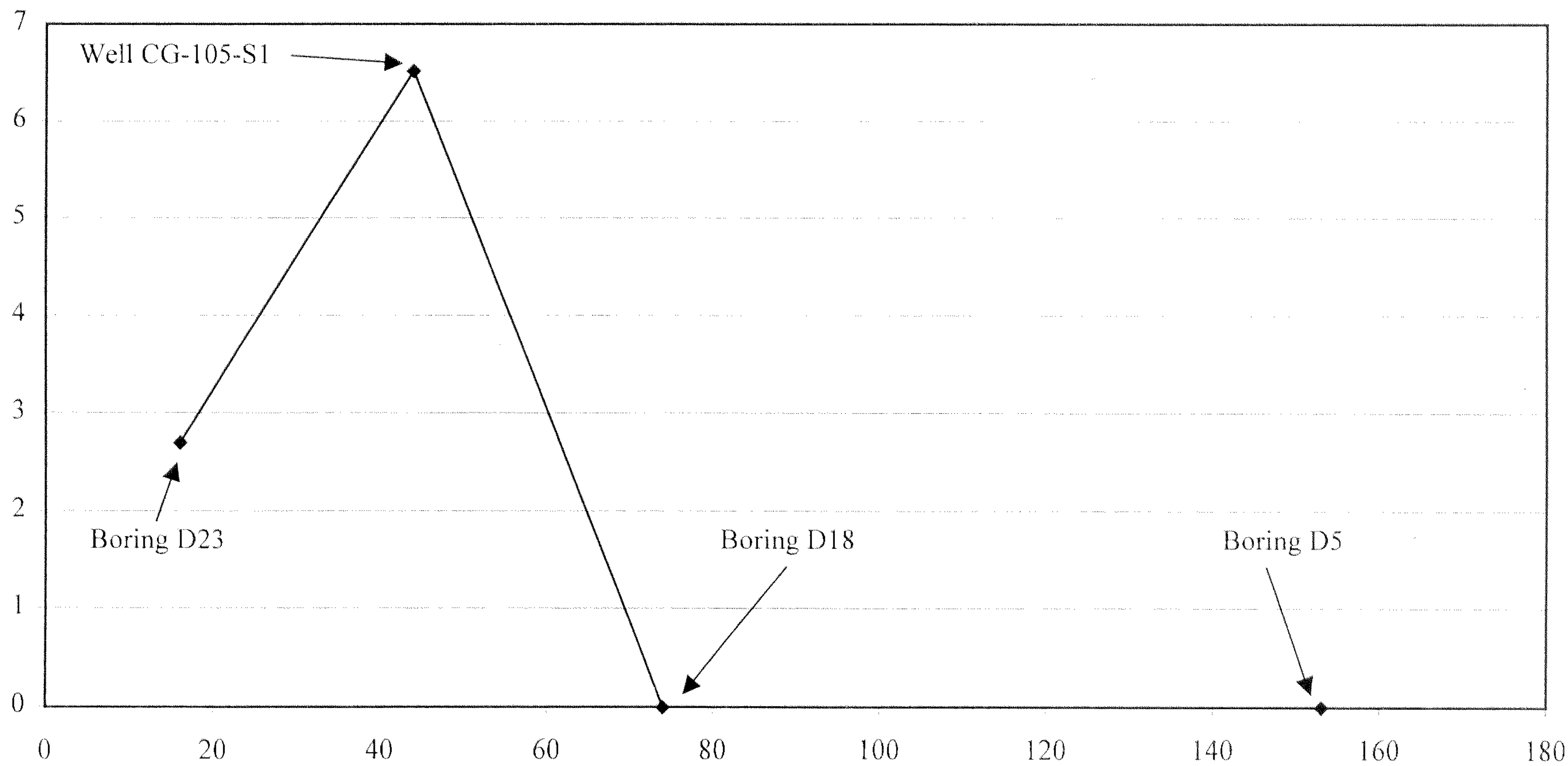


Figure 9D-2
PCE
Trend Line C
Water Table Sample Interval

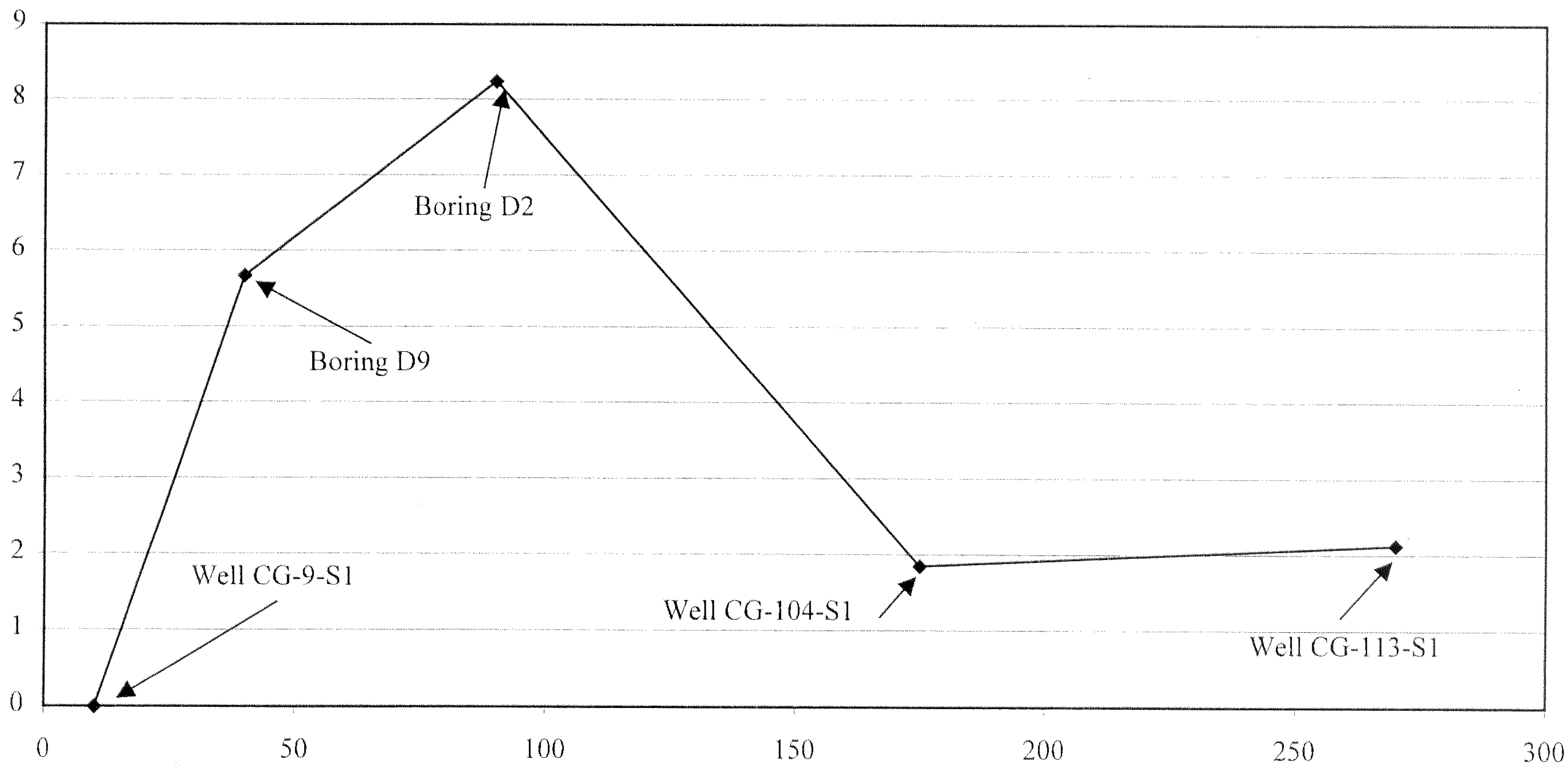


Figure 9D-3
PCE
Trend Line D
Water Table Sample Interval

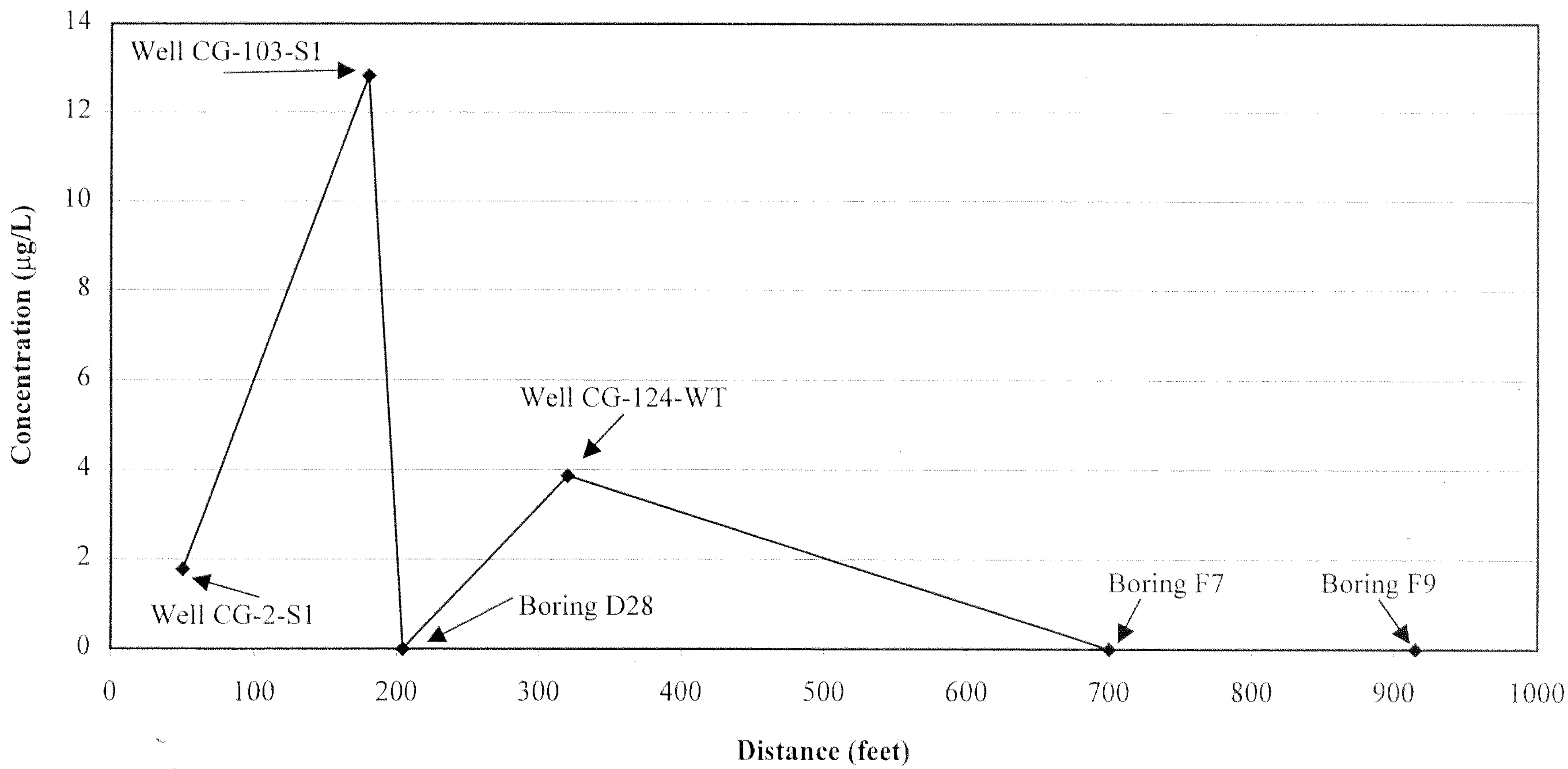


Figure 9D-4
PCE
Trend Line C
Shallow Sample Interval

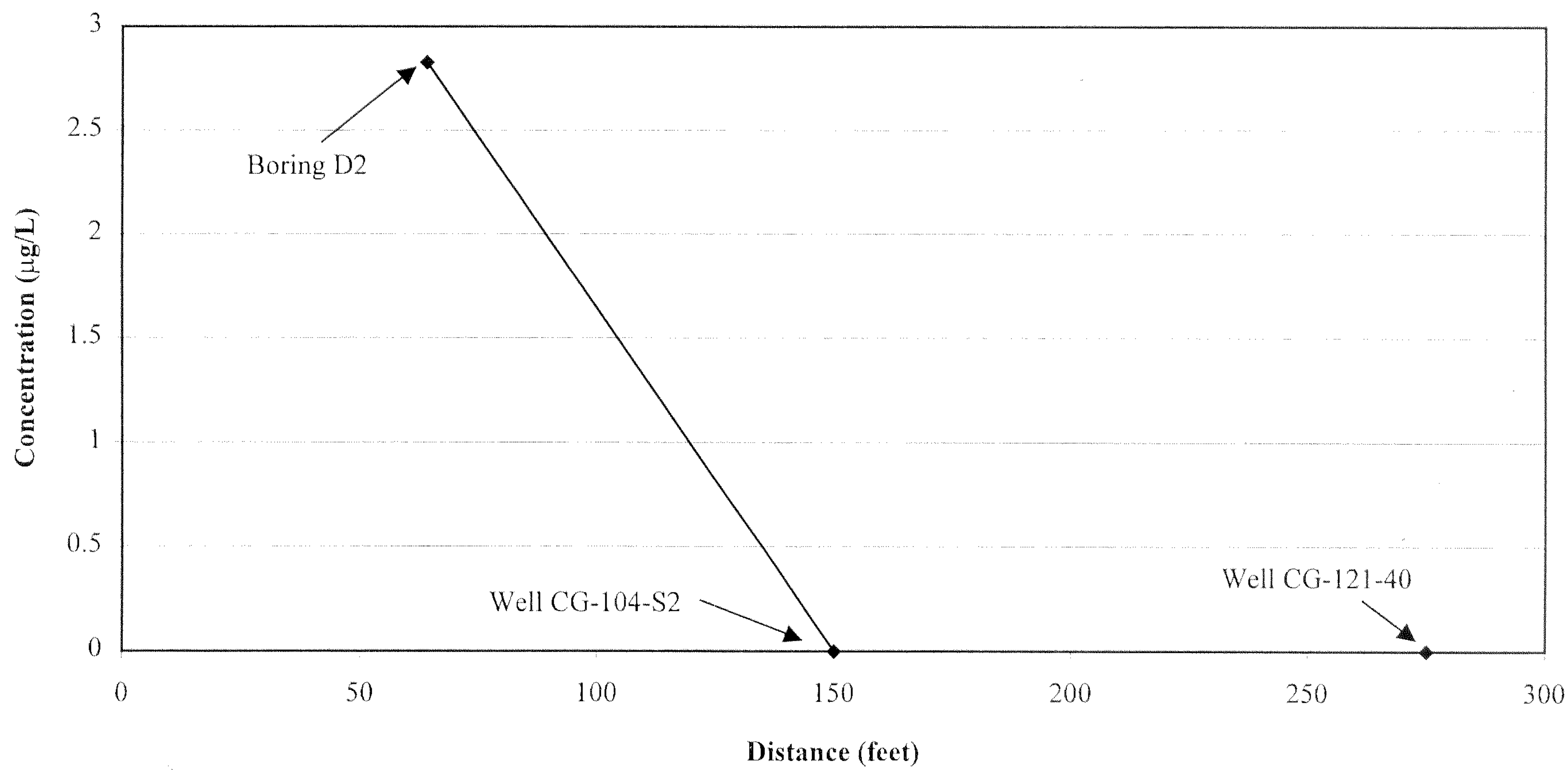


Figure 9D-5
PCE
Trend Line D
Shallow Sample Interval

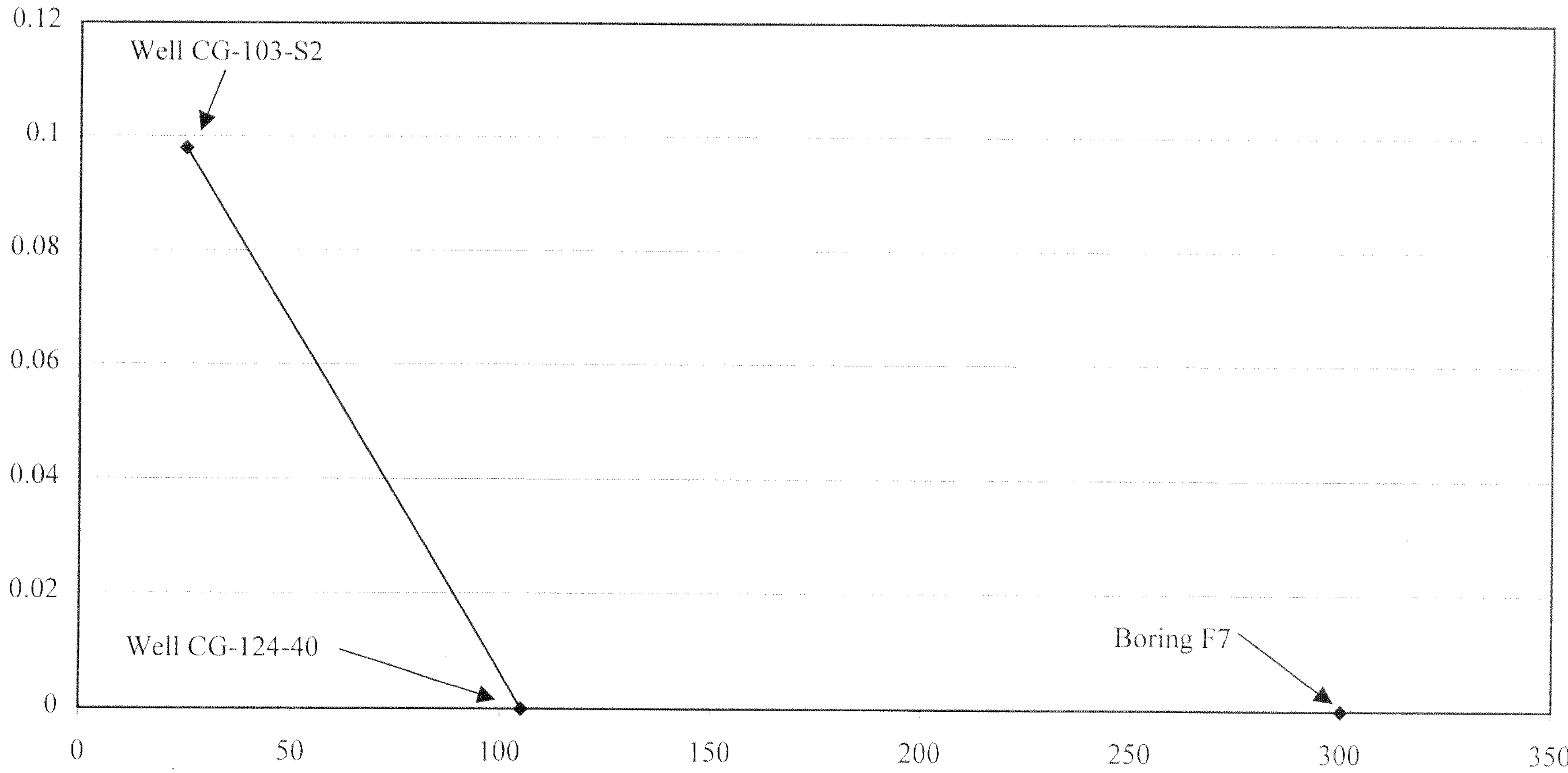


Figure 9D-6
PCE
Trend Line B
Intermediate Sample Interval

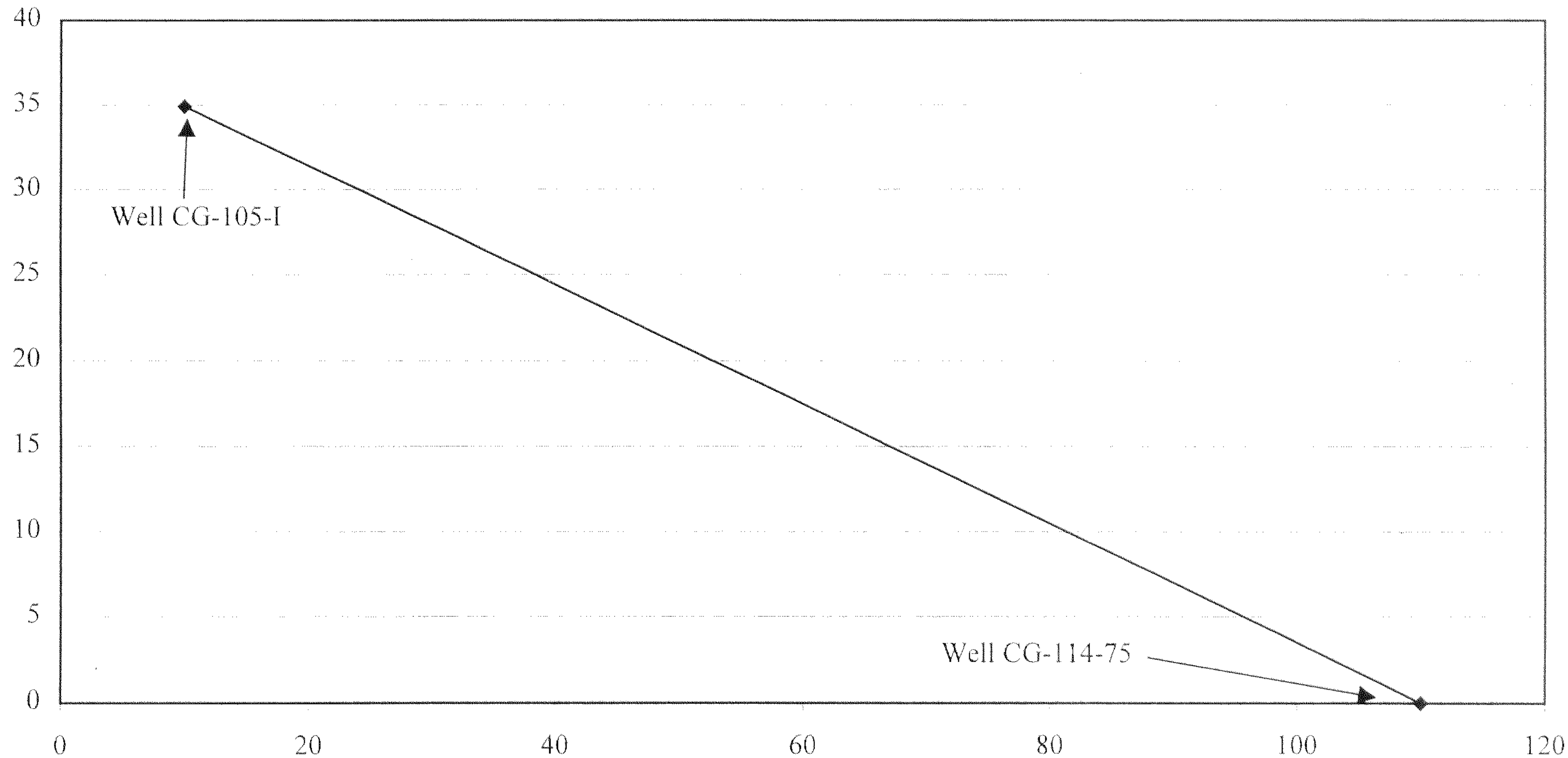


Figure 9D-7
TCE
Trend Line B
Water Table Sample Interval

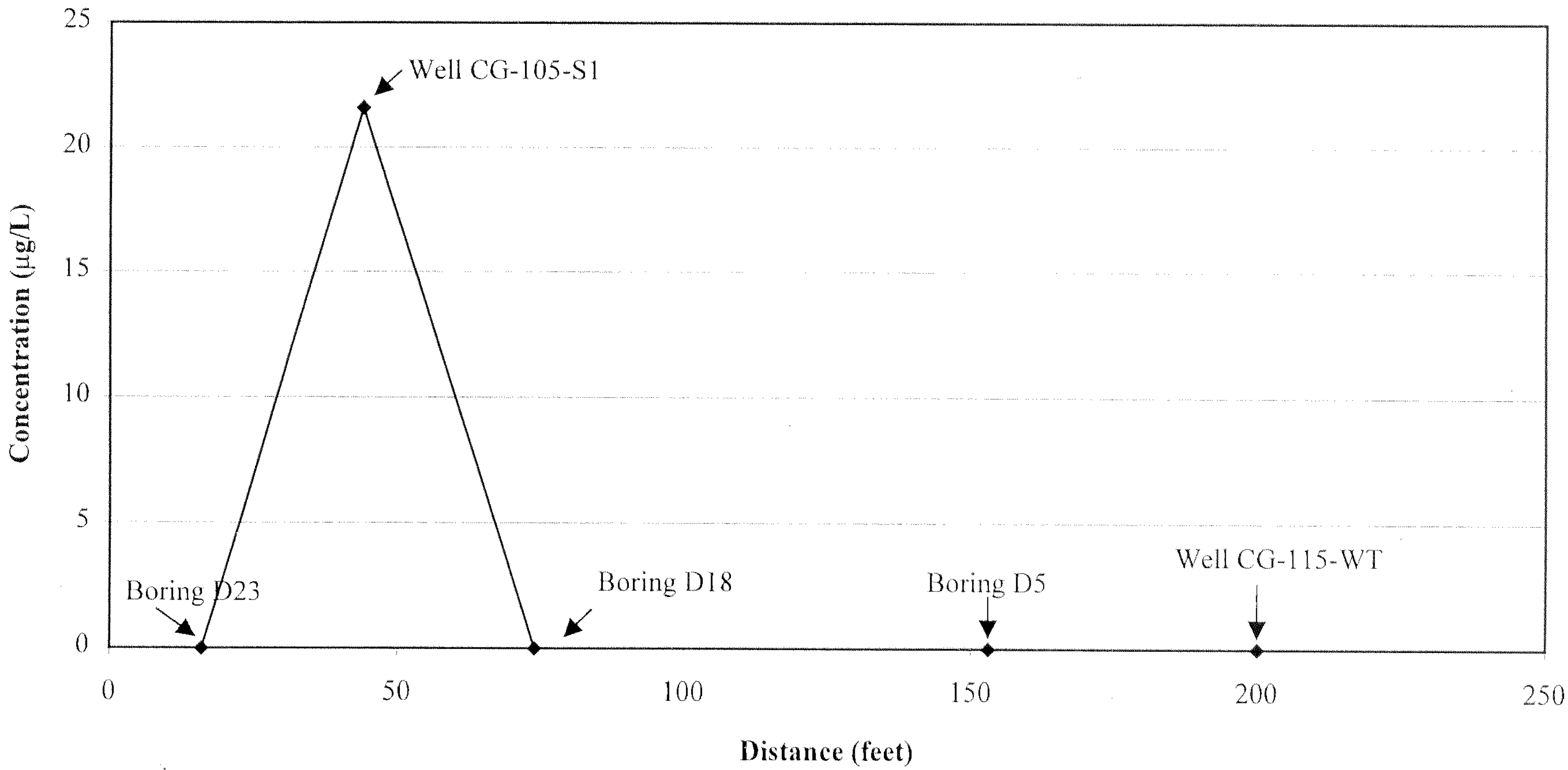


Figure 9D-8
TCE
Trend Line C
Water Table Sample Interval

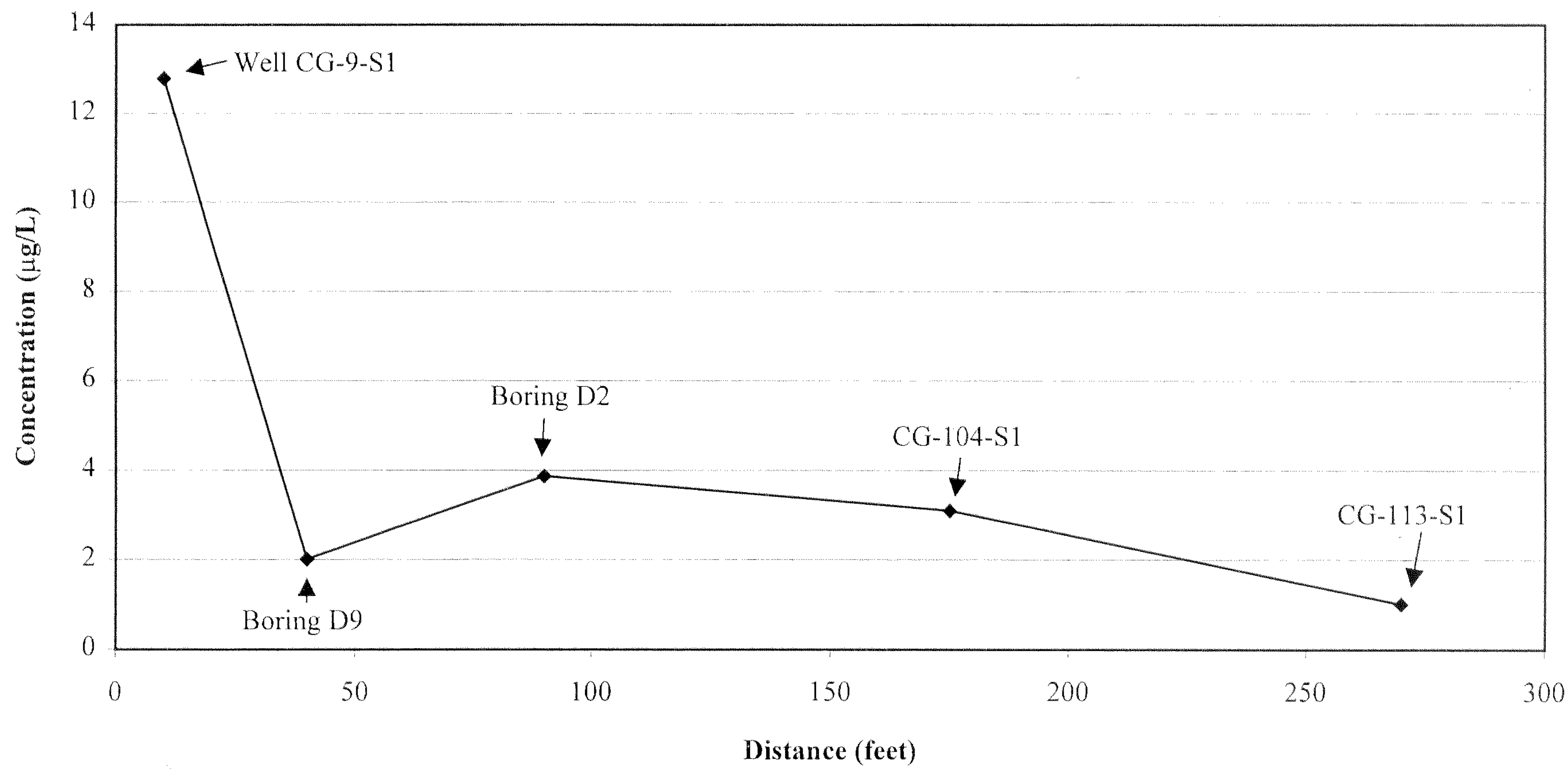
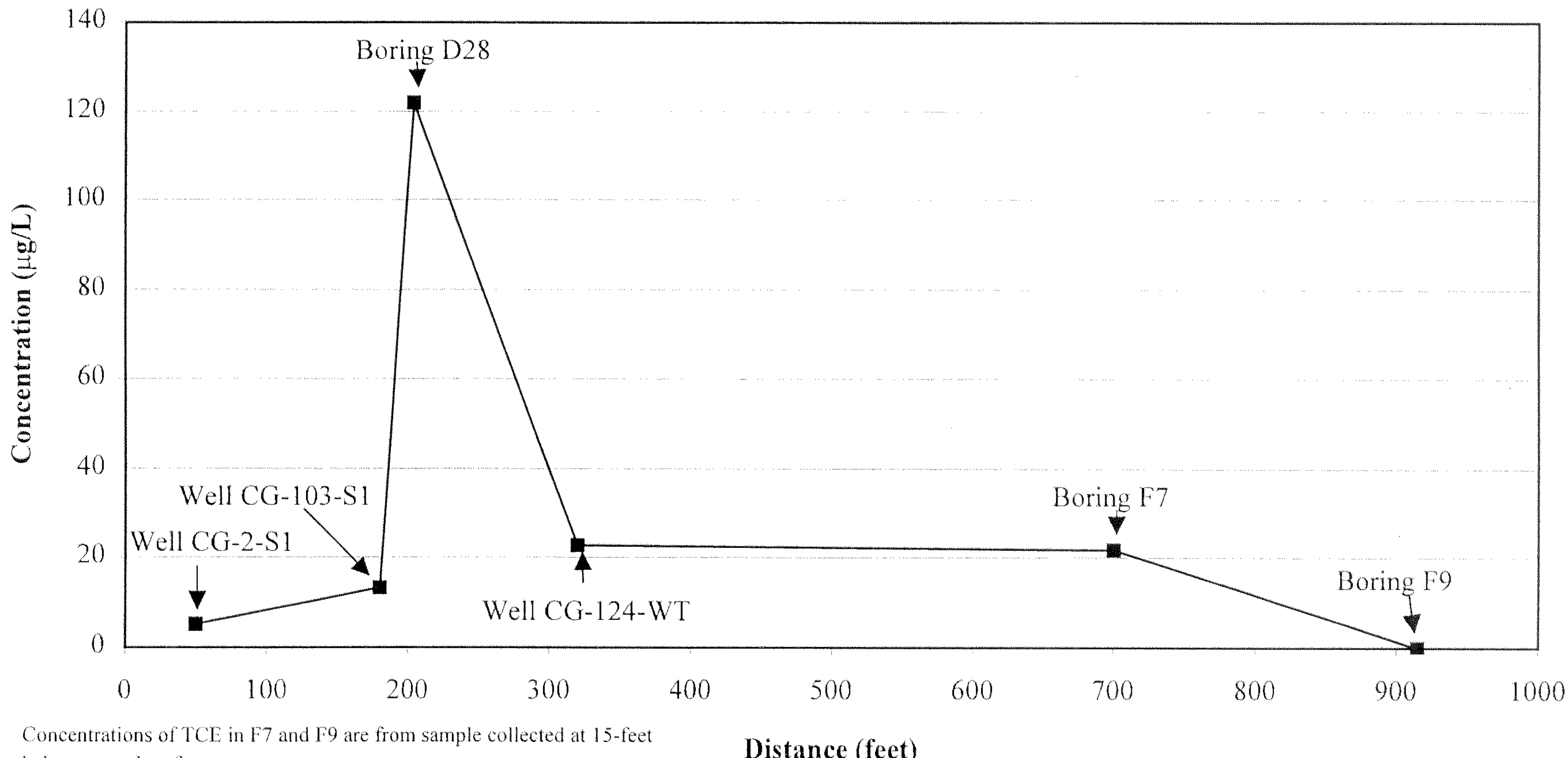


Figure 9D-9
TCE
Trend Line D
Water Table Sample Interval



Concentrations of TCE in F7 and F9 are from sample collected at 15-feet below ground surface

Figure 9D-10
TCE
Trend Line B
Shallow Sample Interval

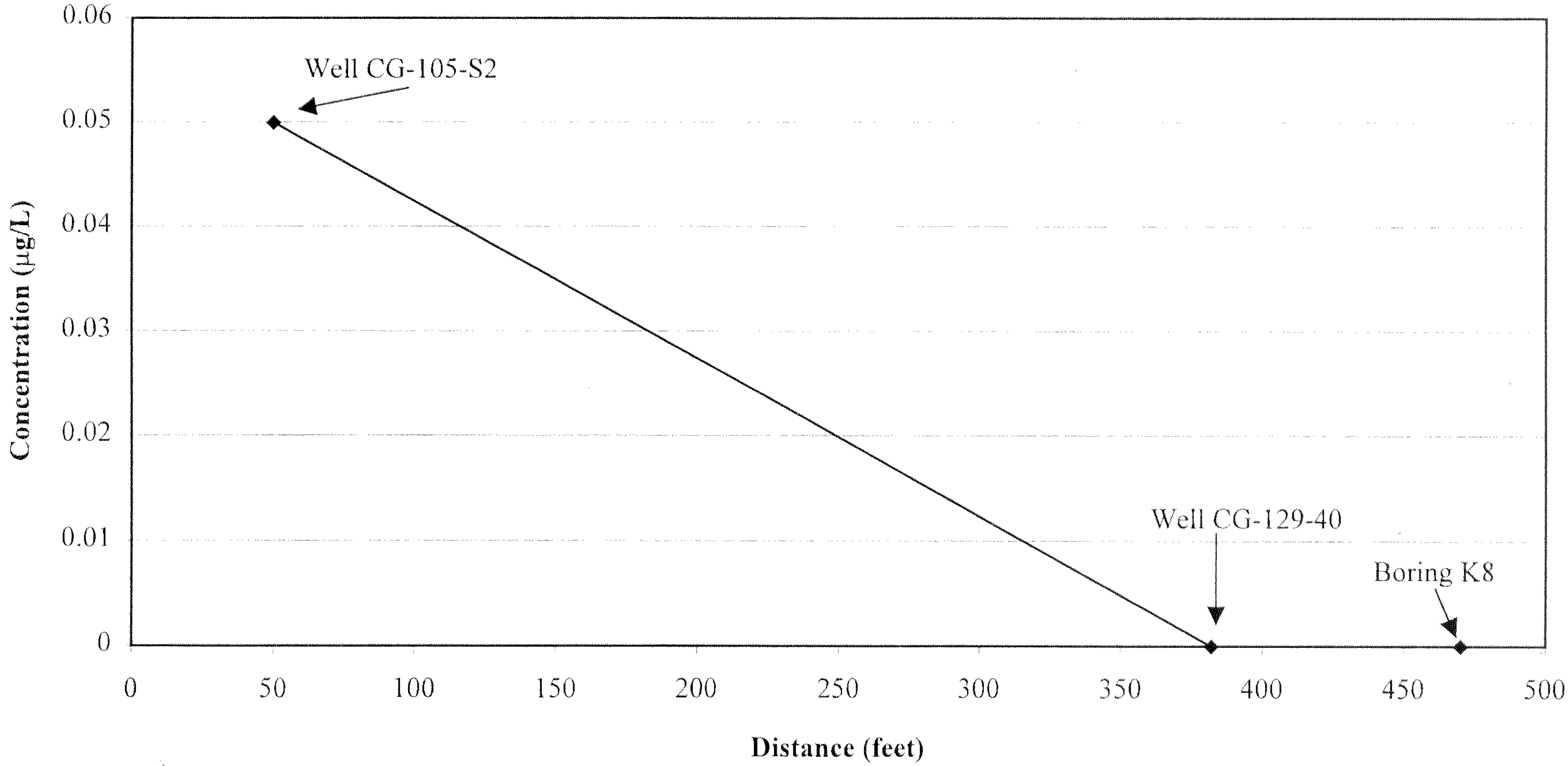


Figure 9D-11
TCE
Trend Line C
Shallow Sample Interval

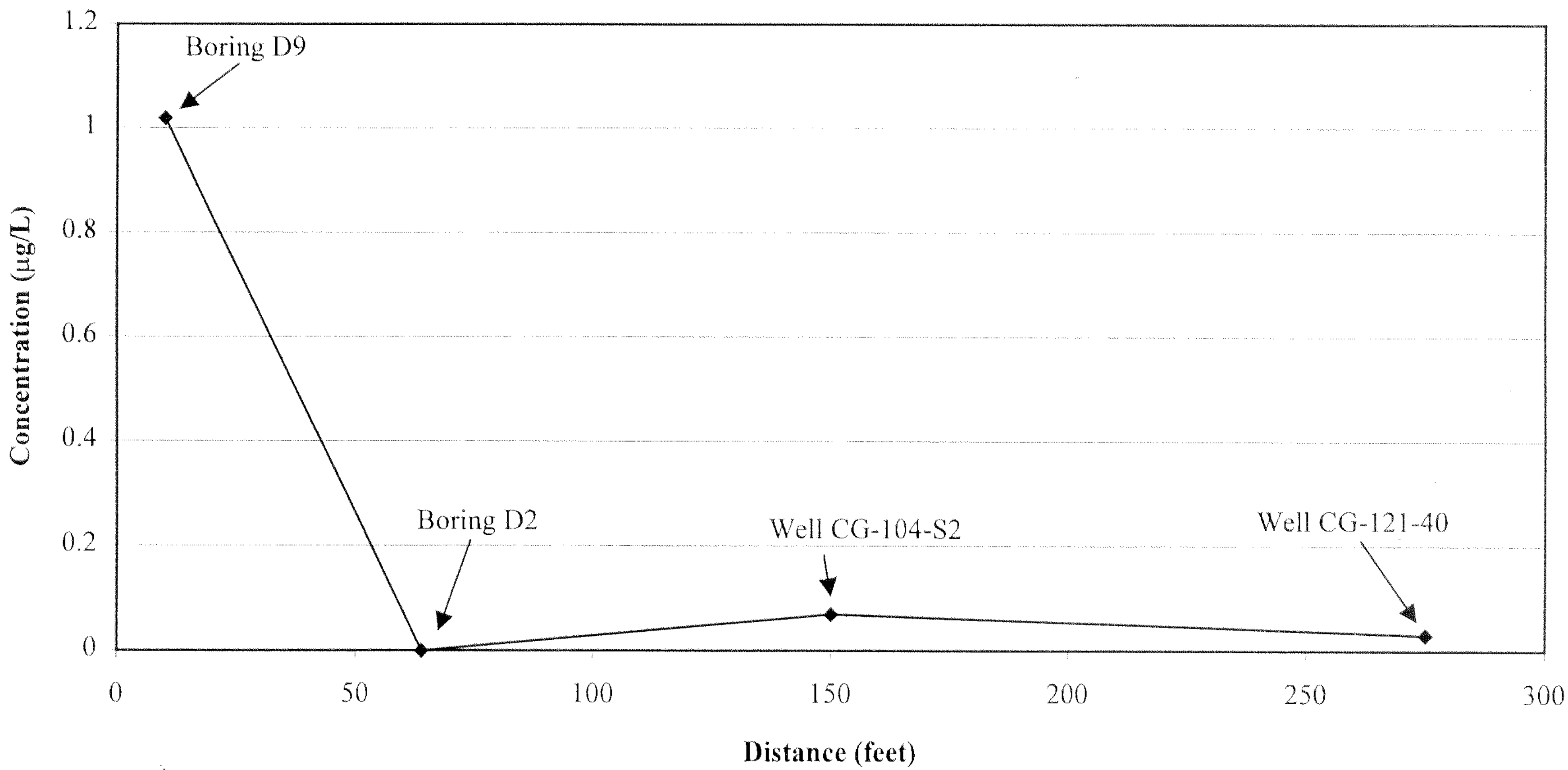


Figure 9D-12
TCE
Trend Line D
Shallow Sample Interval

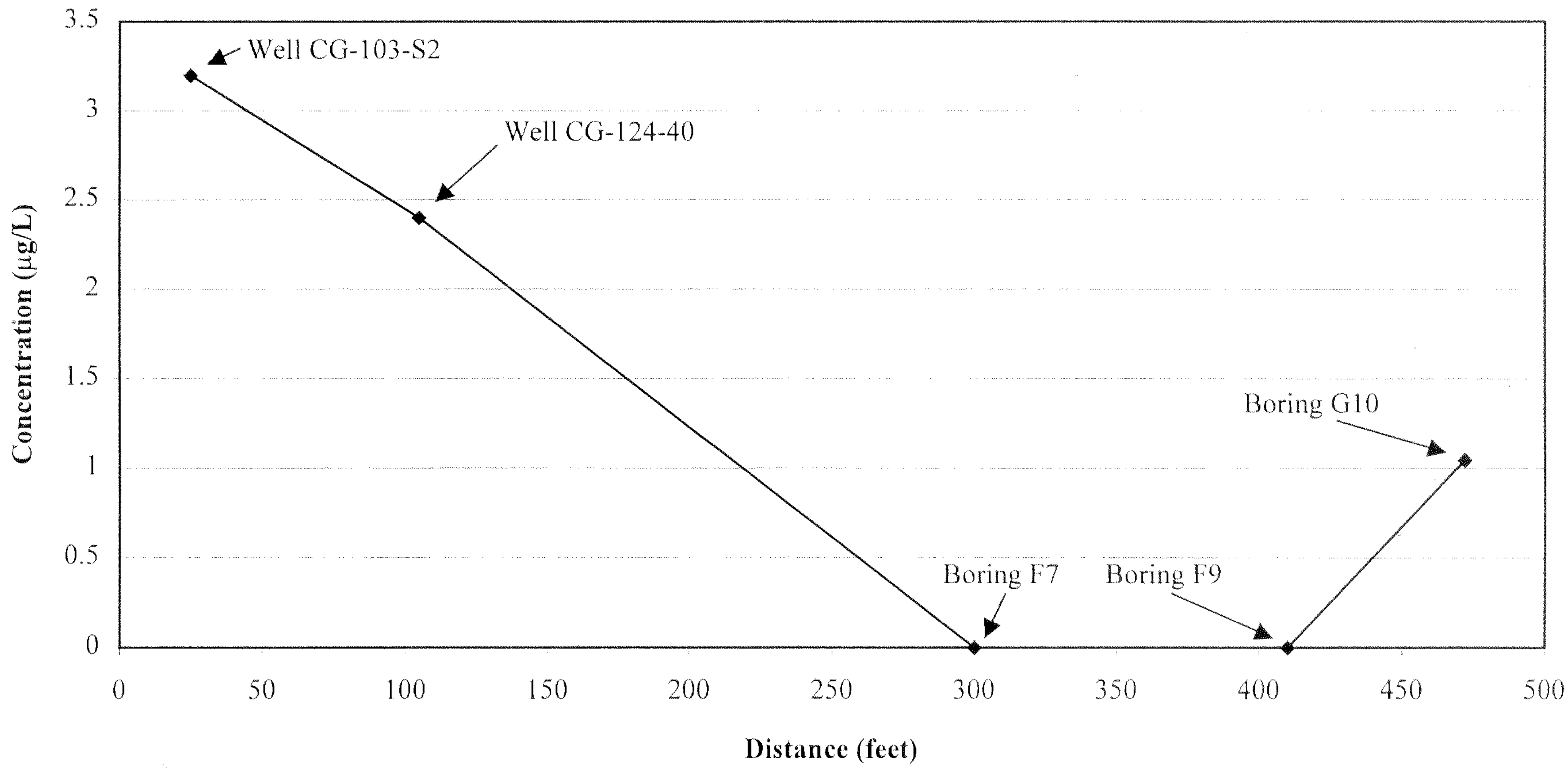


Figure 9D-12
TCE
Trend Line D
Shallow Sample Interval

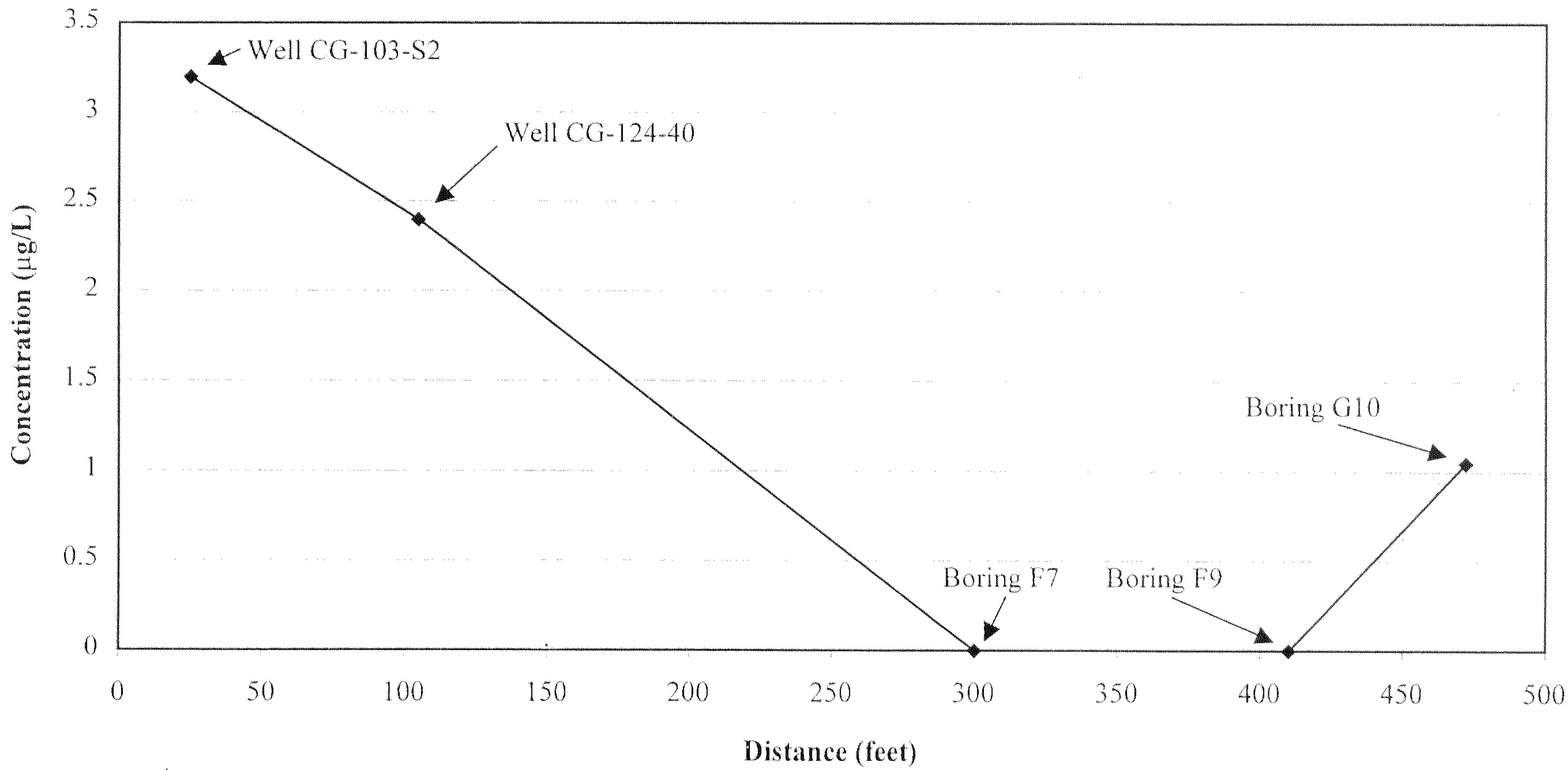


Figure 9D-13
TCE
Trend Line B
Intermediate Sample Interval

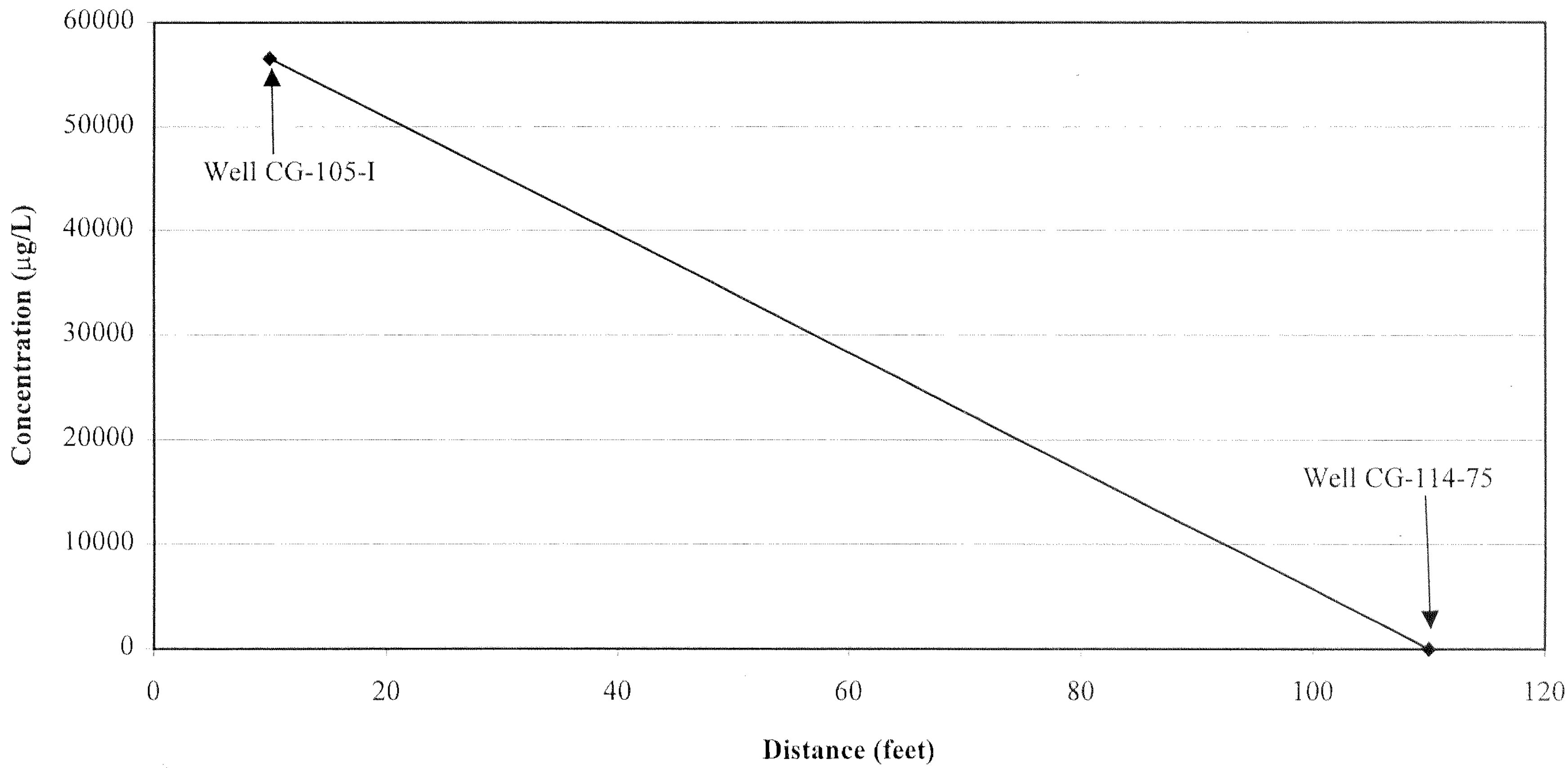


Figure 9D-14
TCE
Trend Line C
Intermediate Sample Interval

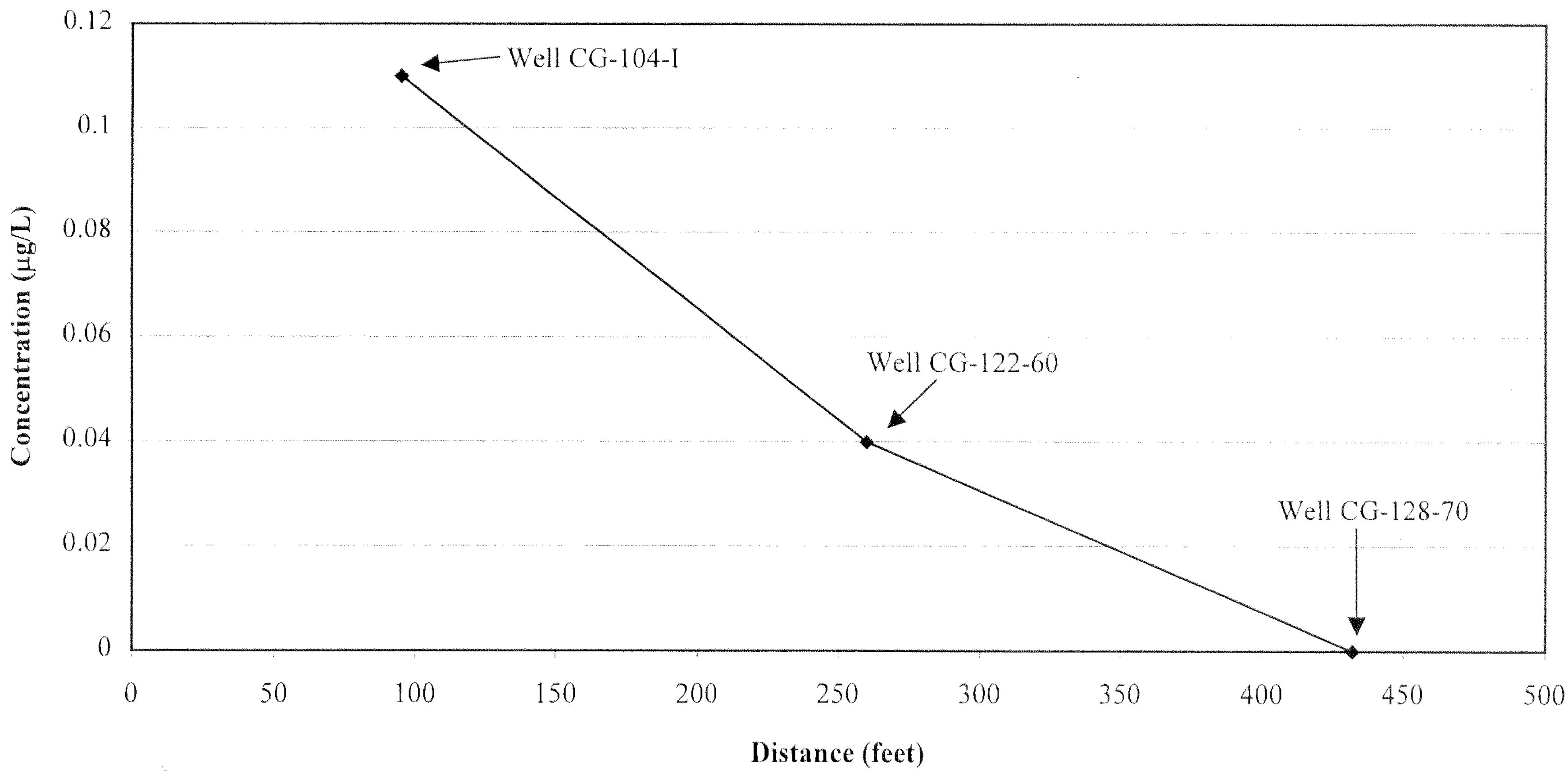


Figure 9D-15
TCE
Trend Line D
Intermediate Sample Interval

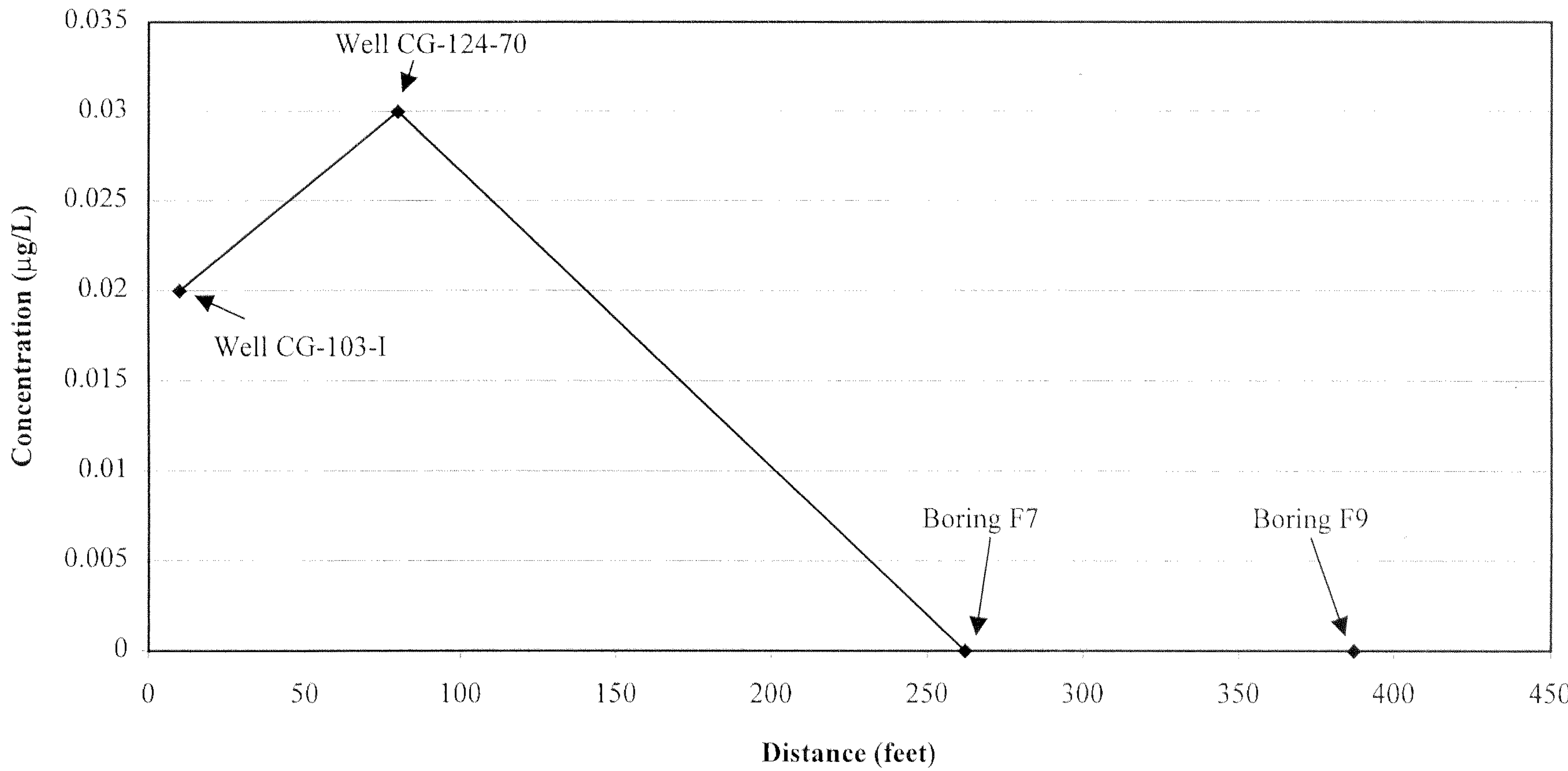


Figure 9D-16
Cis-1,2-DCE
Trend Line B
Water Table Sample Interval

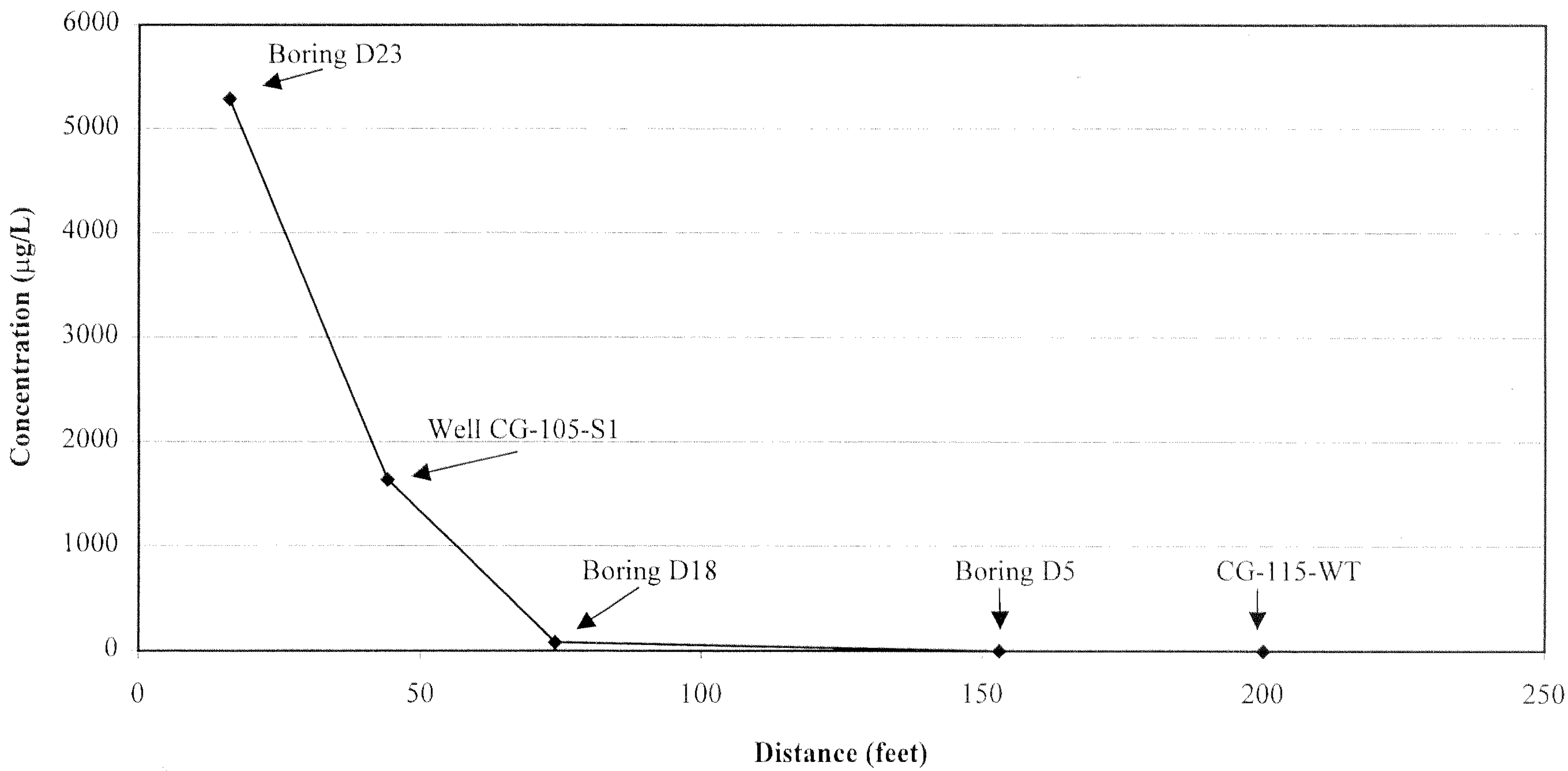


Figure 9D-17
Cis-1,2-DCE
Trend Line C
Water Table Sample Interval

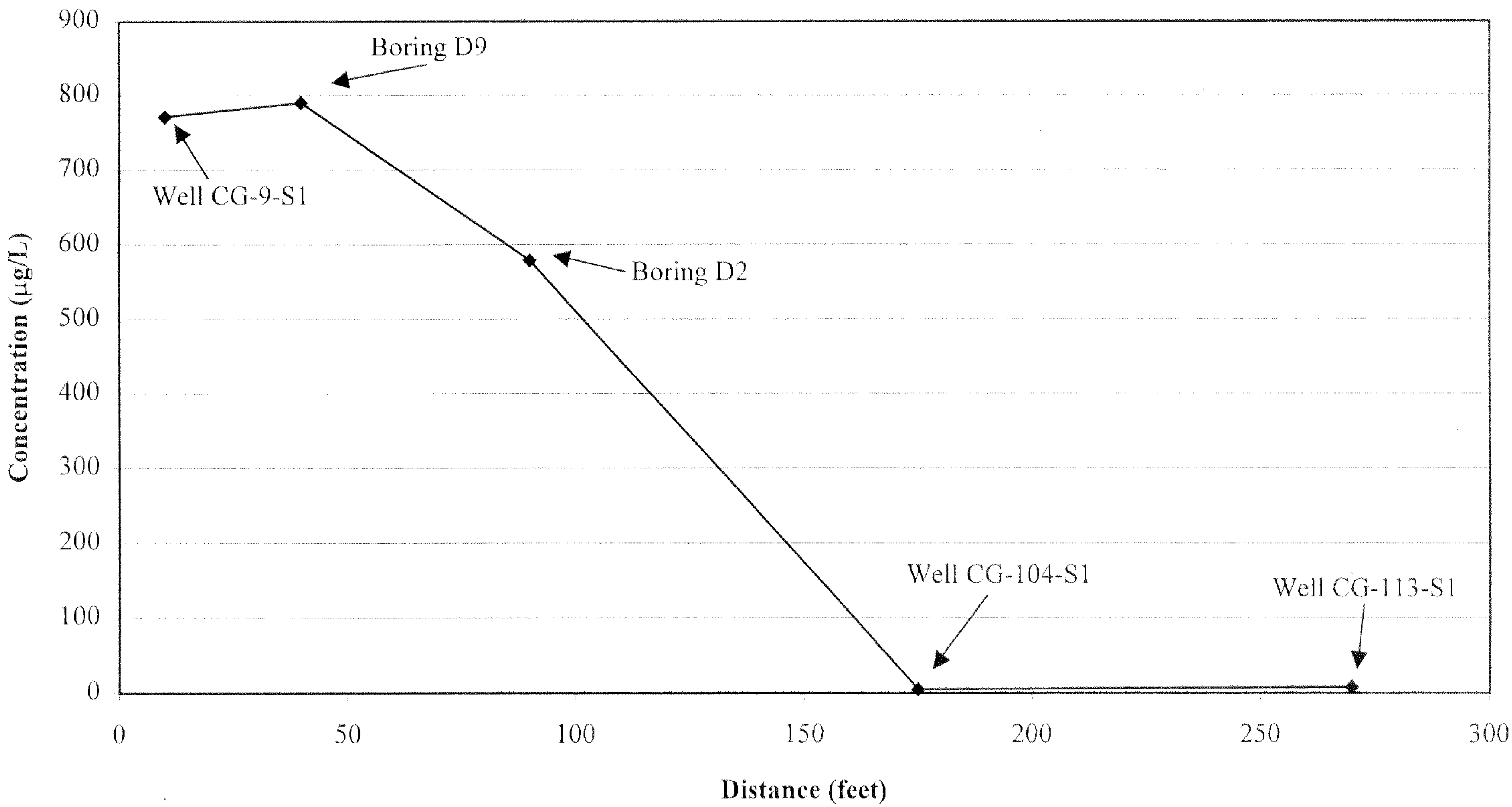


Figure 9D-18
Cis-1,2-DCE
Trend Line D
Water Table Sample Interval

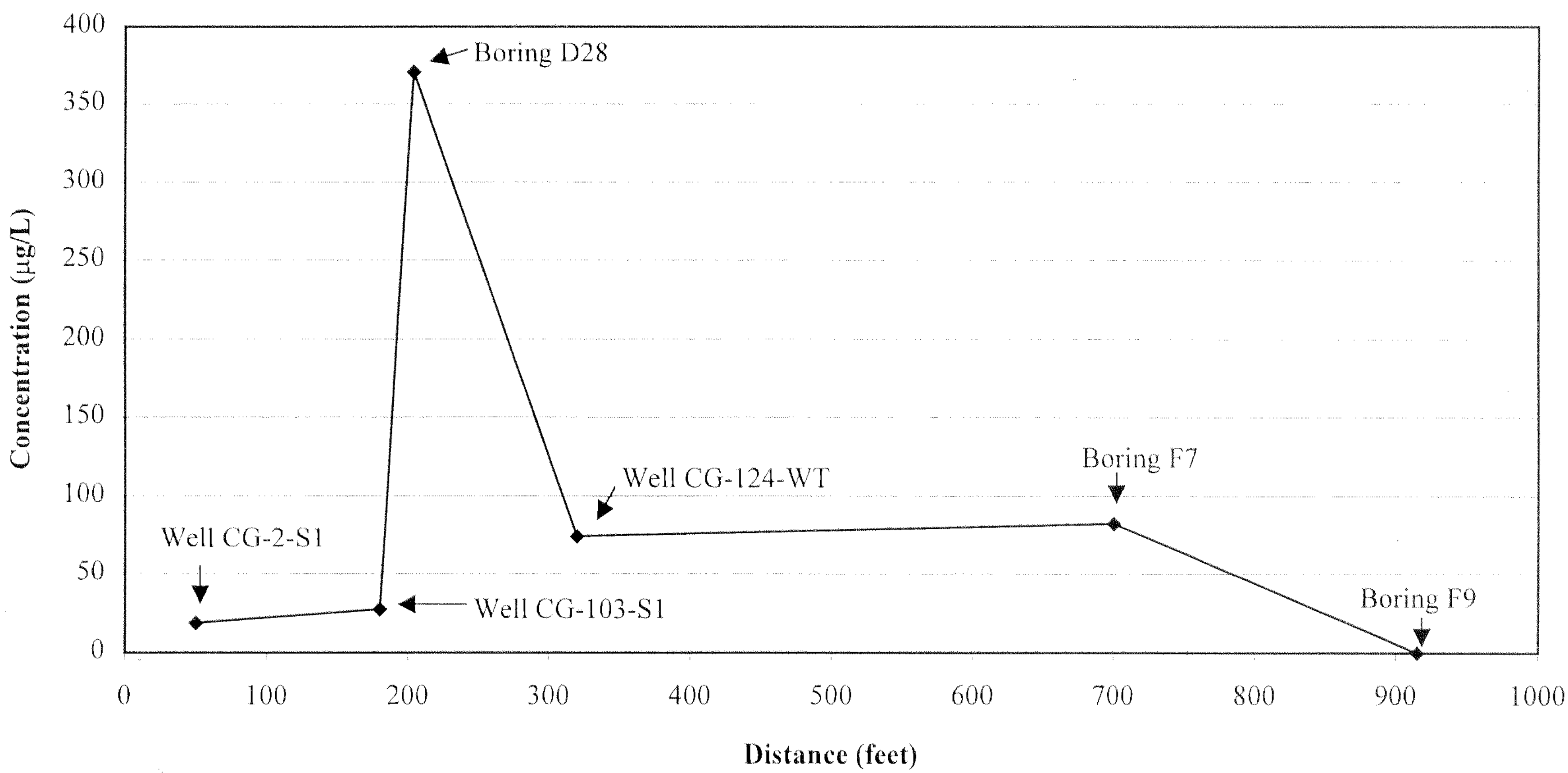


Figure 9D-19
Cis-1,2-DCE
Trend Line B
Shallow Sample Interval

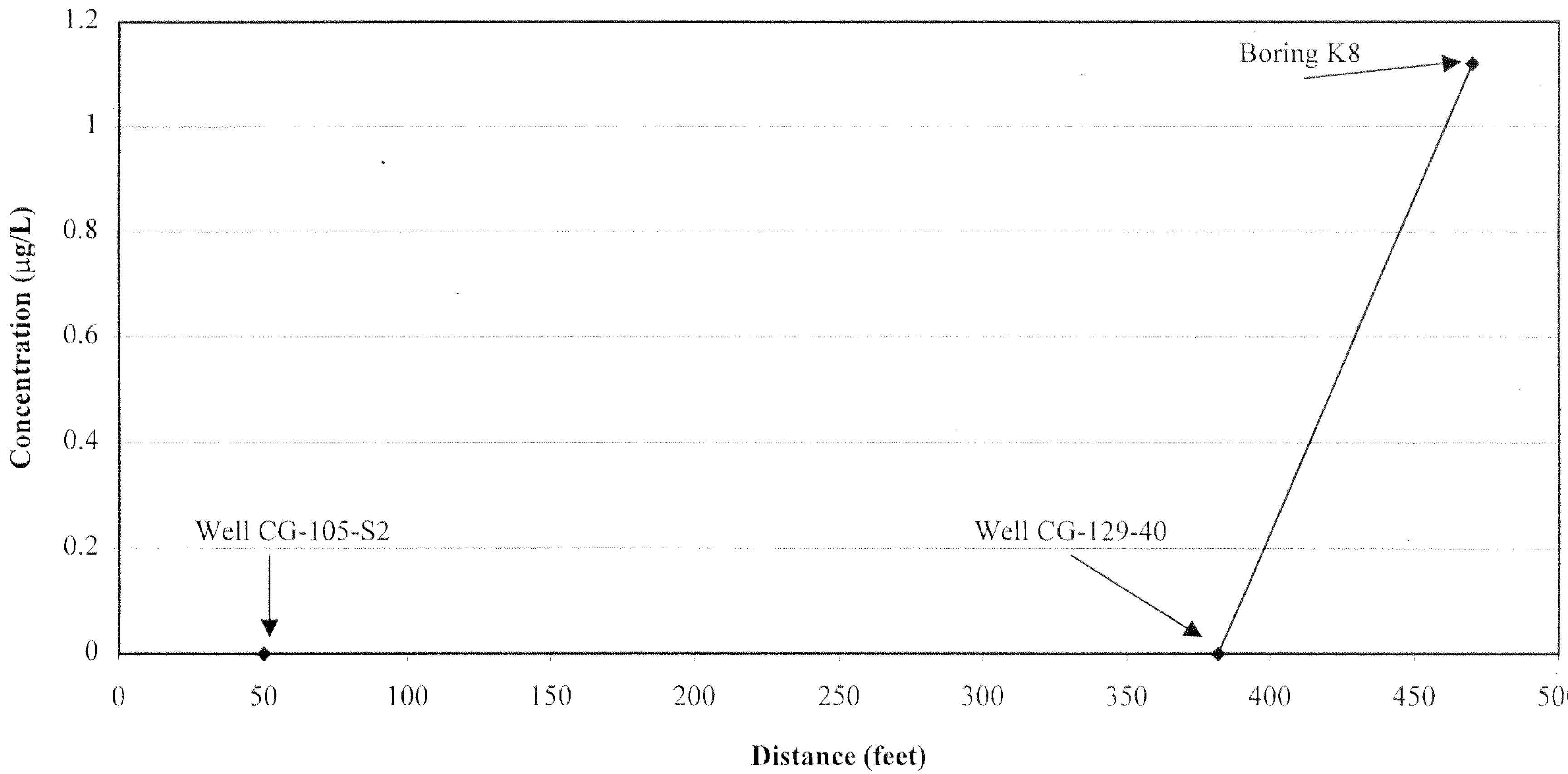


Figure 9D-20
Cis-1,2-DCE
Trend Line C
Shallow Sample Interval

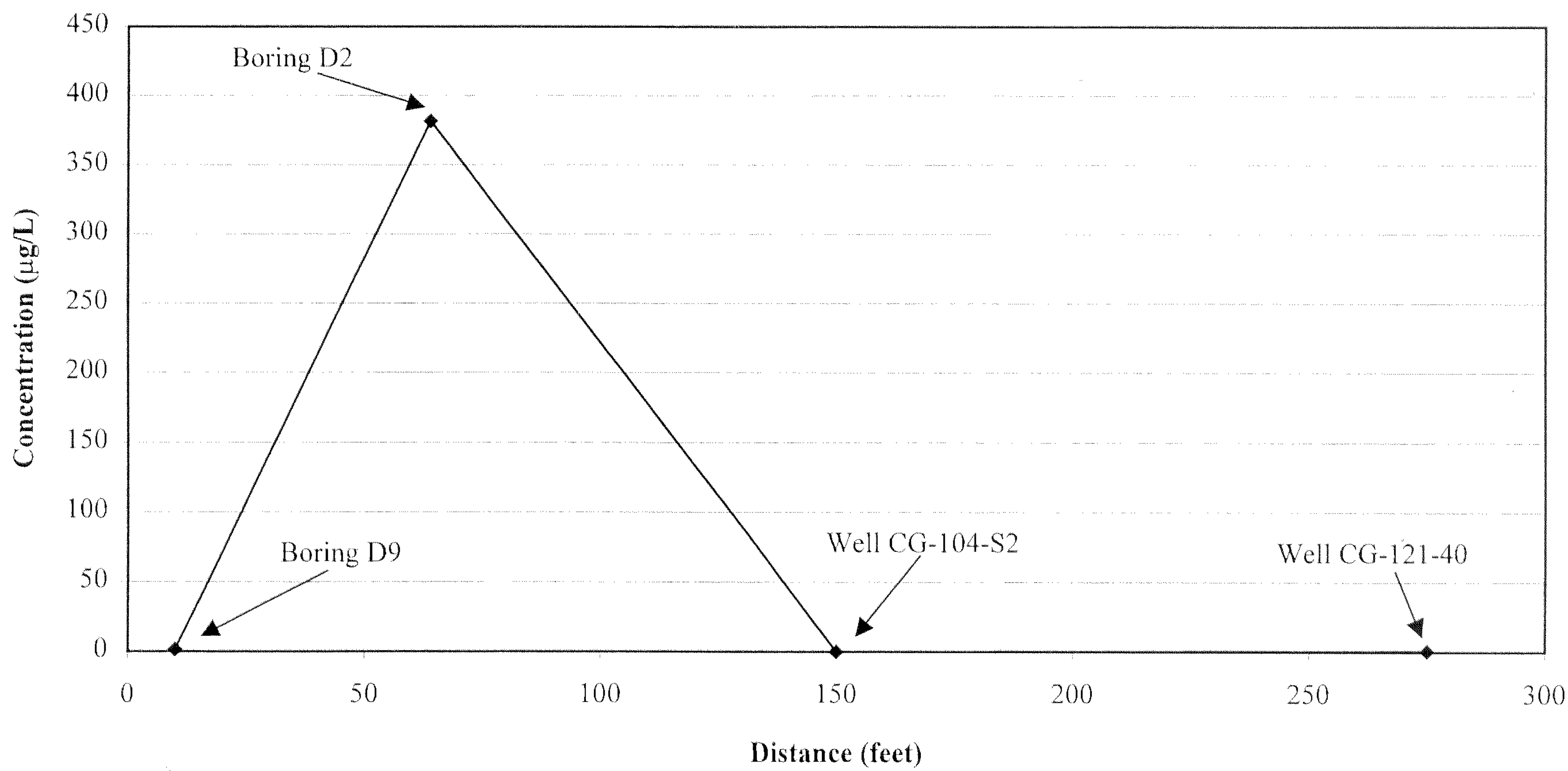


Figure 9D-21
Cis-1,2-DCE
Trend Line D
Shallow Sample Interval

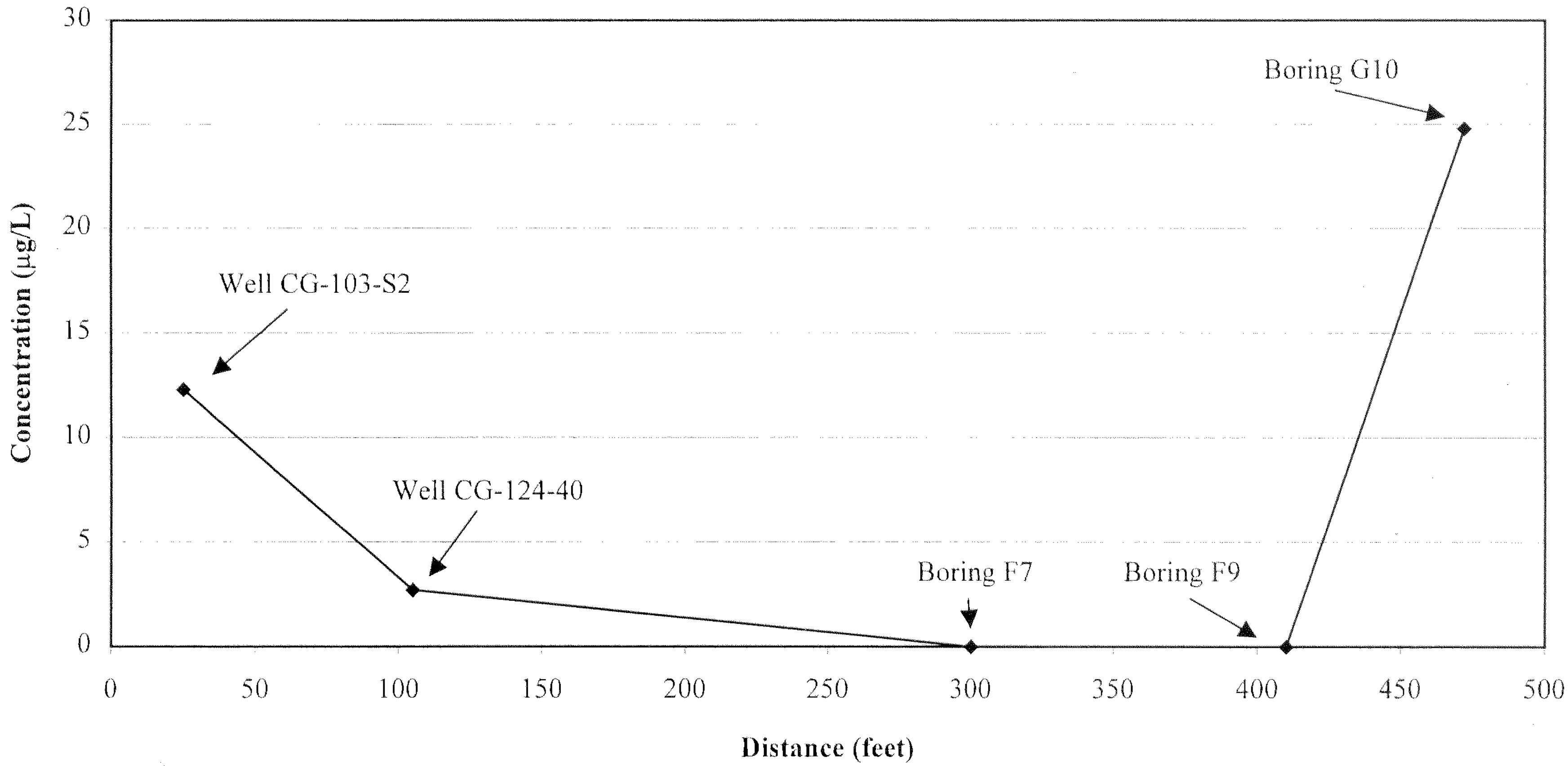


Figure 9D-22
Cis-1,2-DCE
Trend Line B
Intermediate Sample Interval

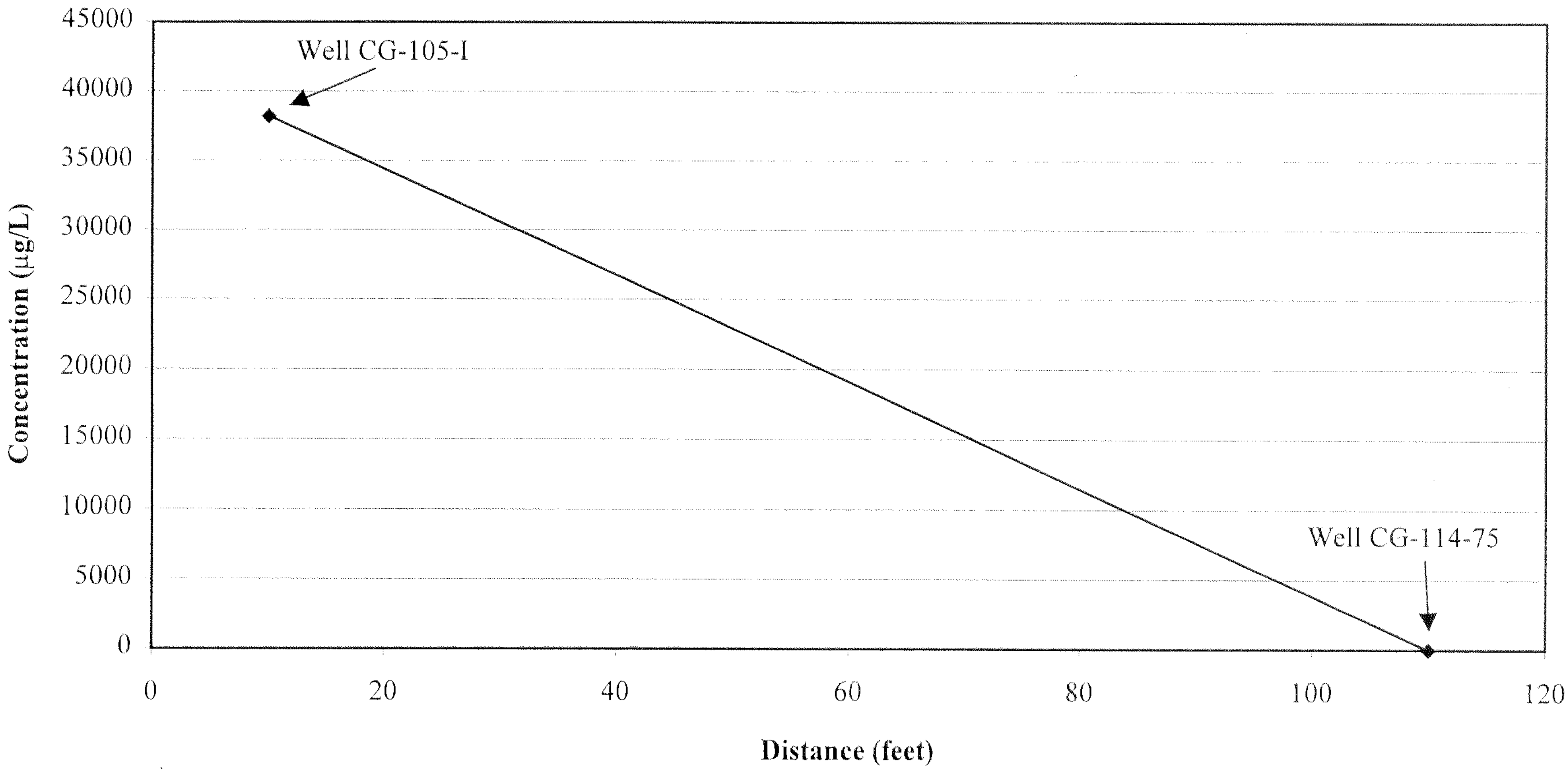


Figure 9D-23
Cis-1,2-DCE
Trend Line C
Intermediate Sample Interval

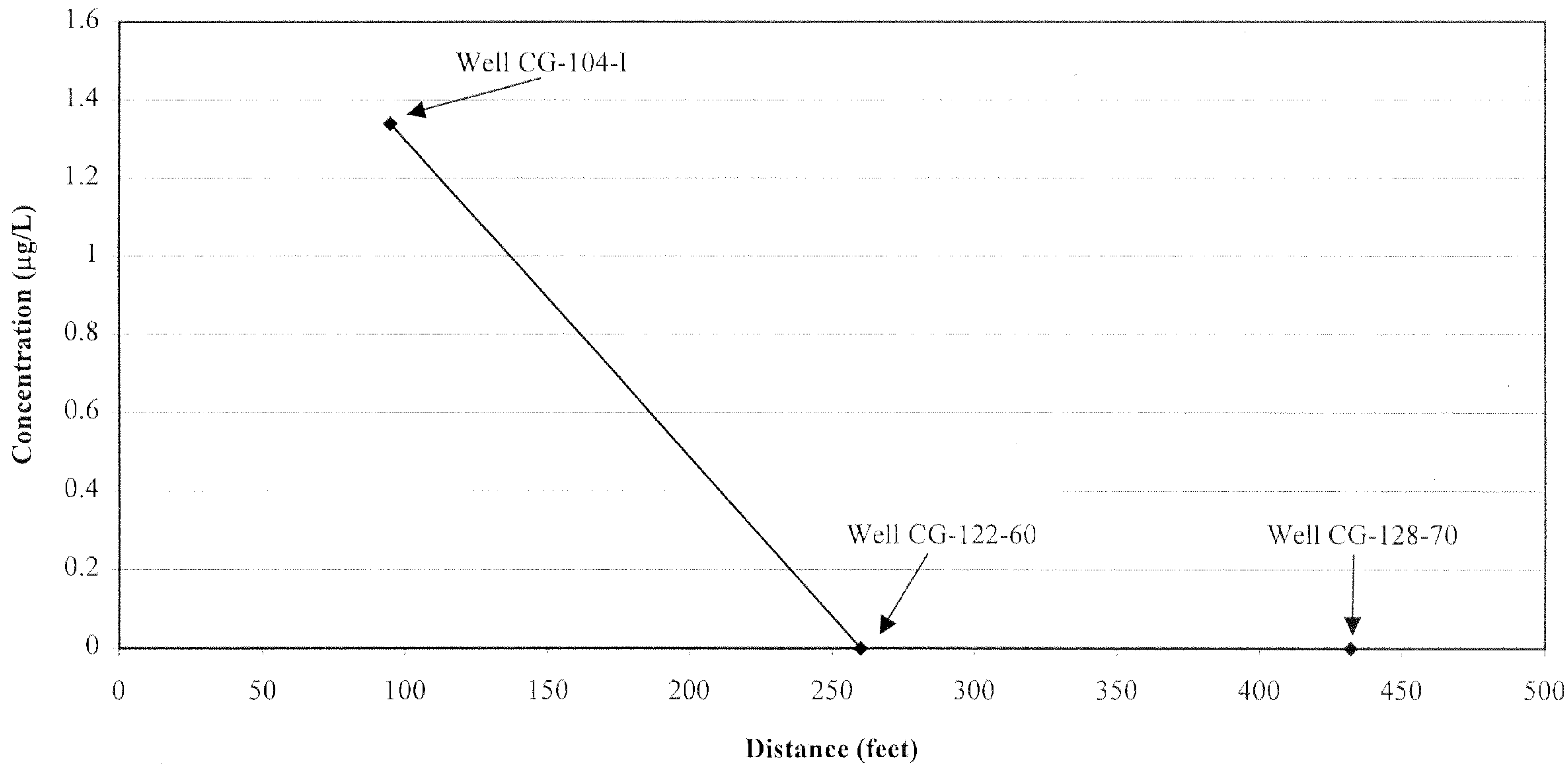


Figure 9D-24
Vinyl Chloride
Trend Line B
Water Table Sample Interval

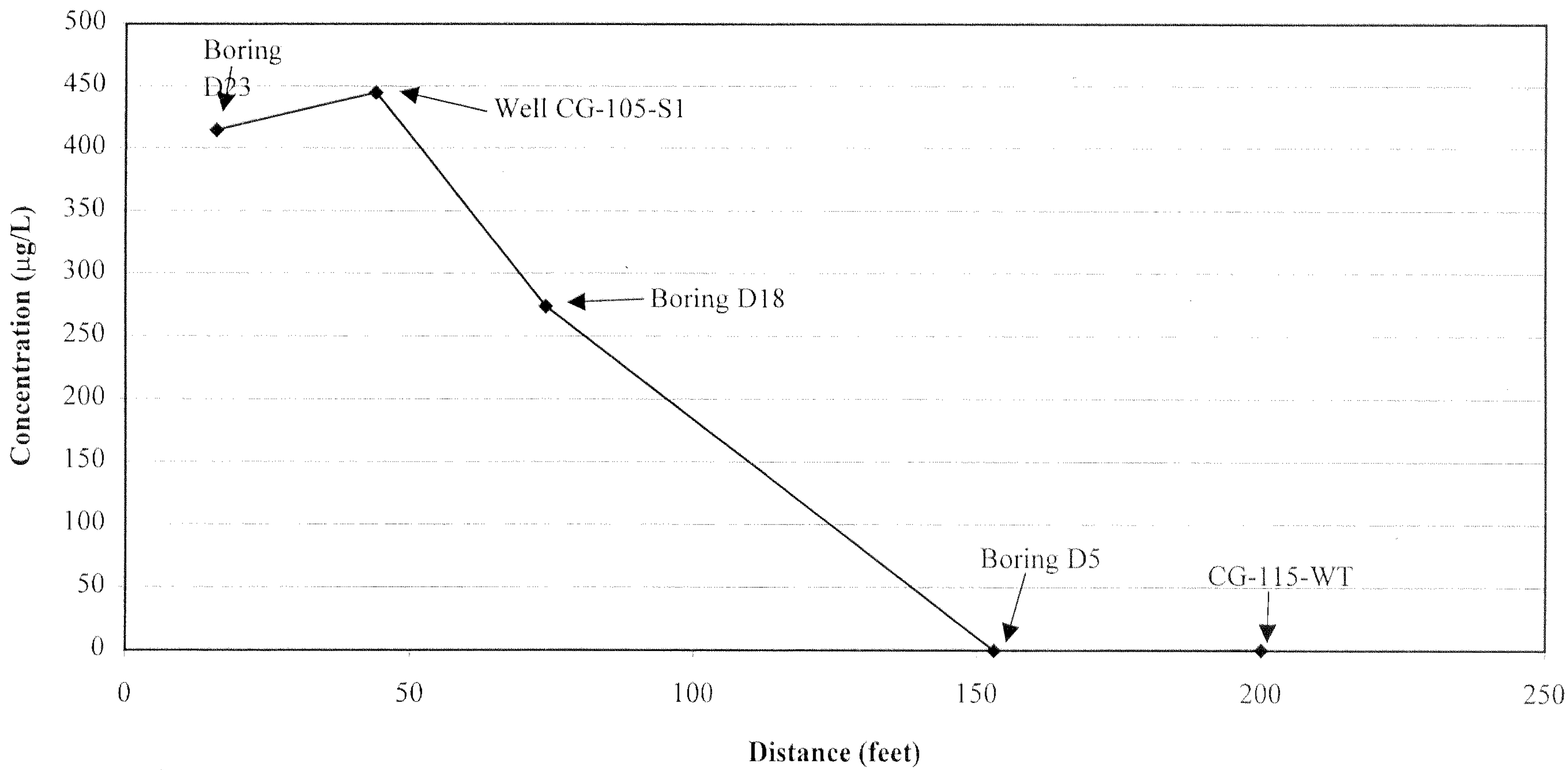


Figure 9D-25
Vinyl Chloride
Trend Line C
Water Table Sample Interval

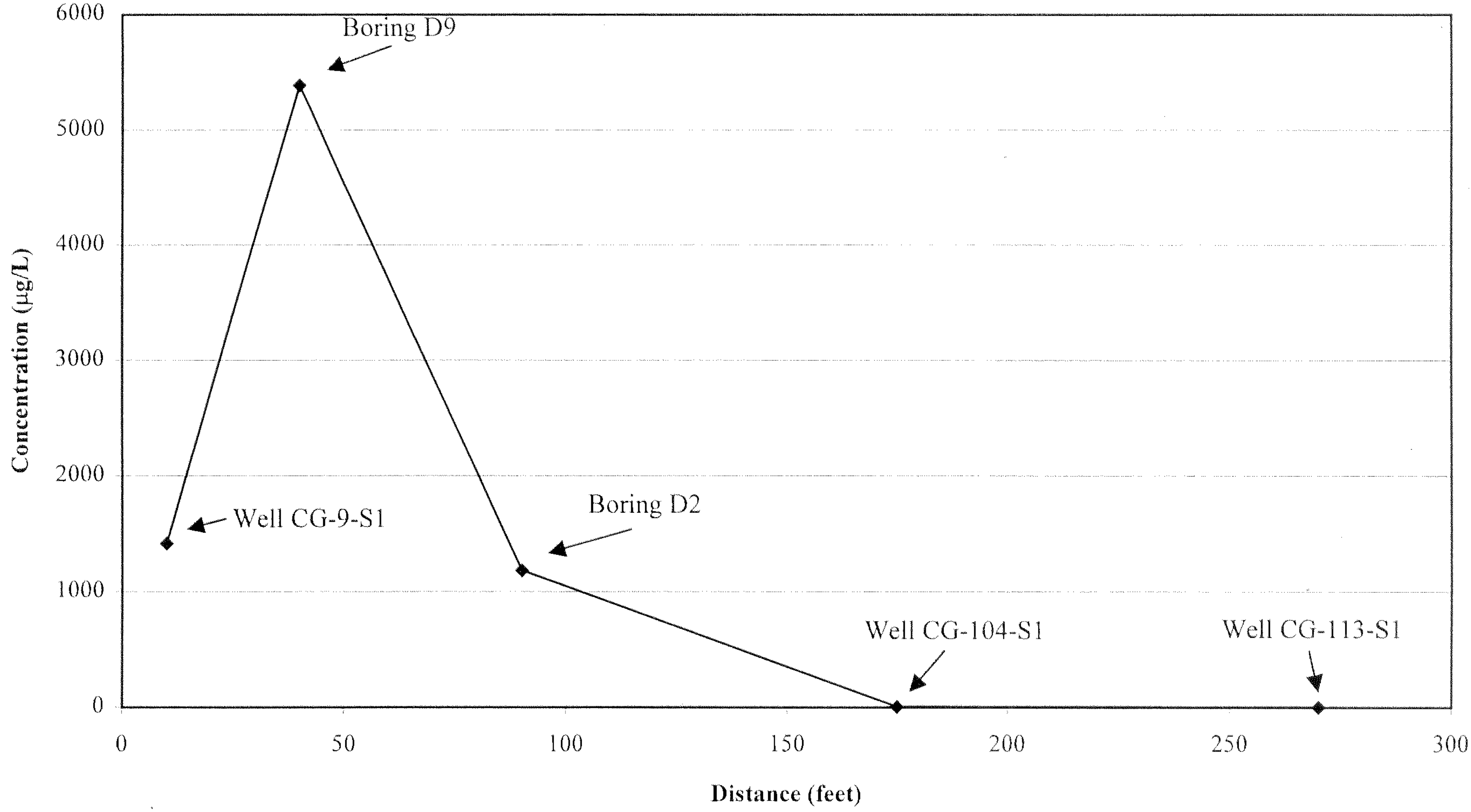


Figure 9D-26
Vinyl Chloride
Trend Line D
Water Table Sample Interval

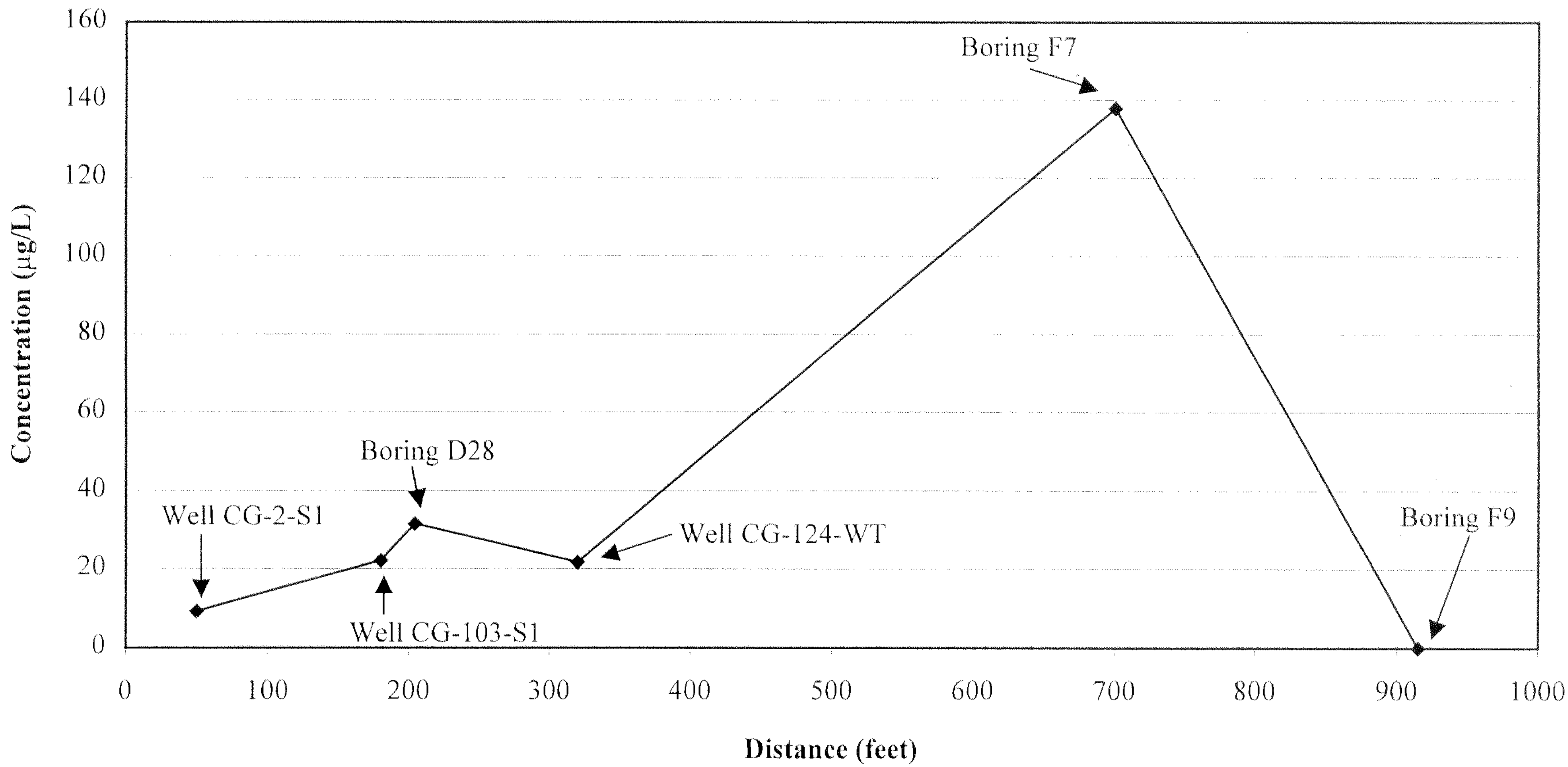


Figure 9D-27
Vinyl Chloride
Trend Line B
Shallow Sample Interval

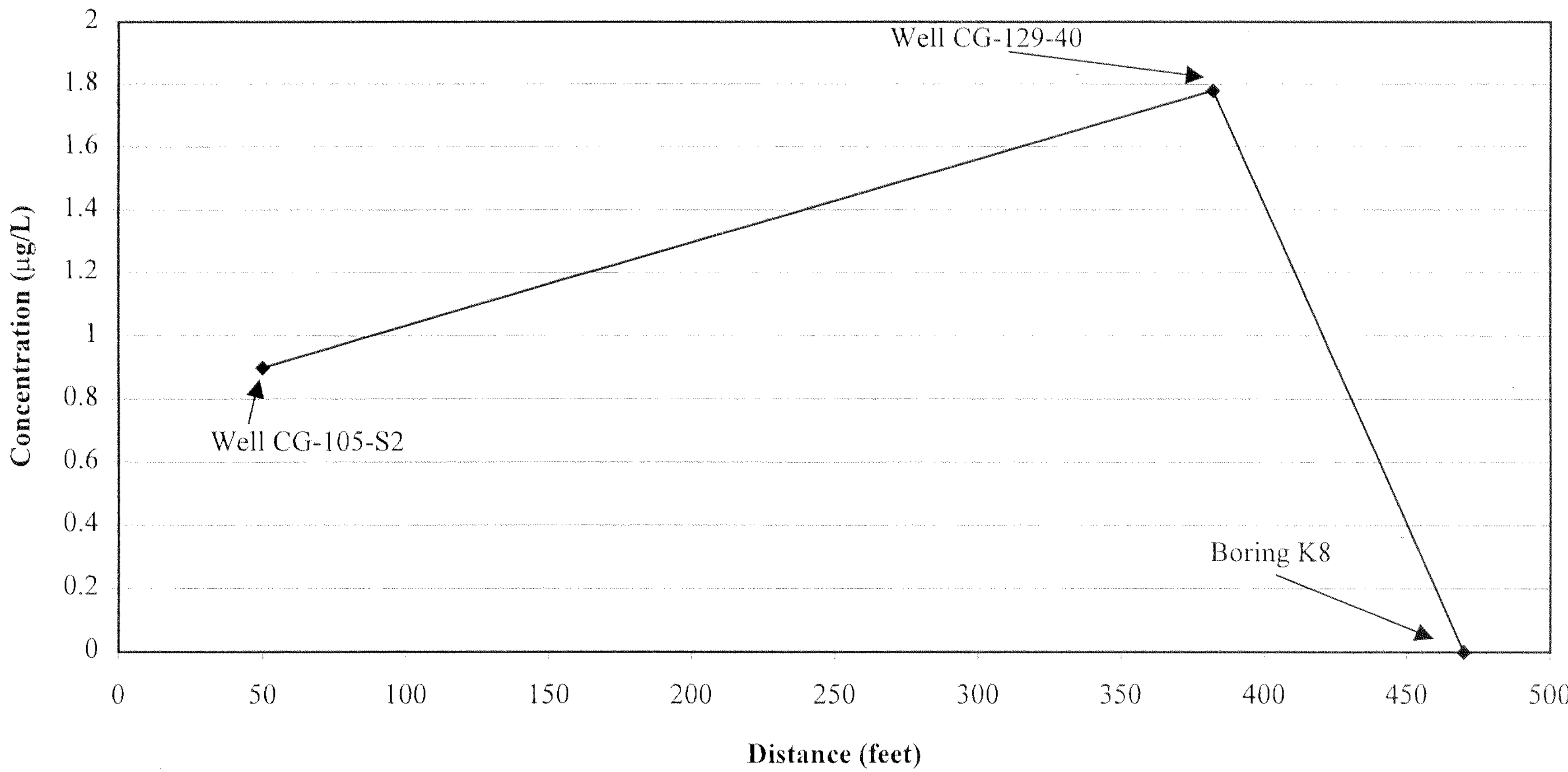


Figure 9D-28
Vinyl Chloride
Trend Line C
Shallow Sample Interval

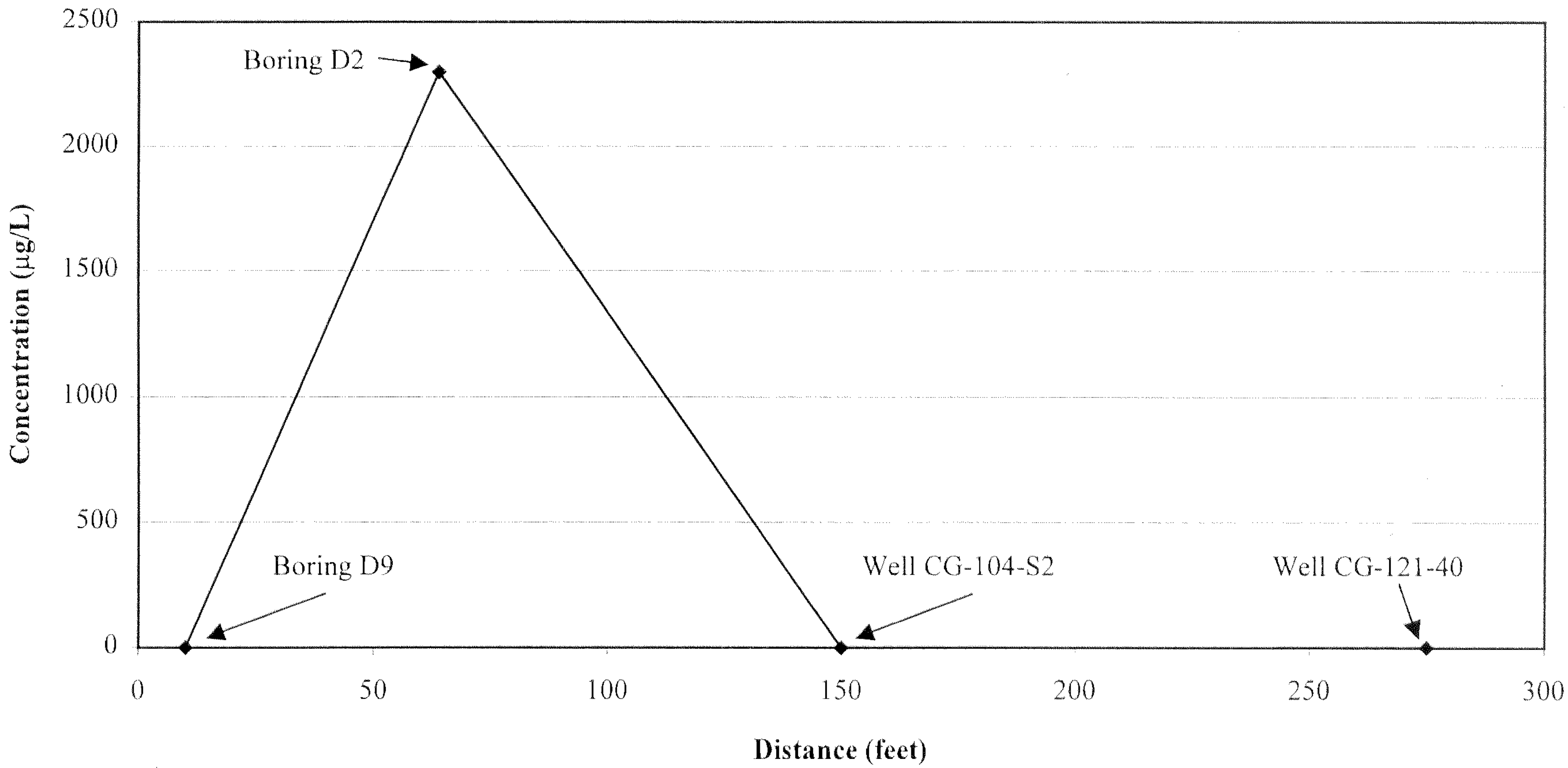


Figure 9D-29
Vinyl Chloride
Trend Line D
Shallow Sample Interval

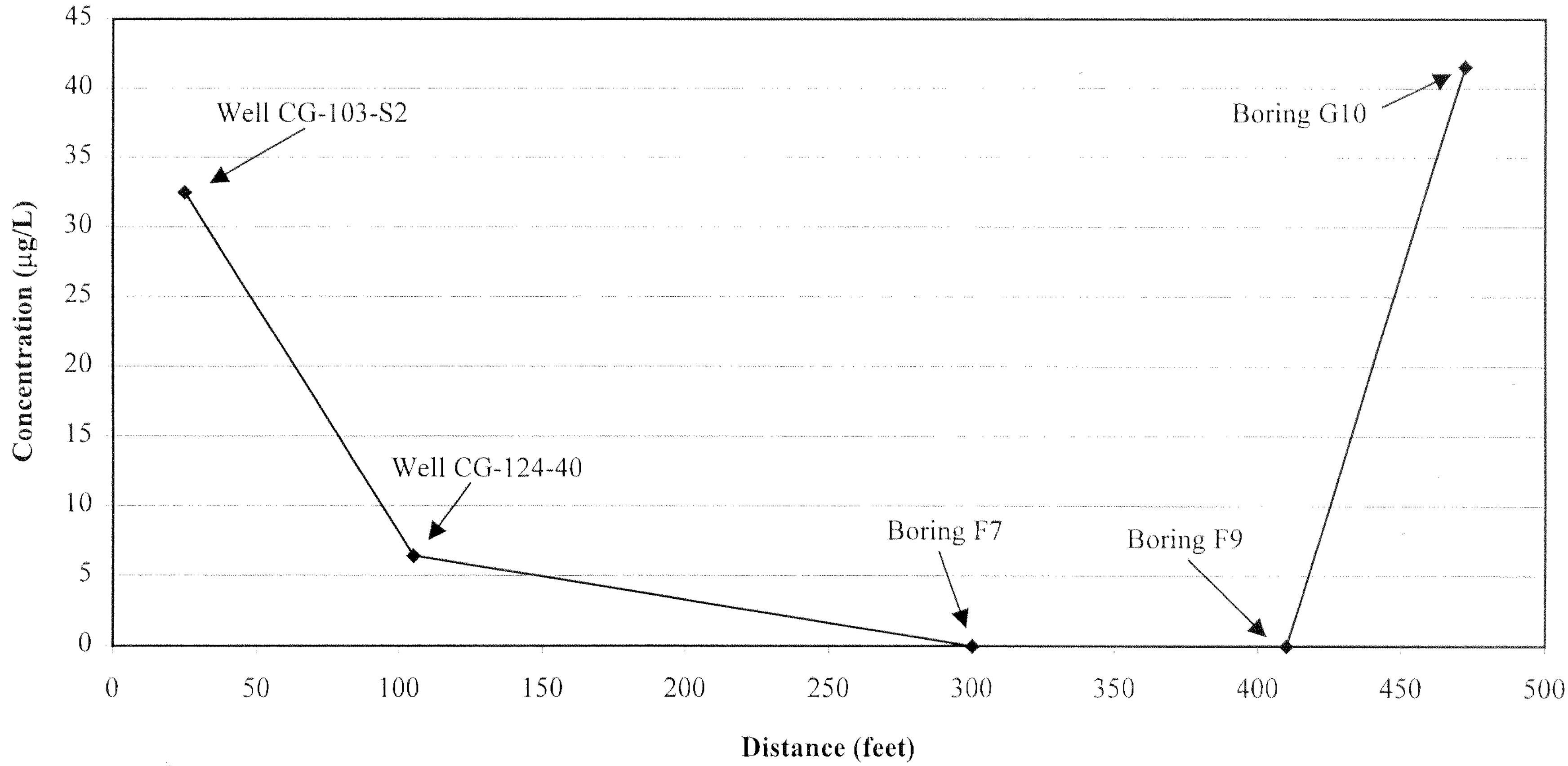


Figure 9D-30
Vinyl Chloride
Trend Line B
Intermediate Sample Interval

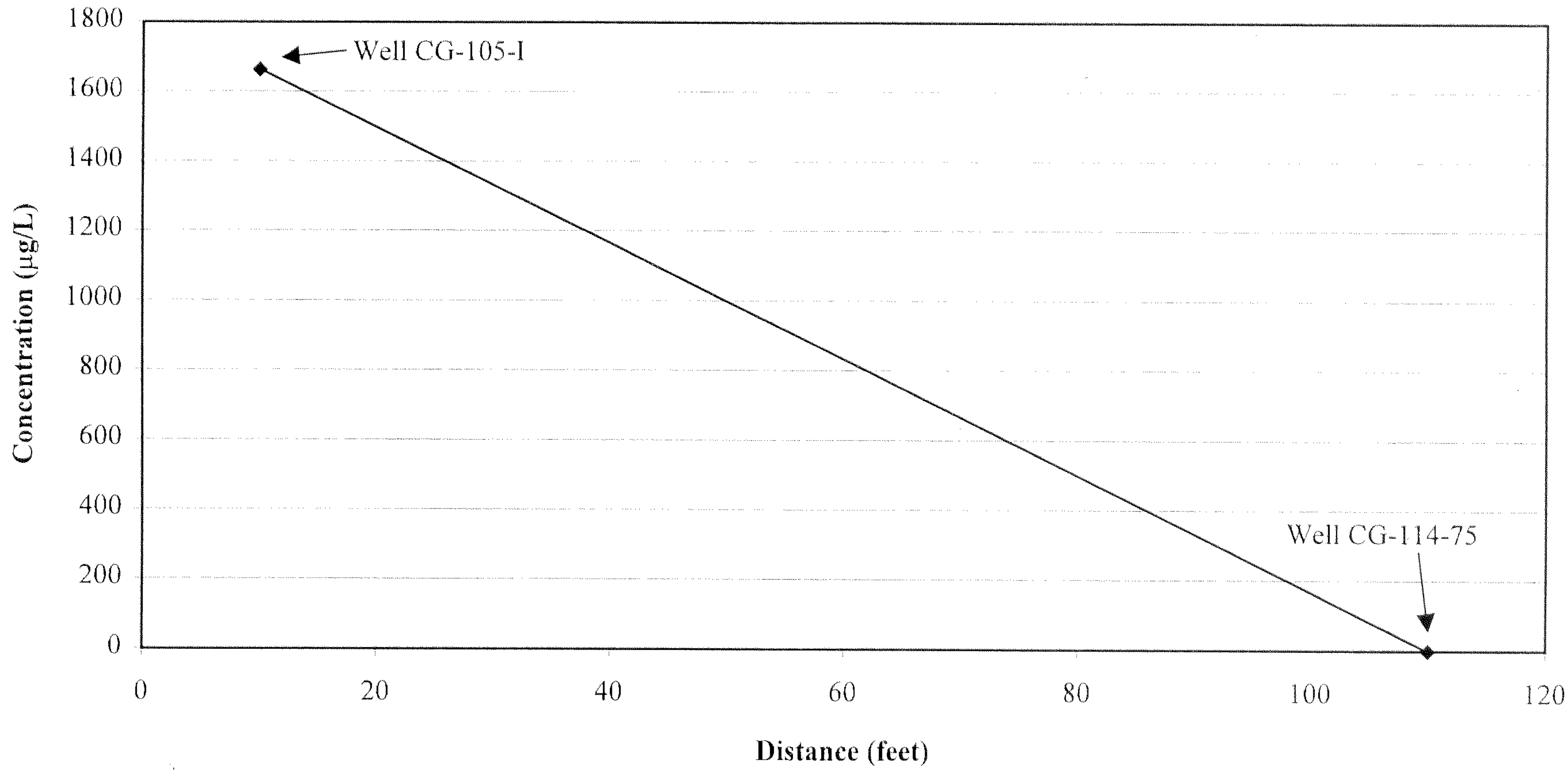


Figure 9D-31
Vinyl Chloride
Trend Line C
Intermediate Sample Interval

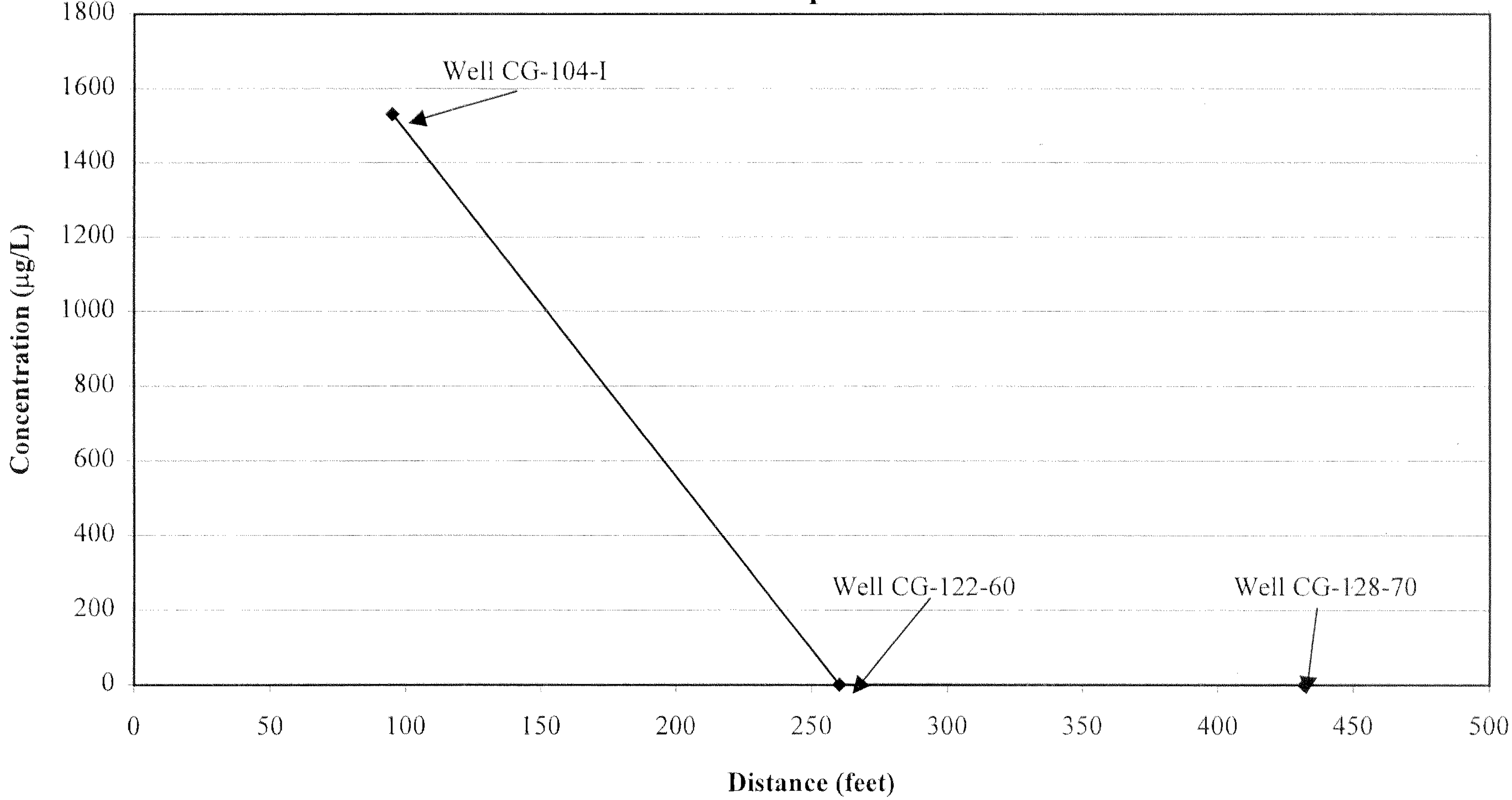


Figure 9D-32
Vinyl Chloride
Trend Line D
Intermediate Sample Interval

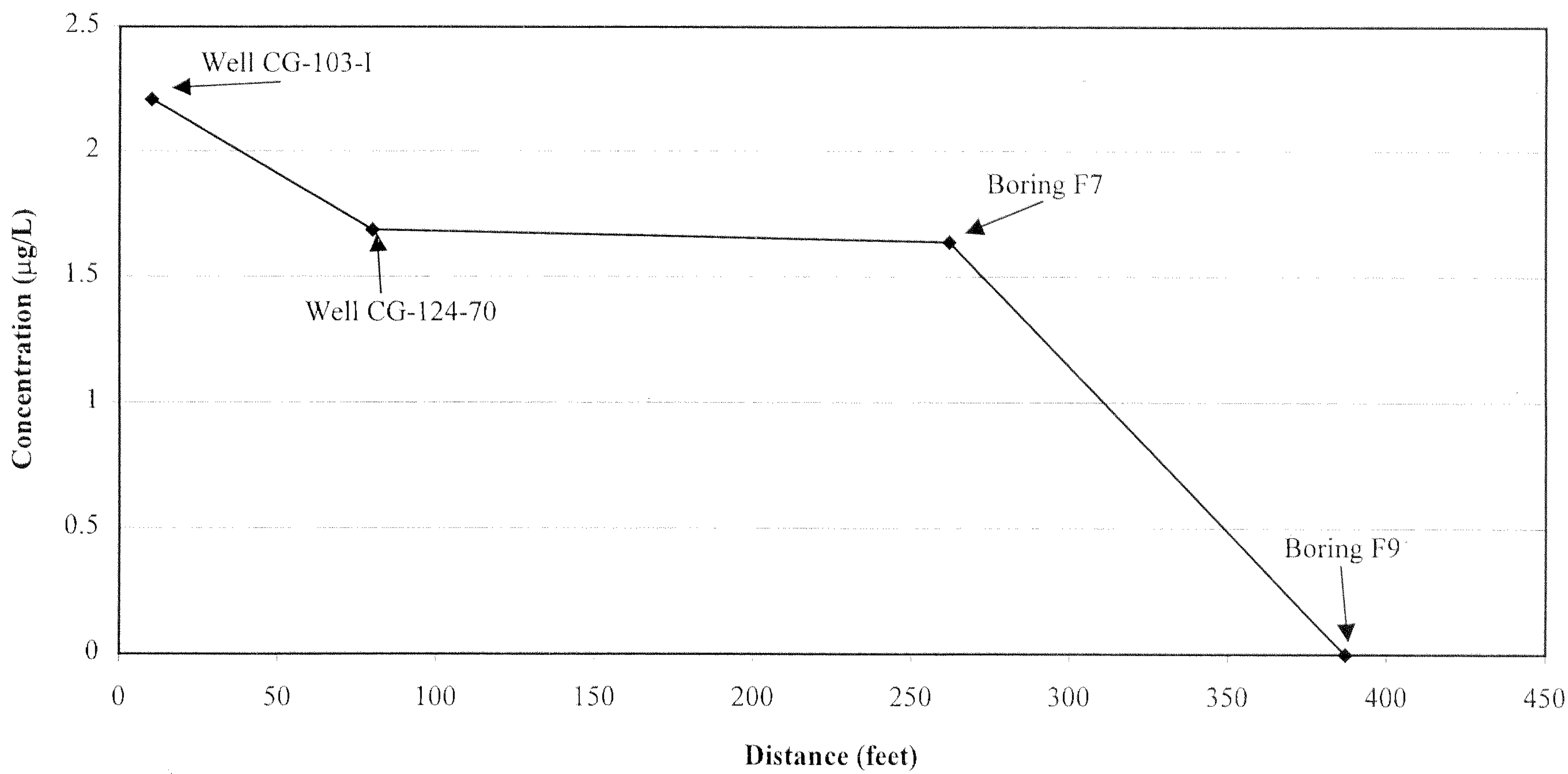


Figure 9D-33
Ethylbenzene
Trend Line B
Water Table Sample Interval

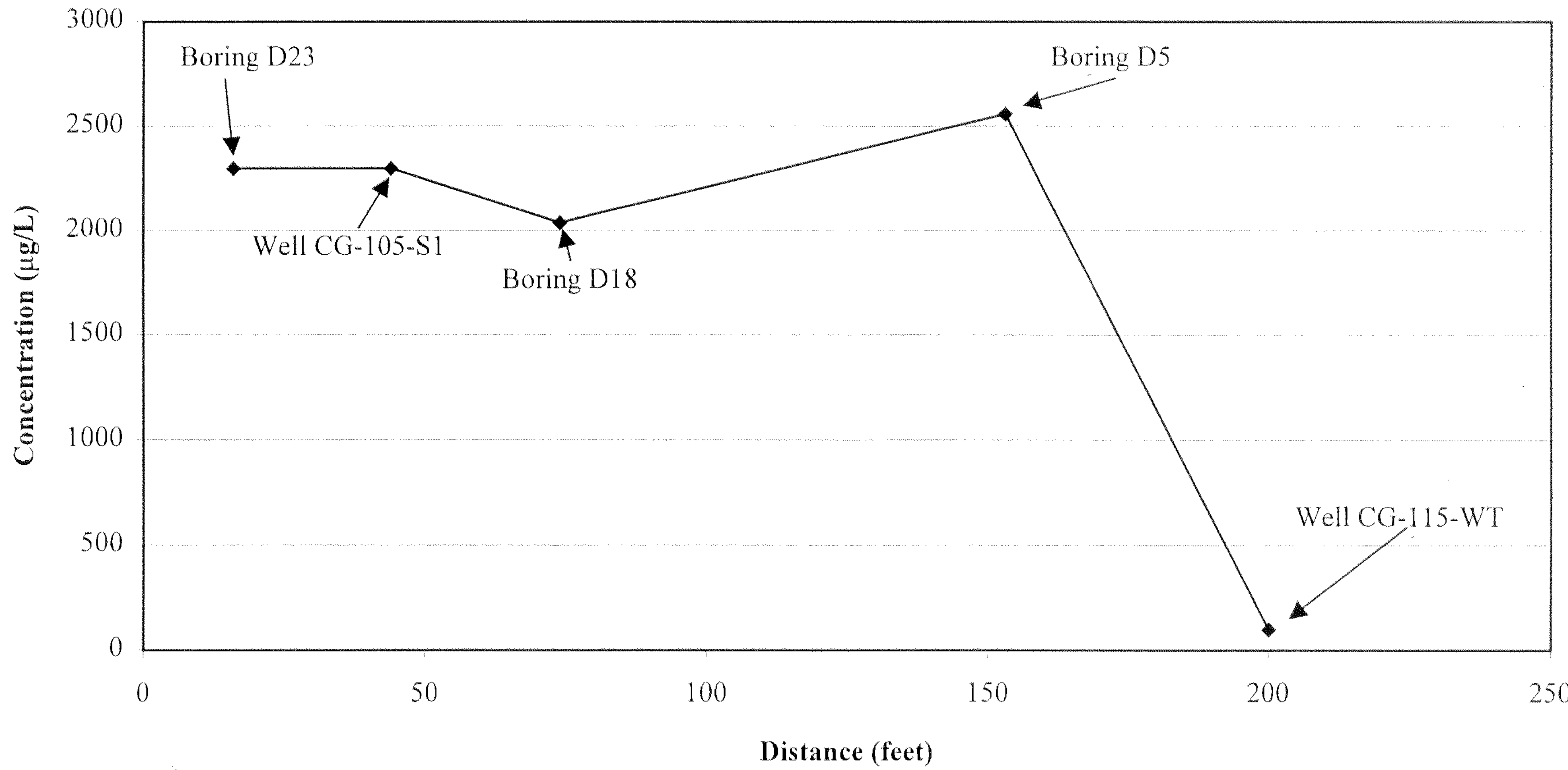


Figure 9D-34
Ethylbenzene
Trend Line C
Water Table Sample Interval

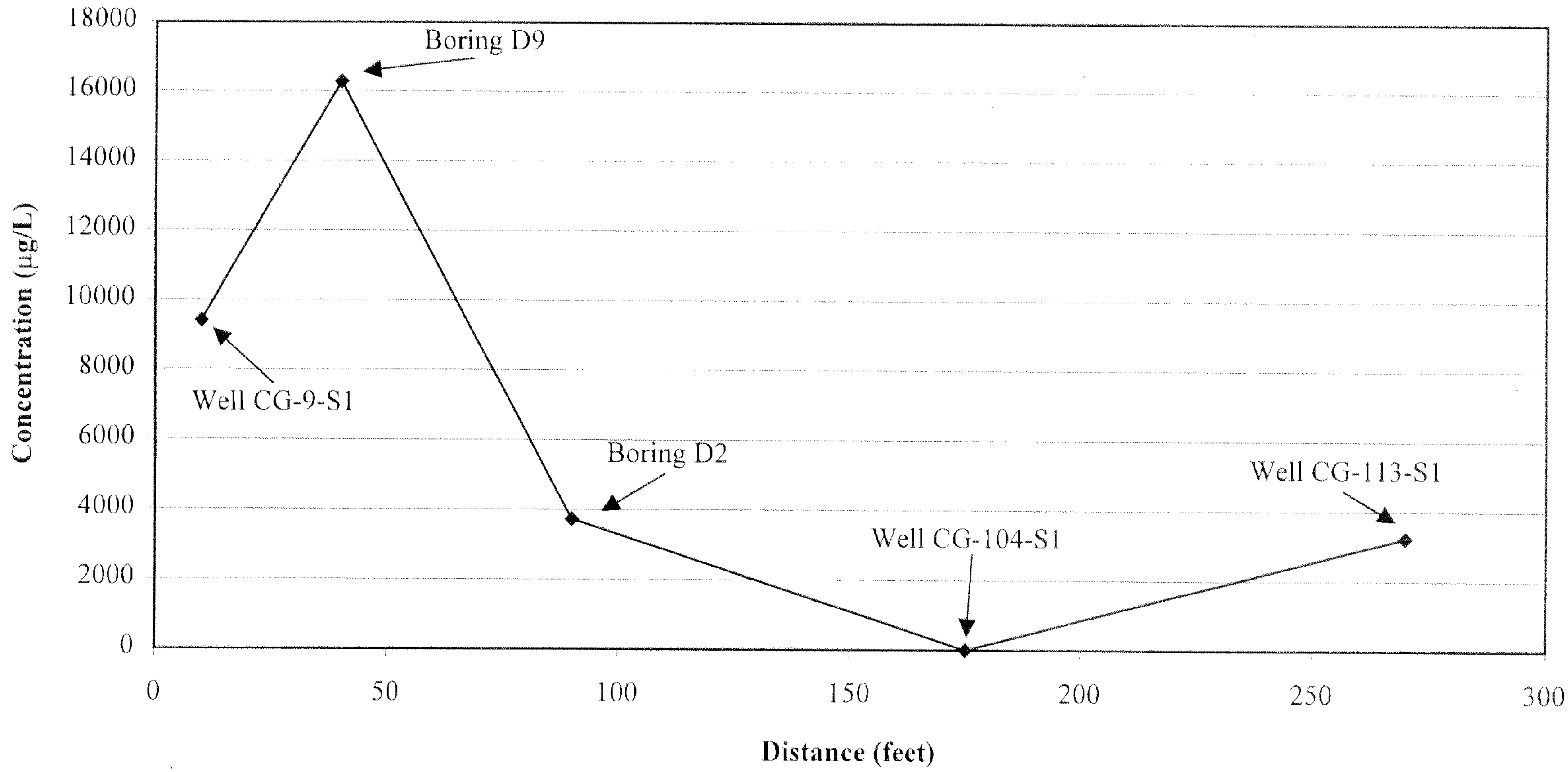
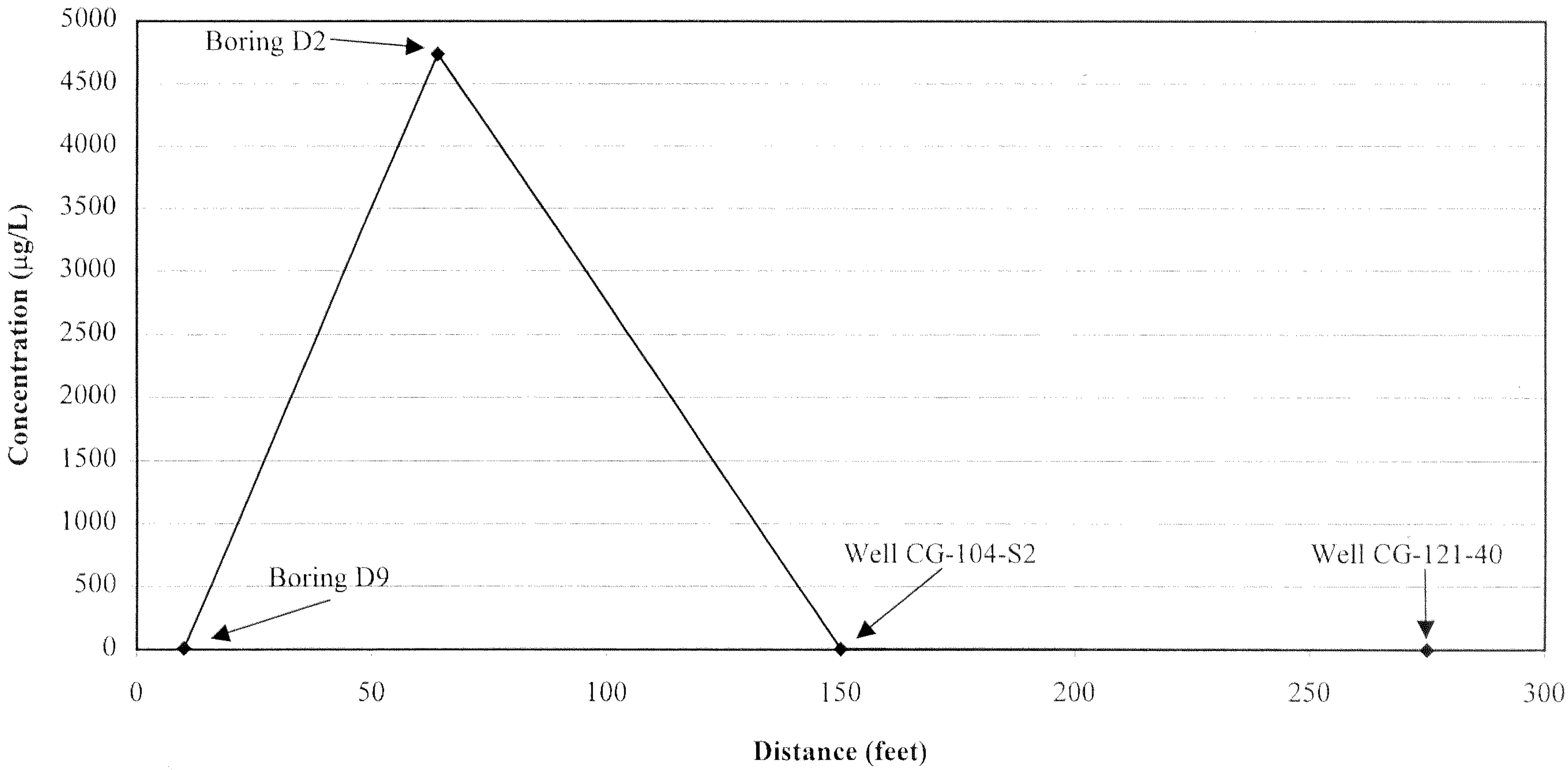


Figure 9D-35
Ethylbenzene
Trend Line C
Shallow Sample Interval



Period: From 8/19/2002 thru 12/30/2002 - inclusive
SAMPLE TYPE: Ambient Air

Site	Date	91-20-3 Naphthalene ug/m3	Lab Qual	71-55-6 1,1,1-Trichloroethane ug/m3	Lab Qual	75-34-3 1,1-Dichloroethane ug/m3	Lab Qual
MTCA B Minimum Level		**1.371**		**1008**		**228.571**	
406 S Orcas St	12/30/02	95	U	5	U	3.7	U
412 S Orcas St	8/19/02	100	U	0.22	U	0.42	
412 S Lucile St	8/19/02	100	U	0.19	U	0.19	U
507 S Brandon	8/21/02	93	U	0.21		0.14	U
5327 Denver Ave S	8/27/02	90	U	0.19	U	0.14	U
5403 Maynard Ave S	8/19/02	79	U	0.18		0.12	U
5409 Denver Ave S	12/17/02	110	U	5.6	U	4.1	U
5409 Denver Ave S	8/19/02	100	U	0.22		0.15	U
727 Homer Ave S	8/19/02	91	U	0.19		0.26	
735 Homer Ave S	12/18/02	97	U	5.1	U	3.8	U

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	75-35-4 1,1-Dichloroethylene ug/m3	Lab Qual	107-06-2 1,2-Dichloroethane ug/m3	Lab Qual
MTCA B Minimum Level		**91.429**		**0.0962**	
406 S Orcas St	12/30/02	0.072	U	0.15	U
412 S Orcas St	8/19/02	0.079	U	0.16	U
412 S Lucile St	8/19/02	0.19	U	0.16	U
507 S Brandon	8/21/02	0.07	U	0.14	U
5327 Denver Ave S	8/27/02	0.068	U	0.14	U
5403 Maynard Ave S	8/19/02	0.06	U	0.12	U
5409 Denver Ave S	12/17/02	0.1	U	0.21	U
5409 Denver Ave S	8/19/02	0.075	U	0.15	U
727 Homer Ave S	8/19/02	0.069	U	17	
735 Homer Ave S	12/18/02	0.074	U	0.15	U

Period: From 8/19/2002 thru 12/30/2

SAMPLE TYPE: Ambient Air

Site	Date	591-78-6 2-Hexanone ug/m3	Lab Qual	71-43-2 Benzene ug/m3	Lab Qual	75-00-3 Chloroethane ug/m3	Lab Qual
MTCA B Minimum Level		**8**		**0.321**		**4571.429**	
406 S Orcas St	12/30/02	0.74	U	46		2.4	U
412 S Orcas St	8/19/02	3.2		1.2		0.26	U
412 S Lucile St	8/19/02	0.8	U	1.2		0.038	U
507 S Brandon	8/21/02	0.73	U	1.3		0.55	
5327 Denver Ave S	8/27/02	2		1.8		0.22	U
5403 Maynard Ave S	8/19/02	1.3		1.1		0.2	U
5409 Denver Ave S	12/17/02	1	U	4		2.7	U
5409 Denver Ave S	8/19/02	0.78	U	0.95		0.25	U
727 Homer Ave S	8/19/02	1.7		1.5		0.56	
735 Homer Ave S	12/18/02	0.76	U	8.2		2.4	U

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	67-66-3 Chloroform ug/m3	Lab Qual	100-41-4 Ethylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		**0.109**		**457.143**	
406 S Orcas St	12/30/02	0.18	U	19	
412 S Orcas St	8/19/02	0.19	U	0.88	
412 S Lucile St	8/19/02	0.038	U	0.64	
507 S Brandon	8/21/02	0.17	U	0.49	
5327 Denver Ave S	8/27/02	0.17	U	0.955	
5403 Maynard Ave S	8/19/02	0.15	U	1.1	
5409 Denver Ave S	12/17/02	0.25	U	4.4	U
5409 Denver Ave S	8/19/02	0.18	U	0.54	
727 Homer Ave S	8/19/02	2.4		0.71	
735 Homer Ave S	12/18/02	0.19		4	U

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	127-18-4 Tetrachloroethylene ug/m3	Lab Qual	108-88-3 Toluene ug/m3	Lab Qual	79-01-6 Trichloroethylene ug/m3	Lab Qual
MTCA B Minimum Level		**0.417**		**182.857**		**0.0219**	
406 S Orcas St	12/30/02	6.2	U	160		13	
412 S Orcas St	8/19/02	0.27	U	8		4.1	
412 S Lucile St	8/19/02	0.26	U	5.4		2.3	
507 S Brandon	8/21/02	0.36		5.3		3.2	
5327 Denver Ave S	8/27/02	0.4		7.4		0.41	
5403 Maynard Ave S	8/19/02	0.2	U	9.1		0.42	
5409 Denver Ave S	12/17/02	6.9	U	8.5		8.2	
5409 Denver Ave S	8/19/02	0.26	U	3.3		0.48	
727 Homer Ave S	8/19/02	0.24		6.7		0.47	
735 Homer Ave S	12/18/02	6.3	U	26		2.1	

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	75-01-4 Vinyl chloride ug/m3	Lab Qual	156-59-2 cis-1,2-Dichloroethylene ug/m3	Lab Qual
MTCA B Minimum Level		**0.284**		**16**	
406 S Orcas St	12/30/02	0.046	U	3.6	U
412 S Orcas St	8/19/02	0.5		0.16	U
412 S Lucile St	8/19/02	0.19	U	0.15	U
507 S Brandon	8/21/02	0.045	U	0.14	U
5327 Denver Ave S	8/27/02	0.31		0.14	U
5403 Maynard Ave S	8/19/02	0.68		0.12	U
5409 Denver Ave S	12/17/02	0.065	U	4	U
5409 Denver Ave S	8/19/02	0.048	U	0.15	U
727 Homer Ave S	8/19/02	2		0.63	
735 Homer Ave S	12/18/02	0.048	U	3.7	U

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	156-60-5 trans-1,2-Dichloroethylene ug/m3	Lab Qual	95-63-6 1,2,4-Trimethylbenzene ug/m3	Lab Qual	108-67-8 1,3,5-Trimethylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		**32**		**2.72**		**2.72**	
406 S Orcas St	12/30/02	14	U	13		4.5	U
412 S Orcas St	8/19/02	0.79	U	0.94		0.73	
412 S Lucile St	8/19/02	0.77	U	0.52		0.19	U
507 S Brandon	8/21/02	0.7	U	0.46		0.18	
5327 Denver Ave S	8/27/02	0.68	U	1.54		0.525	
5403 Maynard Ave S	8/19/02	0.6	U	1.2		0.56	
5409 Denver Ave S	12/17/02	16	U	5	U	5	U
5409 Denver Ave S	8/19/02	0.75	U	0.35		0.19	U
727 Homer Ave S	8/19/02	1.5		0.72		0.54	
735 Homer Ave S	12/18/02	15	U	4.6	U	4.6	U

Period: From 8/19/2002 thru 12/30/2

SAMPLE TYPE: Ambient Air

Site	Date	98-82-8 Cumene ug/m3	Lab Qual	103-65-1 Propylbenzene ug/m3	Lab Qual	99-87-6 p-Isopropyltoluene ug/m3	Lab Qual
MTCA B Minimum Level		**182.857**		**16**		**182.857**	
406 S Orcas St	12/30/02			18	U	50	U
412 S Orcas St	8/19/02	20	U	20	U		
412 S Lucile St	8/19/02	19	U	19	U		
507 S Brandon	8/21/02	17	U	17	U		
5327 Denver Ave S	8/27/02	17	U	17	U		
5403 Maynard Ave S	8/19/02	15	U	15	U		
5409 Denver Ave S	12/17/02			20	U	56	U
5409 Denver Ave S	8/19/02	19	U	19	U		
727 Homer Ave S	8/19/02	17	U	17	U		
735 Homer Ave S	12/18/02			18	U	51	U

Period: From 8/19/2002 thru 12/30/2
SAMPLE TYPE: Ambient Air

Site	Date	135-98-8 sec-Butylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		**16**	
406 S Orcas St	12/30/02	20	U
412 S Orcas St	8/19/02	22	U
412 S Lucile St	8/19/02	21	U
507 S Brandon	8/21/02	20	U
5327 Denver Ave S	8/27/02	19	U
5403 Maynard Ave S	8/19/02	17	U
5409 Denver Ave S	12/17/02	22	U
5409 Denver Ave S	8/19/02	21	U
727 Homer Ave S	8/19/02	19	U
735 Homer Ave S	12/18/02	20	U

Period: From 8/16/2000 thru 8/26/2002 - inclusive
SAMPLE TYPE: Indoor Air

Site	Date	91-20-3 Naphthalene ug/m3	Lab Qual	71-55-6 1,1,1-Trichloroethane ug/m3	Lab Qual	75-34-3 1,1-Dichloroethane ug/m3	Lab Qual
MTCA B Minimum Level		1.371		1008		228.571	
404 S Orcas St	8/19/02	93	U	0.19	U	0.14	U
404 S Orcas St	8/19/02	95	U	0.4	U	0.29	U
406 S Orcas St	8/19/02	95	U	0.2	U	0.15	U
406 S Orcas St	8/19/02	95	U	0.2	U	0.15	U
412 S Orcas St	8/19/02	90	U	0.19	U	0.14	U
412 S Orcas St	8/19/02	95	U	0.2	U	0.15	U
412 S Lucile St	8/19/02	93	U	0.36		0.14	U
412 S Lucile St	8/19/02	97	U	0.33		0.15	U
412 S Lucile St	8/19/02	90	U	0.31		0.14	U
507 S Brandon	8/21/02	84	U	1.1		0.13	U
507 S Brandon	8/21/02	95	U	1		0.15	U
5327 Denver Ave S	8/26/02	100	U	0.28		0.16	U
5403 Maynard Ave S	8/19/02	100	U	0.85		0.21	
5403 Maynard Ave S	8/19/02	100	U	1.5		0.16	U
5409 Denver Ave S	8/19/02	91	U	0.295		0.14	U
5409 Denver Ave S	8/19/02	90	U	0.31		0.14	U
613 S Brandon	8/26/02	69	U	0.28		0.11	U
613 S Brandon	8/19/02	81	U	0.22		0.12	U
613 S Brandon	8/19/02	84	U	0.22		0.13	U
613 S Brandon	8/26/02	100	U	0.32		0.16	U
672 S Lucile St	8/19/02	91	U	1.5		0.14	U
672 S Lucile St	8/27/02	79	U	1.9		0.18	U
672 S Lucile St	8/19/02	93	U	1.6		0.14	U
672 S Lucile St	8/27/02	120	U	1.6		0.18	U
672 S Lucile St	8/27/02	97	U	1.8		0.2	U
5409 Denver Ave S	8/16/00			2			
5409 Denver Ave S	8/16/00			2.1			
672 S Lucile St	8/16/00			3			
672 S Lucile St	8/16/00			3			

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	75-35-4 1,1-Dichloroethylene ug/m3	Lab Qual	107-06-2 1,2-Dichloroethane ug/m3	Lab Qual	106-46-7 1,4-Dichlorobenzene ug/m3	Lab Qual
MTCA B Minimum Level		**91.429**		**0.0962**		**0.0962**	
404 S Orcas St	8/19/02	0.07	U	0.22			
404 S Orcas St	8/19/02	0.14	U	0.29	U		
406 S Orcas St	8/19/02	0.072	U	0.15	U		
406 S Orcas St	8/19/02	0.072	U	0.15	U		
412 S Orcas St	8/19/02	0.068	U	0.14			
412 S Orcas St	8/19/02	0.072	U	0.19			
412 S Lucile St	8/19/02	0.07	U	0.16			
412 S Lucile St	8/19/02	0.074	U	0.15	U		
412 S Lucile St	8/19/02	0.068	U	0.14	U		
507 S Brandon	8/21/02	0.064	U	0.15			
507 S Brandon	8/21/02	0.072	U	0.15	U		
5327 Denver Ave S	8/26/02	0.079	U	0.16	U		
5403 Maynard Ave S	8/19/02	0.075	U	0.15	U		
5403 Maynard Ave S	8/19/02	0.077	U	0.16	U		
5409 Denver Ave S	8/19/02	0.069	U	2.15			
5409 Denver Ave S	8/19/02	0.068	U	0.87			
613 S Brandon	8/26/02	0.052	U	0.14			
613 S Brandon	8/19/02	0.061	U	0.14			
613 S Brandon	8/19/02	0.064	U	0.13	U		
613 S Brandon	8/26/02	0.079	U	0.16	U		
672 S Lucile St	8/19/02	0.069	U	0.14	U		
672 S Lucile St	8/27/02	0.087	U	0.28			
672 S Lucile St	8/19/02	0.07	U	0.14	U		
672 S Lucile St	8/27/02	0.09	U	0.18	U		
672 S Lucile St	8/27/02	0.096	U	0.35			
5409 Denver Ave S	8/16/00			4.1			
5409 Denver Ave S	8/16/00			4			
672 S Lucile St	8/16/00			0.185		0.36	
672 S Lucile St	8/16/00			0.17		0.38	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	591-78-6 2-Hexanone ug/m3	Lab Qual	67-64-1 Acetone ug/m3	Lab Qual	71-43-2 Benzene ug/m3	Lab Qual
MTCA B Minimum Level		**8**		**0**		**0.321**	
404 S Orcas St	8/19/02	0.73	U			1.55	
404 S Orcas St	8/19/02	1.5	U			1.5	
406 S Orcas St	8/19/02	0.8				3.65	
406 S Orcas St	8/19/02	0.74	U			2.4	
412 S Orcas St	8/19/02	0.7	U			1.4	
412 S Orcas St	8/19/02	0.74	U			1.5	
412 S Lucile St	8/19/02	2.8				1.1	
412 S Lucile St	8/19/02	0.76	U			1.2	
412 S Lucile St	8/19/02	0.7	U			1.4	
507 S Brandon	8/21/02	0.66	U			1.95	
507 S Brandon	8/21/02	0.74	U			1.8	
5327 Denver Ave S	8/26/02	0.82	U			1.75	
5403 Maynard Ave S	8/19/02	0.78	U			1.2	
5403 Maynard Ave S	8/19/02	0.8	U			1.3	
5409 Denver Ave S	8/19/02	0.71	U			0.955	
5409 Denver Ave S	8/19/02	0.7	U			1.2	
613 S Brandon	8/26/02	8.6				2.5	
613 S Brandon	8/19/02	0.63	U			1.45	
613 S Brandon	8/19/02	0.66	U			1.4	
613 S Brandon	8/26/02	0.82	U			2.8	
672 S Lucile St	8/19/02	0.71	U			1.2	
672 S Lucile St	8/27/02	0.9	U			1.95	
672 S Lucile St	8/19/02	0.73	U			1.2	
672 S Lucile St	8/27/02	0.93	U			2	
672 S Lucile St	8/27/02	0.99	U			11	
5409 Denver Ave S	8/16/00			32		1.6	
5409 Denver Ave S	8/16/00			35		1.6	
672 S Lucile St	8/16/00			36.5		3.85	
672 S Lucile St	8/16/00			34		3.2	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	56-23-5 Carbon tetrachloride ug/m3	Lab Qual	108-90-7 Chlorobenzene ug/m3	Lab Qual	75-00-3 Chloroethane ug/m3	Lab Qual
MTCA B Minimum Level		0.321		0.321		4571.429	
404 S Orcas St	8/19/02					0.28	
404 S Orcas St	8/19/02					0.48	U
406 S Orcas St	8/19/02					0.24	U
406 S Orcas St	8/19/02					0.24	U
412 S Orcas St	8/19/02					0.22	U
412 S Orcas St	8/19/02					0.24	U
412 S Lucile St	8/19/02					0.23	U
412 S Lucile St	8/19/02					0.24	U
412 S Lucile St	8/19/02					0.22	U
507 S Brandon	8/21/02					0.21	U
507 S Brandon	8/21/02					0.24	U
5327 Denver Ave S	8/26/02					0.26	U
5403 Maynard Ave S	8/19/02					0.25	U
5403 Maynard Ave S	8/19/02					0.26	U
5409 Denver Ave S	8/19/02					0.23	U
5409 Denver Ave S	8/19/02					0.22	U
613 S Brandon	8/26/02					0.17	U
613 S Brandon	8/19/02					0.2	U
613 S Brandon	8/19/02					0.21	U
613 S Brandon	8/26/02					0.26	U
672 S Lucile St	8/19/02					0.23	U
672 S Lucile St	8/27/02					0.38	
672 S Lucile St	8/19/02					0.23	U
672 S Lucile St	8/27/02					0.3	U
672 S Lucile St	8/27/02					0.32	U
5409 Denver Ave S	8/16/00	0.69					
5409 Denver Ave S	8/16/00	0.67					
672 S Lucile St	8/16/00	1		0.14			
672 S Lucile St	8/16/00	1					

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	67-66-3 Chloroform ug/m3	Lab Qual	74-87-3 Chloromethane ug/m3	Lab Qual	100-41-4 Ethylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		**0.109**		**0.109**		**457.143**	
404 S Orcas St	8/19/02	0.235				2.3	
404 S Orcas St	8/19/02	0.36	U			2.4	
406 S Orcas St	8/19/02	0.265				7.65	
406 S Orcas St	8/19/02	0.28				4.2	
412 S Orcas St	8/19/02	0.77				0.775	
412 S Orcas St	8/19/02	0.83				0.83	
412 S Lucile St	8/19/02	0.32				1.45	
412 S Lucile St	8/19/02	1.4				1.5	
412 S Lucile St	8/19/02	1.3				1.7	
507 S Brandon	8/21/02	0.425				1.85	
507 S Brandon	8/21/02	0.44				1.8	
5327 Denver Ave S	8/26/02	0.19	U			0.875	
5403 Maynard Ave S	8/19/02	2.15				0.91	
5403 Maynard Ave S	8/19/02	3.8				1	
5409 Denver Ave S	8/19/02	0.17	U			0.58	
5409 Denver Ave S	8/19/02	0.27				0.96	
613 S Brandon	8/26/02	4				1.2	
613 S Brandon	8/19/02	4.4				1.15	
613 S Brandon	8/19/02	4.6				1.1	
613 S Brandon	8/26/02	3.1				1.8	
672 S Lucile St	8/19/02	0.36				1.75	
672 S Lucile St	8/27/02	0.27				2.35	
672 S Lucile St	8/19/02	0.4				1.6	
672 S Lucile St	8/27/02	0.22	U			2.5	
672 S Lucile St	8/27/02	0.24	U			5.9	
5409 Denver Ave S	8/16/00	0.37		1.4		0.78	
5409 Denver Ave S	8/16/00	0.37		1.5		0.8	
672 S Lucile St	8/16/00	0.73		1.95		1.75	
672 S Lucile St	8/16/00	0.83		1.6		1.7	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	75-09-2 Methylene chloride ug/m3	Lab Qual	100-42-5 Styrene ug/m3	Lab Qual	127-18-4 Tetrachloroethylene ug/m3	Lab Qual
MTCA B Minimum Level		**5.319**		**5.319**		**0.417**	
404 S Orcas St	8/19/02					0.31	
404 S Orcas St	8/19/02					0.49	U
406 S Orcas St	8/19/02					0.25	U
406 S Orcas St	8/19/02					0.25	U
412 S Orcas St	8/19/02					0.23	U
412 S Orcas St	8/19/02					0.25	U
412 S Lucile St	8/19/02					0.24	U
412 S Lucile St	8/19/02					0.25	U
412 S Lucile St	8/19/02					0.26	
507 S Brandon	8/21/02					1.4	
507 S Brandon	8/21/02					1.4	
5327 Denver Ave S	8/26/02					0.28	
5403 Maynard Ave S	8/19/02					0.605	
5403 Maynard Ave S	8/19/02					0.44	
5409 Denver Ave S	8/19/02					0.25	
5409 Denver Ave S	8/19/02					0.68	
613 S Brandon	8/26/02					0.68	
613 S Brandon	8/19/02					0.565	
613 S Brandon	8/19/02					0.57	
613 S Brandon	8/26/02					0.82	
672 S Lucile St	8/19/02					0.24	U
672 S Lucile St	8/27/02					0.41	
672 S Lucile St	8/19/02					0.24	U
672 S Lucile St	8/27/02					0.31	
672 S Lucile St	8/27/02					0.47	
5409 Denver Ave S	8/16/00	320		0.34		1.3	
5409 Denver Ave S	8/16/00	330		0.41		1.4	
672 S Lucile St	8/16/00	125		0.52		2.35	
672 S Lucile St	8/16/00	130		0.62		2.3	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	108-88-3 Toluene ug/m3	Lab Qual	79-01-6 Trichloroethylene ug/m3	Lab Qual	75-01-4 Vinyl chloride ug/m3	Lab Qual
MTCA B Minimum Level		**182.857**		**0.0219**		**0.284**	
404 S Orcas St	8/19/02	6.85		5.35		0.045	U
404 S Orcas St	8/19/02	6.3		7.4		0.093	U
406 S Orcas St	8/19/02	81.5		7.25		0.046	U
406 S Orcas St	8/19/02	42		7.5		0.046	U
412 S Orcas St	8/19/02	5.25		3.9		0.044	U
412 S Orcas St	8/19/02	6.5		4.6		0.046	U
412 S Lucile St	8/19/02	9.15		1.85		0.045	U
412 S Lucile St	8/19/02	14		2.1		0.048	U
412 S Lucile St	8/19/02	12		2.2		0.044	U
507 S Brandon	8/21/02	20		1.4		0.041	U
507 S Brandon	8/21/02	17		1.2		0.046	U
5327 Denver Ave S	8/26/02	7.45		0.335		0.051	U
5403 Maynard Ave S	8/19/02	17.5		0.35		0.048	U
5403 Maynard Ave S	8/19/02	29		0.38		0.049	J
5409 Denver Ave S	8/19/02	4.35		0.495		0.044	U
5409 Denver Ave S	8/19/02	8.3		0.83		0.044	U
613 S Brandon	8/26/02	76		0.47		0.098	
613 S Brandon	8/19/02	49		0.49		0.067	
613 S Brandon	8/19/02	59		0.5		0.059	
613 S Brandon	8/26/02	59		0.72		0.074	
672 S Lucile St	8/19/02	6		0.55		0.044	U
672 S Lucile St	8/27/02	10.1		1.25		0.056	U
672 S Lucile St	8/19/02	7		0.52		0.045	U
672 S Lucile St	8/27/02	8		1.4		0.058	U
672 S Lucile St	8/27/02	39		1.2		0.062	U
5409 Denver Ave S	8/16/00	12		4.5			
5409 Denver Ave S	8/16/00	13		4.4			
672 S Lucile St	8/16/00	21.5		0.52		0.116	
672 S Lucile St	8/16/00	19		3.3		0.1	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	156-59-2 cis-1,2-Dichloroethylene ug/m3	Lab Qual	108-38-3 m-Xylene ug/m3	Lab Qual	95-47-6 o-Xylene ug/m3	Lab Qual
MTCA B Minimum Level		16		16		16	
404 S Orcas St	8/19/02	0.14	U				
404 S Orcas St	8/19/02	0.29	U				
406 S Orcas St	8/19/02	0.14	U				
406 S Orcas St	8/19/02	0.14	U				
412 S Orcas St	8/19/02	0.14	U				
412 S Orcas St	8/19/02	0.14	U				
412 S Lucile St	8/19/02	0.14	U				
412 S Lucile St	8/19/02	0.15	U				
412 S Lucile St	8/19/02	0.14	U				
507 S Brandon	8/21/02	0.13	U				
507 S Brandon	8/21/02	0.14	U				
5327 Denver Ave S	8/26/02	0.16	U				
5403 Maynard Ave S	8/19/02	0.15	U				
5403 Maynard Ave S	8/19/02	0.15	U				
5409 Denver Ave S	8/19/02	0.14	U				
5409 Denver Ave S	8/19/02	0.14	U				
613 S Brandon	8/26/02	0.1	U				
613 S Brandon	8/19/02	0.12	U				
613 S Brandon	8/19/02	0.13	U				
613 S Brandon	8/26/02	0.16	U				
672 S Lucile St	8/19/02	0.14	U				
672 S Lucile St	8/27/02	0.17	U				
672 S Lucile St	8/19/02	0.14	U				
672 S Lucile St	8/27/02	0.18	U				
672 S Lucile St	8/27/02	0.19	U				
5409 Denver Ave S	8/16/00			2.2		0.7	
5409 Denver Ave S	8/16/00			2.2		0.69	
672 S Lucile St	8/16/00			5.15		1.5	
672 S Lucile St	8/16/00			5		1.5	

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	156-60-5 trans-1,2-Dichloroethylene ug/m3	Lab Qual	76-13-1 1,1,2-Trichlorotrifluoroethane ug/m3	Lab Qual	95-63-6 1,2,4-Trimethylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		**32**		**13714.286**		**2.72**	
404 S Orcas St	8/19/02	0.7	U			145	
404 S Orcas St	8/19/02	1.4	U			190	
406 S Orcas St	8/19/02	0.72	U			3.25	
406 S Orcas St	8/19/02	0.72	U			2.3	
412 S Orcas St	8/19/02	0.68	U			0.715	
412 S Orcas St	8/19/02	0.72	U			0.98	
412 S Lucile St	8/19/02	0.7	U			2.85	
412 S Lucile St	8/19/02	0.74	U			0.99	
412 S Lucile St	8/19/02	0.68	U			2	
507 S Brandon	8/21/02	0.64	U			1.2	
507 S Brandon	8/21/02	0.72	U			1	
5327 Denver Ave S	8/26/02	0.79	U			2.065	
5403 Maynard Ave S	8/19/02	0.75	U			0.905	
5403 Maynard Ave S	8/19/02	0.77	U			0.7	
5409 Denver Ave S	8/19/02	0.69	U			0.75	
5409 Denver Ave S	8/19/02	0.68	U			0.9	
613 S Brandon	8/26/02	0.52	U			0.97	
613 S Brandon	8/19/02	0.61	U			0.73	
613 S Brandon	8/19/02	0.64	U			0.76	
613 S Brandon	8/26/02	0.79	U			1.8	
672 S Lucile St	8/19/02	0.69	U			0.87	
672 S Lucile St	8/27/02	0.87	U			1.415	
672 S Lucile St	8/19/02	0.7	U			0.8	
672 S Lucile St	8/27/02	0.9	U			1.3	
672 S Lucile St	8/27/02	0.96	U			2.2	
5409 Denver Ave S	8/16/00			2.7			
5409 Denver Ave S	8/16/00			2.8			
672 S Lucile St	8/16/00			0.655			
672 S Lucile St	8/16/00			0.66			

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	108-67-8 1,3,5-Trimethylbenzene ug/m3	Lab Qual	98-82-8 Cumene ug/m3	Lab Qual	103-65-1 Propylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		2.72		182.857		16	
404 S Orcas St	8/19/02	64.5		18		45	
404 S Orcas St	8/19/02	89		20		48	
406 S Orcas St	8/19/02	1.05		18	U	18	U
406 S Orcas St	8/19/02	0.76		18	U	18	U
412 S Orcas St	8/19/02	0.245		17	U	17	U
412 S Orcas St	8/19/02	0.3		18	U	18	U
412 S Lucile St	8/19/02	0.94		17	U	17	U
412 S Lucile St	8/19/02	0.35		18	U	18	U
412 S Lucile St	8/19/02	0.55		17	U	17	U
507 S Brandon	8/21/02	0.34		16	U	16	U
507 S Brandon	8/21/02	0.29		18	U	18	U
5327 Denver Ave S	8/26/02	0.675		20	U	20	U
5403 Maynard Ave S	8/19/02	0.24		19	U	19	U
5403 Maynard Ave S	8/19/02	0.22		19	U	19	U
5409 Denver Ave S	8/19/02	0.295		17	U	17	U
5409 Denver Ave S	8/19/02	0.3		17	U	17	U
613 S Brandon	8/26/02	0.29		13	U	13	U
613 S Brandon	8/19/02	0.235		15	U	15	U
613 S Brandon	8/19/02	0.24		16	U	16	U
613 S Brandon	8/26/02	0.54		20	U	20	U
672 S Lucile St	8/19/02	0.365		17	U	17	U
672 S Lucile St	8/27/02	0.54		15	U	15	U
672 S Lucile St	8/19/02	0.35		17	U	17	U
672 S Lucile St	8/27/02	0.49		22	U	22	U
672 S Lucile St	8/27/02	0.85		18	U	18	U
5409 Denver Ave S	8/16/00						
5409 Denver Ave S	8/16/00						
672 S Lucile St	8/16/00						
672 S Lucile St	8/16/00						

Period: From 8/16/2000 thru 8/26/
SAMPLE TYPE: Indoor Air

Site	Date	135-98-8 sec-Butylbenzene ug/m3	Lab Qual
MTCA B Minimum Level		16	
404 S Orcas St	8/19/02	20	U
404 S Orcas St	8/19/02	20	U
406 S Orcas St	8/19/02	20	U
406 S Orcas St	8/19/02	20	U
412 S Orcas St	8/19/02	19	U
412 S Orcas St	8/19/02	20	U
412 S Lucile St	8/19/02	20	U
412 S Lucile St	8/19/02	20	U
412 S Lucile St	8/19/02	19	U
507 S Brandon	8/21/02	18	U
507 S Brandon	8/21/02	20	U
5327 Denver Ave S	8/26/02	22	U
5403 Maynard Ave S	8/19/02	21	U
5403 Maynard Ave S	8/19/02	21	U
5409 Denver Ave S	8/19/02	19	U
5409 Denver Ave S	8/19/02	19	U
613 S Brandon	8/26/02	14	U
613 S Brandon	8/19/02	17	U
613 S Brandon	8/19/02	18	U
613 S Brandon	8/26/02	22	U
672 S Lucile St	8/19/02	19	U
672 S Lucile St	8/27/02	17	U
672 S Lucile St	8/19/02	20	U
672 S Lucile St	8/27/02	25	U
672 S Lucile St	8/27/02	20	U
5409 Denver Ave S	8/16/00		
5409 Denver Ave S	8/16/00		
672 S Lucile St	8/16/00		
672 S Lucile St	8/16/00		

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	95-50-1 1,2-Dichlorobenzene ug/m3	Lab Qual	541-73-1 1,3-Dichlorobenzene ug/m3	Lab Qual	91-20-3 Naphthalene ug/m3	Lab Qual
404 S Orcas St	8/21/02	7					120	U
406 S Orcas St	8/21/02	7					110	U
412 S Orcas St	8/21/02	7					110	U
412 S Lucile St	8/21/02	7					110	U
507 S Brandon	8/22/02	8					86	U
5327 Denver Ave S	8/27/02	8.5					100	U
5403 Maynard Ave S	8/21/02	8					110	U
5409 Denver Ave S	8/16/00	6.5	0.41	U	0.41	U		
5409 Denver Ave S	8/22/00	6.5	0.19	U	0.19	U		
5409 Denver Ave S	8/22/00	6.5	0.2	U	0.2	U		
5409 Denver Ave S	8/21/00	6.5	0.18	U	0.18	U		
613 S Brandon	8/21/02	8					100	U
613 S Brandon	8/27/02	8					110	U
613 S Brandon	8/16/00	6.5	0.16	U	0.16	U		
672 S Lucile St	8/21/00	6.5	0.25	U	0.25	U		
672 S Lucile St	8/16/00	6.5	0.17	U	0.17	U		
672 S Lucile St	8/22/00	6.5	1.8	U	1.8	U		
672 S Lucile St	8/22/00	6.5	0.91	U	0.91	U		
672 S Lucile St	8/22/00	6.5	0.73	U	0.73	U		
672 S Lucile St	8/22/00	6.5	0.49	U	0.49	U		
5409 Denver Ave S	8/21/02	5					97	U
5409 Denver Ave S	3/23/01	5.25	0.38	U	0.38	U		
5409 Denver Ave S	5/22/01	5.25	1.1		0.98			
5409 Denver Ave S	8/10/01	5.25	0.68	U	0.68	U		
5409 Denver Ave S	11/13/01	5.25	0.91	U	0.91	U		
672 S Lucile St	8/22/02	5					100	U
672 S Lucile St	8/28/02	5					110	U
672 S Lucile St	3/23/01	5.25	1.1	U	1.1	U		
672 S Lucile St	5/22/01	5.25	0.36	U	0.36	U		
672 S Lucile St	8/10/01	5.25	3.8	U	3.8	U		
672 S Lucile St	11/13/01	5.25	5	U	5	U		
672 S Lucile St	8/21/02	8						
672 S Lucile St	8/28/02	8					93	U
672 S Lucile St	3/23/01	8.25	0.91	U	0.91	U		
672 S Lucile St	5/22/01	8.25	2	U	2	U		
672 S Lucile St	8/10/01	8.25	4.2	U	4.2	U		
672 S Lucile St	11/13/01	8.25	5	U	5	U		
5409 Denver Ave S	8/16/00	6.5	0.46	U	0.46	U		

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	811-97-2 1,1,1,2-Tetrafluoroethane ug/m3	Lab Qual	71-55-6 1,1,1-Trichloroethane ug/m3	Lab Qual	79-00-5 1,1,2-Trichloroethane ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			6	U		
406 S Orcas St	8/21/02	7			0.93			
412 S Orcas St	8/21/02	7			3			
412 S Lucile St	8/21/02	7			5.9	U		
507 S Brandon	8/22/02	8			1.8	U		
5327 Denver Ave S	8/27/02	8.5			0.83			
5403 Maynard Ave S	8/21/02	8			22	U		
5409 Denver Ave S	8/16/00	6.5			19		0.37	U
5409 Denver Ave S	8/22/00	6.5			50		0.17	U
5409 Denver Ave S	8/22/00	6.5			110		0.18	U
5409 Denver Ave S	8/21/00	6.5			54		0.16	U
613 S Brandon	8/21/02	8			5.2	U		
613 S Brandon	8/27/02	8			0.41			
613 S Brandon	8/16/00	6.5			2.8		0.15	U
672 S Lucile St	8/21/00	6.5			450		0.22	U
672 S Lucile St	8/16/00	6.5			3		0.15	U
672 S Lucile St	8/22/00	6.5			2400		1.7	U
672 S Lucile St	8/22/00	6.5			910		0.83	U
672 S Lucile St	8/22/00	6.5			990	[J]	0.66	U
672 S Lucile St	8/22/00	6.5			340	[J]	0.44	U
5409 Denver Ave S	8/21/02	5			27			
5409 Denver Ave S	3/23/01	5.25	0.66	U	65		0.34	U
5409 Denver Ave S	5/22/01	5.25	12		94		0.37	U
5409 Denver Ave S	8/10/01	5.25	4.5		66		0.62	U
5409 Denver Ave S	11/13/01	5.25	2.8		75		0.83	U
672 S Lucile St	8/22/02	5			220			
672 S Lucile St	8/28/02	5			360			
672 S Lucile St	3/23/01	5.25	0.63	U	1800		1	U
672 S Lucile St	5/22/01	5.25	3.7		0.36		0.32	U
672 S Lucile St	8/10/01	5.25	4		1500		8.9	
672 S Lucile St	11/13/01	5.25	2.5		1500		4.5	U
672 S Lucile St	8/21/02	8			460			
672 S Lucile St	8/28/02	8			480			
672 S Lucile St	3/23/01	8.25	0.63	U	1600		0.83	U
672 S Lucile St	5/22/01	8.25	370		2300		1.8	U
672 S Lucile St	8/10/01	8.25	4.4		1600		3.8	U
672 S Lucile St	11/13/01	8.25	3.4		1400		4.5	U
5409 Denver Ave S	8/16/00	6.5			19		0.16	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	75-34-3 1,1-Dichloroethane ug/m3	Lab Qual	75-35-4 1,1-Dichloroethylene ug/m3	Lab Qual	107-06-2 1,2-Dichloroethane ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	4.5	U	4.4	U	4.5	U
406 S Orcas St	8/21/02	7	0.68		0.085	U	0.17	U
412 S Orcas St	8/21/02	7	0.63		0.081	U	0.16	U
412 S Lucile St	8/21/02	7	4.4	U	4.3	U	4.4	U
507 S Brandon	8/22/02	8	1.3	U	0.65	U	1.3	U
5327 Denver Ave S	8/27/02	8.5	2.7		0.079	U	0.16	U
5403 Maynard Ave S	8/21/02	8	610		16	U	16	U
5409 Denver Ave S	8/16/00	6.5	0.28	U	0.14	U	4	
5409 Denver Ave S	8/22/00	6.5	0.13	U	0.062	U	0.13	U
5409 Denver Ave S	8/22/00	6.5	2.1		0.065	U	0.13	U
5409 Denver Ave S	8/21/00	6.5	0.12	U	0.06	U	0.12	U
613 S Brandon	8/21/02	8	3.8	U	3.8	U	3.8	U
613 S Brandon	8/27/02	8	0.16	U	0.081	U	0.16	U
613 S Brandon	8/16/00	6.5	0.11	U	0.054	U	0.2	
672 S Lucile St	8/21/00	6.5	6.3		0.082	U	0.17	U
672 S Lucile St	8/16/00	6.5	0.11	U	0.055	U	0.17	
672 S Lucile St	8/22/00	6.5	330		0.61	U	1.2	U
672 S Lucile St	8/22/00	6.5	100		3		0.61	U
672 S Lucile St	8/22/00	6.5	0.49	[J]	0.24	U	0.49	U
672 S Lucile St	8/22/00	6.5	3.6	[J]	0.16	U	0.33	U
5409 Denver Ave S	8/21/02	5	0.16	U	0.27		0.16	U
5409 Denver Ave S	3/23/01	5.25	0.26	U	0.12	U	0.26	U
5409 Denver Ave S	5/22/01	5.25	0.28	U	0.14	U	0.28	U
5409 Denver Ave S	8/10/01	5.25	0.46	U	0.22	U	0.46	U
5409 Denver Ave S	11/13/01	5.25	0.61	U	1.7		0.61	U
672 S Lucile St	8/22/02	5	8.8		0.15	U	0.31	U
672 S Lucile St	8/28/02	5	14		0.59		0.36	U
672 S Lucile St	3/23/01	5.25	480		0.38	U	0.77	U
672 S Lucile St	5/22/01	5.25	0.24	U	0.12	U	0.24	U
672 S Lucile St	8/10/01	5.25	260		11		9.6	
672 S Lucile St	11/13/01	5.25	230		3.3	U	3.4	U
672 S Lucile St	8/21/02	8	15		0.44		0.5	U
672 S Lucile St	8/28/02	8	15		0.23	U	0.48	U
672 S Lucile St	3/23/01	8.25	520		0.3	U	0.61	U
672 S Lucile St	5/22/01	8.25	510		0.66	U	1.3	U
672 S Lucile St	8/10/01	8.25	270		4		2.8	U
672 S Lucile St	11/13/01	8.25	240		3.3	U	3.4	U
5409 Denver Ave S	8/16/00	6.5	0.12	U	0.12	U	0.12	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	78-87-5 1,2-Dichloropropane ug/m3	Lab Qual	106-46-7 1,4-Dichlorobenzene ug/m3	Lab Qual	591-78-6 2-Hexanone ug/m3	Lab Qual
404 S Orcas St	8/21/02	7					18	U
406 S Orcas St	8/21/02	7					9.9	
412 S Orcas St	8/21/02	7					7.2	
412 S Lucile St	8/21/02	7					18	U
507 S Brandon	8/22/02	8					6.7	U
5327 Denver Ave S	8/27/02	8.5					5.7	
5403 Maynard Ave S	8/21/02	8					67	U
5409 Denver Ave S	8/16/00	6.5	0.32	U	0.41	U		
5409 Denver Ave S	8/22/00	6.5	0.14	U	0.19	U		
5409 Denver Ave S	8/22/00	6.5	0.15	U	0.2	U		
5409 Denver Ave S	8/21/00	6.5	0.14	U	0.18	U		
613 S Brandon	8/21/02	8					19	
613 S Brandon	8/27/02	8					5.2	
613 S Brandon	8/16/00	6.5	0.12	U	0.35			
672 S Lucile St	8/21/00	6.5	0.19	U	0.25	U		
672 S Lucile St	8/16/00	6.5	0.14	U	0.36			
672 S Lucile St	8/22/00	6.5	1.4	U	1.8	U		
672 S Lucile St	8/22/00	6.5	0.7	U	0.91	U		
672 S Lucile St	8/22/00	6.5	0.56	U	0.73	U		
672 S Lucile St	8/22/00	6.5	0.38	U	0.49	U		
5409 Denver Ave S	8/21/02	5					5.2	
5409 Denver Ave S	3/23/01	5.25	0.29	U	0.38	U		
5409 Denver Ave S	5/22/01	5.25	0.32	U	1.7			
5409 Denver Ave S	8/10/01	5.25	0.53	U	0.68	U		
5409 Denver Ave S	11/13/01	5.25	0.7	U	0.91	U		
672 S Lucile St	8/22/02	5					2.3	
672 S Lucile St	8/28/02	5					7.1	
672 S Lucile St	3/23/01	5.25	0.87	U	1.1	U		
672 S Lucile St	5/22/01	5.25	0.28	U	0.36	U		
672 S Lucile St	8/10/01	5.25	11		3.8	U		
672 S Lucile St	11/13/01	5.25	3.8	U	5	U		
672 S Lucile St	8/21/02	8					4	
672 S Lucile St	8/28/02	8					5.2	
672 S Lucile St	3/23/01	8.25	0.7	U	0.91	U		
672 S Lucile St	5/22/01	8.25	1.5	U	2	U		
672 S Lucile St	8/10/01	8.25	3.2	U	4.2	U		
672 S Lucile St	11/13/01	8.25	3.8	U	5	U		
5409 Denver Ave S	8/16/00	6.5	0.14	U	0.18	U		

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	67-64-1 Acetone ug/m3	Lab Qual	71-43-2 Benzene ug/m3	Lab Qual	56-23-5 Carbon tetrachloride ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			6.6			
406 S Orcas St	8/21/02	7			3			
412 S Orcas St	8/21/02	7			4			
412 S Lucile St	8/21/02	7			4.2			
507 S Brandon	8/22/02	8			4.8			
5327 Denver Ave S	8/27/02	8.5			2.9			
5403 Maynard Ave S	8/21/02	8			13	U		
5409 Denver Ave S	8/16/00	6.5	66		2.2		0.67	
5409 Denver Ave S	8/22/00	6.5	99		2.4		6.9	
5409 Denver Ave S	8/22/00	6.5	380	E[J]	2.9		0.2	U
5409 Denver Ave S	8/21/00	6.5	330	E[J]	2.2		0.19	U
613 S Brandon	8/21/02	8			4.6			
613 S Brandon	8/27/02	8			4.6			
613 S Brandon	8/16/00	6.5	38		3.9		1	
672 S Lucile St	8/21/00	6.5	79		1.9		61	
672 S Lucile St	8/16/00	6.5	34		3.2		1	
672 S Lucile St	8/22/00	6.5	140		2.8		320	
672 S Lucile St	8/22/00	6.5	220		4.4		120	
672 S Lucile St	8/22/00	6.5	280	[J]	4.2	[J]	0.76	U
672 S Lucile St	8/22/00	6.5	440	E[J]	4.1	[J]	0.51	U
5409 Denver Ave S	8/21/02	5			0.51			
5409 Denver Ave S	3/23/01	5.25	13		0.32		0.4	U
5409 Denver Ave S	5/22/01	5.25	8.7		0.54	U	0.43	U
5409 Denver Ave S	8/10/01	5.25	18		0.91	U	0.72	U
5409 Denver Ave S	11/13/01	5.25	19		1.2	U	0.95	U
672 S Lucile St	8/22/02	5			0.62	U		
672 S Lucile St	8/28/02	5			0.92			
672 S Lucile St	3/23/01	5.25	10		1		1.2	U
672 S Lucile St	5/22/01	5.25	17		1.7		0.54	
672 S Lucile St	8/10/01	5.25	190		8		14	
672 S Lucile St	11/13/01	5.25	8.3		2.7	U	5.2	U
672 S Lucile St	8/21/02	8			0.99	U		
672 S Lucile St	8/28/02	8			0.95	U		
672 S Lucile St	3/23/01	8.25	7.4		0.69		0.95	U
672 S Lucile St	5/22/01	8.25	7.1		2.7	U	2.1	U
672 S Lucile St	8/10/01	8.25	49		5.6	U	4.4	U
672 S Lucile St	11/13/01	8.25	7.9	U	2.7	U	5.2	U
5409 Denver Ave S	8/16/00	6.5	56		2.2		0.19	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	108-90-7 Chlorobenzene ug/m3	Lab Qual	75-00-3 Chloroethane ug/m3	Lab Qual	67-66-3 Chloroform ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			2.9	U	5.4	U
406 S Orcas St	8/21/02	7			0.28	U	0.62	
412 S Orcas St	8/21/02	7			0.27	U	0.74	
412 S Lucile St	8/21/02	7			2.8	U	5.3	U
507 S Brandon	8/22/02	8			2.2	U	1.6	U
5327 Denver Ave S	8/27/02	8.5			0.26	U	1.4	
5403 Maynard Ave S	8/21/02	8			17		20	U
5409 Denver Ave S	8/16/00	6.5	0.31	U			0.37	
5409 Denver Ave S	8/22/00	6.5	11				0.15	U
5409 Denver Ave S	8/22/00	6.5	2.1				0.3	
5409 Denver Ave S	8/21/00	6.5	62				0.26	
613 S Brandon	8/21/02	8			2.5	U	4.6	U
613 S Brandon	8/27/02	8			0.3		0.52	
613 S Brandon	8/16/00	6.5	0.12	U			0.73	
672 S Lucile St	8/21/00	6.5	48				160	
672 S Lucile St	8/16/00	6.5	0.13	U			0.83	
672 S Lucile St	8/22/00	6.5	24				14	
672 S Lucile St	8/22/00	6.5	6.6				5.7	
672 S Lucile St	8/22/00	6.5	1.7	[J]			5.6	[J]
672 S Lucile St	8/22/00	6.5	32	[J]			3.6	[J]
5409 Denver Ave S	8/21/02	5			0.26	U	0.19	U
5409 Denver Ave S	3/23/01	5.25	0.29	U			2.6	
5409 Denver Ave S	5/22/01	5.25	0.31	U			2.3	
5409 Denver Ave S	8/10/01	5.25	0.52	U			0.66	
5409 Denver Ave S	11/13/01	5.25	0.7	U			0.74	U
672 S Lucile St	8/22/02	5			0.51	U	1.7	
672 S Lucile St	8/28/02	5			0.58	U	2.5	
672 S Lucile St	3/23/01	5.25	0.87	U			18	
672 S Lucile St	5/22/01	5.25	0.27	U			0.29	U
672 S Lucile St	8/10/01	5.25	5.8				33	
672 S Lucile St	11/13/01	5.25	3.8	U			17	
672 S Lucile St	8/21/02	8			0.82	U	3.2	
672 S Lucile St	8/28/02	8			0.78	U	3.2	
672 S Lucile St	3/23/01	8.25	0.7	U			14	
672 S Lucile St	5/22/01	8.25	1.5	U			27	
672 S Lucile St	8/10/01	8.25	3.2	U			21	
672 S Lucile St	11/13/01	8.25	3.8	U			18	
5409 Denver Ave S	8/16/00	6.5	0.14	U			0.15	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	74-87-3 Chloromethane ug/m3	Lab Qual	100-41-4 Ethylbenzene ug/m3	Lab Qual	75-09-2 Methylene chloride ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			4.8	U		
406 S Orcas St	8/21/02	7			2.7			
412 S Orcas St	8/21/02	7			2.8			
412 S Lucile St	8/21/02	7			4.7	U		
507 S Brandon	8/22/02	8			2.5			
5327 Denver Ave S	8/27/02	8.5			3.7			
5403 Maynard Ave S	8/21/02	8			18	U		
5409 Denver Ave S	8/16/00	6.5	1.5		0.8		330	
5409 Denver Ave S	8/22/00	6.5	0.065	U	32		0.55	U
5409 Denver Ave S	8/22/00	6.5	0.068	U	9.7		0.57	U
5409 Denver Ave S	8/21/00	6.5	0.062	U	23		0.65	
613 S Brandon	8/21/02	8			4.1	U		
613 S Brandon	8/27/02	8			1.3			
613 S Brandon	8/16/00	6.5	1.9		1.9		120	
672 S Lucile St	8/21/00	6.5	0.085	U	54		0.96	
672 S Lucile St	8/16/00	6.5	1.6		1.7		130	
672 S Lucile St	8/22/00	6.5	0.78		29		5.4	U
672 S Lucile St	8/22/00	6.5	0.31	U	84		2.6	U
672 S Lucile St	8/22/00	6.5	1.2	[J]	4.5	[J]	2.1	U
672 S Lucile St	8/22/00	6.5	0.44	[J]	10	[J]	1.4	U
5409 Denver Ave S	8/21/02	5			0.35			
5409 Denver Ave S	3/23/01	5.25	0.29		0.27	U	1.1	U
5409 Denver Ave S	5/22/01	5.25	0.43		0.3	U	1.2	U
5409 Denver Ave S	8/10/01	5.25	0.42		0.66		3.5	
5409 Denver Ave S	11/13/01	5.25	0.31	U	0.66	U	2.6	U
672 S Lucile St	8/22/02	5			0.54			
672 S Lucile St	8/28/02	5			0.74			
672 S Lucile St	3/23/01	5.25	0.75		0.82	U	3.3	U
672 S Lucile St	5/22/01	5.25	1.7		0.7		1.9	
672 S Lucile St	8/10/01	5.25	6.3		7.8		13	
672 S Lucile St	11/13/01	5.25	4.1	U	3.6	U	2.9	U
672 S Lucile St	8/21/02	8			0.54	U		
672 S Lucile St	8/28/02	8			1			
672 S Lucile St	3/23/01	8.25	0.31	J	0.66	U	3	
672 S Lucile St	5/22/01	8.25	0.69	U	1.4	U	5.8	U
672 S Lucile St	8/10/01	8.25	1.4	U	3	U	12	U
672 S Lucile St	11/13/01	8.25	1.7	U	3.6	U	2.9	U
5409 Denver Ave S	8/16/00	6.5	0.49		0.13	U	3.8	

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	100-42-5 Styrene ug/m3	Lab Qual	127-18-4 Tetrachloroethylene ug/m3	Lab Qual	108-88-3 Toluene ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			280		13	
406 S Orcas St	8/21/02	7			8.2		11	
412 S Orcas St	8/21/02	7			1.4		13	
412 S Lucile St	8/21/02	7			7.3	U	16	
507 S Brandon	8/22/02	8			2.2	U	16	
5327 Denver Ave S	8/27/02	8.5			3.6		9.4	
5403 Maynard Ave S	8/21/02	8			28	U	27	
5409 Denver Ave S	8/16/00	6.5	0.41		21		13	
5409 Denver Ave S	8/22/00	6.5	0.13	U	75		6.7	
5409 Denver Ave S	8/22/00	6.5	0.93		63		4.1	
5409 Denver Ave S	8/21/00	6.5	0.13	U	61		5.3	
613 S Brandon	8/21/02	8			6.4	U	9.4	
613 S Brandon	8/27/02	8			1.7		8.2	
613 S Brandon	8/16/00	6.5	0.54		2.1		23	
672 S Lucile St	8/21/00	6.5	0.18	U	33		7.2	
672 S Lucile St	8/16/00	6.5	0.62		2.3		19	
672 S Lucile St	8/22/00	6.5	1.3	U	10		6.5	
672 S Lucile St	8/22/00	6.5	0.64	U	5.3		7.6	
672 S Lucile St	8/22/00	6.5	0.92	[J]	39	[J]	4.1	[J]
672 S Lucile St	8/22/00	6.5	1.2	[J]	61	[J]	6.2	[J]
5409 Denver Ave S	8/21/02	5			40		3.1	
5409 Denver Ave S	3/23/01	5.25	0.27	U	30		0.56	
5409 Denver Ave S	5/22/01	5.25	0.95		41		0.26	
5409 Denver Ave S	8/10/01	5.25	0.66		36		6.6	
5409 Denver Ave S	11/13/01	5.25	0.64	U	42		0.57	U
672 S Lucile St	8/22/02	5			9.7		3.7	
672 S Lucile St	8/28/02	5			13		5.9	
672 S Lucile St	3/23/01	5.25	0.81	U	15		4.5	
672 S Lucile St	5/22/01	5.25	0.39		0.4	U	4.1	
672 S Lucile St	8/10/01	5.25	6.5		29		8	
672 S Lucile St	11/13/01	5.25	3.5	U	21		3.1	U
672 S Lucile St	8/21/02	8			21		4.8	
672 S Lucile St	8/28/02	8			21		6.1	
672 S Lucile St	3/23/01	8.25	0.64	U	17		2.8	
672 S Lucile St	5/22/01	8.25	1.4	U	26		1.2	U
672 S Lucile St	8/10/01	8.25	3	U	22		2.6	U
672 S Lucile St	11/13/01	8.25	3.5	U	30		3.1	U
5409 Denver Ave S	8/16/00	6.5	0.13	U	21		1.5	

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	79-01-6 Trichloroethylene ug/m3	Lab Qual	75-01-4 Vinyl chloride ug/m3	Lab Qual	108-38-3, 1 Xylene (total) ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	5.9	U	2.8	U		
406 S Orcas St	8/21/02	7	3.4		1.6			
412 S Orcas St	8/21/02	7	7.5		0.49			
412 S Lucile St	8/21/02	7	5.8	U	2.8	U		
507 S Brandon	8/22/02	8	2		0.86			
5327 Denver Ave S	8/27/02	8.5	0.89		0.23			
5403 Maynard Ave S	8/21/02	8	22	U	10	U		
5409 Denver Ave S	8/16/00	6.5	4.4		0.087	U	2.2	
5409 Denver Ave S	8/22/00	6.5	0.5		0.04	U	75	
5409 Denver Ave S	8/22/00	6.5	1.1		0.042	U	23	
5409 Denver Ave S	8/21/00	6.5	0.29		0.039	U	67	
613 S Brandon	8/21/02	8	5.1	U	2.4	U		
613 S Brandon	8/27/02	8	1.5		0.5			
613 S Brandon	8/16/00	6.5	0.44		0.15		5.8	
672 S Lucile St	8/21/00	6.5	8.9		0.053	U	240	
672 S Lucile St	8/16/00	6.5	3.3		0.1		6	
672 S Lucile St	8/22/00	6.5	3.9		0.39	U	140	
672 S Lucile St	8/22/00	6.5	22		0.19	U	420	
672 S Lucile St	8/22/00	6.5	3.8	[J]	0.16	U	13	[J]
672 S Lucile St	8/22/00	6.5	0.44	U	0.1	U	27	[J]
5409 Denver Ave S	8/21/02	5	0.21	U	3.9			
5409 Denver Ave S	3/23/01	5.25	0.34	U	0.08	U	0.27	U
5409 Denver Ave S	5/22/01	5.25	0.37	U	0.087	U	0.3	U
5409 Denver Ave S	8/10/01	5.25	0.61	U	0.14	U	2	
5409 Denver Ave S	11/13/01	5.25	0.81	U	0.19	U	0.66	U
672 S Lucile St	8/22/02	5	2.4		2			
672 S Lucile St	8/28/02	5	3.9		2.8			
672 S Lucile St	3/23/01	5.25	6.7		0.24	U	0.82	U
672 S Lucile St	5/22/01	5.25	0.32	U	0.76	U	2	
672 S Lucile St	8/10/01	5.25	20		7.2		15	
672 S Lucile St	11/13/01	5.25	11		2.1	U	3.6	U
672 S Lucile St	8/21/02	8	4.9		3.8			
672 S Lucile St	8/28/02	8	5.3		1.9			
672 S Lucile St	3/23/01	8.25	6.8		0.19	U	0.66	U
672 S Lucile St	5/22/01	8.25	10		0.43	U	1.4	U
672 S Lucile St	8/10/01	8.25	9.4		0.89	U	3	U
672 S Lucile St	11/13/01	8.25	13		2.1	U	3.6	U
5409 Denver Ave S	8/16/00	6.5	2.7		0.039	U	0.66	

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	156-59-2 cis-1,2-Dichloroethylene ug/m3	Lab Qual	10061-01-5 cis-1,3-Dichloropropene ug/m3	Lab Qual	95-47-6 o-Xylene ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	4.4	U				
406 S Orcas St	8/21/02	7	0.17	U				
412 S Orcas St	8/21/02	7	0.16	U				
412 S Lucile St	8/21/02	7	4.3	U				
507 S Brandon	8/22/02	8	1.3	U				
5327 Denver Ave S	8/27/02	8.5	1.8					
5403 Maynard Ave S	8/21/02	8	460					
5409 Denver Ave S	8/16/00	6.5	0.27	U	0.31	U	0.69	
5409 Denver Ave S	8/22/00	6.5	0.12	U	0.14	U	60	
5409 Denver Ave S	8/22/00	6.5	0.13	U	0.15	U	9	
5409 Denver Ave S	8/21/00	6.5	0.12	U	0.14	U	54	
613 S Brandon	8/21/02	8	3.8	U				
613 S Brandon	8/27/02	8	0.16	U				
613 S Brandon	8/16/00	6.5	0.11	U	0.12	U	1.7	
672 S Lucile St	8/21/00	6.5	0.16	U	0.19	U	160	
672 S Lucile St	8/16/00	6.5	0.11	U	0.12	U	1.5	
672 S Lucile St	8/22/00	6.5	160		1.4	U	61	
672 S Lucile St	8/22/00	6.5	39		0.69	U	260	
672 S Lucile St	8/22/00	6.5	0.48	U	0.55	U	4.8	[J]
672 S Lucile St	8/22/00	6.5	0.32	U	0.37	U	11	[J]
5409 Denver Ave S	8/21/02	5	0.16	U				
5409 Denver Ave S	3/23/01	5.25	0.25	U	0.29	U	0.27	U
5409 Denver Ave S	5/22/01	5.25	0.27	U	0.31	U	0.3	U
5409 Denver Ave S	8/10/01	5.25	0.45	U	0.52	U	0.71	
5409 Denver Ave S	11/13/01	5.25	0.6	U	0.69	U	0.66	U
672 S Lucile St	8/22/02	5	0.31	U				
672 S Lucile St	8/28/02	5	0.35	U				
672 S Lucile St	3/23/01	5.25	64		0.86	U	0.82	U
672 S Lucile St	5/22/01	5.25	0.24	U	0.27	U	0.85	
672 S Lucile St	8/10/01	5.25	28		13		7.2	
672 S Lucile St	11/13/01	5.25	41		3.8	U	3.6	U
672 S Lucile St	8/21/02	8	0.63					
672 S Lucile St	8/28/02	8	0.47	U				
672 S Lucile St	3/23/01	8.25	74		0.69	U	0.66	U
672 S Lucile St	5/22/01	8.25	50		1.5	U	1.4	U
672 S Lucile St	8/10/01	8.25	21		3.2	U	3	U
672 S Lucile St	11/13/01	8.25	42		3.8	U	3.6	U
5409 Denver Ave S	8/16/00	6.5	0.12	U	0.14	U	0.13	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	156-60-5 trans-1,2-Dichloroethylene ug/m3	Lab Qual	10061-02-6 trans-1,3-Dichloropropene ug/m3	Lab Qual	630-20-6 1,1,1,2-Tetrachloroethane ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	17	U				
406 S Orcas St	8/21/02	7	0.85	U				
412 S Orcas St	8/21/02	7	0.81	U				
412 S Lucile St	8/21/02	7	17	U				
507 S Brandon	8/22/02	8	6.5	U				
5327 Denver Ave S	8/27/02	8.5	0.79	U				
5403 Maynard Ave S	8/21/02	8	65	U				
5409 Denver Ave S	8/16/00	6.5	0.27	U	0.31	U	0.47	U
5409 Denver Ave S	8/22/00	6.5	0.12	U	0.14	U	0.22	U
5409 Denver Ave S	8/22/00	6.5	0.13	U	0.15	U	0.22	U
5409 Denver Ave S	8/21/00	6.5	0.12	U	0.14	U	0.21	U
613 S Brandon	8/21/02	8	15	U				
613 S Brandon	8/27/02	8	0.81	U				
613 S Brandon	8/16/00	6.5	0.11	U	0.12	U	0.19	U
672 S Lucile St	8/21/00	6.5	0.16	U	0.19	U	0.28	U
672 S Lucile St	8/16/00	6.5	0.11	U	0.12	U	0.19	U
672 S Lucile St	8/22/00	6.5	2.8		1.4	U	2.1	U
672 S Lucile St	8/22/00	6.5	1.9		0.69	U	1.01	U
672 S Lucile St	8/22/00	6.5	0.48	U	0.55	U	0.83	U
672 S Lucile St	8/22/00	6.5	0.32	U	0.37	U	0.56	U
5409 Denver Ave S	8/21/02	5	0.79	U				
5409 Denver Ave S	3/23/01	5.25	1.2	U	0.29	U	0.43	U
5409 Denver Ave S	5/22/01	5.25	1.4	U	0.31	U	0.47	U
5409 Denver Ave S	8/10/01	5.25	2.2	U	0.52	U	0.78	U
5409 Denver Ave S	11/13/01	5.25	3	U	0.69	U	1	U
672 S Lucile St	8/22/02	5	1.5	U				
672 S Lucile St	8/28/02	5	1.7	U				
672 S Lucile St	3/23/01	5.25	3.8	U	0.86	U	1.3	U
672 S Lucile St	5/22/01	5.25	1.2	U	0.27	U	0.41	U
672 S Lucile St	8/10/01	5.25	140		8.3		7.7	
672 S Lucile St	11/13/01	5.25	13	U	3.8	U	5.7	U
672 S Lucile St	8/21/02	8	2.4	U				
672 S Lucile St	8/28/02	8	2.3	U				
672 S Lucile St	3/23/01	8.25	2.9	J	0.69	U	1	U
672 S Lucile St	5/22/01	8.25	6	U	1.5	U	2.3	U
672 S Lucile St	8/10/01	8.25	14	U	3.2	U	4.8	U
672 S Lucile St	11/13/01	8.25	13	U	3.8	U	5.7	U
5409 Denver Ave S	8/16/00	6.5	0.6	U	0.14	U	0.21	U

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	76-13-1 1,1,2-Trichlorotrifluoroethane ug/m3	Lab Qual	95-63-6 1,2,4-Trimethylbenzene ug/m3	Lab Qual	106-93-4 1,2-Dibromoethane (EDB) ug/m3	Lab Qual
404 S Orcas St	8/21/02	7			5.4	U		
406 S Orcas St	8/21/02	7			14			
412 S Orcas St	8/21/02	7			7.2			
412 S Lucile St	8/21/02	7			28			
507 S Brandon	8/22/02	8			5.3			
5327 Denver Ave S	8/27/02	8.5			9.4			
5403 Maynard Ave S	8/21/02	8			20	U		
5409 Denver Ave S	8/16/00	6.5	340					
5409 Denver Ave S	8/22/00	6.5	320					
5409 Denver Ave S	8/22/00	6.5	310					
5409 Denver Ave S	8/21/00	6.5	370					
613 S Brandon	8/21/02	8			4.7	U		
613 S Brandon	8/27/02	8			1.6			
613 S Brandon	8/16/00	6.5	0.7					
672 S Lucile St	8/21/00	6.5	120					
672 S Lucile St	8/16/00	6.5	0.66					
672 S Lucile St	8/22/00	6.5	110					
672 S Lucile St	8/22/00	6.5	190					
672 S Lucile St	8/22/00	6.5	350	[J]				
672 S Lucile St	8/22/00	6.5	850	[J]				
5409 Denver Ave S	8/21/02	5			0.71			
5409 Denver Ave S	3/23/01	5.25	540		0.31	U	0.48	U
5409 Denver Ave S	5/22/01	5.25	710		0.49		0.64	
5409 Denver Ave S	8/10/01	5.25	780					
5409 Denver Ave S	11/13/01	5.25	970		0.74	U	1.2	U
672 S Lucile St	8/22/02	5			0.62			
672 S Lucile St	8/28/02	5			1.1			
672 S Lucile St	3/23/01	5.25	160		0.93	U	1.4	U
672 S Lucile St	5/22/01	5.25	0.69		0.8		0.46	U
672 S Lucile St	8/10/01	5.25	230					
672 S Lucile St	11/13/01	5.25	350		4.1	U	6.4	U
672 S Lucile St	8/21/02	8			0.61	U		
672 S Lucile St	8/28/02	8			0.72			
672 S Lucile St	3/23/01	8.25	590		0.74	U	1.2	U
672 S Lucile St	5/22/01	8.25	650		1.6	U	2.6	U
672 S Lucile St	8/10/01	8.25	300					
672 S Lucile St	11/13/01	8.25	380		4.1	U	6.4	U
5409 Denver Ave S	8/16/00	6.5	340					

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	108-67-8 1,3,5-Trimethylbenzene ug/m3	Lab Qual	98-82-8 Cumene ug/m3	Lab Qual	75-71-8 Dichlorodifluoromethane ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	5.4	U	22	U		
406 S Orcas St	8/21/02	7	3.6		21	U		
412 S Orcas St	8/21/02	7	2.1		20	U		
412 S Lucile St	8/21/02	7	5.3	U	21	U		
507 S Brandon	8/22/02	8	1.6	J	16	U		
5327 Denver Ave S	8/27/02	8.5	2.1		20	U		
5403 Maynard Ave S	8/21/02	8	20	U	20	U		
5409 Denver Ave S	8/16/00	6.5						
5409 Denver Ave S	8/22/00	6.5						
5409 Denver Ave S	8/22/00	6.5						
5409 Denver Ave S	8/21/00	6.5						
613 S Brandon	8/21/02	8	4.7	U	19	U		
613 S Brandon	8/27/02	8	0.81		20	U		
613 S Brandon	8/16/00	6.5	0.12	U				
672 S Lucile St	8/21/00	6.5						
672 S Lucile St	8/16/00	6.5						
672 S Lucile St	8/22/00	6.5						
672 S Lucile St	8/22/00	6.5						
672 S Lucile St	8/22/00	6.5						
672 S Lucile St	8/22/00	6.5						
5409 Denver Ave S	8/21/02	5	0.44		18	U		
5409 Denver Ave S	3/23/01	5.25					7.2	
5409 Denver Ave S	5/22/01	5.25					9.1	
5409 Denver Ave S	8/10/01	5.25						
5409 Denver Ave S	11/13/01	5.25					5.2	
672 S Lucile St	8/22/02	5	0.41		19	U		
672 S Lucile St	8/28/02	5	0.67		21	U		
672 S Lucile St	3/23/01	5.25					4.3	
672 S Lucile St	5/22/01	5.25					3.7	
672 S Lucile St	8/10/01	5.25						
672 S Lucile St	11/13/01	5.25					4.1	U
672 S Lucile St	8/21/02	8	0.61	U				
672 S Lucile St	8/28/02	8	0.58	U	17	U		
672 S Lucile St	3/23/01	8.25					4.5	
672 S Lucile St	5/22/01	8.25					5.7	
672 S Lucile St	8/10/01	8.25						
672 S Lucile St	11/13/01	8.25					4.1	U
5409 Denver Ave S	8/16/00	6.5	0.37	U				

Period: From 8/16/2000 thru 8/28/2003 - inclusive
SAMPLE TYPE: Soil Gas

Site	Date	Sample Depth (feet)	103-65-1 Propylbenzene ug/m3	Lab Qual	135-98-8 sec-Butylbenzene ug/m3	Lab Qual
404 S Orcas St	8/21/02	7	22	U	24	U
406 S Orcas St	8/21/02	7	21	U	24	U
412 S Orcas St	8/21/02	7	20	U	22	U
412 S Lucile St	8/21/02	7	21	U	24	U
507 S Brandon	8/22/02	8	16	U	18	U
5327 Denver Ave S	8/27/02	8.5	20	U	22	U
5403 Maynard Ave S	8/21/02	8	20	U	22	U
5409 Denver Ave S	8/16/00	6.5				
5409 Denver Ave S	8/22/00	6.5				
5409 Denver Ave S	8/22/00	6.5				
5409 Denver Ave S	8/21/00	6.5				
613 S Brandon	8/21/02	8	19	U	21	U
613 S Brandon	8/27/02	8	20	U	22	U
613 S Brandon	8/16/00	6.5				
672 S Lucile St	8/21/00	6.5				
672 S Lucile St	8/16/00	6.5				
672 S Lucile St	8/22/00	6.5				
672 S Lucile St	8/22/00	6.5				
672 S Lucile St	8/22/00	6.5				
672 S Lucile St	8/22/00	6.5				
5409 Denver Ave S	8/21/02	5	18	U	20	U
5409 Denver Ave S	3/23/01	5.25				
5409 Denver Ave S	5/22/01	5.25				
5409 Denver Ave S	8/10/01	5.25				
5409 Denver Ave S	11/13/01	5.25				
672 S Lucile St	8/22/02	5	19	U	21	U
672 S Lucile St	8/28/02	5	21	U	24	U
672 S Lucile St	3/23/01	5.25				
672 S Lucile St	5/22/01	5.25				
672 S Lucile St	8/10/01	5.25				
672 S Lucile St	11/13/01	5.25				
672 S Lucile St	8/21/02	8				
672 S Lucile St	8/28/02	8	17	U	20	U
672 S Lucile St	3/23/01	8.25				
672 S Lucile St	5/22/01	8.25				
672 S Lucile St	8/10/01	8.25				
672 S Lucile St	11/13/01	8.25				
5409 Denver Ave S	8/16/00	6.5				

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	471-34-1 Alkalinity, Total (as CaCO3) ug/l	Lab Qual	7664-41-7 Ammonia (as N) ug/l	Lab Qual	71-52-3 Bicarbonate (as CaCO3) ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0	146000					
5409 Denver Ave S	2/10/03	0	147000		1320		147000	
5409 Denver Ave S	3/23/01	0	186000					
5409 Denver Ave S	5/20/02	0	144000		234		144000	
5409 Denver Ave S	5/22/01	0	180500					
5409 Denver Ave S	8/2/02	0	148500		1070		148500	
5409 Denver Ave S	8/10/01	0	196000					
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	172000		739		172000	
5409 Denver Ave S	11/13/01	0	166000					
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	471-34-1 Alkalinity, Total (as CaCO3) ug/l	Lab Qual	7664-41-7 Ammonia (as N) ug/l	Lab Qual	71-52-3 Bicarbonate (as CaCO3) ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10	78000		100	U	78000	
412 S Lucile St	5/8/02	10	71500		448		71500	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	80400		100	U	80400	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	66000		100	U	66000	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	124-38-9 Carbon dioxide ug/l	Lab Qual	3812-32-6 Carbonate (as CaCO3) ug/l	Lab Qual	16887-00-6 Chloride ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0	45800				15000	D[J]
5409 Denver Ave S	2/10/03	0	86700		5000	U	16900	D
5409 Denver Ave S	3/23/01	0					31300	
5409 Denver Ave S	5/20/02	0	78300		5000	U	10900	
5409 Denver Ave S	5/22/01	0	100000				26550	
5409 Denver Ave S	8/2/02	0	70750		5000	U	10200	D
5409 Denver Ave S	8/10/01	0	137000				22300	D
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	110000		5000	U	20800	D
5409 Denver Ave S	11/13/01	0	107000				18300	D
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	124-38-9 Carbon dioxide ug/l	Lab Qual	3812-32-6 Carbonate (as CaCO3) ug/l	Lab Qual	16887-00-6 Chloride ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10	17350		5000	U	13800	
412 S Lucile St	5/8/02	10	23400		5000	U	10000	D
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	42800		5000	U	9655	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	30600		5000	U	9445	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	TDS Dissolved Solids, Total ug/l	Lab Qual	14280-30-9 Hydroxide (as CaCO3) ug/l	Lab Qual	14797-55-8 Nitrate-Nitrogen (as N) ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0					1430	
5409 Denver Ave S	2/10/03	0	250000		5000	U	818	
5409 Denver Ave S	3/23/01	0					100	U
5409 Denver Ave S	5/20/02	0	240000		5000	U	1480	
5409 Denver Ave S	5/22/01	0					408	
5409 Denver Ave S	8/2/02	0	250000		5000	U	663.5	
5409 Denver Ave S	8/10/01	0					265	
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	270000		5000	U	1350	
5409 Denver Ave S	11/13/01	0					350	
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	TDS Dissolved Solids, Total ug/l	Lab Qual	14280-30-9 Hydroxide (as CaCO3) ug/l	Lab Qual	14797-55-8 Nitrate-Nitrogen (as N) ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10	190000		5000	U	1355	
412 S Lucile St	5/8/02	10	220000		5000	U	532	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	210000		5000	U	1990	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	250000		5000	U	5520	D
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	14797-65-0 Nitrite-Nitrogen ug/l	Lab Qual	14808-79-8 Sulfate ug/l	Lab Qual	18496-25-8 Sulfide ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					20000	U
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0					20000	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0					20000	U
672 S Lucile St	8/10/01	0					20000	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0					20000	U
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0	100	U	8790		20000	U
5409 Denver Ave S	2/10/03	0	200	U	7095		20000	U
5409 Denver Ave S	3/23/01	0	100	U	5100		5000	U
5409 Denver Ave S	5/20/02	0	200	U	10900		20000	U
5409 Denver Ave S	5/22/01	0	408		12700		20000	U
5409 Denver Ave S	8/2/02	0	200	U	9290	D	20000	U
5409 Denver Ave S	8/10/01	0	100	U	8530		20000	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	200	U	6190		50000	U
5409 Denver Ave S	11/13/01	0	100	U	4300		20000	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	14797-65-0 Nitrite-Nitrogen ug/l	Lab Qual	14808-79-8 Sulfate ug/l	Lab Qual	18496-25-8 Sulfide ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10	200	U	28350		20000	U
412 S Lucile St	5/8/02	10	200	U	32900		20000	U
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	200	U	34400		20000	U
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	200	U	39500	D	50000	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-44-0 Total Organic Carbon ug/l	Lab Qual	7440-38-2 Arsenic ug/l	Lab Qual	7440-39-3 Barium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0					4	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0			10.6		10	U
672 S Lucile St	5/22/01	0			23.2		10	U
672 S Lucile St	8/2/02	0					4	U
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0			23.3		10	U
672 S Lucile St	11/13/02	0			17.6		10	U
5409 Denver Ave S	2/7/02	0	20100	D				
5409 Denver Ave S	2/10/03	0	25500	D			4.03	
5409 Denver Ave S	3/23/01	0	30800		24		10	U
5409 Denver Ave S	5/20/02	0	17600	D	10.5		10	U
5409 Denver Ave S	5/22/01	0	25800	DB	24.1		10	U
5409 Denver Ave S	8/2/02	0	21150				4	U
5409 Denver Ave S	8/10/01	0	14700	D				
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	9310		15.5		10	U
5409 Denver Ave S	11/13/01	0	18700		21.6		10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-44-0 Total Organic Carbon ug/l	Lab Qual	7440-38-2 Arsenic ug/l	Lab Qual	7440-39-3 Barium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0			0.809			
412 S Lucile St	2/17/03	10	9260	D				
412 S Lucile St	5/8/02	10	10000	UD				
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	10800	D				
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	2360		1.26			
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0			1.61			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-43-9W Cadmium ug/l	Lab Qual	7440-70-2 Calcium ug/l	Lab Qual	7440-47-3 Chromium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0					1	U
672 S Lucile St	5/22/01	0	1	U			2.65	
672 S Lucile St	8/2/02	0					1	U
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1	U			3.22	
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0					2.67	
5409 Denver Ave S	2/10/03	0			30600			
5409 Denver Ave S	3/23/01	0	1	U			18.6	
5409 Denver Ave S	5/20/02	0			29800		1.86	
5409 Denver Ave S	5/22/01	0	1	U			3.46	
5409 Denver Ave S	8/2/02	0			15300		1.83	
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0			30700			
5409 Denver Ave S	11/13/01	0	1	U			2.58	
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-43-9W Cadmium ug/l	Lab Qual	7440-70-2 Calcium ug/l	Lab Qual	7440-47-3 Chromium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10			23400			
412 S Lucile St	5/8/02	10			22200			
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10			11500			
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0			25200			
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-50-8 Copper ug/l	Lab Qual	57-12-5 Cyanide ug/l	Lab Qual	GIS-FERRIC Ferric Iron ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0			10	U		
672 S Lucile St	2/10/03	0	3.47		10	U		
672 S Lucile St	3/23/01	0			10	U		
672 S Lucile St	5/17/02	0	4.44					
672 S Lucile St	5/22/01	0	1	U	10	U		
672 S Lucile St	8/2/02	0	2.34		10	U		
672 S Lucile St	8/10/01	0			10	U		
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1	U	10	U		
672 S Lucile St	11/13/02	0	2.14					
5409 Denver Ave S	2/7/02	0			10	U	8550	
5409 Denver Ave S	2/10/03	0	1.26		10	U	3260	[J]
5409 Denver Ave S	3/23/01	0	1.17		10	U	11200	
5409 Denver Ave S	5/20/02	0	1.77				4300	
5409 Denver Ave S	5/22/01	0	1	U	10	U	9040	[J]
5409 Denver Ave S	8/2/02	0	1.03		10	U	500	U[J]
5409 Denver Ave S	8/10/01	0			10	U	16700	[J]
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	1	U			6070	[J]
5409 Denver Ave S	11/13/01	0	1	U	10	U	2100	
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-50-8 Copper ug/l	Lab Qual	57-12-5 Cyanide ug/l	Lab Qual	GIS-FERRIC Ferric Iron ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			10	U		
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0			10	U		
412 S Lucile St	2/17/03	10			10	U	500	U[J]
412 S Lucile St	5/8/02	10					2910	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10					1100	[J]
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0			10	U	500	U[J]
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5			10	U		
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0			10	U		

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-FERROUS Ferrous Iron ug/l	Lab Qual	18540-29-9 Hexavalent Chromium ug/l	Lab Qual	7439-89-6 Iron ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0			5	U[J]		
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0	21400	D[J]	5	U		
5409 Denver Ave S	2/10/03	0	10000	UD[J]				
5409 Denver Ave S	3/23/01	0	15900					
5409 Denver Ave S	5/20/02	0	6080	D[J]				
5409 Denver Ave S	5/22/01	0					12800	D[J]
5409 Denver Ave S	8/2/02	0	6435		5	U[J]		
5409 Denver Ave S	8/10/01	0	9470	D[J]				
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	9595					
5409 Denver Ave S	11/13/01	0	16800	D[J]				
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-FERROUS Ferrous Iron ug/l	Lab Qual	18540-29-9 Hexavalent Chromium ug/l	Lab Qual	7439-89-6 Iron ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10	594					
412 S Lucile St	5/8/02	10	500	U[J]				
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	502	[J]				
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	3465					
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7439-92-1 Lead ug/l	Lab Qual	7439-95-4 Magnesium ug/l	Lab Qual	7439-96-5W Manganese ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0					279	
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	1	U			363	[J]
672 S Lucile St	5/22/01	0	1	U				
672 S Lucile St	8/2/02	0					346	
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1	U				
672 S Lucile St	11/13/02	0	1	U			328	
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0			8830		125	
5409 Denver Ave S	3/23/01	0	1	U			221	
5409 Denver Ave S	5/20/02	0	1	U	7820		129	[J]
5409 Denver Ave S	5/22/01	0	1	U				
5409 Denver Ave S	8/2/02	0			4380		111	
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	1	U	9300		143	
5409 Denver Ave S	11/13/01	0	1	U				
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7439-92-1 Lead ug/l	Lab Qual	7439-95-4 Magnesium ug/l	Lab Qual	7439-96-5W Manganese ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	1	U				
412 S Lucile St	2/17/03	10			9800		55.2	
412 S Lucile St	5/8/02	10			8310		84.4	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10			4480		74.6	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	1	U	9630		64.9	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	1	U				

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7439-97-6 Mercury ug/l	Lab Qual	7440-02-0 Nickel ug/l	Lab Qual	9/7/40 Potassium ug/l	Lab Qual
MTCA B Minimum Level			7.898		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0			1.48			
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0			1.83			
672 S Lucile St	5/22/01	0			3.48			
672 S Lucile St	8/2/02	0			2			
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1	U	4.33			
672 S Lucile St	11/13/02	0			1.78			
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0			2.48		9520	
5409 Denver Ave S	3/23/01	0			15.2			
5409 Denver Ave S	5/20/02	0			2.76		8500	
5409 Denver Ave S	5/22/01	0			6.17			
5409 Denver Ave S	8/2/02	0			3.02		4870	
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0			3.68		11600	
5409 Denver Ave S	11/13/01	0	1	U	5.62			
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7439-97-6 Mercury ug/l	Lab Qual	7440-02-0 Nickel ug/l	Lab Qual	9/7/40 Potassium ug/l	Lab Qual
MTCA B Minimum Level			7.898		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10					5600	
412 S Lucile St	5/8/02	10					4300	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10					2540	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0					4940	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7782-49-2 Selenium ug/l	Lab Qual	7440-22-4 Silver ug/l	Lab Qual	7440-23-5 Sodium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	1	U	1	U		
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	1	U	1	U		
672 S Lucile St	5/22/01	0	1	UB	1	U		
672 S Lucile St	8/2/02	0	1	U	1	U		
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1	U				
672 S Lucile St	11/13/02	0	1	U	1	U		
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0	1	U	1	U	26000	
5409 Denver Ave S	3/23/01	0	1	U	1	U		
5409 Denver Ave S	5/20/02	0	1	U	1	U	29000	[J]
5409 Denver Ave S	5/22/01	0	1	UB	1	U		
5409 Denver Ave S	8/2/02	0	1	U	1	U	16400	
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	1	U	1	U	34900	
5409 Denver Ave S	11/13/01	0	2.01					
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7782-49-2 Selenium ug/l	Lab Qual	7440-22-4 Silver ug/l	Lab Qual	7440-23-5 Sodium ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10					15300	
412 S Lucile St	5/8/02	10					13500	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10					6880	
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0					14100	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-62-2 Vanadium ug/l	Lab Qual	7440-66-6 Zinc ug/l	Lab Qual	GIS-C10-ALE C10-C12 (EPH) Aliphatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0					50	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	3.55					
672 S Lucile St	5/22/01	0	4.46		10	U		
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	5.49		10	U		
672 S Lucile St	11/13/02	0					50	U
5409 Denver Ave S	2/7/02	0					100	U
5409 Denver Ave S	2/10/03	0					50	U
5409 Denver Ave S	3/23/01	0	10	U	10	U		
5409 Denver Ave S	5/20/02	0	4.81				100	U
5409 Denver Ave S	5/22/01	0	4.88		10	U		
5409 Denver Ave S	8/2/02	0					100	U
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0					50	U
5409 Denver Ave S	11/13/01	0	6.36		10	U		
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	7440-62-2 Vanadium ug/l	Lab Qual	7440-66-6 Zinc ug/l	Lab Qual	GIS-C10-ALE C10-C12 (EPH) Aliphatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5					50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0					50	U
412 S Lucile St	2/17/03	10					50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0					50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5					50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0					50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C10-ARE C10-C12 (EPH) Aromatics ug/l	Lab Qual	GIS-C12-ALE C12-C16 (EPH) Aliphatics ug/l	Lab Qual	GIS-C12-ARE C12-C16 (EPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	103		50	U	50	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	71.8		50	U	50	U
5409 Denver Ave S	2/7/02	0	100	U	100	U	100	U
5409 Denver Ave S	2/10/03	0	53.8		50	U	50	U
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	100	U	100	U	100	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	100	U	100	U	100	U
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	68.3		50	U	50	U
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C10-ARE C10-C12 (EPH) Aromatics ug/l	Lab Qual	GIS-C12-ALE C12-C16 (EPH) Aliphatics ug/l	Lab Qual	GIS-C12-ARE C12-C16 (EPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U	50	U	50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U	50	U	50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U	50	U	50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C16-ALE C16-C21 (EPH) Aliphatics ug/l	Lab Qual	GIS-C16-ARE C16-C21 (EPH) Aromatics ug/l	Lab Qual	GIS-C21-ALE C21-C34 (EPH) Aliphatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	50	U	50	U	50	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	50	U	50	U	50	U
5409 Denver Ave S	2/7/02	0	100	U	100	U	100	U
5409 Denver Ave S	2/10/03	0	50	U	50	U	50	U
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	100	U	100	U	100	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	100	U	100	U	100	U
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	50	U	50	U	50	U
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C16-ALE C16-C21 (EPH) Aliphatics ug/l	Lab Qual	GIS-C16-ARE C16-C21 (EPH) Aromatics ug/l	Lab Qual	GIS-C21-ALE C21-C34 (EPH) Aliphatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U	50	U	50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U	50	U	50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U	50	U	50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C21-ARE C21-C34 (EPH) Aromatics ug/l	Lab Qual	GIS-C8-ALE C8-C10 (EPH) Aliphatics ug/l	Lab Qual	GIS-C8-ARE C8-C10 (EPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	50	U	50	U	164	
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	50	U	50	U	265	
5409 Denver Ave S	2/7/02	0	100	U	633			
5409 Denver Ave S	2/10/03	0	50	U	78.5		1920	
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	100	U	266			
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	100	U	255			
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	50	U	737		10000	UD
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C21-ARE C21-C34 (EPH) Aromatics ug/l	Lab Qual	GIS-C8-ALE C8-C10 (EPH) Aliphatics ug/l	Lab Qual	GIS-C8-ARE C8-C10 (EPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U	50	U	50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U	50	U	50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U	50	U	50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-TEPH TotalExtractablePetroleum HC ug/l	Lab Qual	GIS-C10-ALV C10-C12 (VPH) Aliphatics ug/l	Lab Qual	GIS-C10-ARV C10-C12 (VPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	267		91.5		153	
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	71.8		71.1		100	
5409 Denver Ave S	2/7/02	0	633		5000	UD	5000	UD
5409 Denver Ave S	2/10/03	0	1970		5000	UD	5000	UD
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	266		1000	UD	1000	UD
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	100	U	2500	UD	2500	UD
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	805		10000	UD	10000	UD
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-TEPH TotalExtractablePetroleum HC ug/l	Lab Qual	GIS-C10-ALV C10-C12 (VPH) Aliphatics ug/l	Lab Qual	GIS-C10-ARV C10-C12 (VPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U	50	U	50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U	50	U	50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U	50	U	50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C12-ARV C12-C13 (VPH) Aromatics ug/l	Lab Qual	GIS-C5-ARV C5-C6 (VPH) Aromatics ug/l	Lab Qual	GIS-C6-ARV C6-C8 (VPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	50	U	50	U	50	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	50	U	50	U	50	U
5409 Denver Ave S	2/7/02	0	5000	UD	5000	UD	5000	UD
5409 Denver Ave S	2/10/03	0	5000	UD	5000	UD	5000	UD
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	1000	UD	1000	UD	1000	UD
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	2500	UD	2500	UD	2500	UD
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10000	UD	10000	UD	10000	UD
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C12-ARV C12-C13 (VPH) Aromatics ug/l	Lab Qual	GIS-C5-ARV C5-C6 (VPH) Aromatics ug/l	Lab Qual	GIS-C6-ARV C6-C8 (VPH) Aromatics ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U	50	U	50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U	50	U	50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U	50	U	50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C8-ALV C8-C10 (VPH) Aliphatics ug/l	Lab Qual	GIS-C8-ARV C8-C10 (VPH) Aromatics ug/l	Lab Qual	GIS-TVPH TotalVolatilePetroleum HC ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	50	U	375		620	
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	50	U			436	
5409 Denver Ave S	2/7/02	0	5000	UD	6070	D	6070	D
5409 Denver Ave S	2/10/03	0	5000	UD	5050	D	5050	D
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	1000	UD	1970	D	1970	D
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	2500	UD	3620	D	3620	D
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10000	UD			10000	UD
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	GIS-C8-ALV C8-C10 (VPH) Aliphatics ug/l	Lab Qual	GIS-C8-ARV C8-C10 (VPH) Aromatics ug/l	Lab Qual	GIS-TVPH TotalVolatilePetroleum HC ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	50	U	50	U	50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	50	U			50	U
412 S Lucile St	2/17/03	10	50	U	50	U	50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	50	U			50	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	50	U	50	U	50	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	50	U			50	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	12674-11-2 Aroclor 1016 ug/l	Lab Qual	11104-28-2 Aroclor 1221 ug/l	Lab Qual	11141-16-5 Aroclor 1232 ug/l	Lab Qual
MTCA B Minimum Level			176.468		176.468		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	0.1	U	0.219	U	0.1	U
672 S Lucile St	5/22/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	11/13/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	0.1	U	0.219	U	0.1	U
5409 Denver Ave S	5/22/01	0	0.5	U	0.5	U	0.5	U
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	11/13/01	0	0.5	U	0.5	U	0.5	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	12674-11-2 Aroclor 1016 ug/l	Lab Qual	11104-28-2 Aroclor 1221 ug/l	Lab Qual	11141-16-5 Aroclor 1232 ug/l	Lab Qual
MTCA B Minimum Level			176.468		176.468		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	53469-21-9 Aroclor 1242 ug/l	Lab Qual	12672-29-6 Aroclor 1248 ug/l	Lab Qual	11097-69-1 Aroclor 1254 ug/l	Lab Qual
MTCA B Minimum Level			0		0		13.724	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	0.131	U	0.123	U	0.18	U
672 S Lucile St	5/22/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	11/13/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	0.131	U	0.123	U	0.18	U
5409 Denver Ave S	5/22/01	0	0.5	U	0.5	U	0.5	U
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	11/13/01	0	0.5	U	0.5	U	0.5	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	53469-21-9 Aroclor 1242 ug/l	Lab Qual	12672-29-6 Aroclor 1248 ug/l	Lab Qual	11097-69-1 Aroclor 1254 ug/l	Lab Qual
MTCA B Minimum Level			0		0		13.724	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	11096-82-5 Aroclor 1260 ug/l	Lab Qual	37324-23-5 Aroclor 1262 ug/l	Lab Qual	11100-14-4 Aroclor 1268 ug/l	Lab Qual
MTCA B Minimum Level			9.047		9.047		9.047	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0	0.1	U	0.1	U	0.1	U
672 S Lucile St	5/22/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	0.5	U	0.5	U	0.5	U
672 S Lucile St	11/13/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	5/22/01	0	0.5	U	0.5	U	0.5	U
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	11/13/01	0	0.5	U	0.5	U	0.5	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	11096-82-5 Aroclor 1260 ug/l	Lab Qual	37324-23-5 Aroclor 1262 ug/l	Lab Qual	11100-14-4 Aroclor 1268 ug/l	Lab Qual
MTCA B Minimum Level			9.047		9.047		9.047	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	68334-30-5 Diesel ug/l	Lab Qual	86290-81-5 Gasoline ug/l	Lab Qual	GIS_LUBEOIL Lube Oil Hydrocarbons ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	1070		532		500	U
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	2050		1160		500	U
672 S Lucile St	5/17/02	0	250	U	594		500	U
672 S Lucile St	5/22/01	0	1380	[U]	1250	[J]	500	UB
672 S Lucile St	8/2/02	0	250	U	786.5		500	U
672 S Lucile St	8/10/01	0	1670		1250		500	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	1050		626		500	U
672 S Lucile St	11/13/02	0						
5409 Denver Ave S	2/7/02	0	2090		9380	D	500	U
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	3440		22200		500	U
5409 Denver Ave S	5/20/02	0	250	U	4860		500	U
5409 Denver Ave S	5/22/01	0	2530	[J]	20800	D	500	UB
5409 Denver Ave S	8/2/02	0	250	U	7100	[J]	500	U
5409 Denver Ave S	8/10/01	0	2740	[J]	14500	D	500	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0						
5409 Denver Ave S	11/13/01	0	2820	[J]	21000	D[J]	500	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	68334-30-5 Diesel ug/l	Lab Qual	86290-81-5 Gasoline ug/l	Lab Qual	GIS_LUBEOIL Lube Oil Hydrocarbons ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0						
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	120-82-1 1,2,4-Trichlorobenzene ug/l	Lab Qual	95-50-1 1,2-Dichlorobenzene ug/l	Lab Qual	541-73-1 1,3-Dichlorobenzene ug/l	Lab Qual
MTCA B Minimum Level			27379.227		11187.977		11187.977	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0			11.7		0.593	
672 S Lucile St	3/23/01	0			9.56		1	U
672 S Lucile St	5/17/02	0	4.76	U	6.49		1	U
672 S Lucile St	5/22/01	0			8.07		1	U
672 S Lucile St	8/2/02	0			6.575		0.5	U
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0			6.1		0.5	U
672 S Lucile St	8/28/02	0			6.46		0.5	U
672 S Lucile St	11/13/01	0	10	U	8	UD	8	UD
672 S Lucile St	11/13/02	0	10	U	8.01		0.5	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0			25	UD	12.5	UD
5409 Denver Ave S	3/23/01	0			1	U	1	U
5409 Denver Ave S	5/20/02	0	4.85	U	1.34		1	U
5409 Denver Ave S	5/22/01	0			10	UD	10	UD
5409 Denver Ave S	8/2/02	0			1.24		0.5	U
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0			1.39		0.5	U
5409 Denver Ave S	11/7/02	0	10	U	2.21		0.5	U
5409 Denver Ave S	11/13/01	0	10	U	250	UD	250	UD
404 S Orcas St	8/22/02	0			1	U	0.5	U
406 S Orcas St	8/22/02	0			1	U	0.5	U
412 S Lucile St	8/22/02	0			1	U	0.5	U
412 S Orcas St	8/22/02	0			1	UD	0.5	UD
507 S Brandon	8/23/02	0			1	U	0.5	U
5327 Denver Ave S	8/28/02	0			1	U	0.5	U
5403 Maynard Ave S	8/22/02	0			1	UD	0.5	UD
5409 Denver Ave S	8/29/00	0			1		1	
5409 Denver Ave S	8/29/00	0			1		1	
5409 Denver Ave S	8/29/00	0			1		1	
5409 Denver Ave S	8/29/00	0			1		1	
613 S Brandon	8/22/02	0			1	U	0.5	U
613 S Brandon	8/28/02	0			1	U	0.5	U
672 S Lucile St	8/29/00	0			1		1	
672 S Lucile St	8/29/00	0			1		1	
672 S Lucile St	8/29/00	0			1		1	
672 S Lucile St	8/29/00	0			1		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	120-82-1 1,2,4-Trichlorobenzene ug/l	Lab Qual	95-50-1 1,2-Dichlorobenzene ug/l	Lab Qual	541-73-1 1,3-Dichlorobenzene ug/l	Lab Qual
MTCA B Minimum Level			27379.227		11187.977		11187.977	
672 S Lucile St	8/29/00	0			1		1	
672 S Lucile St	8/29/00	0			1		1	
672 S Lucile St	8/29/00	0			1		1	
611, 613, and 507 S	2/17/03	10.5			1	U	0.5	U
611, 613, and 507 S	5/8/02	10.5			1	U	1	U
611, 613, and 507 S	7/16/02	10.5			1	U	0.5	U
611, 613, and 507 S	7/31/02	10.5			1	U	0.5	U
611, 613, and 507 S	8/22/02	10.5			1	U	0.5	U
611, 613, and 507 S	11/5/02	0	10	U	1	U	0.5	U
412 S Lucile St	2/17/03	10			1	U	0.5	U
412 S Lucile St	5/8/02	10			1	U	1	U
412 S Lucile St	7/19/02	10			1	U	0.5	U
412 S Lucile St	8/8/02	10			1	U	0.5	U
412 S Lucile St	8/22/02	10			1	U	0.5	U
412 S Lucile St	11/4/02	0			1	U	0.5	U
412 S Lucile St	11/5/02	0	10	U				
412 S Orcas St	2/17/03	10.5			1	U	0.5	U
412 S Orcas St	5/9/02	10.5			1	U	1	U
412 S Orcas St	8/1/02	10.5			1	U	0.5	U
412 S Orcas St	8/22/02	10.5			1	UD	0.5	UD
412 S Orcas St	11/6/02	0	10	U	1	U	0.5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-95-4 2,4,5-Trichlorophenol ug/l	Lab Qual	88-06-2 2,4,6-Trichlorophenol ug/l	Lab Qual	120-83-2 2,4-Dichlorophenol ug/l	Lab Qual
MTCA B Minimum Level			11187.977		11187.977		11187.977	
672 S Lucile St	2/7/02	0	10	U	10	U	10	U
672 S Lucile St	2/10/03	0	10	U	0.5	U	10	U
672 S Lucile St	3/23/01	0	10	U	10	U	10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0	1.15		0.5	U	10	U
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	0.5	U	0.5	U	10	U
5409 Denver Ave S	2/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/10/03	0	10	U	0.5	U	10	U
5409 Denver Ave S	3/23/01	0	10	U	10	U	10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	0.5	U	0.5	U	10	U
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.5	U	0.5	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-95-4 2,4,5-Trichlorophenol ug/l	Lab Qual	88-06-2 2,4,6-Trichlorophenol ug/l	Lab Qual	120-83-2 2,4-Dichlorophenol ug/l	Lab Qual
MTCA B Minimum Level			11187.977		11187.977		11187.977	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	10	U	0.5	U	10	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.5	U	0.5	U	10	U
412 S Lucile St	2/17/03	10	10	U	0.5	U	10	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.5	U	0.5	U	10	U
412 S Orcas St	2/17/03	10.5	10	U	0.5	U	10	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.5	U	0.5	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	105-67-9 2,4-Dimethylphenol ug/l	Lab Qual	51-28-5 2,4-Dinitrophenol ug/l	Lab Qual	121-14-2 2,4-Dinitrotoluene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	10	U	20	U		
672 S Lucile St	2/10/03	0	10	U	20	U		
672 S Lucile St	3/23/01	0	11.1		20	U		
672 S Lucile St	5/17/02	0	4.76	U	9.52	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0	10	U	20	U		
672 S Lucile St	8/10/01	0	10	U	20	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	20	U	10	U
672 S Lucile St	11/13/02	0	10	U	20	U	10	U
5409 Denver Ave S	2/7/02	0	10	U	20	U		
5409 Denver Ave S	2/10/03	0	10	U	20	U		
5409 Denver Ave S	3/23/01	0	16.5		20	U		
5409 Denver Ave S	5/20/02	0	4.85	U	9.71	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	10	U	20	U		
5409 Denver Ave S	8/10/01	0	16		20	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	20	U	10	U
5409 Denver Ave S	11/13/01	0	27.2		20	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	105-67-9 2,4-Dimethylphenol ug/l	Lab Qual	51-28-5 2,4-Dinitrophenol ug/l	Lab Qual	121-14-2 2,4-Dinitrotoluene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	10	U	20	U		
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	20	U	10	U
412 S Lucile St	2/17/03	10	10	U	20	U		
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	20	U	10	U
412 S Orcas St	2/17/03	10.5	10	U	20	U		
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	20	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	606-20-2 2,6-Dinitrotoluene ug/l	Lab Qual	91-58-7 2-Chloronaphthalene ug/l	Lab Qual	95-57-8 2-Chlorophenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					10	U
672 S Lucile St	2/10/03	0					10	U
672 S Lucile St	3/23/01	0					10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0					10	U
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0					10	U
5409 Denver Ave S	2/10/03	0					10	U
5409 Denver Ave S	3/23/01	0					10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0					10	U
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	606-20-2 2,6-Dinitrotoluene ug/l	Lab Qual	91-58-7 2-Chloronaphthalene ug/l	Lab Qual	95-57-8 2-Chlorophenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5					10	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10					10	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	10	U
412 S Orcas St	2/17/03	10.5					10	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-48-7 2-Methylphenol ug/l	Lab Qual	88-74-4 2-Nitroaniline ug/l	Lab Qual	91-94-1 3,3-Dichlorobenzidine ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	10	U				
672 S Lucile St	2/10/03	0	10	U				
672 S Lucile St	3/23/01	0	10	U			10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	0.0238	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0	10	U				
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	0.02	U[J]
5409 Denver Ave S	2/7/02	0	10	U				
5409 Denver Ave S	2/10/03	0	10	U				
5409 Denver Ave S	3/23/01	0	16.9				10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	0.0243	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	10	U				
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	0.02	U
5409 Denver Ave S	11/13/01	0	16.3		10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-48-7 2-Methylphenol ug/l	Lab Qual	88-74-4 2-Nitroaniline ug/l	Lab Qual	91-94-1 3,3-Dichlorobenzidine ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	10	U				
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	0.02	U
412 S Lucile St	2/17/03	10	10	U				
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	0.02	U
412 S Orcas St	2/17/03	10.5	10	U				
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	0.02	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	99-09-2 3-Nitroaniline ug/l	Lab Qual	534-52-1 4,6-Dinitro2-methylphenol ug/l	Lab Qual	101-55-3 4-Bromophenyl phenyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0			10	U		
672 S Lucile St	2/10/03	0			10	U		
672 S Lucile St	3/23/01	0			10	U	10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0			10	U		
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0			10	U		
5409 Denver Ave S	2/10/03	0			10	U		
5409 Denver Ave S	3/23/01	0			10	U	10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0			10	U		
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	99-09-2 3-Nitroaniline ug/l	Lab Qual	534-52-1 4,6-Dinitro2-methylphenol ug/l	Lab Qual	101-55-3 4-Bromophenyl phenyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			10	U		
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10			10	U		
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	10	U
412 S Orcas St	2/17/03	10.5			10	U		
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	59-50-7 4-Chloro-3-methylphenol ug/l	Lab Qual	106-47-8 4-Chloroaniline ug/l	Lab Qual	7005-72-3 4-Chlorophenyl phenyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	10	U				
672 S Lucile St	2/10/03	0	10	U				
672 S Lucile St	3/23/01	0	10	U			10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0	10	U				
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0	10	U				
5409 Denver Ave S	2/10/03	0	10	U				
5409 Denver Ave S	3/23/01	0	10	U			10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	10	U				
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	59-50-7 4-Chloro-3-methylphenol ug/l	Lab Qual	106-47-8 4-Chloroaniline ug/l	Lab Qual	7005-72-3 4-Chlorophenyl phenyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	10	U				
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10	10	U				
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	10	U
412 S Orcas St	2/17/03	10.5	10	U				
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	106-44-5 4-Methylphenol ug/l	Lab Qual	100-01-6 4-Nitroaniline ug/l	Lab Qual	100-02-7 4-Nitrophenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					10	U
672 S Lucile St	2/10/03	0					10	U
672 S Lucile St	3/23/01	0	10	U			10	U
672 S Lucile St	5/17/02	0			4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0					10	U
672 S Lucile St	8/10/01	0			10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0			10	U	10	U
672 S Lucile St	11/13/02	0			0.02	U[J]	10	U
5409 Denver Ave S	2/7/02	0					10	U
5409 Denver Ave S	2/10/03	0					10	U
5409 Denver Ave S	3/23/01	0	10	U			10	U
5409 Denver Ave S	5/20/02	0			4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0					10	U
5409 Denver Ave S	8/10/01	0			10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0			0.02	U	10	U
5409 Denver Ave S	11/13/01	0			10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	106-44-5 4-Methylphenol ug/l	Lab Qual	100-01-6 4-Nitroaniline ug/l	Lab Qual	100-02-7 4-Nitrophenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5					10	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0			0.02	U	10	U
412 S Lucile St	2/17/03	10					10	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0			0.02	U	10	U
412 S Orcas St	2/17/03	10.5					10	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0			0.02	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	83-32-9 Acenaphthene ug/l	Lab Qual	208-96-8 Acenaphthylene ug/l	Lab Qual	120-12-7 Anthracene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	0.1	U	0.16		0.1	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	83-32-9 Acenaphthene ug/l	Lab Qual	208-96-8 Acenaphthylene ug/l	Lab Qual	120-12-7 Anthracene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	56-55-3 Benzo(a)anthracene ug/l	Lab Qual	50-32-8 Benzo(a)pyrene ug/l	Lab Qual	205-99-2 Benzo(b)fluoranthene ug/l	Lab Qual
MTCA B Minimum Level			0		0		78.538	
672 S Lucile St	2/7/02	0	0.01	U	0.01	U	0.01	U
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	0.1	U	0.1	U	0.1	U
672 S Lucile St	5/17/02	0	0.01	U	0.01	U	0.01	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	0.01	U[J]	0.01	U[J]	0.01	U[J]
5409 Denver Ave S	2/7/02	0	0.01	U	0.01	U	0.01	U
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	0.1	U	0.1	U	0.1	U
5409 Denver Ave S	5/20/02	0	0.01	U	0.01	U	0.01	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.01	U	0.01	U	0.01	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	56-55-3 Benzo(a)anthracene ug/l	Lab Qual	50-32-8 Benzo(a)pyrene ug/l	Lab Qual	205-99-2 Benzo(b)fluoranthene ug/l	Lab Qual
MTCA B Minimum Level			0		0		78.538	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.01	U	0.01	U	0.01	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.01	U	0.01	U	0.01	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.01	U	0.01	U	0.01	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	191-24-2 Benzo(ghi)perylene ug/l	Lab Qual	207-08-9 Benzo(k)fluoranthene ug/l	Lab Qual	111-91-1 Bis(2-chloro-ethoxy)methane ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0			0.01	U		
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	0.1	U	0.1	U	10	U
672 S Lucile St	5/17/02	0	0.0476	U	0.01	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	0.1	U[J]	0.01	U[J]	10	U
5409 Denver Ave S	2/7/02	0			0.01	U		
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	0.1	U	0.1	U	10	U
5409 Denver Ave S	5/20/02	0	0.0485	U	0.01	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.1	U	0.01	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	191-24-2 Benzo(ghi)perylene ug/l	Lab Qual	207-08-9 Benzo(k)fluoranthene ug/l	Lab Qual	111-91-1 Bis(2-chloro-ethoxy)methane ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.1	U	0.01	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.1	U	0.01	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.1	U	0.01	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	111-44-4 Bis(2-chloro-ethyl)ether ug/l	Lab Qual	117-81-7 Bis(2-ethylhexyl) phthalate ug/l	Lab Qual	85-68-7 Butyl benzyl phthalate ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	10	U				
672 S Lucile St	5/17/02	0	0.00952	U	23.8	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	50	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	50	U	10	U
672 S Lucile St	11/13/02	0	0.02	U[J]	7.07	E[U	10	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	10	U				
5409 Denver Ave S	5/20/02	0	0.00971	U	24.3	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	50	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.02	U	12.1	B	10	U
5409 Denver Ave S	11/13/01	0	10	U	50	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	111-44-4 Bis(2-chloro-ethyl)ether ug/l	Lab Qual	117-81-7 Bis(2-ethylhexyl) phthalate ug/l	Lab Qual	85-68-7 Butyl benzyl phthalate ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.02	U	17.5	B	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.02	U	1.09	B[U]	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.02	U	0.792	B[U]	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	86-74-8 Carbazole ug/l	Lab Qual	218-01-9 Chrysene ug/l	Lab Qual	84-74-2 Di-n-butyl phthalate ug/l	Lab Qual
MTCA B Minimum Level			0		8878.83		0	
672 S Lucile St	2/7/02	0			0.01	U		
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0			0.1	U		
672 S Lucile St	5/17/02	0	4.76	U	0.01	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	0.02	U[J]	0.166	[J]	10	U
5409 Denver Ave S	2/7/02	0			0.01	U		
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0			0.1	U		
5409 Denver Ave S	5/20/02	0	4.85	U	0.01	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.02	U	0.01	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	86-74-8 Carbazole ug/l	Lab Qual	218-01-9 Chrysene ug/l	Lab Qual	84-74-2 Di-n-butyl phthalate ug/l	Lab Qual
MTCA B Minimum Level			0		8878.83		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.02	U	0.01	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.02	U	0.01	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.02	U	0.01	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	117-84-0 Di-n-octyl phthalate ug/l	Lab Qual	53-70-3 Dibenzo(a,h)anthracene ug/l	Lab Qual	132-64-9 Dibenzofuran ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0			0.01	U		
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0			0.1	U		
672 S Lucile St	5/17/02	0	4.76	U	0.01	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	0.01	U[J]	10	U
5409 Denver Ave S	2/7/02	0			0.01	U		
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0			0.1	U		
5409 Denver Ave S	5/20/02	0	4.85	U	0.01	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	0.01	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	117-84-0 Di-n-octyl phthalate ug/l	Lab Qual	53-70-3 Dibenzo(a,h)anthracene ug/l	Lab Qual	132-64-9 Dibenzofuran ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	0.01	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	0.01	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	0.01	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	84-66-2 Diethyl phthalate ug/l	Lab Qual	131-11-3 Dimethyl phthalate ug/l	Lab Qual	206-44-0 Fluoranthene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0					0.1	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0					0.1	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	84-66-2 Diethyl phthalate ug/l	Lab Qual	131-11-3 Dimethyl phthalate ug/l	Lab Qual	206-44-0 Fluoranthene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	10	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	86-73-7 Fluorene ug/l	Lab Qual	118-74-1 Hexachlorobenzene ug/l	Lab Qual	87-68-3 Hexachlorobutadiene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	0.1	U				
672 S Lucile St	5/17/02	0	4.76	U	0.0238	U	0.00476	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	0.02	U[J]	0.02	U[J]
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0	0.1	U				
5409 Denver Ave S	5/20/02	0	4.85	U	0.0243	U	0.00485	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	0.02	U	0.02	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	86-73-7 Fluorene ug/l	Lab Qual	118-74-1 Hexachlorobenzene ug/l	Lab Qual	87-68-3 Hexachlorobutadiene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	0.02	U	0.02	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	0.02	U	0.02	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	0.02	U	0.02	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	77-47-4 Hexachlorocyclopentadiene ug/l	Lab Qual	67-72-1 Hexachloroethane ug/l	Lab Qual	193-39-5 Indeno(1,2,3-cd)pyrene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					0.01	U
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0					0.1	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	0.01	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	10	U	0.02	U[J]	0.01	U[J]
5409 Denver Ave S	2/7/02	0					0.01	U
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0					0.1	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	0.01	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	0.02	U	0.01	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	77-47-4 Hexachlorocyclopentadiene ug/l	Lab Qual	67-72-1 Hexachloroethane ug/l	Lab Qual	193-39-5 Indeno(1,2,3-cd)pyrene ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	0.02	U	0.01	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	0.02	U	0.01	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	0.02	U	0.01	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	78-59-1 Isophorone ug/l	Lab Qual	108-10-1 Methyl isobutyl ketone (MIBK) ug/l	Lab Qual	86-30-6 N-Nitrosodiphenylamine ug/l	Lab Qual
MTCA B Minimum Level			0		1043973.07		1043973.07	
672 S Lucile St	2/7/02	0			10	U		
672 S Lucile St	2/10/03	0			10	U		
672 S Lucile St	3/23/01	0			10	U		
672 S Lucile St	5/17/02	0	4.76	U	10	U	4.76	U
672 S Lucile St	5/22/01	0			10	U		
672 S Lucile St	8/2/02	0			10	U		
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0			10	U		
672 S Lucile St	8/28/02	0			10	U		
672 S Lucile St	11/13/01	0	10	U	80	UD	10	U
672 S Lucile St	11/13/02	0	10	U	10	U	10	U
5409 Denver Ave S	2/7/02	0			10	U		
5409 Denver Ave S	2/10/03	0			250	UD		
5409 Denver Ave S	3/23/01	0			10	U		
5409 Denver Ave S	5/20/02	0	4.85	U	10	U	4.85	U
5409 Denver Ave S	5/22/01	0			100	UD		
5409 Denver Ave S	8/2/02	0			10	U		
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0			10	U		
5409 Denver Ave S	11/7/02	0	10	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	2500	UD	10	U
404 S Orcas St	8/22/02	0			10	U[J]		
406 S Orcas St	8/22/02	0			10	U[J]		
412 S Lucile St	8/22/02	0			10	U		
412 S Orcas St	8/22/02	0			10	UD		
507 S Brandon	8/23/02	0			10	U		
5327 Denver Ave S	8/28/02	0			10	U		
5403 Maynard Ave S	8/22/02	0			10	UD		
5409 Denver Ave S	8/29/00	0			10			
5409 Denver Ave S	8/29/00	0			10			
5409 Denver Ave S	8/29/00	0			10			
5409 Denver Ave S	8/29/00	0			10			
613 S Brandon	8/22/02	0			10	U		
613 S Brandon	8/28/02	0			10	U		
672 S Lucile St	8/29/00	0			10			
672 S Lucile St	8/29/00	0			10			
672 S Lucile St	8/29/00	0			10			
672 S Lucile St	8/29/00	0			10			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	78-59-1 Isophorone ug/l	Lab Qual	108-10-1 Methyl isobutyl ketone (MIBK) ug/l	Lab Qual	86-30-6 N-Nitrosodiphenylamine ug/l	Lab Qual
MTCA B Minimum Level			0		1043973.07		1043973.07	
672 S Lucile St	8/29/00	0			10			
672 S Lucile St	8/29/00	0			10			
672 S Lucile St	8/29/00	0			10			
611, 613, and 507 S	2/17/03	10.5			10	U		
611, 613, and 507 S	5/8/02	10.5			10	U		
611, 613, and 507 S	7/16/02	10.5			10	U		
611, 613, and 507 S	7/31/02	10.5			10	U		
611, 613, and 507 S	8/22/02	10.5			10	U		
611, 613, and 507 S	11/5/02	0	10	U	10	U	10	U
412 S Lucile St	2/17/03	10			10	U		
412 S Lucile St	5/8/02	10			10	U		
412 S Lucile St	7/19/02	10			10	U		
412 S Lucile St	8/8/02	10			10	U		
412 S Lucile St	8/22/02	10			10	U		
412 S Lucile St	11/4/02	0			10	U		
412 S Lucile St	11/5/02	0	10	U			10	U
412 S Orcas St	2/17/03	10.5			10	U		
412 S Orcas St	5/9/02	10.5			10	U		
412 S Orcas St	8/1/02	10.5			10	U		
412 S Orcas St	8/22/02	10.5			10	UD		
412 S Orcas St	11/6/02	0	10	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	621-64-7 N-Nitrosodipropylamine ug/l	Lab Qual	91-20-3 Naphthalene ug/l	Lab Qual	98-95-3 Nitrobenzene ug/l	Lab Qual
MTCA B Minimum Level			1043973.07		591.577		591.577	
672 S Lucile St	2/7/02	0			24.7			
672 S Lucile St	2/10/03	0			41.4			
672 S Lucile St	3/23/01	0	10	U	58.6			
672 S Lucile St	5/17/02	0	0.00476	U	13.4		4.76	U
672 S Lucile St	5/22/01	0			29.4			
672 S Lucile St	8/2/02	0			20.75			
672 S Lucile St	8/10/01	0	10	U	31.7		10	U
672 S Lucile St	8/22/02	0			16.9			
672 S Lucile St	8/28/02	0			20.8			
672 S Lucile St	11/13/01	0	10	U	27.6		10	U
672 S Lucile St	11/13/02	0	0.01	U[J]	21.9		0.02	U[J]
5409 Denver Ave S	2/7/02	0			12.6			
5409 Denver Ave S	2/10/03	0			12.5	UD		
5409 Denver Ave S	3/23/01	0	10	U	20.5			
5409 Denver Ave S	5/20/02	0	0.00485	U	9.66		4.85	U
5409 Denver Ave S	5/22/01	0			18.5	D		
5409 Denver Ave S	8/2/02	0			10.6			
5409 Denver Ave S	8/10/01	0	10	U	24.5		10	U
5409 Denver Ave S	8/22/02	0			9.87			
5409 Denver Ave S	11/7/02	0	0.01	U	12.1		0.02	U
5409 Denver Ave S	11/13/01	0	10	U	21		10	U
404 S Orcas St	8/22/02	0			0.5	U		
406 S Orcas St	8/22/02	0			0.5	U		
412 S Lucile St	8/22/02	0			0.5	U		
412 S Orcas St	8/22/02	0			0.5	UD		
507 S Brandon	8/23/02	0			0.5	U		
5327 Denver Ave S	8/28/02	0			0.5	U		
5403 Maynard Ave S	8/22/02	0			0.5	UD		
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
613 S Brandon	8/22/02	0			0.5	U		
613 S Brandon	8/28/02	0			0.5	U		
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	621-64-7 N-Nitrosodipropylamine ug/l	Lab Qual	91-20-3 Naphthalene ug/l	Lab Qual	98-95-3 Nitrobenzene ug/l	Lab Qual
MTCA B Minimum Level			1043973.07		591.577		591.577	
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
611, 613, and 507 S	2/17/03	10.5			0.5	U		
611, 613, and 507 S	5/8/02	10.5			1	U		
611, 613, and 507 S	7/16/02	10.5			0.5	U[J]		
611, 613, and 507 S	7/31/02	10.5			0.5	U		
611, 613, and 507 S	8/22/02	10.5			0.5	U		
611, 613, and 507 S	11/5/02	0	0.01	U	0.5	U	0.02	U
412 S Lucile St	2/17/03	10			0.5	U		
412 S Lucile St	5/8/02	10			1	U		
412 S Lucile St	7/19/02	10			0.5	U		
412 S Lucile St	8/8/02	10			0.5	U		
412 S Lucile St	8/22/02	10			0.5	U		
412 S Lucile St	11/4/02	0			0.5	U		
412 S Lucile St	11/5/02	0	0.01	U			0.02	U
412 S Orcas St	2/17/03	10.5			0.5	U		
412 S Orcas St	5/9/02	10.5			1	U		
412 S Orcas St	8/1/02	10.5			0.5	U		
412 S Orcas St	8/22/02	10.5			0.5	UD		
412 S Orcas St	11/6/02	0	0.01	U	0.5	U	0.02	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	87-86-5 Pentachlorophenol ug/l	Lab Qual	85-01-8 Phenanthrene ug/l	Lab Qual	108-95-2 Phenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	10	U			10	U
672 S Lucile St	2/10/03	0	0.5	U			10	U
672 S Lucile St	3/23/01	0	10	U	0.1	U	10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0	3.37	[J]			10	U
672 S Lucile St	8/10/01	0	10	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U	10	U
672 S Lucile St	11/13/02	0	0.5	U	10	U	10	U
5409 Denver Ave S	2/7/02	0	10	U			10	U
5409 Denver Ave S	2/10/03	0	0.5	U			10	U
5409 Denver Ave S	3/23/01	0	10	U	0.1	U	24.6	
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U	6.64	
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0	3.02				10	U
5409 Denver Ave S	8/10/01	0	10	U	10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.5	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	10	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	87-86-5 Pentachlorophenol ug/l	Lab Qual	85-01-8 Phenanthrene ug/l	Lab Qual	108-95-2 Phenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5	0.5	U			10	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.5	U	10	U	10	U
412 S Lucile St	2/17/03	10	0.5	U			10	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.5	U	10	U	10	U
412 S Orcas St	2/17/03	10.5	0.5	U			10	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.5	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	129-00-0 Pyrene ug/l	Lab Qual	71-55-6 1,1,1-Trichloroethane ug/l	Lab Qual	79-00-5 1,1,2-Trichloroethane ug/l	Lab Qual
MTCA B Minimum Level			0		10949.45		29.041	
672 S Lucile St	2/7/02	0			11		1	U
672 S Lucile St	2/10/03	0			44		0.5	U
672 S Lucile St	3/23/01	0	0.1	U	39.8		1	U
672 S Lucile St	5/17/02	0	4.76	U	21.2		1	U
672 S Lucile St	5/22/01	0			27.5		1	U
672 S Lucile St	8/2/02	0			39.9		0.5	U
672 S Lucile St	8/10/01	0	10	U	45.5		1	U
672 S Lucile St	8/22/02	0			72.4	D	0.5	U
672 S Lucile St	8/28/02	0			82.4	D	0.528	
672 S Lucile St	11/13/01	0	10	U	60.9	D	8	UD
672 S Lucile St	11/13/02	0	10	U	101	D	0.822	
5409 Denver Ave S	2/7/02	0			4.77		1	U
5409 Denver Ave S	2/10/03	0			25	UD	12.5	UD
5409 Denver Ave S	3/23/01	0	0.1	U	34		1	U
5409 Denver Ave S	5/20/02	0	4.85	U	7.49		1	U
5409 Denver Ave S	5/22/01	0			31.6	D	10	UD
5409 Denver Ave S	8/2/02	0			4.16		0.5	U
5409 Denver Ave S	8/10/01	0	10	U	36.5		1.11	
5409 Denver Ave S	8/22/02	0			5.47		0.5	U
5409 Denver Ave S	11/7/02	0	10	U	9.27		0.5	U
5409 Denver Ave S	11/13/01	0	10	U	250	UD	250	UD
404 S Orcas St	8/22/02	0			1	U	0.5	U
406 S Orcas St	8/22/02	0			1	U	0.5	U
412 S Lucile St	8/22/02	0			1	U	0.5	U
412 S Orcas St	8/22/02	0			1	UD	0.5	UD
507 S Brandon	8/23/02	0			1	U	0.5	U
5327 Denver Ave S	8/28/02	0			1	U	0.5	U
5403 Maynard Ave S	8/22/02	0			1	UD	0.5	UD
5409 Denver Ave S	8/29/00	0			5		1	
5409 Denver Ave S	8/29/00	0			3.56		1	
5409 Denver Ave S	8/29/00	0			1.02		1	
5409 Denver Ave S	8/29/00	0			8.99		1	
613 S Brandon	8/22/02	0			1	U	0.5	U
613 S Brandon	8/28/02	0			1	U	0.5	U
672 S Lucile St	8/29/00	0			379		4.21	
672 S Lucile St	8/29/00	0			174		1.89	
672 S Lucile St	8/29/00	0			144		1.25	
672 S Lucile St	8/29/00	0			264		3.4	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	129-00-0 Pyrene ug/l	Lab Qual	71-55-6 1,1,1-Trichloroethane ug/l	Lab Qual	79-00-5 1,1,2-Trichloroethane ug/l	Lab Qual
MTCA B Minimum Level			0		10949.45		29.041	
672 S Lucile St	8/29/00	0			3.98		1	
672 S Lucile St	8/29/00	0			157		1.5	
672 S Lucile St	8/29/00	0			874		12.5	
611, 613, and 507 S	2/17/03	10.5			1	U	0.5	U
611, 613, and 507 S	5/8/02	10.5			1	U	1	U
611, 613, and 507 S	7/16/02	10.5			1	U	0.5	U
611, 613, and 507 S	7/31/02	10.5			1	U	0.5	U
611, 613, and 507 S	8/22/02	10.5			1	U	0.5	U
611, 613, and 507 S	11/5/02	0	10	U	1	U	0.5	U
412 S Lucile St	2/17/03	10			1	U	0.5	U
412 S Lucile St	5/8/02	10			1	U	1	U
412 S Lucile St	7/19/02	10			1	U	0.5	U
412 S Lucile St	8/8/02	10			1	U	0.5	U
412 S Lucile St	8/22/02	10			1	U	0.5	U
412 S Lucile St	11/4/02	0			1	U	0.5	U
412 S Lucile St	11/5/02	0	10	U				
412 S Orcas St	2/17/03	10.5			4	UD	0.5	U
412 S Orcas St	5/9/02	10.5			1	U	1	U
412 S Orcas St	8/1/02	10.5			1	U	0.5	U
412 S Orcas St	8/22/02	10.5			1	UD	0.5	UD
412 S Orcas St	11/6/02	0	10	U	1	U	0.5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-34-3 1,1-Dichloroethane ug/l	Lab Qual	75-35-4 1,1-Dichloroethylene ug/l	Lab Qual	107-06-2 1,2-Dichloroethane ug/l	Lab Qual
MTCA B Minimum Level			7515.704		532.063		12.882	
672 S Lucile St	2/7/02	0	31.3		1	U	1	U
672 S Lucile St	2/10/03	0	223	D	1	U	1.34	
672 S Lucile St	3/23/01	0	95.7		1	U	1	U
672 S Lucile St	5/17/02	0	33.1		1	U	1	U
672 S Lucile St	5/22/01	0	85.5		1	U	1	U
672 S Lucile St	8/2/02	0	78.05		1	U	1	U
672 S Lucile St	8/10/01	0	172	D	1	U	1.32	
672 S Lucile St	8/22/02	0	119	D	0.645		0.357	
672 S Lucile St	8/28/02	0	132	D	1	U	1	U
672 S Lucile St	11/13/01	0	153	D	8	UD	8	UD
672 S Lucile St	11/13/02	0	172	D	1.41		1.52	
5409 Denver Ave S	2/7/02	0	45.5		1	U	1	U
5409 Denver Ave S	2/10/03	0	56.3	D	25	UD	25	UD
5409 Denver Ave S	3/23/01	0	169		1	U	1	U
5409 Denver Ave S	5/20/02	0	68.2	D	1	U	1.14	
5409 Denver Ave S	5/22/01	0	160	D	10	UD	10	UD
5409 Denver Ave S	8/2/02	0	38.2		1	U	1.18	
5409 Denver Ave S	8/10/01	0	300	D	1	U	9.95	
5409 Denver Ave S	8/22/02	0	48.4		0.05	U[J]	1.92	[J]
5409 Denver Ave S	11/7/02	0	60.7	D	1	U	3.85	
5409 Denver Ave S	11/13/01	0	250	UD	250	UD	250	UD
404 S Orcas St	8/22/02	0	4.5		0.052		0.172	
406 S Orcas St	8/22/02	0	31.7		0.419		0.535	
412 S Lucile St	8/22/02	0	1	U	0.05	U	0.1	U
412 S Orcas St	8/22/02	0	54	D	1	UD	1.82	D
507 S Brandon	8/23/02	0	1	U	0.05	U	0.1	U
5327 Denver Ave S	8/28/02	0	3.11		0.05	U	0.1	U
5403 Maynard Ave S	8/22/02	0	265	D	1.93	D	1	UD
5409 Denver Ave S	8/29/00	0	5		1		1	
5409 Denver Ave S	8/29/00	0	10.8		1		1	
5409 Denver Ave S	8/29/00	0	3.43		1		1	
5409 Denver Ave S	8/29/00	0	188		1		7.45	
613 S Brandon	8/22/02	0	1	U	0.05	U	0.1	U
613 S Brandon	8/28/02	0	1	U	0.05	U	0.1	U
672 S Lucile St	8/29/00	0	815		6.88		3.69	
672 S Lucile St	8/29/00	0	64.1		7.26		1	
672 S Lucile St	8/29/00	0	226		4.57		3.5	
672 S Lucile St	8/29/00	0	465		4.72		2.45	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-34-3 1,1-Dichloroethane ug/l	Lab Qual	75-35-4 1,1-Dichloroethylene ug/l	Lab Qual	107-06-2 1,2-Dichloroethane ug/l	Lab Qual
MTCA B Minimum Level			7515.704		532.063		12.882	
672 S Lucile St	8/29/00	0	26.8		1		1	
672 S Lucile St	8/29/00	0	242		9.57		4.43	
672 S Lucile St	8/29/00	0	431		12.9		4.63	
611, 613, and 507 S	2/17/03	10.5	1	U	0.05	U	0.1	U
611, 613, and 507 S	5/8/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	1	U	0.05	U	0.1	U
611, 613, and 507 S	7/31/02	10.5	1	U	0.05	U	0.1	U
611, 613, and 507 S	8/22/02	10.5	1	U	0.05	U	0.1	U
611, 613, and 507 S	11/5/02	0	1	U	0.05	U	0.1	U
412 S Lucile St	2/17/03	10	3.08		0.124		0.127	
412 S Lucile St	5/8/02	10	3.19		1	U	1	U
412 S Lucile St	7/19/02	10	1.72		0.094		0.1	U
412 S Lucile St	8/8/02	10	1.78		0.107		0.103	
412 S Lucile St	8/22/02	10	1.8		0.091		0.1	U
412 S Lucile St	11/4/02	0	1.39		0.163		0.173	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	21.8		2.7		1.08	
412 S Orcas St	5/9/02	10.5	31.8		2.47		1.46	
412 S Orcas St	8/1/02	10.5	46.8		4.46		1.82	
412 S Orcas St	8/22/02	10.5	38.8	D	4.46	D	1.87	
412 S Orcas St	11/6/02	0	34.6		3.3		1.7	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	78-87-5 1,2-Dichloropropane ug/l	Lab Qual	106-46-7 1,4-Dichlorobenzene ug/l	Lab Qual	591-78-6 2-Hexanone ug/l	Lab Qual
MTCA B Minimum Level			12.882		12.882		6089.843	
672 S Lucile St	2/7/02	0	1	U			10	U
672 S Lucile St	2/10/03	0	0.5	U	2.6		10	U
672 S Lucile St	3/23/01	0	1	U	1	U	10	U
672 S Lucile St	5/17/02	0	1	U	1.45		10	U
672 S Lucile St	5/22/01	0	1	U	1.49		10	U
672 S Lucile St	8/2/02	0	0.5	U	1.405		10	U
672 S Lucile St	8/10/01	0	1	U	10	U	10	U
672 S Lucile St	8/22/02	0	0.5	U	1.13		10	U
672 S Lucile St	8/28/02	0	0.5	U	1.46		10	U
672 S Lucile St	11/13/01	0	8	UD	8	UD	80	UD
672 S Lucile St	11/13/02	0	0.5	U	1.75		10	U
5409 Denver Ave S	2/7/02	0	1	U			10	U
5409 Denver Ave S	2/10/03	0	12.5	UD	25	UD	250	UD
5409 Denver Ave S	3/23/01	0	1	U	1	U	10	U
5409 Denver Ave S	5/20/02	0	1	U	1	U	10	U
5409 Denver Ave S	5/22/01	0	10	UD	10	UD	100	UD
5409 Denver Ave S	8/2/02	0	0.5	U	1	U	10	U
5409 Denver Ave S	8/10/01	0	1	U	10	U	10	U
5409 Denver Ave S	8/22/02	0	0.5	U	0.237	[J]	10	U
5409 Denver Ave S	11/7/02	0	0.5	U	1	U	10	U
5409 Denver Ave S	11/13/01	0	250	UD	250	UD	2500	UD
404 S Orcas St	8/22/02	0	0.5	U	0.1	U	10	U
406 S Orcas St	8/22/02	0	0.5	U	0.1	U	10	U
412 S Lucile St	8/22/02	0	0.5	U	0.1	U	10	U
412 S Orcas St	8/22/02	0	0.5	UD	1	UD	10	UD
507 S Brandon	8/23/02	0	0.5	U	0.1	U	10	U
5327 Denver Ave S	8/28/02	0	0.5	U	0.1	U	10	U
5403 Maynard Ave S	8/22/02	0	0.5	UD	1	UD	10	UD
5409 Denver Ave S	8/29/00	0	1		1		10	
5409 Denver Ave S	8/29/00	0	1		1		10	
5409 Denver Ave S	8/29/00	0	1		1		10	
5409 Denver Ave S	8/29/00	0	1		1		10	
613 S Brandon	8/22/02	0	0.5	U	0.1	U	10	U
613 S Brandon	8/28/02	0	0.5	U	0.1	U	10	U
672 S Lucile St	8/29/00	0	1		1		10	
672 S Lucile St	8/29/00	0	1		1		10	
672 S Lucile St	8/29/00	0	1		1		10	
672 S Lucile St	8/29/00	0	1		1		10	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	78-87-5 1,2-Dichloropropane ug/l	Lab Qual	106-46-7 1,4-Dichlorobenzene ug/l	Lab Qual	591-78-6 2-Hexanone ug/l	Lab Qual
MTCA B Minimum Level			12.882		12.882		6089.843	
672 S Lucile St	8/29/00	0	1		1		10	
672 S Lucile St	8/29/00	0	1		1		10	
672 S Lucile St	8/29/00	0	1		1		10	
611, 613, and 507 S	2/17/03	10.5	0.5	U	0.1	U	10	U
611, 613, and 507 S	5/8/02	10.5	1	U	1	U	10	U
611, 613, and 507 S	7/16/02	10.5	0.5	U	0.1	U	10	U
611, 613, and 507 S	7/31/02	10.5	0.5	U	0.1	U	10	U
611, 613, and 507 S	8/22/02	10.5	0.5	U	0.1	U	10	U
611, 613, and 507 S	11/5/02	0	0.5	U	0.1	U	10	U
412 S Lucile St	2/17/03	10	0.5	U	0.1	U	10	U
412 S Lucile St	5/8/02	10	1	U	1	U	10	U
412 S Lucile St	7/19/02	10	0.5	U	0.1	U	10	U
412 S Lucile St	8/8/02	10	0.5	U	0.1	U	10	U
412 S Lucile St	8/22/02	10	0.5	U	0.1	U	10	U
412 S Lucile St	11/4/02	0	0.5	U	0.1	U	10	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	0.5	U	0.1	U	10	U
412 S Orcas St	5/9/02	10.5	1	U	1	U	10	U
412 S Orcas St	8/1/02	10.5	0.5	U	0.1	U	10	U
412 S Orcas St	8/22/02	10.5	0.5	UD	0.1	U	10	UD
412 S Orcas St	11/6/02	0	0.5	U	1	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	67-64-1 Acetone ug/l	Lab Qual	71-43-2 Benzene ug/l	Lab Qual	75-27-4 Bromodichloromethane ug/l	Lab Qual
MTCA B Minimum Level			0		9.597		9.597	
672 S Lucile St	2/7/02	0	25	U	0.902		1	U
672 S Lucile St	2/10/03	0	25	U	2.48		0.5	U
672 S Lucile St	3/23/01	0	10	U	2.73		1	U
672 S Lucile St	5/17/02	0	25	U	1.35		1	U
672 S Lucile St	5/22/01	0	10	U	1.32		1	U
672 S Lucile St	8/2/02	0	25	U	1.295		0.5	U
672 S Lucile St	8/10/01	0	10	U	1.96		1	U
672 S Lucile St	8/22/02	0	25	U	1.03		0.5	U
672 S Lucile St	8/28/02	0	25	U	1.05		0.5	U
672 S Lucile St	11/13/01	0	200	UD	4	UD	8	UD
672 S Lucile St	11/13/02	0	25	U	1.08		0.5	U
5409 Denver Ave S	2/7/02	0	25	U	6.33		1	U
5409 Denver Ave S	2/10/03	0	625	UD	12.5	UD	12.5	UD
5409 Denver Ave S	3/23/01	0	10	U	38.2		1	U
5409 Denver Ave S	5/20/02	0	25	U	4.73		1	U
5409 Denver Ave S	5/22/01	0	100	UD	31.6	D	10	UD
5409 Denver Ave S	8/2/02	0	25	U	4.72		0.5	U
5409 Denver Ave S	8/10/01	0	10	U	24		1	U
5409 Denver Ave S	8/22/02	0	25	U	5.76		0.5	U
5409 Denver Ave S	11/7/02	0	25	U	8.43		0.5	U
5409 Denver Ave S	11/13/01	0	6250	UD	125	UD	250	UD
404 S Orcas St	8/22/02	0	25	U	0.5	U	0.5	U
406 S Orcas St	8/22/02	0	25	U	0.5	U	0.5	U
412 S Lucile St	8/22/02	0	25	U	0.5	U	0.5	U
412 S Orcas St	8/22/02	0	25	UD	0.5	UD	0.5	UD
507 S Brandon	8/23/02	0	25	U	0.5	U	0.5	U
5327 Denver Ave S	8/28/02	0	25	U	1.32		0.5	U
5403 Maynard Ave S	8/22/02	0	25	UD	2.48	D	0.5	UD
5409 Denver Ave S	8/29/00	0	10		1		1	
5409 Denver Ave S	8/29/00	0	10		1		1	
5409 Denver Ave S	8/29/00	0	10		1		1	
5409 Denver Ave S	8/29/00	0	10		1		1	
613 S Brandon	8/22/02	0	25	U	0.5	U	0.5	U
613 S Brandon	8/28/02	0	25	U	0.5	U	0.5	U
672 S Lucile St	8/29/00	0	10		1		1	
672 S Lucile St	8/29/00	0	10		1		1	
672 S Lucile St	8/29/00	0	10		1		1	
672 S Lucile St	8/29/00	0	10		1		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	67-64-1 Acetone ug/l	Lab Qual	71-43-2 Benzene ug/l	Lab Qual	75-27-4 Bromodichloromethane ug/l	Lab Qual
MTCA B Minimum Level			0		9.597		9.597	
672 S Lucile St	8/29/00	0	10		1		1	
672 S Lucile St	8/29/00	0	10		1		1	
672 S Lucile St	8/29/00	0	10		1		1	
611, 613, and 507 S	2/17/03	10.5	25	U	0.5	U	0.5	U
611, 613, and 507 S	5/8/02	10.5	25	U	0.5	U	1	U
611, 613, and 507 S	7/16/02	10.5	25	U	0.5	U	0.5	U
611, 613, and 507 S	7/31/02	10.5	25	U	0.5	U	0.5	U
611, 613, and 507 S	8/22/02	10.5	25	U	0.5	U	0.5	U
611, 613, and 507 S	11/5/02	0	25	U	0.5	U	0.5	U
412 S Lucile St	2/17/03	10	25	U	0.5	U	0.5	U
412 S Lucile St	5/8/02	10	25	U	0.289	[J]	1	U
412 S Lucile St	7/19/02	10	25	U	0.5	U	0.5	U
412 S Lucile St	8/8/02	10	25	U	0.5	U	0.5	U
412 S Lucile St	8/22/02	10	25	U	0.5	U	0.5	U
412 S Lucile St	11/4/02	0	25	U	0.5	U	0.5	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	25	U	1.3		0.5	U
412 S Orcas St	5/9/02	10.5	25	U	2.62		1	U
412 S Orcas St	8/1/02	10.5	25	U	3.99		0.5	U
412 S Orcas St	8/22/02	10.5	25	UD	3.46	D	0.5	UD
412 S Orcas St	11/6/02	0	25	U	2.37		0.5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-25-2 Bromoform ug/l	Lab Qual	74-83-9 Bromomethane ug/l	Lab Qual	75-15-0 Carbon disulfide ug/l	Lab Qual
MTCA B Minimum Level			9.597		9.597		9.597	
672 S Lucile St	2/7/02	0	1	U	2	U	1	U
672 S Lucile St	2/10/03	0	1	U	2	U	0.5	U
672 S Lucile St	3/23/01	0	1	U	2	U	1	U
672 S Lucile St	5/17/02	0	1	U	2	U	1	U
672 S Lucile St	5/22/01	0	1	U	2	U	1	U
672 S Lucile St	8/2/02	0	1	U	2	U	0.5	U
672 S Lucile St	8/10/01	0	1	U	2	U	1	U
672 S Lucile St	8/22/02	0	1	U	2	U	0.5	U
672 S Lucile St	8/28/02	0	1	U	2	U	0.5	U
672 S Lucile St	11/13/01	0	8	UD	16	UD	8	UD
672 S Lucile St	11/13/02	0	1	U	2	U	0.5	U
5409 Denver Ave S	2/7/02	0	1	U	2	U	1	U
5409 Denver Ave S	2/10/03	0	25	UD	50	UD	12.5	UD
5409 Denver Ave S	3/23/01	0	1	U	2	U	1	U
5409 Denver Ave S	5/20/02	0	1	U	2	U	1	U
5409 Denver Ave S	5/22/01	0	10	UD	20	UD	10	UD
5409 Denver Ave S	8/2/02	0	1	U	2	U	0.5	U
5409 Denver Ave S	8/10/01	0	1	U	2	U	1	U
5409 Denver Ave S	8/22/02	0	1	U	2	U	0.5	U
5409 Denver Ave S	11/7/02	0	1	U	2	U	0.5	U
5409 Denver Ave S	11/13/01	0	250	UD	500	UD	250	UD
404 S Orcas St	8/22/02	0	1	U	2	U[J]	0.5	U
406 S Orcas St	8/22/02	0	1	U	2	U[J]	0.5	U
412 S Lucile St	8/22/02	0	1	U	2	U	0.5	U
412 S Orcas St	8/22/02	0	1	UD	2	UD	0.5	UD
507 S Brandon	8/23/02	0	1	U	2	U	0.5	U
5327 Denver Ave S	8/28/02	0	1	U	2	U	0.5	U
5403 Maynard Ave S	8/22/02	0	1	UD	2	UD	0.5	UD
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
613 S Brandon	8/22/02	0	1	U	2	U	0.5	U
613 S Brandon	8/28/02	0	1	U	2	U	0.5	U
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-25-2 Bromoform ug/l	Lab Qual	74-83-9 Bromomethane ug/l	Lab Qual	75-15-0 Carbon disulfide ug/l	Lab Qual
MTCA B Minimum Level			9.597		9.597		9.597	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		1	
611, 613, and 507 S	2/17/03	10.5	1	U	2	U	0.5	U
611, 613, and 507 S	5/8/02	10.5	1	U	2	U	1	U
611, 613, and 507 S	7/16/02	10.5	1	U	2	U	0.5	U
611, 613, and 507 S	7/31/02	10.5	1	U	2	U	0.5	U
611, 613, and 507 S	8/22/02	10.5	1	U	2	U	0.5	U
611, 613, and 507 S	11/5/02	0	1	U	2	U	0.5	U
412 S Lucile St	2/17/03	10	1	U	2	U	0.5	U
412 S Lucile St	5/8/02	10	1	U	2	U	1	U
412 S Lucile St	7/19/02	10	1	U	2	U	0.5	U
412 S Lucile St	8/8/02	10	1	U	2	U	0.5	U
412 S Lucile St	8/22/02	10	1	U	2	U	0.5	U
412 S Lucile St	11/4/02	0	1	U	2	U	0.5	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	1	U	2	U	0.5	U
412 S Orcas St	5/9/02	10.5	1	U	2	U	1	U
412 S Orcas St	8/1/02	10.5	1	U	2	U	0.5	U
412 S Orcas St	8/22/02	10.5	1	UD	2	UD	0.5	UD
412 S Orcas St	11/6/02	0	1	U	2	U	0.5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	56-23-5 Carbon tetrachloride ug/l	Lab Qual	108-90-7 Chlorobenzene ug/l	Lab Qual	75-00-3 Chloroethane ug/l	Lab Qual
MTCA B Minimum Level			9.597		9.597		54374.425	
672 S Lucile St	2/7/02	0	1	U	7.99		72.7	D
672 S Lucile St	2/10/03	0	1	U	11.8		197	D
672 S Lucile St	3/23/01	0	1	U	1	U	352	
672 S Lucile St	5/17/02	0	1	U	1	U	121	D
672 S Lucile St	5/22/01	0	1	U	1	U	284	
672 S Lucile St	8/2/02	0	1	U	7.52		141	
672 S Lucile St	8/10/01	0	1	U	1	U	360	
672 S Lucile St	8/22/02	0	0.05	U	1	U	94.8	D
672 S Lucile St	8/28/02	0	1	U	8.77		119	D
672 S Lucile St	11/13/01	0	8	UD	8	UD	330	D
672 S Lucile St	11/13/02	0	0.05	U	8.66		83.6	D
5409 Denver Ave S	2/7/02	0	1	U	1	U	401	D
5409 Denver Ave S	2/10/03	0	25	UD	25	UD	288	D
5409 Denver Ave S	3/23/01	0	1	U	1	U	401	
5409 Denver Ave S	5/20/02	0	1	U	1	U	322	D
5409 Denver Ave S	5/22/01	0	10	UD	10	UD	354	D
5409 Denver Ave S	8/2/02	0	1	U	1	U	437	D
5409 Denver Ave S	8/10/01	0	1	U	1	U	323	
5409 Denver Ave S	8/22/02	0	0.05	U[J]	1	U	552	D
5409 Denver Ave S	11/7/02	0	1	U	1	U	284	D
5409 Denver Ave S	11/13/01	0	250	UD	250	UD	340	D
404 S Orcas St	8/22/02	0	0.05	U	1	U	1	U
406 S Orcas St	8/22/02	0	0.05	U	1	U	1	U
412 S Lucile St	8/22/02	0	0.05	U	1	U	1	U
412 S Orcas St	8/22/02	0	1	UD	1	UD	1	UD
507 S Brandon	8/23/02	0	0.05	U	1	U	1	U
5327 Denver Ave S	8/28/02	0	0.05	U	1	U	1	U
5403 Maynard Ave S	8/22/02	0	1	UD	1	UD	1	UD
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		50.9	
613 S Brandon	8/22/02	0	0.05	U	1	U	1	U
613 S Brandon	8/28/02	0	0.05	U	1	U	1	U
672 S Lucile St	8/29/00	0	1		1		22.7	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		2.63	
672 S Lucile St	8/29/00	0	1		1		3.94	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	56-23-5 Carbon tetrachloride ug/l	Lab Qual	108-90-7 Chlorobenzene ug/l	Lab Qual	75-00-3 Chloroethane ug/l	Lab Qual
MTCA B Minimum Level			9.597		9.597		54374.425	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		1		6.04	
672 S Lucile St	8/29/00	0	1		1		1	
611, 613, and 507 S	2/17/03	10.5	0.05	U	1	U	1	U
611, 613, and 507 S	5/8/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	0.05	U	1	U	1	U
611, 613, and 507 S	7/31/02	10.5	0.05	U	1	U	1	U
611, 613, and 507 S	8/22/02	10.5	0.05	U	1	U	1	U
611, 613, and 507 S	11/5/02	0	0.05	U	1	U	1	U
412 S Lucile St	2/17/03	10	0.05	U	1	U	1	U
412 S Lucile St	5/8/02	10	1	U	1	U	1	U
412 S Lucile St	7/19/02	10	0.05	U	1	U	1	U
412 S Lucile St	8/8/02	10	0.05	U	1	U	1	U
412 S Lucile St	8/22/02	10	0.05	U	1	U	1	U
412 S Lucile St	11/4/02	0	0.05	U	1	U	1	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	0.05	U	1	U	1	U
412 S Orcas St	5/9/02	10.5	1	U	1	U	1	U
412 S Orcas St	8/1/02	10.5	0.05	U	1	U	1	U
412 S Orcas St	8/22/02	10.5	0.05	U	1	UD	1	UD
412 S Orcas St	11/6/02	0	1	U	1	U	1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	67-66-3 Chloroform ug/l	Lab Qual	74-87-3 Chloromethane ug/l	Lab Qual	124-48-1 Dibromochloromethane ug/l	Lab Qual
MTCA B Minimum Level			4.108		4.108		4.108	
672 S Lucile St	2/7/02	0	1	U	5	U	1	U
672 S Lucile St	2/10/03	0	1	U	2.5	U	0.5	U
672 S Lucile St	3/23/01	0	1	U	5	U		
672 S Lucile St	5/17/02	0	1	U	5	U	1	U
672 S Lucile St	5/22/01	0	1	U	5	U	1	U
672 S Lucile St	8/2/02	0	1	U	2.5	U	0.5	U
672 S Lucile St	8/10/01	0	1	U	5	U	1	U
672 S Lucile St	8/22/02	0	1	U	2.5	U	0.5	U
672 S Lucile St	8/28/02	0	1	U	2.5	U	0.5	U
672 S Lucile St	11/13/01	0	8	UD	40	UD	8	UD
672 S Lucile St	11/13/02	0	1	U	2.5	U	0.5	U
5409 Denver Ave S	2/7/02	0	1	U	5	U	1	U
5409 Denver Ave S	2/10/03	0	25	UD	62.5	UD	12.5	UD
5409 Denver Ave S	3/23/01	0	1.13		5	U		
5409 Denver Ave S	5/20/02	0	1	U	5	U	1	U
5409 Denver Ave S	5/22/01	0	10	UD	50	UD	10	UD
5409 Denver Ave S	8/2/02	0	1	U	2.5	U	0.5	U
5409 Denver Ave S	8/10/01	0	1.41	[U]	5	U	1	U
5409 Denver Ave S	8/22/02	0	1	U	2.5	U	0.5	U
5409 Denver Ave S	11/7/02	0	1	U	2.5	U	0.5	U
5409 Denver Ave S	11/13/01	0	250	UD	1250	UD	250	UD
404 S Orcas St	8/22/02	0	1	U	2.5	U	0.5	U
406 S Orcas St	8/22/02	0	1	U	2.5	U	0.5	U
412 S Lucile St	8/22/02	0	1	U	2.5	U	0.5	U
412 S Orcas St	8/22/02	0	1	UD	2.5	UD	0.5	UD
507 S Brandon	8/23/02	0	1	U	2.5	U	0.5	U
5327 Denver Ave S	8/28/02	0	1	U	2.5	U	0.5	U
5403 Maynard Ave S	8/22/02	0	1	UD	2.5	UD	0.5	UD
5409 Denver Ave S	8/29/00	0	1		5		1	
5409 Denver Ave S	8/29/00	0	1		5		1	
5409 Denver Ave S	8/29/00	0	1		5		1	
5409 Denver Ave S	8/29/00	0	1.9		5		1	
613 S Brandon	8/22/02	0	1	U	2.5	U	0.5	U
613 S Brandon	8/28/02	0	1	U	2.5	U	0.5	U
672 S Lucile St	8/29/00	0	1		5		1	
672 S Lucile St	8/29/00	0	1		5		1	
672 S Lucile St	8/29/00	0	3.3		5		1	
672 S Lucile St	8/29/00	0	1		5		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	67-66-3 Chloroform ug/l	Lab Qual	74-87-3 Chloromethane ug/l	Lab Qual	124-48-1 Dibromochloromethane ug/l	Lab Qual
MTCA B Minimum Level			4.108		4.108		4.108	
672 S Lucile St	8/29/00	0	1		5		1	
672 S Lucile St	8/29/00	0	4.56		5		1	
672 S Lucile St	8/29/00	0	2.63		5		1	
611, 613, and 507 S	2/17/03	10.5	1	U	2.5	U	0.5	U
611, 613, and 507 S	5/8/02	10.5	1	U	5	U	1	U
611, 613, and 507 S	7/16/02	10.5	1	U	2.5	U	0.5	U
611, 613, and 507 S	7/31/02	10.5	1	U	2.5	U	0.5	U
611, 613, and 507 S	8/22/02	10.5	1	U	2.5	U	0.5	U
611, 613, and 507 S	11/5/02	0	1	U	2.5	U	0.5	U
412 S Lucile St	2/17/03	10	1	U	2.5	U	0.5	U
412 S Lucile St	5/8/02	10	1	U	5	U	1	U
412 S Lucile St	7/19/02	10	1	U	2.5	U	0.5	U
412 S Lucile St	8/8/02	10	1	U	2.5	U	0.5	U
412 S Lucile St	8/22/02	10	1	U	2.5	U	0.5	U
412 S Lucile St	11/4/02	0	1	U	2.5	U	0.5	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	1	U	2.5	U	0.5	U
412 S Orcas St	5/9/02	10.5	1	U	5	U	1	U
412 S Orcas St	8/1/02	10.5	1	U	2.5	U	0.5	U
412 S Orcas St	8/22/02	10.5	1	UD	2.5	UD	0.5	UD
412 S Orcas St	11/6/02	0	1	U	2.5	U	0.5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	64-17-5 Ethanol ug/l	Lab Qual	100-41-4 Ethylbenzene ug/l	Lab Qual	78-93-3 Methyl ethyl ketone ug/l	Lab Qual
MTCA B Minimum Level			4.108		12624.045		12624.045	
672 S Lucile St	2/7/02	0			2.79		10	U
672 S Lucile St	2/10/03	0	250	UD	4.06		10	U
672 S Lucile St	3/23/01	0			130		10	U
672 S Lucile St	5/17/02	0			38.1		10	U
672 S Lucile St	5/22/01	0			74		10	U
672 S Lucile St	8/2/02	0			76.55		10	U
672 S Lucile St	8/10/01	0			97.2	D	10	U
672 S Lucile St	8/22/02	0			44.9		10	U
672 S Lucile St	8/28/02	0			40.9		10	U
672 S Lucile St	11/13/01	0			40.1	D	80	UD
672 S Lucile St	11/13/02	0	50	U	15.5		10	U
5409 Denver Ave S	2/7/02	0			4180	D	10	U
5409 Denver Ave S	2/10/03	0	1250	UD	4450	D	250	UD
5409 Denver Ave S	3/23/01	0			6950		10	U
5409 Denver Ave S	5/20/02	0			1640	DE[J	10	U
5409 Denver Ave S	5/22/01	0			15700	D	100	UD
5409 Denver Ave S	8/2/02	0			2550	D	10	U
5409 Denver Ave S	8/10/01	0					10	U
5409 Denver Ave S	8/22/02	0			2930	D	10	U
5409 Denver Ave S	11/7/02	0	2000	UD	3960	DE[J	10	U
5409 Denver Ave S	11/13/01	0			10500	D	2500	UD
404 S Orcas St	8/22/02	0			1	U	10	U[J]
406 S Orcas St	8/22/02	0			1	U	10	U[J]
412 S Lucile St	8/22/02	0			1	U	10	U
412 S Orcas St	8/22/02	0			1	UD	10	UD
507 S Brandon	8/23/02	0			1	U	10	U
5327 Denver Ave S	8/28/02	0			1	U	10	U
5403 Maynard Ave S	8/22/02	0			2.18	D	10	UD
5409 Denver Ave S	8/29/00	0			1		10	
5409 Denver Ave S	8/29/00	0			1		10	
5409 Denver Ave S	8/29/00	0			1		10	
5409 Denver Ave S	8/29/00	0			1		10	
613 S Brandon	8/22/02	0			1	U	10	U
613 S Brandon	8/28/02	0			1	U	10	U
672 S Lucile St	8/29/00	0			1		10	
672 S Lucile St	8/29/00	0			1		10	
672 S Lucile St	8/29/00	0			1		10	
672 S Lucile St	8/29/00	0			1		10	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	64-17-5 Ethanol ug/l	Lab Qual	100-41-4 Ethylbenzene ug/l	Lab Qual	78-93-3 Methyl ethyl ketone ug/l	Lab Qual
MTCA B Minimum Level			4.108		12624.045		12624.045	
672 S Lucile St	8/29/00	0			1		10	
672 S Lucile St	8/29/00	0			1		10	
672 S Lucile St	8/29/00	0			1		10	
611, 613, and 507 S	2/17/03	10.5	50	U	1	U	10	U
611, 613, and 507 S	5/8/02	10.5			1	U	10	U
611, 613, and 507 S	7/16/02	10.5			1	U	10	U
611, 613, and 507 S	7/31/02	10.5			1	U	10	U
611, 613, and 507 S	8/22/02	10.5			1	U	10	U
611, 613, and 507 S	11/5/02	0	50	U	1	U	10	U
412 S Lucile St	2/17/03	10	50	U	1	U	10	U
412 S Lucile St	5/8/02	10			1	U	10	U
412 S Lucile St	7/19/02	10			1	U	10	U
412 S Lucile St	8/8/02	10			1	U	10	U
412 S Lucile St	8/22/02	10			1	U	10	U
412 S Lucile St	11/4/02	0	50	U	1	U	10	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	200	UD	1	U	10	U
412 S Orcas St	5/9/02	10.5			1	U	10	U
412 S Orcas St	8/1/02	10.5			1	U	10	U
412 S Orcas St	8/22/02	10.5			1	UD	10	UD
412 S Orcas St	11/6/02	0	50	U	1	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-09-2 Methylene chloride ug/l	Lab Qual	100-42-5 Styrene ug/l	Lab Qual	127-18-4 Tetrachloroethylene ug/l	Lab Qual
MTCA B Minimum Level			321.33		321.33		5.007	
672 S Lucile St	2/7/02	0	5	U	1	U	1	U
672 S Lucile St	2/10/03	0	5	U	1	U	1	U
672 S Lucile St	3/23/01	0	5	U	1	U	1.36	
672 S Lucile St	5/17/02	0	5	U	1	U	1	U
672 S Lucile St	5/22/01	0	5	U	1	U	1.1	
672 S Lucile St	8/2/02	0	5	U	1	U	1	U
672 S Lucile St	8/10/01	0	5	U	1	U	1.16	
672 S Lucile St	8/22/02	0	5	U	1	U	0.896	
672 S Lucile St	8/28/02	0	5	U	1	U	1	U
672 S Lucile St	11/13/01	0	40	UD	8	UD	8	UD
672 S Lucile St	11/13/02	0	5	U	1	U	1.15	
5409 Denver Ave S	2/7/02	0	5	U	1	U	3.05	
5409 Denver Ave S	2/10/03	0	125	UD	25	UD	25	UD
5409 Denver Ave S	3/23/01	0	10.2		1	U	2.56	
5409 Denver Ave S	5/20/02	0	0.901	[J]	1	U	1.91	
5409 Denver Ave S	5/22/01	0	50	UD	10	UD	10	UD
5409 Denver Ave S	8/2/02	0	5	U	1	U	1.71	
5409 Denver Ave S	8/10/01	0	5	U	1	U	3.14	
5409 Denver Ave S	8/22/02	0	5	U	1	U	1.76	[J]
5409 Denver Ave S	11/7/02	0	5	U	1	U	3.13	
5409 Denver Ave S	11/13/01	0	1250	UD	250	UD	250	UD
404 S Orcas St	8/22/02	0	5	U[J]	1	U	0.097	
406 S Orcas St	8/22/02	0	5	U[J]	1	U	0.06	
412 S Lucile St	8/22/02	0	5	U	1	U	0.05	U
412 S Orcas St	8/22/02	0	5	UD	1	UD	1	UD
507 S Brandon	8/23/02	0	5	U	1	U	0.05	U
5327 Denver Ave S	8/28/02	0	5	U	1	U	0.05	U
5403 Maynard Ave S	8/22/02	0	5	UD	1	UD	1	UD
5409 Denver Ave S	8/29/00	0	5		1		1	
5409 Denver Ave S	8/29/00	0	5		1		1	
5409 Denver Ave S	8/29/00	0	5		1		1	
5409 Denver Ave S	8/29/00	0	5		1		1	
613 S Brandon	8/22/02	0	5	U	1	U	0.05	U
613 S Brandon	8/28/02	0	5	U	1	U	0.05	U
672 S Lucile St	8/29/00	0	5		1		1	
672 S Lucile St	8/29/00	0	5		1		1	
672 S Lucile St	8/29/00	0	5		1		1	
672 S Lucile St	8/29/00	0	5		1		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	75-09-2 Methylene chloride ug/l	Lab Qual	100-42-5 Styrene ug/l	Lab Qual	127-18-4 Tetrachloroethylene ug/l	Lab Qual
MTCA B Minimum Level			321.33		321.33		5.007	
672 S Lucile St	8/29/00	0	5		1		1	
672 S Lucile St	8/29/00	0	5		1		1.73	
672 S Lucile St	8/29/00	0	5		1		1	
611, 613, and 507 S	2/17/03	10.5	5	U	1	U	0.05	U
611, 613, and 507 S	5/8/02	10.5	5	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	5	U[J]	1	U	0.05	U
611, 613, and 507 S	7/31/02	10.5	5	U	1	U	0.05	U
611, 613, and 507 S	8/22/02	10.5	5	U	1	U	0.05	U
611, 613, and 507 S	11/5/02	0	5	U	1	U	0.05	U
412 S Lucile St	2/17/03	10	5	U	1	U	0.05	U
412 S Lucile St	5/8/02	10	5	U	1	U	1	U
412 S Lucile St	7/19/02	10	5	U[J]	1	U	0.05	U
412 S Lucile St	8/8/02	10	5	U	1	U	0.06	
412 S Lucile St	8/22/02	10	5	U	1	U	0.052	
412 S Lucile St	11/4/02	0	5	U	1	U	0.107	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	5	U	1	U	0.05	U
412 S Orcas St	5/9/02	10.5	5	U	1	U	1	U
412 S Orcas St	8/1/02	10.5	5	U	1	U	0.05	U
412 S Orcas St	8/22/02	10.5	5	UD	1	UD	0.05	U
412 S Orcas St	11/6/02	0	5	U	1	U	1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-88-3 Toluene ug/l	Lab Qual	79-01-6 Trichloroethylene ug/l	Lab Qual	75-01-4 Vinyl chloride ug/l	Lab Qual
MTCA B Minimum Level			**4961.255**		**0.404**		**1.282**	
672 S Lucile St	2/7/02	0	1.03		1	U	1.06	
672 S Lucile St	2/10/03	0	1.23		1.19		3.96	
672 S Lucile St	3/23/01	0	3.48		1.3		4.98	
672 S Lucile St	5/17/02	0	1.67		0.755	[J]	1.33	
672 S Lucile St	5/22/01	0	3.05	[U]	7.21		2	
672 S Lucile St	8/2/02	0	21.8		1	U	3.595	
672 S Lucile St	8/10/01	0	3.35		1.45		3.86	
672 S Lucile St	8/22/02	0	1.6		1.64		4.94	
672 S Lucile St	8/28/02	0	1	U	1.37		6.12	
672 S Lucile St	11/13/01	0	8	UD	8	UD	8	UD
672 S Lucile St	11/13/02	0	1	U	1.65		4.8	
5409 Denver Ave S	2/7/02	0	686	D	1	U	3.7	
5409 Denver Ave S	2/10/03	0	333	D	25	UD	25	UD
5409 Denver Ave S	3/23/01	0	2240		2.22		48.7	
5409 Denver Ave S	5/20/02	0	143	D	0.913	[J]	3.59	
5409 Denver Ave S	5/22/01	0	4060	D	10	UD	32.2	D
5409 Denver Ave S	8/2/02	0	196	D	1	U	2.63	
5409 Denver Ave S	8/10/01	0	1140	D	1.9		68.1	D
5409 Denver Ave S	8/22/02	0	119	[J]	0.943	[J]	2.89	[J]
5409 Denver Ave S	11/7/02	0	412	D	1.23		2.96	
5409 Denver Ave S	11/13/01	0	2350	D	250	UD	250	UD
404 S Orcas St	8/22/02	0	1	U	1.5		0.071	
406 S Orcas St	8/22/02	0	1	U	4.38		15.8	
412 S Lucile St	8/22/02	0	1	U	3		0.02	U
412 S Orcas St	8/22/02	0	1	UD	2.54	D	17.9	D
507 S Brandon	8/23/02	0	1	U	0.02	U	0.02	U
5327 Denver Ave S	8/28/02	0	1	U	0.073		0.209	
5403 Maynard Ave S	8/22/02	0	1	UD	1	UD	176	D
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1.16		1	
5409 Denver Ave S	8/29/00	0	1		1		7.21	
5409 Denver Ave S	8/29/00	0	1		1.15		49.8	
613 S Brandon	8/22/02	0	1	U	0.02	U	0.194	
613 S Brandon	8/28/02	0	1	U	0.032		0.972	
672 S Lucile St	8/29/00	0	1		1		97.3	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		16.5		8.88	
672 S Lucile St	8/29/00	0	1		1		18	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-88-3 Toluene ug/l	Lab Qual	79-01-6 Trichloroethylene ug/l	Lab Qual	75-01-4 Vinyl chloride ug/l	Lab Qual
MTCA B Minimum Level			**4961.255**		**0.404**		**1.282**	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		45.8		15.2	
672 S Lucile St	8/29/00	0	1		3.33		10.9	
611, 613, and 507 S	2/17/03	10.5	1	U	0.02	U	0.02	U
611, 613, and 507 S	5/8/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	1	U	0.05	U	0.05	U
611, 613, and 507 S	7/31/02	10.5	1	U	0.034		0.02	U
611, 613, and 507 S	8/22/02	10.5	1	U	0.039		0.0305	
611, 613, and 507 S	11/5/02	0	1	U	0.095		0.02	U
412 S Lucile St	2/17/03	10	1	U	1.7		0.56	
412 S Lucile St	5/8/02	10	1	U	1.92		0.666	[J]
412 S Lucile St	7/19/02	10	1	U	1.62		0.175	
412 S Lucile St	8/8/02	10	1	U	1.57		0.444	
412 S Lucile St	8/22/02	10	1	U	1.54		0.284	
412 S Lucile St	11/4/02	0	1	U	1.6		0.486	
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	1	U	38.4		6.95	
412 S Orcas St	5/9/02	10.5	1	U	39.7		25.3	
412 S Orcas St	8/1/02	10.5	1	U	48.9		40.3	
412 S Orcas St	8/22/02	10.5	1	UD	44.1	D	51.1	D
412 S Orcas St	11/6/02	0	1	U	49.8		24.4	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-38-3, 1 Xylene (total) ug/l	Lab Qual	156-59-2 cis-1,2-Dichloroethylene ug/l	Lab Qual	10061-01-5 cis-1,3-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			1442.091		727.076		0	
672 S Lucile St	2/7/02	0	56.2		5.13		1	U
672 S Lucile St	2/10/03	0	70.8		21.8		1	U
672 S Lucile St	3/23/01	0	138		51.3		1	U
672 S Lucile St	5/17/02	0	47.7		7.29		1	U
672 S Lucile St	5/22/01	0	64.2		30.7		1	U
672 S Lucile St	8/2/02	0	74		14.4		1	U
672 S Lucile St	8/10/01	0	87.5		32.7		1	U
672 S Lucile St	8/22/02	0	38.8		24.7		1	U
672 S Lucile St	8/28/02	0	38.1		28.4		1	U
672 S Lucile St	11/13/01	0	19.5	D	29.5	D	8	UD
672 S Lucile St	11/13/02	0	44.5		42.7		1	U
5409 Denver Ave S	2/7/02	0	432	D	5.33		1	U
5409 Denver Ave S	2/10/03	0	463	D	25	UD	25	UD
5409 Denver Ave S	3/23/01	0	1140		21.9		1	U
5409 Denver Ave S	5/20/02	0	217	D	5.4		1	U
5409 Denver Ave S	5/22/01	0	962	D	28.9	D	10	UD
5409 Denver Ave S	8/2/02	0	263	D	3.6		1	U
5409 Denver Ave S	8/10/01	0	949	D	48.1		1	U
5409 Denver Ave S	8/22/02	0	137	[J]	5.94		1	U
5409 Denver Ave S	11/7/02	0	508	D	5.36		1	U
5409 Denver Ave S	11/13/01	0	1400	D	250	UD	250	UD
404 S Orcas St	8/22/02	0	2	U	4.57		1	U
406 S Orcas St	8/22/02	0	2	U	20.2		1	U
412 S Lucile St	8/22/02	0	2	U	1	U	1	U
412 S Orcas St	8/22/02	0	2	UD	22.6	D	1	UD
507 S Brandon	8/23/02	0	2	U	1	U	1	U
5327 Denver Ave S	8/28/02	0	2	U	1	U	1	U
5403 Maynard Ave S	8/22/02	0	2	UD	265	D	1	UD
5409 Denver Ave S	8/29/00	0	2		5		1	
5409 Denver Ave S	8/29/00	0	2		12.9		1	
5409 Denver Ave S	8/29/00	0	2		5		1	
5409 Denver Ave S	8/29/00	0	2		49.4		1	
613 S Brandon	8/22/02	0	2	U	1	U	1	U
613 S Brandon	8/28/02	0	2	U	3.19		1	U
672 S Lucile St	8/29/00	0	2		618		1	
672 S Lucile St	8/29/00	0	2		144		1	
672 S Lucile St	8/29/00	0	2		217		1	
672 S Lucile St	8/29/00	0	2		428		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-38-3, 1 Xylene (total) ug/l	Lab Qual	156-59-2 cis-1,2-Dichloroethylene ug/l	Lab Qual	10061-01-5 cis-1,3-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			**1442.091**		**727.076**		**0**	
672 S Lucile St	8/29/00	0	2		3.81		1	
672 S Lucile St	8/29/00	0	2		231		1	
672 S Lucile St	8/29/00	0	2		800		1	
611, 613, and 507 S	2/17/03	10.5	2	U	1	U	1	U
611, 613, and 507 S	5/8/02	10.5	2	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	2	U	1	U	1	U
611, 613, and 507 S	7/31/02	10.5	2	U	1	U	1	U
611, 613, and 507 S	8/22/02	10.5	2	U	1	U	1	U
611, 613, and 507 S	11/5/02	0	2	U	1	U	1	U
412 S Lucile St	2/17/03	10	2	U	3.24		1	U
412 S Lucile St	5/8/02	10	2	U	4.48		1	U
412 S Lucile St	7/19/02	10	2	U	2.99		1	U
412 S Lucile St	8/8/02	10	2	U	2.8		1	U
412 S Lucile St	8/22/02	10	2	U	3.18		1	U
412 S Lucile St	11/4/02	0	2	U	2.24		1	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	2	U	59.2	D	1	U
412 S Orcas St	5/9/02	10.5	2	U	59	D	1	U
412 S Orcas St	8/1/02	10.5	2	U	98.5	D	1	U
412 S Orcas St	8/22/02	10.5	2	UD	80.9	D	1	UD
412 S Orcas St	11/6/02	0	2	U	89.4	E[J]	1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-47-6 o-Xylene ug/l	Lab Qual	156-60-5 trans-1,2-Dichloroethylene ug/l	Lab Qual	10061-02-6 trans-1,3-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			0		652.622		0	
672 S Lucile St	2/7/02	0	1.37		1	U	1	U
672 S Lucile St	2/10/03	0	3.42		1.85		1	U
672 S Lucile St	3/23/01	0	43.8		5.89		1	U
672 S Lucile St	5/17/02	0	2.77		0.839	[J]	1	U
672 S Lucile St	5/22/01	0	17.7		2.16		1	U
672 S Lucile St	8/2/02	0	17.75		1.205		1	U
672 S Lucile St	8/10/01	0	17.9		3.09		1	U
672 S Lucile St	8/22/02	0	9.35		1.61		1	U
672 S Lucile St	8/28/02	0	9.34		1.57		1	U
672 S Lucile St	11/13/01	0	8	UD	8	UD	8	UD
672 S Lucile St	11/13/02	0	9.28		1.84		1	U
5409 Denver Ave S	2/7/02	0	182	D	1.17		1	U
5409 Denver Ave S	2/10/03	0	161	D	25	UD	25	UD
5409 Denver Ave S	3/23/01	0	357		3.95		1	U
5409 Denver Ave S	5/20/02	0	80.3	D	1.05		1	U
5409 Denver Ave S	5/22/01	0	314	D	10	UD	10	UD
5409 Denver Ave S	8/2/02	0	91.7	D	1	U	1	U
5409 Denver Ave S	8/10/01	0	258	D	2.3		1	U
5409 Denver Ave S	8/22/02	0	74	[J]	1.06		1	U
5409 Denver Ave S	11/7/02	0	186	D	1	U	1	U
5409 Denver Ave S	11/13/01	0	395	D	250	UD	250	UD
404 S Orcas St	8/22/02	0	1	U	1	U	1	U
406 S Orcas St	8/22/02	0	1	U	1	U	1	U
412 S Lucile St	8/22/02	0	1	U	1	U	1	U
412 S Orcas St	8/22/02	0	1	UD	1	UD	1	UD
507 S Brandon	8/23/02	0	1	U	1	U	1	U
5327 Denver Ave S	8/28/02	0	1	U	1	U	1	U
5403 Maynard Ave S	8/22/02	0	1	UD	7.21	D	1	UD
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
5409 Denver Ave S	8/29/00	0	1		1		1	
613 S Brandon	8/22/02	0	1	U	1	U	1	U
613 S Brandon	8/28/02	0	1	U	1	U	1	U
672 S Lucile St	8/29/00	0	1		2.18		1	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		2.2		1	
672 S Lucile St	8/29/00	0	1		1.26		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	95-47-6 o-Xylene ug/l	Lab Qual	156-60-5 trans-1,2-Dichloroethylene ug/l	Lab Qual	10061-02-6 trans-1,3-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			0		652.622		0	
672 S Lucile St	8/29/00	0	1		1		1	
672 S Lucile St	8/29/00	0	1		5.07		1	
672 S Lucile St	8/29/00	0	1		2.5		1	
611, 613, and 507 S	2/17/03	10.5	1	U	1	U	1	U
611, 613, and 507 S	5/8/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	7/16/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	7/31/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	8/22/02	10.5	1	U	1	U	1	U
611, 613, and 507 S	11/5/02	0	1	U	1	U	1	U
412 S Lucile St	2/17/03	10	1	U	1	U	1	U
412 S Lucile St	5/8/02	10	1	U	1	U	1	U
412 S Lucile St	7/19/02	10	1	U	1	U	1	U
412 S Lucile St	8/8/02	10	1	U	1	U	1	U
412 S Lucile St	8/22/02	10	1	U	1	U	1	U
412 S Lucile St	11/4/02	0	1	U	1	U	1	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	1	U	1.06		1	U
412 S Orcas St	5/9/02	10.5	1	U	0.716	[J]	1	U
412 S Orcas St	8/1/02	10.5	1	U	1.3		1	U
412 S Orcas St	8/22/02	10.5	1	UD	1.47	D	1	UD
412 S Orcas St	11/6/02	0	1	U	1	U	1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	630-20-6 1,1,1,2-Tetrachloroethane ug/l	Lab Qual	76-13-1 1,1,2-Trichlorotrifluoroethane ug/l	Lab Qual	563-58-6 1,1-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			0		12087.587		0	
672 S Lucile St	2/7/02	0	1	U	2.62			
672 S Lucile St	2/10/03	0	1	U	6.11			
672 S Lucile St	3/23/01	0	1	U	17.6		1	U
672 S Lucile St	5/17/02	0	1	U	2.96			
672 S Lucile St	5/22/01	0	1	U	20		1	U
672 S Lucile St	8/2/02	0	1	U	6.855			
672 S Lucile St	8/10/01	0	1	U	20.3		1	U
672 S Lucile St	8/22/02	0	0.1	U	8.49			
672 S Lucile St	8/28/02	0	1	U	10			
672 S Lucile St	11/13/01	0	8	UD	17.7	D		
672 S Lucile St	11/13/02	0	0.1	U	21.1			
5409 Denver Ave S	2/7/02	0	1	U	22.6			
5409 Denver Ave S	2/10/03	0	25	UD	50	UD		
5409 Denver Ave S	3/23/01	0	1	U	68.7		1	U
5409 Denver Ave S	5/20/02	0	1	U	11.9			
5409 Denver Ave S	5/22/01	0	10	UD	200	UD	10	UD
5409 Denver Ave S	8/2/02	0	1	U	7.16			
5409 Denver Ave S	8/10/01	0	1	U	63.9	D	1	U
5409 Denver Ave S	8/22/02	0	0.1	U[J]	5.79			
5409 Denver Ave S	11/7/02	0	1	U	12.5			
5409 Denver Ave S	11/13/01	0	250	UD	500	UD		
404 S Orcas St	8/22/02	0	0.1	U[J]	2	U		
406 S Orcas St	8/22/02	0	0.1	U[J]	2	U		
412 S Lucile St	8/22/02	0	0.1	U	2	U		
412 S Orcas St	8/22/02	0	1	UD	2	UD		
507 S Brandon	8/23/02	0	0.1	U	2	U		
5327 Denver Ave S	8/28/02	0	0.1	U	2	U		
5403 Maynard Ave S	8/22/02	0	1	UD	2	UD		
5409 Denver Ave S	8/29/00	0	1		2		1	
5409 Denver Ave S	8/29/00	0	1		3.66		1	
5409 Denver Ave S	8/29/00	0	1		2		1	
5409 Denver Ave S	8/29/00	0	1		7.67		1	
613 S Brandon	8/22/02	0	0.1	U	2	U		
613 S Brandon	8/28/02	0	0.1	U	2	U		
672 S Lucile St	8/29/00	0	1		4.91		1	
672 S Lucile St	8/29/00	0	1		4.35		1	
672 S Lucile St	8/29/00	0	1		6.47		1	
672 S Lucile St	8/29/00	0	1		2.99		1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	630-20-6 1,1,1,2-Tetrachloroethane ug/l	Lab Qual	76-13-1 1,1,2-Trichlorotrifluoroethane ug/l	Lab Qual	563-58-6 1,1-Dichloropropene ug/l	Lab Qual
MTCA B Minimum Level			0		12087.587		0	
672 S Lucile St	8/29/00	0	1		2		1	
672 S Lucile St	8/29/00	0	1		29.6		1	
672 S Lucile St	8/29/00	0	1		2.41		1	
611, 613, and 507 S	2/17/03	10.5	0.1	U	2	U		
611, 613, and 507 S	5/8/02	10.5	1	U	2	U		
611, 613, and 507 S	7/16/02	10.5	0.1	U	2	U		
611, 613, and 507 S	7/31/02	10.5	0.1	U	2	U		
611, 613, and 507 S	8/22/02	10.5	0.1	U	2	U		
611, 613, and 507 S	11/5/02	0	0.1	U	2	U		
412 S Lucile St	2/17/03	10	0.1	U	2	U		
412 S Lucile St	5/8/02	10	1	U	2	U		
412 S Lucile St	7/19/02	10	0.1	U	2	U		
412 S Lucile St	8/8/02	10	0.1	U	2	U		
412 S Lucile St	8/22/02	10	0.1	U	2	U		
412 S Lucile St	11/4/02	0	0.1	U	2	U		
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	0.1	U	2	U		
412 S Orcas St	5/9/02	10.5	1	U	2	U		
412 S Orcas St	8/1/02	10.5	0.1	U	2	U		
412 S Orcas St	8/22/02	10.5	0.1	U	2	UD		
412 S Orcas St	11/6/02	0	1	U	2	U		

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	96-18-4 1,2,3-Trichloropropane ug/l	Lab Qual	95-63-6 1,2,4-Trimethylbenzene ug/l	Lab Qual	106-93-4 1,2-Dibromoethane (EDB) ug/l	Lab Qual
MTCA B Minimum Level			0		130.142		130.142	
672 S Lucile St	2/7/02	0			20.1			
672 S Lucile St	2/10/03	0			44		0.01	U
672 S Lucile St	3/23/01	0	1	U	106		1	U
672 S Lucile St	5/17/02	0			18.2			
672 S Lucile St	5/22/01	0	1	U	40.3		1	U
672 S Lucile St	8/2/02	0			38.35			
672 S Lucile St	8/10/01	0			70.6	D		
672 S Lucile St	8/22/02	0			21			
672 S Lucile St	8/28/02	0			29.2			
672 S Lucile St	11/13/01	0			24.3	D		
672 S Lucile St	11/13/02	0			27.6		0.01	U
5409 Denver Ave S	2/7/02	0			57.4			
5409 Denver Ave S	2/10/03	0			117	D	0.01	U
5409 Denver Ave S	3/23/01	0	1	U	184		1	U
5409 Denver Ave S	5/20/02	0			68.8	D		
5409 Denver Ave S	5/22/01	0	10	UD	188	D	10	UD
5409 Denver Ave S	8/2/02	0			64.5	D		
5409 Denver Ave S	8/10/01	0			140	D		
5409 Denver Ave S	8/22/02	0			48.6			
5409 Denver Ave S	11/7/02	0			98.6	D	0.01	U
5409 Denver Ave S	11/13/01	0			250	UD		
404 S Orcas St	8/22/02	0			1	U		
406 S Orcas St	8/22/02	0			1	U		
412 S Lucile St	8/22/02	0			1	U		
412 S Orcas St	8/22/02	0			1	UD		
507 S Brandon	8/23/02	0			1	U		
5327 Denver Ave S	8/28/02	0			1	U		
5403 Maynard Ave S	8/22/02	0			2.68	D		
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0			1	U		
613 S Brandon	8/28/02	0			1	U		
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	96-18-4 1,2,3-Trichloropropane ug/l	Lab Qual	95-63-6 1,2,4-Trimethylbenzene ug/l	Lab Qual	106-93-4 1,2-Dibromoethane (EDB) ug/l	Lab Qual
MTCA B Minimum Level			0		130.142		130.142	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			1	U	0.01	U
611, 613, and 507 S	5/8/02	10.5			1	U		
611, 613, and 507 S	7/16/02	10.5			1	U		
611, 613, and 507 S	7/31/02	10.5			1	U		
611, 613, and 507 S	8/22/02	10.5			1	U		
611, 613, and 507 S	11/5/02	0			1	U	0.01	U
412 S Lucile St	2/17/03	10			1	U	0.01	U
412 S Lucile St	5/8/02	10			1	U		
412 S Lucile St	7/19/02	10			1	U		
412 S Lucile St	8/8/02	10			1	U		
412 S Lucile St	8/22/02	10			1	U		
412 S Lucile St	11/4/02	0			1	U	0.01	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5			1	U	0.01	U
412 S Orcas St	5/9/02	10.5			1	U		
412 S Orcas St	8/1/02	10.5			1	U		
412 S Orcas St	8/22/02	10.5			1	UD		
412 S Orcas St	11/6/02	0			1	U	0.01	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-67-8 1,3,5-Trimethylbenzene ug/l	Lab Qual	142-28-9 1,3-Dichloropropane ug/l	Lab Qual	123-91-1 1,4-Dioxane ug/l	Lab Qual
MTCA B Minimum Level			97.62		97.62		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0	16.5				1.09	
672 S Lucile St	3/23/01	0			1	U		
672 S Lucile St	5/17/02	0	1.91					
672 S Lucile St	5/22/01	0			1	U		
672 S Lucile St	8/2/02	0	4.515					
672 S Lucile St	8/10/01	0			1	U		
672 S Lucile St	8/22/02	0	1.52					
672 S Lucile St	8/28/02	0	2.51					
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	2.17					
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0	28.4	D			2.7	
5409 Denver Ave S	3/23/01	0			1	U		
5409 Denver Ave S	5/20/02	0	14.4					
5409 Denver Ave S	5/22/01	0			10	UD		
5409 Denver Ave S	8/2/02	0	18.4					
5409 Denver Ave S	8/10/01	0			1	U		
5409 Denver Ave S	8/22/02	0	10.3					
5409 Denver Ave S	11/7/02	0	27.9					
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0	1	U				
406 S Orcas St	8/22/02	0	1	U				
412 S Lucile St	8/22/02	0	1	U				
412 S Orcas St	8/22/02	0	1	UD				
507 S Brandon	8/23/02	0	1	U				
5327 Denver Ave S	8/28/02	0	1	U				
5403 Maynard Ave S	8/22/02	0	1	UD				
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
613 S Brandon	8/22/02	0	1	U				
613 S Brandon	8/28/02	0	1	U				
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-67-8 1,3,5-Trimethylbenzene ug/l	Lab Qual	142-28-9 1,3-Dichloropropane ug/l	Lab Qual	123-91-1 1,4-Dioxane ug/l	Lab Qual
MTCA B Minimum Level			97.62		97.62		0	
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
611, 613, and 507 S	2/17/03	10.5	1	U			1	U
611, 613, and 507 S	5/8/02	10.5	1	U				
611, 613, and 507 S	7/16/02	10.5	1	U				
611, 613, and 507 S	7/31/02	10.5	1	U				
611, 613, and 507 S	8/22/02	10.5	1	U				
611, 613, and 507 S	11/5/02	0	1	U				
412 S Lucile St	2/17/03	10	1	U			2.02	
412 S Lucile St	5/8/02	10	1	U				
412 S Lucile St	7/19/02	10	1	U				
412 S Lucile St	8/8/02	10	1	U				
412 S Lucile St	8/22/02	10	1	U				
412 S Lucile St	11/4/02	0	1	U				
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	1	U			30.9	D
412 S Orcas St	5/9/02	10.5	1	U				
412 S Orcas St	8/1/02	10.5	1	U				
412 S Orcas St	8/22/02	10.5	1	UD				
412 S Orcas St	11/6/02	0	1	U				

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	90-12-0 1-Methyl naphthalene ug/l	Lab Qual	594-20-7 2,2-Dichloropropane ug/l	Lab Qual	110-75-8 2-Chloroethylvinyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					5	U
672 S Lucile St	2/10/03	0					5	U
672 S Lucile St	3/23/01	0			1	U		
672 S Lucile St	5/17/02	0					5	U
672 S Lucile St	5/22/01	0			1	U		
672 S Lucile St	8/2/02	0					5	U
672 S Lucile St	8/10/01	0			1	U	5	U
672 S Lucile St	8/22/02	0					5	U
672 S Lucile St	8/28/02	0					5	U
672 S Lucile St	11/13/01	0					40	UD
672 S Lucile St	11/13/02	0					5	U
5409 Denver Ave S	2/7/02	0	10	U			5	U
5409 Denver Ave S	2/10/03	0	0.358				125	UD
5409 Denver Ave S	3/23/01	0			1	U		
5409 Denver Ave S	5/20/02	0	4.85	U			5	U
5409 Denver Ave S	5/22/01	0			10	UD		
5409 Denver Ave S	8/2/02	0	0.1	U			5	U
5409 Denver Ave S	8/10/01	0			1	U	5	U
5409 Denver Ave S	8/22/02	0					5	U
5409 Denver Ave S	11/7/02	0	0.302				5	U
5409 Denver Ave S	11/13/01	0					1250	UD
404 S Orcas St	8/22/02	0					5	U
406 S Orcas St	8/22/02	0					5	U
412 S Lucile St	8/22/02	0					5	U
412 S Orcas St	8/22/02	0					5	UD
507 S Brandon	8/23/02	0					5	U
5327 Denver Ave S	8/28/02	0					5	U
5403 Maynard Ave S	8/22/02	0					5	UD
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
613 S Brandon	8/22/02	0					5	U
613 S Brandon	8/28/02	0					5	U
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	90-12-0 1-Methyl naphthalene ug/l	Lab Qual	594-20-7 2,2-Dichloropropane ug/l	Lab Qual	110-75-8 2-Chloroethylvinyl ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
611, 613, and 507 S	2/17/03	10.5					5	U
611, 613, and 507 S	5/8/02	10.5					5	U
611, 613, and 507 S	7/16/02	10.5					5	U
611, 613, and 507 S	7/31/02	10.5					5	U
611, 613, and 507 S	8/22/02	10.5					5	U
611, 613, and 507 S	11/5/02	0					5	U
412 S Lucile St	2/17/03	10					5	U
412 S Lucile St	5/8/02	10					5	U
412 S Lucile St	7/19/02	10					5	U
412 S Lucile St	8/8/02	10					5	U
412 S Lucile St	8/22/02	10					5	U
412 S Lucile St	11/4/02	0					5	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5					5	U
412 S Orcas St	5/9/02	10.5					5	U
412 S Orcas St	8/1/02	10.5					5	U
412 S Orcas St	8/22/02	10.5					5	UD
412 S Orcas St	11/6/02	0					5	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	91-57-6 2-Methylnaphthalene ug/l	Lab Qual	88-75-5 2-Nitrophenol ug/l	Lab Qual	108-39-4 3-Methylphenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0	10	U	10	U[J]		
672 S Lucile St	2/10/03	0			10	U		
672 S Lucile St	3/23/01	0			10	U	10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U		
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0			10	U		
672 S Lucile St	8/10/01	0	10	U	10	U		
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U		
672 S Lucile St	11/13/02	0	0.472		10	U		
5409 Denver Ave S	2/7/02	0	10	U	10	U[J]		
5409 Denver Ave S	2/10/03	0			10	U		
5409 Denver Ave S	3/23/01	0			10	U	10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U		
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0			10	U		
5409 Denver Ave S	8/10/01	0	10	U	10	U		
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.208		10	U		
5409 Denver Ave S	11/13/01	0	10	U	10	U		
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	91-57-6 2-Methylnaphthalene ug/l	Lab Qual	88-75-5 2-Nitrophenol ug/l	Lab Qual	108-39-4 3-Methylphenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			10	U		
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.1	U	10	U		
412 S Lucile St	2/17/03	10			10	U		
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	0.1	U	10	U		
412 S Orcas St	2/17/03	10.5			10	U		
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.1	U	10	U		

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	98-86-2 Acetophenone ug/l	Lab Qual	62-53-3 Aniline ug/l	Lab Qual	92-87-5 Benzidine ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0					10	U
672 S Lucile St	5/17/02	0	4.76	U	4.76	U		
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	1	U	10	U		
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	10	U	10	U		
672 S Lucile St	11/13/02	0	10	U	0.05	U[J]		
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0					10	U
5409 Denver Ave S	5/20/02	0	4.85	U	4.85	U		
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	1	U	10	U		
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	10	U	0.05	U		
5409 Denver Ave S	11/13/01	0	21.4		10	U		
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	98-86-2 Acetophenone ug/l	Lab Qual	62-53-3 Aniline ug/l	Lab Qual	92-87-5 Benzidine ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	10	U	0.05	U		
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	10	U	0.05	U		
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	10	U	0.05	U		

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	65-85-0 Benzoic acid ug/l	Lab Qual	100-51-6 Benzyl alcohol ug/l	Lab Qual	39638-32-9 Bis(2-chloroisopropyl)ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0			10	U		
672 S Lucile St	5/17/02	0	9.52	U	4.76	U	4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0	20	U	10	U	10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0	20	U	10	U	10	U
672 S Lucile St	11/13/02	0	20	U	10	U	10	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0						
5409 Denver Ave S	3/23/01	0			10	U		
5409 Denver Ave S	5/20/02	0	9.71	U	4.85	U	4.85	U
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0	21.9		10	U	10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	20	U	10	U	10	U
5409 Denver Ave S	11/13/01	0	20	U	10	U	10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	65-85-0 Benzoic acid ug/l	Lab Qual	100-51-6 Benzyl alcohol ug/l	Lab Qual	39638-32-9 Bis(2-chloroisopropyl)ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	20	U	10	U	10	U
412 S Lucile St	2/17/03	10						
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0						
412 S Lucile St	11/5/02	0	20	U	10	U	10	U
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	20	U	10	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	96-12-8 Dibromochloropropane (DBCP) ug/l	Lab Qual	75-71-8 Dichlorodifluoromethane ug/l	Lab Qual	74-84-0 Ethane ug/l	Lab Qual
MTCA B Minimum Level			0		63.61		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0						
672 S Lucile St	3/23/01	0	1	U	1	U		
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0	5	U	1	U		
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0	0.01	U				
5409 Denver Ave S	2/7/02	0					34.9	
5409 Denver Ave S	2/10/03	0					140	
5409 Denver Ave S	3/23/01	0	1	U	1	U	289	
5409 Denver Ave S	5/20/02	0					98.1	
5409 Denver Ave S	5/22/01	0	50	UD	10	UD	271	
5409 Denver Ave S	8/2/02	0					100.35	
5409 Denver Ave S	8/10/01	0					248	
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	0.01	U			131.5	
5409 Denver Ave S	11/13/01	0					149.5	
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
5409 Denver Ave S	8/29/00	0			1			
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	96-12-8 Dibromochloropropane (DBCP) ug/l	Lab Qual	75-71-8 Dichlorodifluoromethane ug/l	Lab Qual	74-84-0 Ethane ug/l	Lab Qual
MTCA B Minimum Level			0		63.61		0	
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
672 S Lucile St	8/29/00	0			1			
611, 613, and 507 S	2/17/03	10.5						
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0	0.01	U				
412 S Lucile St	2/17/03	10					117	
412 S Lucile St	5/8/02	10					31.25	
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10					10	U
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	0.01	U			10	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5						
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0	0.01	U				

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	74-85-1 Ethene ug/l	Lab Qual	637-92-3 Ethyl t-butyl ether ug/l	Lab Qual	108-20-3 Isopropyl Ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0			5	UD	5	UD
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0			1	U	1	U
5409 Denver Ave S	2/7/02	0	470					
5409 Denver Ave S	2/10/03	0	290.5		25	UD	25	UD
5409 Denver Ave S	3/23/01	0	1740					
5409 Denver Ave S	5/20/02	0	445					
5409 Denver Ave S	5/22/01	0	1630					
5409 Denver Ave S	8/2/02	0	266					
5409 Denver Ave S	8/10/01	0	1080					
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	521		40	UD	40	UD
5409 Denver Ave S	11/13/01	0	884					
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	74-85-1 Ethene ug/l	Lab Qual	637-92-3 Ethyl t-butyl ether ug/l	Lab Qual	108-20-3 Isopropyl Ether ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			1	U	1	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0			1	U	1	U
412 S Lucile St	2/17/03	10	10	U	1	U	1	U
412 S Lucile St	5/8/02	10	10	U				
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	10	U				
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	10	U	1	U	1	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5			4	UD	4	UD
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0			1	U	1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	74-82-8 Methane ug/l	Lab Qual	994-05-8 Methyl tert-amyl ether ug/l	Lab Qual	1319-77-3 Methylphenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	2/7/02	0					10	U
672 S Lucile St	2/10/03	0			5	UD	10	U
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0					4.76	U
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0					10	U
672 S Lucile St	8/10/01	0					10	U
672 S Lucile St	8/22/02	0						
672 S Lucile St	8/28/02	0						
672 S Lucile St	11/13/01	0					10	U
672 S Lucile St	11/13/02	0			1	U	10	U
5409 Denver Ave S	2/7/02	0	1010				10	U
5409 Denver Ave S	2/10/03	0	1195		25	UD	10	U
5409 Denver Ave S	3/23/01	0	4570					
5409 Denver Ave S	5/20/02	0	2340				4.85	U
5409 Denver Ave S	5/22/01	0	3770					
5409 Denver Ave S	8/2/02	0	814.5				10	U
5409 Denver Ave S	8/10/01	0	2760				10	U
5409 Denver Ave S	8/22/02	0						
5409 Denver Ave S	11/7/02	0	797		40	UD	10	U
5409 Denver Ave S	11/13/01	0	771				10	U
404 S Orcas St	8/22/02	0						
406 S Orcas St	8/22/02	0						
412 S Lucile St	8/22/02	0						
412 S Orcas St	8/22/02	0						
507 S Brandon	8/23/02	0						
5327 Denver Ave S	8/28/02	0						
5403 Maynard Ave S	8/22/02	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0						
613 S Brandon	8/28/02	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	74-82-8 Methane ug/l	Lab Qual	994-05-8 Methyl tert-amyl ether ug/l	Lab Qual	1319-77-3 Methylphenol ug/l	Lab Qual
MTCA B Minimum Level			0		0		0	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5			1	U	10	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5						
611, 613, and 507 S	11/5/02	0			1	U	10	U
412 S Lucile St	2/17/03	10	1190		1	U	10	U
412 S Lucile St	5/8/02	10	418.5					
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10	52.9					
412 S Lucile St	8/22/02	10						
412 S Lucile St	11/4/02	0	39.5		1	U		
412 S Lucile St	11/5/02	0					10	U
412 S Orcas St	2/17/03	10.5			4	UD	10	U
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5						
412 S Orcas St	11/6/02	0			1	U	10	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	1634-04-4 Methyltert-butylether ug/l	Lab Qual	103-65-1 Propylbenzene ug/l	Lab Qual	75-69-4 Trichlorofluoromethane ug/l	Lab Qual
MTCA B Minimum Level			0		268.65		268.65	
672 S Lucile St	2/7/02	0					1	U
672 S Lucile St	2/10/03	0	5	U			1	U
672 S Lucile St	3/23/01	0					1	U
672 S Lucile St	5/17/02	0					1	U
672 S Lucile St	5/22/01	0					1	U
672 S Lucile St	8/2/02	0					1	U
672 S Lucile St	8/10/01	0					1	U
672 S Lucile St	8/22/02	0			1	U	1	U
672 S Lucile St	8/28/02	0			5.76		1	U
672 S Lucile St	11/13/01	0					8	UD
672 S Lucile St	11/13/02	0	5	U			1	U
5409 Denver Ave S	2/7/02	0					1	U
5409 Denver Ave S	2/10/03	0	125	UD			25	UD
5409 Denver Ave S	3/23/01	0					1	U
5409 Denver Ave S	5/20/02	0					1	U
5409 Denver Ave S	5/22/01	0					10	UD
5409 Denver Ave S	8/2/02	0					1	U
5409 Denver Ave S	8/10/01	0					1	U
5409 Denver Ave S	8/22/02	0			16.3		1	U
5409 Denver Ave S	11/7/02	0	5	U			1	U
5409 Denver Ave S	11/13/01	0					250	UD
404 S Orcas St	8/22/02	0			1	U	1	U
406 S Orcas St	8/22/02	0			1	U	1	U
412 S Lucile St	8/22/02	0			1	U	1	U
412 S Orcas St	8/22/02	0			1	UD	1	UD
507 S Brandon	8/23/02	0			1	U	1	U
5327 Denver Ave S	8/28/02	0			1	U	1	U
5403 Maynard Ave S	8/22/02	0			1	UD	1	UD
5409 Denver Ave S	8/29/00	0					1	
5409 Denver Ave S	8/29/00	0					1	
5409 Denver Ave S	8/29/00	0					1	
5409 Denver Ave S	8/29/00	0					1	
613 S Brandon	8/22/02	0			1	U	1	U
613 S Brandon	8/28/02	0			1	U	1	U
672 S Lucile St	8/29/00	0					1	
672 S Lucile St	8/29/00	0					1	
672 S Lucile St	8/29/00	0					1	
672 S Lucile St	8/29/00	0					1	

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	1634-04-4 Methyltert-butylether ug/l	Lab Qual	103-65-1 Propylbenzene ug/l	Lab Qual	75-69-4 Trichlorofluoromethane ug/l	Lab Qual
MTCA B Minimum Level			0		268.65		268.65	
672 S Lucile St	8/29/00	0					1	
672 S Lucile St	8/29/00	0					1	
672 S Lucile St	8/29/00	0					1	
611, 613, and 507 S	2/17/03	10.5	5	U			1	U
611, 613, and 507 S	5/8/02	10.5					1	U
611, 613, and 507 S	7/16/02	10.5					1	U
611, 613, and 507 S	7/31/02	10.5					1	U
611, 613, and 507 S	8/22/02	10.5			1	U	1	U
611, 613, and 507 S	11/5/02	0	5	U			1	U
412 S Lucile St	2/17/03	10	5	U			1	U
412 S Lucile St	5/8/02	10					1	U
412 S Lucile St	7/19/02	10					1	U
412 S Lucile St	8/8/02	10					1	U
412 S Lucile St	8/22/02	10			1	U	1	U
412 S Lucile St	11/4/02	0	5	U			1	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	5	U			1	U
412 S Orcas St	5/9/02	10.5					1	U
412 S Orcas St	8/1/02	10.5					1	U
412 S Orcas St	8/22/02	10.5			1	UD	1	UD
412 S Orcas St	11/6/02	0	5	U			1	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-05-4 Vinyl acetate ug/l	Lab Qual	104-51-8 n-Butylbenzene ug/l	Lab Qual	110-54-3 n-Hexane ug/l	Lab Qual
MTCA B Minimum Level			268.65		0		0	
672 S Lucile St	2/7/02	0	5	U				
672 S Lucile St	2/10/03	0	5	U	1	U	2	U
672 S Lucile St	3/23/01	0	5	U				
672 S Lucile St	5/17/02	0	5	U				
672 S Lucile St	5/22/01	0	5	U				
672 S Lucile St	8/2/02	0	5	U	1.605			
672 S Lucile St	8/10/01	0	5	U				
672 S Lucile St	8/22/02	0	5	U				
672 S Lucile St	8/28/02	0	5	U				
672 S Lucile St	11/13/01	0	40	UD				
672 S Lucile St	11/13/02	0	5	U	1	U	2	U
5409 Denver Ave S	2/7/02	0	5	U			2	U
5409 Denver Ave S	2/10/03	0	125	UD	25	UD	50	UD
5409 Denver Ave S	3/23/01	0	5	U				
5409 Denver Ave S	5/20/02	0	5	U	1.24		1.06	[J]
5409 Denver Ave S	5/22/01	0	500	UD				
5409 Denver Ave S	8/2/02	0	5	U	1.35		2	U
5409 Denver Ave S	8/10/01	0	5	U				
5409 Denver Ave S	8/22/02	0	5	U				
5409 Denver Ave S	11/7/02	0	5	U	1	U	2	U
5409 Denver Ave S	11/13/01	0	1250	UD				
404 S Orcas St	8/22/02	0	5	U				
406 S Orcas St	8/22/02	0	5	U				
412 S Lucile St	8/22/02	0	5	U				
412 S Orcas St	8/22/02	0	5	UD				
507 S Brandon	8/23/02	0	5	U				
5327 Denver Ave S	8/28/02	0	5	U				
5403 Maynard Ave S	8/22/02	0	5	UD				
5409 Denver Ave S	8/29/00	0	5					
5409 Denver Ave S	8/29/00	0	5					
5409 Denver Ave S	8/29/00	0	5					
5409 Denver Ave S	8/29/00	0	5					
613 S Brandon	8/22/02	0	5	U				
613 S Brandon	8/28/02	0	5	U				
672 S Lucile St	8/29/00	0	5					
672 S Lucile St	8/29/00	0	5					
672 S Lucile St	8/29/00	0	5					
672 S Lucile St	8/29/00	0	5					

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	108-05-4 Vinyl acetate ug/l	Lab Qual	104-51-8 n-Butylbenzene ug/l	Lab Qual	110-54-3 n-Hexane ug/l	Lab Qual
MTCA B Minimum Level			**268.65**		0		0	
672 S Lucile St	8/29/00	0	5					
672 S Lucile St	8/29/00	0	5					
672 S Lucile St	8/29/00	0	5					
611, 613, and 507 S	2/17/03	10.5	5	U			2	U
611, 613, and 507 S	5/8/02	10.5	5	U				
611, 613, and 507 S	7/16/02	10.5	5	U				
611, 613, and 507 S	7/31/02	10.5	5	U				
611, 613, and 507 S	8/22/02	10.5	5	U				
611, 613, and 507 S	11/5/02	0	5	U			2	U
412 S Lucile St	2/17/03	10	5	U			2	U
412 S Lucile St	5/8/02	10	5	U				
412 S Lucile St	7/19/02	10	5	U				
412 S Lucile St	8/8/02	10	5	U				
412 S Lucile St	8/22/02	10	5	U				
412 S Lucile St	11/4/02	0	5	U			2	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5	5	U			2	U
412 S Orcas St	5/9/02	10.5	5	U				
412 S Orcas St	8/1/02	10.5	5	U				
412 S Orcas St	8/22/02	10.5	5	UD				
412 S Orcas St	11/6/02	0	5	U			2	U

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	99-87-6 p-Isopropyltoluene ug/l	Lab Qual	135-98-8 sec-Butylbenzene ug/l	Lab Qual	75-65-0 tert-Butyl alcohol ug/l	Lab Qual
MTCA B Minimum Level			749.011		231.412		231.412	
672 S Lucile St	2/7/02	0						
672 S Lucile St	2/10/03	0					250	UD
672 S Lucile St	3/23/01	0						
672 S Lucile St	5/17/02	0						
672 S Lucile St	5/22/01	0						
672 S Lucile St	8/2/02	0						
672 S Lucile St	8/10/01	0						
672 S Lucile St	8/22/02	0	1	U	1	U		
672 S Lucile St	8/28/02	0	1.92		2.48			
672 S Lucile St	11/13/01	0						
672 S Lucile St	11/13/02	0					50	U
5409 Denver Ave S	2/7/02	0						
5409 Denver Ave S	2/10/03	0					1250	UD
5409 Denver Ave S	3/23/01	0						
5409 Denver Ave S	5/20/02	0						
5409 Denver Ave S	5/22/01	0						
5409 Denver Ave S	8/2/02	0						
5409 Denver Ave S	8/10/01	0						
5409 Denver Ave S	8/22/02	0	1.56		1.42			
5409 Denver Ave S	11/7/02	0					200	UD
5409 Denver Ave S	11/13/01	0						
404 S Orcas St	8/22/02	0	1	U	1	U		
406 S Orcas St	8/22/02	0	1	U	1	U		
412 S Lucile St	8/22/02	0	1	U	1	U		
412 S Orcas St	8/22/02	0	1	UD	1	UD		
507 S Brandon	8/23/02	0	1	U	1	U		
5327 Denver Ave S	8/28/02	0	1	U	1	U		
5403 Maynard Ave S	8/22/02	0	1	UD	1	UD		
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
5409 Denver Ave S	8/29/00	0						
613 S Brandon	8/22/02	0	1	U	1	U		
613 S Brandon	8/28/02	0	1	U	1	U		
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						

Period: From 8/29/2000 thru 2/17/2003 - inclusive
SAMPLE TYPE: Ground Water

Site	Date	Sample Depth (feet)	99-87-6 p-Isopropyltoluene ug/l	Lab Qual	135-98-8 sec-Butylbenzene ug/l	Lab Qual	75-65-0 tert-Butyl alcohol ug/l	Lab Qual
MTCA B Minimum Level			749.011		231.412		231.412	
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
672 S Lucile St	8/29/00	0						
611, 613, and 507 S	2/17/03	10.5					50	U
611, 613, and 507 S	5/8/02	10.5						
611, 613, and 507 S	7/16/02	10.5						
611, 613, and 507 S	7/31/02	10.5						
611, 613, and 507 S	8/22/02	10.5	1	U	1	U		
611, 613, and 507 S	11/5/02	0					5	U
412 S Lucile St	2/17/03	10					50	U
412 S Lucile St	5/8/02	10						
412 S Lucile St	7/19/02	10						
412 S Lucile St	8/8/02	10						
412 S Lucile St	8/22/02	10	1	U	1	U		
412 S Lucile St	11/4/02	0					5	U
412 S Lucile St	11/5/02	0						
412 S Orcas St	2/17/03	10.5					200	UD
412 S Orcas St	5/9/02	10.5						
412 S Orcas St	8/1/02	10.5						
412 S Orcas St	8/22/02	10.5	1	UD	1	UD		
412 S Orcas St	11/6/02	0					5	U

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMININATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Philip Services Corporation Georgetown Facility
Facility Address: 734 S. Lucile Street, Seattle, WA 98108
Facility EPA ID #: WAD000812909

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC), been **considered** in this EI determination?

✓ If yes – check here and continue with #2 below.

_______ If no – re-evaluate existing data, or

_______ If data is not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g. reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposure Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under land- and groundwater-use conditions (for all "contamination" subject to RCRA Corrective Action at or from the identified facility (i.e., site-wide).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives, which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determination

EI Determination status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMU's, RU's or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	✓			
Air (indoors) [2]	✓			
Surface Soil (e.g. <2 ft.)	✓			
Surface Water		✓		
Sediment		✓		
Subsurf. Soil (e.g. <2 ft.)	✓			
Air (outdoors)		✓		

_____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

✓ If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) – skip to #6 and enter "IN" status code.

Rationale and Reference (s):

The attached tables from the Human Health and Ecological Risk Assessment, Part II of the Final Comprehensive Remedial Investigation (RI) Report provides a summary of the chemicals of potential concern associated with releases from the facility along with the risk-based screening levels used to identify them.

Ambient (outdoor) air samples have been collected throughout the area downgradient of the facility and multiple compounds have been detected at concentrations exceeding risk-based screening levels. However, the concentrations

[1] "Contamination" and "Contaminated describes media containing contaminants (in any for NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field a reviewers are encouraged to look at the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

detected in ambient air are not considered to be associated with releases from the PSC facility, as discussed in Section 10 of the Final Comprehensive RI Report.

As discussed in Section 9 of the Final Comprehensive RI Report, the groundwater contamination likely to be associated with releases from the facility is not expected to be present downgradient west of approximately 5th Avenue South. However, the analytical results for groundwater samples that have been collected from sampling locations near the Duwamish Waterway indicate that contamination, originating from other non-PSC sources, may be entering the Waterway at concentrations exceeding the risk-based screening levels.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonable expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
Contaminated Media	Residents	Workers	~~Day-Care~~	Construction	~~Trespassers~~	~~Recreation~~	~~Food~~ [3]
Groundwater	No	No	____	No	____	____	____
Air (indoors)	Yes	Yes	____	No	____	____	____
Soil (surface e.g., <2 ft.)	No	No	____	Yes	____	____	____
~~Surface Water~~	____	____	____	____	____	____	____
~~Sediment~~	____	____	____	____	____	____	____
Soil (subsurface e.g., > 2ft.)	No	No	____	Yes	____	____	____
Air (outdoors)	No	No	____	Yes	____	____	____

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media – Human Receptor combinations (Pathways) do not have check spaces (" ____"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in place, whether natural or man-made , preventing a complete exposure pathway from each contaminated medium (e.g. use optional Pathway Evaluation Worksheet to analyze major pathways

✔ If yes (pathways are complete for any "Contaminated" Media – Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media-receptor combination) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

The Human Health and Ecological Risk Assessment, Part II of the Final Comprehensive RI Report, provides a detailed conceptual site model that describes each of the above pathways under current and potential future conditions. The conceptual site model explains why these pathways are considered significant for the current scenarios.

In general, the groundwater is not known to be used for any purpose and there are laws and rules in place that prohibit the use of the groundwater in the area of contamination. At and downgradient of the facility, the water table is generally seven to thirteen feet below ground surface which is well below the typical depth for routine trenching activities. Groundwater vapor intrusion may result in the exposure of off-site residents and workers to volatile chemicals of potential concern migrating from groundwater into indoor air of area residences and businesses.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat, and diary products, fish, shellfish, etc.).

Surface and subsurface soil contamination are limited to the PSC property, which is capped; therefore, only on-site construction workers involved in excavation activities may potentially be exposed to chemicals of potential concern in surface and subsurface soil at the site. Construction workers could also be exposed to volatile chemicals of potential concern migrating from soil and groundwater into the air of trenches (outdoor air) during excavation activities.

As discussed in the HHERA, workers could also be exposed to chemicals of potential concern migrating from soil and groundwater into outdoor air.

As discussed in Section 7 of the Final Comprehensive RI Report, contamination has been detected in groundwater from monitoring wells located between the PSC facility and the Duwamish Waterway. However, groundwater contamination associated with releases from the facility is likely to have migrated only as far as 5th Avenue South, and thus, is not likely to impact the Duwamish Waterway under current or future conditions.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "significant"[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) – skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

✓ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway – continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Complete exposure pathways that are likely to be significant include:

- Exposure of area residents and workers to volatile chemicals of concern migrating from contaminated groundwater into the indoor air of overlying residences and businesses.
- Exposure of on-site construction workers to chemicals of potential concern in soil, groundwater and trench air during excavation activities.
- Exposure of off-site construction workers to chemicals of potential concern in groundwater and trench air during excavation activities.

Exposure of workers to volatile chemicals of potential concern in outdoor air is expected to be negligible due to the relatively low concentrations likely to be present in soil gas and rapid mixing and dilution in ambient air.

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[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

✔ If yes (all "significant" exposures have been shown to be within acceptable limits) – continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable") – continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) – continue and enter "IN" status code.

Rationale and Reference(s):

The significant exposures associated with the complete exposure pathways identified in #4 are likely to be within acceptable limits due to several interim measure controls currently in place.

Interim measures are currently being conducted to prevent exposure to volatile chemicals of potential concern migrating from groundwater into the indoor air of area residences and businesses. Additional information regarding these interim measures is available in the *Inhalation Pathways Interim Measure Work Plan* (PSC, 2003).

Exposure of on-site construction workers to chemicals of potential concern in soil, groundwater and trench air is limited by an asphalt and concrete cap currently in place on the site and by the site *Health and Safety Plans* which requires personal air monitoring the use of personal protective equipment (PPE).

Exposure of off-site construction workers to chemicals of potential concern in groundwater and trench air is limited by the depth groundwater off-site. PSC has also notified all area businesses, residents and local utilities of the groundwater contamination and have advised that all workers exercise appropriate precautionary measures, such as the use of PPE during any excavation activities in the area. Private utility companies did not indicate that trenching or excavation was used as a method of installing utilities. However, any planned trenching work requires a permit from the City of Seattle, which should notify the permit requestor of the groundwater contamination in the area.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

✓ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Philip Services Corporation Georgetown facility, EPA ID # WAD000812909, located at 734 S. Lucile Street, Seattle, Washington, 98108 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO – "Current Human Exposures" are NOT "Under Control."

____ IN – More information is needed to make a determination.

Completed by: (signature)________________ Date: June 21, 2001
(print)Carolyn Mayer
(title)Manager, Regulatory Affairs Department, Philip Services Corporation

Supervisor: (signature)________________ Date: ____________
(print)________________
(title)________________
(EPA Region or State)________

Location where References may be found:

Philip Services Corporation, Final Comprehensive RI Report, Philip Services Corporation Georgetown Facility, Seattle, Washington. November 2003. (Part II includes Human Health and Ecological Risk Assessment prepared by Pioneer Technologies Corporation).

Contact telephone and e-mail numbers:

(name) Carolyn Mayer
(phone #) (425) 227-6121
(e-mail) cmayer@contactpsc.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE SPECIFIC) ASSESSMENTS OF RISK.

Table 3-1 - Groundwater Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	VOA?[1]	COI?[2]	COI Rationale[2]	Number of Exceedances[3]	Minimum RBSC [4]	Minimum Risk Basis[5]	Minimum RBSC Basis[4]	Exceedance Factor (EF)[6]	COPC[7]	COPC Rationale[7]
7440-38-2	Arsenic	GW_INORGANIC	ug/l	282	66.31	0.0612	3	0.0726	29.5	NO	YES	Freq>5%	45	9.82E-03	CR	HH_GW_SW	3.00E+03	YES	EF> 1
7440-39-3	Barium	GW_INORGANIC	ug/l	342	44.15	4	10	4.03	198	NO	YES	Freq>5%	0	2.87E+01	NC	HH_GW_SW	6.91E+00	YES	EF> 1
7440-47-3	Chromium	GW_INORGANIC	ug/l	263	68.82	1	5.28	1.01	136	NO	YES	Freq>5%	181	--	--	--	--	YES	No RBSC
7440-50-8	Copper	GW_INORGANIC	ug/l	342	58.48	1	7.93	1	90.9	NO	YES	Freq>5%	0	2.66E+02	NC	HH_GW_SW	3.41E-01	NO	EF < 1
57-12-5	Cyanide	GW_INORGANIC	ug/l	477	20.34	10	10	1.66	64.9	NO	YES	Freq>5%	0	5.19E+03	NC	HH_GW_SW	1.25E-02	NO	EF < 1
18540-29-9	Hexavalent Chromium	GW_INORGANIC	ug/l	97	35.05	5	100	5.01	38	NO	YES	Freq>5%	0	4.86E+01	NC	HH_GW_SW	7.82E-01	NO	EF < 1
7439-92-1	Lead	GW_INORGANIC	ug/l	338	22.78	1	4.04	0.994	15.9	NO	YES	Freq>5%	77	--	--	--	--	YES	No RBSC
7439-96-5W	Manganese	GW_INORGANIC	ug/l	280	98.21	10	10	12.2	6390000	NO	YES	Freq>5%	1	3.78E+03	NC	HH_GW_SW	1.69E+03	YES	EF> 1
7440-02-0	Nickel	GW_INORGANIC	ug/l	340	67.35	1	5.09	1	67.2	NO	YES	Freq>5%	0	1.10E+02	NC	HH_GW_SW	6.09E-01	NO	EF < 1
7782-49-2	Selenium	GW_INORGANIC	ug/l	341	20.23	1	1	1.01	33.9	NO	YES	Freq>5%	0	2.70E+02	NC	HH_GW_SW	1.26E-01	NO	EF < 1
7440-62-2	Vanadium	GW_INORGANIC	ug/l	122	91.80	1	10	1.055	44.9	NO	YES	Freq>5%	0	5.67E+02	NC	HH_GW_SW	7.92E-02	NO	EF < 1
7440-66-6	Zinc	GW_INORGANIC	ug/l	175	25.71	10	76	4.11	722	NO	YES	Freq>5%	0	1.65E+03	NC	HH_GW_SW	4.36E-01	NO	EF < 1
GIS-C10-ARE	C10-C12 (EPH) Aromatics	GW_NWEPH	ug/l	152	9.87	50	100	53.8	2300	YES	YES	No RBSC	15	--	--	--	--	YES	No RBSC
GIS-C8-ALE	C8-C10 (EPH) Aliphatics	GW_NWEPH	ug/l	152	12.50	50	100	55.6	4070	YES	YES	No RBSC	19	--	--	--	--	YES	No RBSC
GIS-C8-ARE	C8-C10 (EPH) Aromatics	GW_NWEPH	ug/l	86	11.63	50	25000	51.5	13700	YES	YES	No RBSC	10	--	--	--	--	YES	No RBSC
GIS-TEPH	TotalExtractablePetroleum H	GW_NWEPH	ug/l	152	19.08	50	100	55.6	8170	NO	YES	No RBSC	29	--	--	--	--	YES	No RBSC
GIS-C8-ARV	C8-C10 (VPH) Aromatics	GW_NWVPH	ug/l	96	16.67	50	25000	50.3	36800	YES	YES	No RBSC	16	--	--	--	--	YES	No RBSC
GIS-TVPH	TotalVolatilePetroleum HC	GW_NWVPH	ug/l	152	17.11	50	25000	50.3	36800	NO	YES	No RBSC	26	--	--	--	--	YES	No RBSC
12674-11-2	Aroclor 1016	GW_PCB	ug/l	252	3.17	0.1	5.5	0.752	15.4	NO	YES	Hit>2*RBSC	8	2.97E-04	CR	HH_GW_SW	5.19E+04	YES	EF> 1
11141-16-5	Aroclor 1232	GW_PCB	ug/l	252	3.57	0.1	5	1.04	25.9	NO	YES	Hit>2*RBSC	9	1.04E-05	CR	HH_GW_SW	2.49E+06	YES	EF> 1
95-50-1	1,2-Dichlorobenzene	GW_SVOC	ug/l	918	11.11	0.5	1000	1	197	YES	YES	Freq>5%	0	4.20E+02	NC	HH_GW_SW	4.69E-01	NO	EF < 1
105-67-9	2,4-Dimethylphenol	GW_SVOC	ug/l	421	12.11	4.72	500	6.09	972	NO	YES	Freq>5%	21	5.53E+01	NC	HH_GW_SW	1.76E+01	YES	EF> 1
95-48-7	2-Methylphenol	GW_SVOC	ug/l	453	9.05	4.72	500	6.39	491	NO	YES	Freq>5%	0	2.06E+03	NC	HH_GW_SW	2.39E-01	NO	EF < 1
106-44-5	4-Methylphenol	GW_SVOC	ug/l	97	15.46	10	50	10	2230	NO	YES	Freq>5%	7	2.09E+02	NC	HH_GW_SW	1.07E+01	YES	EF> 1
117-81-7	Bis(2-ethylhexyl) phthalate	GW_SVOC	ug/l	283	2.83	0.331	2500	1	1250	NO	YES	Hit>2*RBSC	8	3.56E-01	CR	HH_GW_SW	3.51E+03	YES	EF> 1
108-10-1	Methyl isobutyl ketone (MIBK)	GW_SVOC	ug/l	1259	5.88	5	10000	5.85	2790	YES	YES	Freq>5%	0	1.04E+04	NC	HH_GW_SW	2.69E-01	NO	EF < 1
91-20-3	Naphthalene	GW_SVOC	ug/l	938	18.12	0.1	500	0.113	652	YES	YES	Freq>5%	28	5.92E+01	NC	HH_GW_IA	1.10E+01	YES	IPIM is Kept
87-86-5	Pentachlorophenol	GW_SVOC	ug/l	453	6.62	0.05	500	0.155	250	NO	YES	Freq>5%	29	4.91E-01	CR	HH_GW_SW	5.09E+02	YES	EF> 1
108-95-2	Phenol	GW_SVOC	ug/l	453	10.38	2.5	50	2.39	6630	NO	YES	Freq>5%	0	5.56E+04	NC	HH_GW_SW	1.19E-01	NO	EF < 1
68334-30-5	Diesel	GW_TPH	ug/l	372	39.78	250	1380	104	24700	NO	YES	No RBSC	148	--	--	--	--	YES	No RBSC
86290-81-5	Gasoline	GW_TPH	ug/l	372	44.62	50	100	7.93	161000	NO	YES	No RBSC	166	--	--	--	--	YES	No RBSC
GIS_LUBEOI	Lube Oil Hydrocarbons	GW_TPH	ug/l	371	15.90	500	5500	60.1	5500	nc	YES	No RBSC	59	--	--	--	--	YES	No RBSC
71-55-6	1,1,1-Trichloroethane	GW_VOC	ug/l	1383	18.15	0.5	1000	0.686	9010	YES	YES	Freq>5%	8	1.09E+03	NC	HH_GW_IA	8.23E+00	YES	IPIM is Kept
75-34-3	1,1-Dichloroethane	GW_VOC	ug/l	1454	43.47	0.5	2000	0.543	3210	YES	YES	Freq>5%	36	7.52E+02	NC	HH_GW_IA	4.27E+00	YES	IPIM is Kept
75-35-4	1,1-Dichloroethylene	GW_VOC	ug/l	1383	14.53	0.05	2000	0.052	1380	YES	YES	Freq>5%	25	5.32E+01	NC	HH_GW_IA	2.59E+01	YES	IPIM is Kept
107-06-2	1,2-Dichloroethane	GW_VOC	ug/l	1383	13.96	0.1	1000	0.1	1100	YES	YES	Freq>5%	120	1.29E+00	CR	HH_GW_IA	8.54E+02	YES	IPIM is Kept
591-78-6	2-Hexanone	GW_VOC	ug/l	1259	2.62	10	10000	6.65	523	YES	YES	Hit>2*RBSC	0	6.09E+02	NC	HH_GW_IA	8.59E-01	YES	IPIM is Kept
71-43-2	Benzene	GW_VOC	ug/l	1383	33.26	0.5	1000	0.289	103	YES	YES	Freq>5%	416	9.60E-01	CR	HH_GW_IA	1.07E+02	YES	IPIM is Kept
75-15-0	Carbon disulfide	GW_VOC	ug/l	1259	7.31	0.5	2000	0.507	46.6	YES	YES	Freq>5%	0	1.45E+02	NC	HH_GW_IA	3.22E-01	NO	EF < 1
108-90-7	Chlorobenzene	GW_VOC	ug/l	1265	5.61	0.5	1000	0.603	19.2	YES	YES	Freq>5%	0	5.19E+01	NC	HH_GW_IA	3.70E-01	NO	EF < 1
75-00-3	Chloroethane	GW_VOC	ug/l	1259	29.15	1	1000	0.825	1830	YES	YES	Freq>5%	131	8.94E+01	CR	HH_GW_SW	2.05E+01	YES	IPIM is Kept
67-66-3	Chloroform	GW_VOC	ug/l	1265	5.45	0.44	1000	0.202	82	YES	YES	Freq>5%	67	4.11E-01	CR	HH_GW_IA	2.00E+02	YES	IPIM is Kept
100-41-4	Ethylbenzene	GW_VOC	ug/l	1264	30.14	0.5	1000	0.528	21900	YES	YES	Freq>5%	121	6.91E+02	NC	HH_GW_SW	3.17E+01	YES	IPIM is Kept
75-09-2	Methylene chloride	GW_VOC	ug/l	1383	7.38	5	5000	0.86	355	YES	YES	Freq>5%	20	3.21E+01	CR	HH_GW_IA	1.10E+01	YES	EF> 1
100-42-5	Styrene	GW_VOC	ug/l	1265	1.66	0.5	1000	0.6	47.4	YES	YES	Hit>2*RBSC	0	1.40E+03	NC	HH_GW_SW	3.38E-02	NO	EF < 1
127-18-4	Tetrachloroethylene	GW_VOC	ug/l	1383	14.90	0.05	2000	0.052	282	YES	YES	Freq>5%	206	3.92E-02	CR	HH_GW_SW	7.19E+03	YES	IPIM is Kept
108-88-3	Toluene	GW_VOC	ug/l	1265	33.75	0.12	2000	0.319	66900	YES	YES	Freq>5%	126	4.96E+02	NC	HH_GW_IA	1.35E+02	YES	IPIM is Kept
79-01-6	Trichloroethylene	GW_VOC	ug/l	1454	31.02	0.02	1000	0.02	143000	YES	YES	Freq>5%	423	4.04E-02	CR	HH_GW_IA	3.54E+06	YES	IPIM is Kept
75-01-4	Vinyl chloride	GW_VOC	ug/l	1454	49.24	0.02	2000	0.024	67200	YES	YES	Freq>5%	700	1.28E-01	CR	HH_GW_IA	5.24E+05	YES	IPIM is Kept
108-38-3, 1	Xylene (total)	GW_VOC	ug/l	1281	30.99	1	3000	1.81	39430	YES	YES	Freq>5%	169	1.44E+02	NC	HH_GW_IA	2.73E+02	YES	EF> 1
156-59-2	cis-1,2-Dichloroethylene	GW_VOC	ug/l	1453	41.57	0.5	400	0.56	85400	YES	YES	Freq>5%	193	7.27E+01	NC	HH_GW_IA	1.17E+03	YES	IPIM is Kept
156-60-5	trans-1,2-Dichloroethylene	GW_VOC	ug/l	1453	19.75	0.5	1000	0.502	12800	YES	YES	Freq>5%	78	6.53E+01	NC	HH_GW_IA	1.96E+02	YES	IPIM is Kept
76-13-1	1,1,2-Trichlorotrifluoroethane	GW_VOC_SVOC	ug/l	1192	12.75	2	2000	2	2170	YES	YES	Freq>5%	1	1.21E+03	NC	HH_GW_IA	1.80E+00	YES	EF> 1
95-63-6	1,2,4-Trimethylbenzene	GW_VOC_SVOC	ug/l	862	21.69	1	1000	0.757	3080	YES	YES	Freq>5%	120	1.30E+01	NC	HH_GW_IA	2.37E+02	YES	IPIM is Kept
108-67-8	1,3,5-Trimethylbenzene	GW_VOC_SVOC	ug/l	691	14.62	1	1000	0.503	1160	YES	YES	Freq>5%	57	9.76E+00	NC	HH_GW_IA	1.19E+02	YES	IPIM is Kept
123-91-1	1,4-Dioxane	GW_VOC_SVOC	ug/l	73	41.10	1	1	1.09	1040	NO	YES	Freq>5%	8	1.84E+01	CR	HH_GW_SW	5.65E+01	YES	EF> 1
90-12-0	1-Methyl naphthalene	GW_VOC_SVOC	ug/l	54	7.41	0.1	10	0.302	7.03	YES	YES	Freq>5%	4	--	--	--	--	YES	No RBSC
91-57-6	2-Methylnaphthalene	GW_VOC_SVOC	ug/l	299	6.02	0.05	500	0.208	250	YES	YES	Freq>5%	1	2.22E+02	NC	HH_GW_SW	1.13E+00	YES	EF> 1
65-85-0	Benzoic acid	GW_VOC_SVOC	ug/l	280	6.43	9.43	500	10.6	6420	NO	YES	Freq>5%	0	6.56E+04	NC	HH_GW_SW	9.78E-02	NO	EF < 1
98-82-8	Cumene	GW_VOC_SVOC	ug/l	133	18.80	1	20	1	78.1	YES	YES	Freq>5%	2	7.49E+01	NC	HH_GW_IA	1.04E+00	YES	EF> 1
75-71-8	Dichlorodifluoromethane	GW_VOC_SVOC	ug/l	284	6.69	1	1000	1	52.6	YES	YES	Freq>5%	5	6.36E+00	NC	HH_GW_IA	8.27E+00	YES	EF> 1
74-84-0	Ethane	GW_VOC_SVOC	ug/l	330	38.48	2	10000	10.2	16700	YES	YES	No RBSC	127	--	--	--	--	YES	No RBSC
74-85-1	Ethene	GW_VOC_SVOC	ug/l	327	35.47	2	665	7.65	10000	YES	YES	No RBSC	116	--	--	--	--	YES	No RBSC
74-82-8	Methane	GW_VOC_SVOC	ug/l	330	96.67	1.2	2	2.02	64200	YES	YES	No RBSC	319	--	--	--	--	YES	No RBSC
1319-77-3	Methylphenol	GW_VOC_SVOC	ug/l	325	8.31	2.5	11.3	5.31	2680	NO	YES	Freq>5%	27	--	--	--	--	YES	No RBSC

Table 3-1 - Groundwater Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	VOA?[1]	COI?[2]	COI Rationale[2]	Number of Exceedances[3]	Minimum RBSC[4]	Minimum Risk Basis[5]	Minimum RBSC Basis[4]	Exceedance Factor (EF)[6]	COPC[7]	COPC Rationale[7]
103-65-1	**Propylbenzene**	GW_VOC_SVOC	ug/l	148	17.57	1	500	1	172	YES	YES	Freq>5%	11	2.69E+01	NC	HH_GW_IA	6.40E+00	YES	IPIM is Kept
104-51-8	**n-Butylbenzene**	GW_VOC_SVOC	ug/l	300	5.33	1	1000	0.542	38.7	YES	YES	Freq>5%	1	3.56E+01	NC	HH_GW_SW	1.09E+00	YES	EF> 1
110-54-3	**n-Hexane**	GW_VOC_SVOC	ug/l	182	3.85	2	2000	1.06	14.4	YES	YES	Hit>2*RBSC	0	7.78E+01	NC	HH_GW_SW	1.85E-01	YES	EF < 1, VOA_No GWI_IA RBSC
99-87-6	**p-Isopropyltoluene**	GW_VOC_SVOC	ug/l	148	14.19	1	20	1	58.1	YES	YES	Freq>5%	0	7.49E+01	NC	HH_GW_IA	7.76E-01	YES	IPIM is Kept
135-98-8	**sec-Butylbenzene**	GW_VOC_SVOC	ug/l	88	15.91	1	5	1	202	YES	YES	Freq>5%	6	8.91E+00	NC	HH_GW_SW	2.27E+01	YES	IPIM is Kept

Notes:
COPCs designated YES are in Bold
[1] VOA - Determination of volatility was made for all detected analytes based on molecular weight (<200 g/mole) and Henry's Law (>1E-05 atm-m^3/mole) (EPA, 1991)
[2] COI Rationale Codes (see Section 2.1.5):
- Non-Detect - Constituent was not detected in any samples
- Freq>5% - Constituent was detected in more than five percent of the samples
- Hit<2*RBC - Constituent was detected at frequency of less than five percent and maximum hit was less than the RBSC
- Hit>2*RBSC - Constituent was detected at frequency of less than five percent and maximum detected value was greater than RBSC
- No RBSC - No RBSC value available
[3] Number of Exceedances - Number of samples with detected values exceeding the minimum RBSC
[4] Minimum RBSC based on the most stringent value of: surface water concentrations that are protective of human health under MTCA Method B (HH_GW_SW), groundwater concentrations that are protective of human
[5] Minimum Risk Basis for RBSC: CR - toxicity based on carcinogen and risk of 1E-06, NC - toxicity based on non-carcinogen and Hazard Quotient (HQ) of 0.1. Eco - Aquatic Screening
[6] EF - Exceedance Factor = Maximum Detected Value / Minimum RBSC
[7] COPC - Chemical of Potential Concern based on the following criteria:
- EF>1 - Constituent is retained as a COPC because maximum detected value / minimum RBSC is greater than 1
- No RBSC - Constituent is retained as a COPC because no RBSC is available for screening purposes
- IPIM is Kept - Constituent is retained as COPC because it has an inhalation pathway interim measure action level (IPIMAL) and was used to evaluate inhalation pathway interim measures (PSC, February 2003).
- EF<1, VOA_NO GWI_IA RBSC - Constituent is retained as COPC because (although EF is less than the surface water RBSCs) it is a VOA and there is no HH_GW_IA RBSC identified at this time
- EF<1 - Constituent is not retained as a COPC because the maximum detected value / minimum RBSC (EF) is less than 1

Table 3-2 - Soil Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	COI?[1]	COI Rationale[1]	Number of Exceedances[2]	Soil RBSC[3]	RBSC Risk Basis[4]	Exceedance Factor (EF)[5]	COPC?[6]	COPC Rationale[6]
7440-38-2	Arsenic	SOIL_INORGANIC	ug/kg	66	90.91	1000	2000	1000	5810	YES	Freq>5%	60	6.67E-02	CR	8.71E+04	YES	EF> 1
7440-39-3	Barium	SOIL_INORGANIC	ug/kg	11	100.00	0	0	18600	880000	YES	Freq>5%	11	5.60E+02	NC	1.57E+03	YES	EF> 1
7440-43-9F	Cadmium	SOIL_INORGANIC	ug/kg	65	9.23	130	1000	298	1100	YES	Freq>5%	--	--	--	--	YES	No RBSC
7440-47-3	Chromium	SOIL_INORGANIC	ug/kg	66	100.00	0	0	6000	257000	YES	No RBSC	--	--	--	--	YES	No RBSC
7440-50-8	Copper	SOIL_INORGANIC	ug/kg	66	100.00	0	0	6000	230000	YES	Freq>5%	66	2.96E+02	NC	7.77E+02	YES	EF> 1
57-12-5	Cyanide	SOIL_INORGANIC	ug/kg	54	35.19	1000	1000	1000	25000	YES	Freq>5%	19	1.60E+02	NC	1.56E+02	YES	EF> 1
7439-92-1	Lead	SOIL_INORGANIC	ug/kg	66	53.03	6000	6000	1200	1900000	YES	No RBSC	--	--	--	--	YES	No RBSC
7439-97-6	Mercury	SOIL_INORGANIC	ug/kg	65	16.92	200	230	20	2400	YES	No RBSC	--	--	--	--	YES	No RBSC
7440-02-0	Nickel	SOIL_INORGANIC	ug/kg	66	100.00	0	0	3300	13000	YES	Freq>5%	66	1.60E+02	NC	8.13E+01	YES	EF> 1
7440-22-4	Silver	SOIL_INORGANIC	ug/kg	6	16.67	194	500	36300	36300	YES	Freq>5%	1	4.00E+01	NC	9.07E+02	YES	EF> 1
7440-66-6	Zinc	SOIL_INORGANIC	ug/kg	66	100.00	0	0	14000	226000	YES	Freq>5%	66	2.40E+03	NC	9.42E+01	YES	EF> 1
1336-36-3	Aroclor 1016/1242	SOIL_PCB	ug/kg	42	83.33	40	1000	150	2200000	YES	No RBSC	35	5.00E-02	CR	4.40E+07	YES	EF> 1
11097-69-1	Aroclor 1254	SOIL_PCB	ug/kg	33	18.18	40	20000	140	3600	YES	Freq>5%	6	5.00E-02	CR	7.20E+04	YES	EF> 1
11096-82-5	Aroclor 1260	SOIL_PCB	ug/kg	33	27.27	40	5000	53	5500	YES	No RBSC	9	5.00E-02	CR	1.10E+05	YES	EF> 1
120-82-1	1,2,4-Trichlorobenzene	SOIL_SVOC	ug/kg	70	10.00	46	7200	78	8800	YES	Freq>5%	6	8.00E+01	NC	1.10E+02	YES	EF> 1
95-50-1	1,2-Dichlorobenzene	SOIL_SVOC	ug/kg	71	28.17	46	7200	38	9400	YES	Freq>5%	8	7.20E+02	NC	1.31E+01	YES	EF> 1
105-67-9	2,4-Dimethylphenol	SOIL_SVOC	ug/kg	66	12.12	90	7200	94	12000	YES	Freq>5%	5	1.60E+02	NC	7.50E+01	YES	EF> 1
95-48-7	2-Methylphenol	SOIL_SVOC	ug/kg	66	25.76	53	7200	29	1000	YES	Freq>5%	4	4.00E+02	NC	2.50E+00	YES	EF> 1
106-44-5	4-Methylphenol	SOIL_SVOC	ug/kg	66	39.39	53	7200	120	41000	YES	Freq>5%	26	4.00E+01	NC	1.03E+03	YES	EF> 1
83-32-9	Acenaphthene	SOIL_SVOC	ug/kg	66	25.76	53	7200	37	2100	YES	Freq>5%	4	4.80E+02	NC	4.37E+00	YES	EF> 1
120-12-7	Anthracene	SOIL_SVOC	ug/kg	66	25.76	56	7200	23	940	YES	Freq>5%	0	2.40E+03	NC	3.92E-01	NO	EF < 1
56-55-3	Benzo(a)anthracene	SOIL_SVOC	ug/kg	66	31.82	53	7200	13	1200	YES	Freq>5%	21	1.37E-01	CR	8.76E+03	YES	EF> 1
50-32-8	Benzo(a)pyrene	SOIL_SVOC	ug/kg	66	19.70	53	7200	21	920	YES	Freq>5%	13	1.37E-02	CR	6.72E+04	YES	EF> 1
205-99-2	Benzo(b)fluoranthene	SOIL_SVOC	ug/kg	66	33.33	53	7200	51	1200	YES	Freq>5%	22	1.37E-01	CR	8.76E+03	YES	EF> 1
191-24-2	Benzo(ghi)perylene	SOIL_SVOC	ug/kg	66	21.21	53	7200	32	660	YES	No RBSC	--	--	--	--	YES	No RBSC
207-08-9	Benzo(k)fluoranthene	SOIL_SVOC	ug/kg	66	33.33	53	7200	51	1200	YES	Freq>5%	22	1.37E-01	CR	8.76E+03	YES	EF> 1
117-81-7	Bis(2-ethylhexyl) phthalate	SOIL_SVOC	ug/kg	66	57.58	56	560	39	40000	YES	Freq>5%	38	7.14E+00	CR	5.60E+03	YES	EF> 1
85-68-7	Butyl benzyl phthalate	SOIL_SVOC	ug/kg	66	10.61	46	7200	81	920	YES	Freq>5%	0	1.60E+03	NC	5.75E-01	NO	EF < 1
86-74-8	Carbazole	SOIL_SVOC	ug/kg	9	11.11	56	1500	92	92	YES	Freq>5%	1	5.00E+00	CR	1.84E+01	YES	EF> 1
218-01-9	Chrysene	SOIL_SVOC	ug/kg	66	39.39	53	7200	38	1500	YES	Freq>5%	26	1.37E+00	CR	1.10E+03	YES	EF> 1
84-74-2	Di-n-butyl phthalate	SOIL_SVOC	ug/kg	66	33.33	53	1400	71	5300	YES	Freq>5%	7	8.00E+02	NC	6.62E+00	YES	EF> 1
53-70-3	Dibenzo(a,h)anthracene	SOIL_SVOC	ug/kg	66	6.06	46	7200	9	76	YES	Freq>5%	4	3.42E-02	CR	2.22E+03	YES	EF> 1
132-64-9	Dibenzofuran	SOIL_SVOC	ug/kg	66	22.73	53	7200	30	1400	YES	No RBSC	--	--	--	--	YES	No RBSC
206-44-0	Fluoranthene	SOIL_SVOC	ug/kg	66	39.39	53	1500	60	3300	YES	Freq>5%	12	3.20E+02	NC	1.03E+01	YES	EF> 1
86-73-7	Fluorene	SOIL_SVOC	ug/kg	66	31.82	53	7200	53	2600	YES	Freq>5%	9	3.20E+02	NC	8.12E+00	YES	EF> 1
193-39-5	Indeno(1,2,3-cd)pyrene	SOIL_SVOC	ug/kg	66	21.21	53	7200	35	810	YES	Freq>5%	14	1.37E-01	CR	5.91E+03	YES	EF> 1
108-10-1	Methyl isobutyl ketone (MIBK	SOIL_SVOC	ug/kg	75	33.33	1.4	100000	2.9	43000	YES	Freq>5%	5	6.40E+02	NC	6.72E+01	YES	EF> 1
91-20-3	Naphthalene	SOIL_SVOC	ug/kg	70	61.43	53	1500	30	84000	YES	Freq>5%	35	1.60E+02	NC	5.25E+02	YES	IPIM is Kept
87-86-5	Pentachlorophenol	SOIL_SVOC	ug/kg	66	18.18	230	36000	49	1800	YES	Freq>5%	12	8.33E-01	CR	2.16E+03	YES	EF> 1
85-01-8	Phenanthrene	SOIL_SVOC	ug/kg	66	56.06	53	1500	26	7400	YES	No RBSC	--	--	--	--	YES	No RBSC
108-95-2	Phenol	SOIL_SVOC	ug/kg	66	51.52	110	7200	58	50000	YES	Freq>5%	9	2.40E+03	NC	2.08E+01	YES	EF> 1
129-00-0	Pyrene	SOIL_SVOC	ug/kg	66	45.45	58	1500	57	12000	YES	Freq>5%	17	2.40E+02	NC	5.00E+01	YES	EF> 1
71-55-6	1,1,1-Trichloroethane	SOIL_VOC	ug/kg	75	72.00	0.6	2500	0.9	570000	YES	No RBSC	21	2.24E+03	NC	2.54E+02	YES	IPIM is Kept
79-00-5	1,1,2-Trichloroethane	SOIL_VOC	ug/kg	75	9.33	0.7	20000	0.5	390	YES	Freq>5%	4	1.75E+00	CR	2.22E+02	YES	EF> 1
75-34-3	1,1-Dichloroethane	SOIL_VOC	ug/kg	74	35.14	0.6	20000	1	3100	YES	Freq>5%	6	8.00E+02	NC	3.87E+00	YES	IPIM is Kept
75-35-4	1,1-Dichloroethylene	SOIL_VOC	ug/kg	74	4.05	0.7	20000	13	2000	YES	Hit>2*RBSC	1	4.00E+02	NC	5.00E+00	YES	IPIM is Kept
107-06-2	1,2-Dichloroethane	SOIL_VOC	ug/kg	74	25.68	0.5	20000	1.9	23000	YES	Freq>5%	19	1.10E+00	CR	2.09E+04	YES	IPIM is Kept
540-59-0	1,2-Dichloroethene	SOIL_VOC	ug/kg	42	66.67	0.8	20000	0.6	47000	YES	Freq>5%	19	7.20E+01	NC	6.53E+02	YES	EF> 1
591-78-6	2-Hexanone	SOIL_VOC	ug/kg	74	5.41	3.2	20000	37	40000	YES	Freq>5%	2	3.20E+02	NC	1.25E+02	YES	IPIM is Kept
67-64-1	Acetone	SOIL_VOC	ug/kg	76	63.16	5.7	40000	2.5	16000	YES	Freq>5%	13	8.00E+02	NC	2.00E+01	YES	EF> 1

Table 3-2 - Soil Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	COI?[1]	COI Rationale[1]	Number of Exceedances[2]	Soil RBSC[3]	RBSC Risk Basis[4]	Exceedance Factor (EF)[5]	COPC?[6]	COPC Rationale[6]
71-43-2	Benzene	SOIL_VOC	ug/kg	75	26.67	1	20000	1.4	2600	YES	Freq>5%	19	1.82E+00	CR	1.43E+03	YES	IPIM is Kept
67-66-3	Chloroform	SOIL_VOC	ug/kg	74	20.27	1.1	20000	0.8	4200	YES	Freq>5%	8	8.00E+01	NC	5.25E+01	YES	IPIM is Kept
100-41-4	Ethylbenzene	SOIL_VOC	ug/kg	75	84.00	0.8	60	0.4	3400000	YES	Freq>5%	41	8.00E+02	NC	4.25E+03	YES	IPIM is Kept
78-93-3	Methyl ethyl ketone	SOIL_VOC	ug/kg	75	22.67	6.4	100000	1.1	1700	YES	Freq>5%	0	4.80E+03	NC	3.54E-01	NO	EF < 1
75-09-2	Methylene chloride	SOIL_VOC	ug/kg	75	90.67	7.1	5300	0.6	680000	YES	Freq>5%	45	1.33E+01	CR	5.10E+04	YES	EF> 1
127-18-4	Tetrachloroethylene	SOIL_VOC	ug/kg	75	70.67	0.5	6600	0.3	290000	YES	Freq>5%	53	1.85E-01	CR	1.57E+06	YES	IPIM is Kept
108-88-3	Toluene	SOIL_VOC	ug/kg	75	96.00	1.1	60	0.7	3300000	YES	Freq>5%	39	1.60E+03	NC	2.06E+03	YES	IPIM is Kept
79-01-6	Trichloroethylene	SOIL_VOC	ug/kg	75	60.00	0.6	5300	0.6	460000	YES	Freq>5%	45	2.50E-01	CR	1.84E+06	YES	IPIM is Kept
75-01-4	Vinyl chloride	SOIL_VOC	ug/kg	74	6.76	2	40000	2.1	96	YES	Freq>5%	5	7.14E-02	CR	1.34E+03	YES	IPIM is Kept
108-38-3, 1	Xylenes (Total)	SOIL_VOC	ug/kg	67	92.54	1.9	60	0.6	2800000	YES	Freq>5%	35	1.60E+03	NC	1.75E+03	YES	EF> 1
156-59-2	cis-1,2-Dichloroethylene	SOIL_VOC	ug/kg	32	62.50	2.6	2500	0.2	47000	YES	Freq>5%	13	8.00E+01	NC	5.87E+02	YES	IPIM is Kept
156-60-5	trans-1,2-Dichloroethylene	SOIL_VOC	ug/kg	33	9.09	1.1	2500	0.4	8.4	YES	Freq>5%	0	1.60E+02	NC	5.25E-02	YES	IPIM is Kept
76-13-1	1,1,2-Trichlorotrifluoroethane	SOIL_VOC_SVOC	ug/kg	55	43.64	1.1	13000	1.2	330000	YES	Freq>5%	1	2.40E+05	NC	1.38E+00	YES	EF> 1
95-63-6	1,2,4-Trimethylbenzene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	13000	27000	YES	No RBSC	4	4.00E+02	NC	6.75E+01	YES	IPIM is Kept
108-67-8	1,3,5-Trimethylbenzene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	9700	18000	YES	No RBSC	4	4.00E+02	NC	4.50E+01	YES	IPIM is Kept
91-57-6	2-Methylnaphthalene	SOIL_VOC_SVOC	ug/kg	66	51.52	53	1500	24	23000	YES	No RBSC	31	7.20E+01	NC	3.19E+02	YES	EF> 1
65-85-0	Benzoic acid	SOIL_VOC_SVOC	ug/kg	66	10.61	460	36000	55	1800	YES	Freq>5%	0	3.20E+04	NC	5.63E-02	NO	EF < 1
98-82-8	Cumene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	730	1800	YES	Freq>5%	2	8.00E+02	NC	2.25E+00	YES	EF> 1
103-65-1	Propylbenzene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	1900	5900	YES	No RBSC	4	8.00E+01	NC	7.37E+01	YES	IPIM is Kept
104-51-8	n-Butylbenzene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	520	1200	YES	No RBSC	4	3.20E+02	NC	3.75E+00	YES	EF> 1
99-87-6	p-Isopropyltoluene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	850	1900	YES	No RBSC	--	--	--	--	YES	IPIM is Kept
135-98-8	sec-Butylbenzene	SOIL_VOC_SVOC	ug/kg	4	100.00	0	0	660	960	YES	No RBSC	4	8.00E+01	NC	1.20E+01	YES	IPIM is Kept

Notes:

[1] COI Rationale Codes (see Section 2.1.5):

- Non-Detect - Constituent was not detected in any samples
- Freq>5% - Constituent was detected in more than five percent of the samples
- Hit<2*RBC - Constituent was detected at frequency of less than five percent and maximum hit was less than the RBSC
- Hit>2*RBSC - Constituent was detected at frequency of less than five percent and maximum detected value was greater than RBSC
- No RBSC - No RBSC value available

[2] Number of Exceedances - Number of samples with detected values exceeding the minimum RBSC

[3] Soil RBSC based on soil concentrations that are protective of human health based on the direct contact pathway (ingestion only) calculated using MTCA standard Method B (unrestricted land use) and a hazard quotient of 0.1 and cancer risk of 1E-06.

[4] Minimum Risk Basis for RBSC: CR - toxicity based on carcinogen and risk of 1E-06, NC - toxicity based on non-carcinogen and Hazard Quotient (HQ) of 0.1. Eco - Aquatic Screening Criteria.

[5] EF - Exceedance Factor = Maximum Detected Value / Minimum RBSC

[6] COPC - Chemical of Potential Concern based on the following criteria:

- EF>1 - Constituent is retained as a COPC because maximum detected value / minimum RBSC is greater than one
- No RBSC - Constituent is retained as a COPC because no RBSC is available for screening purposes
- IPIM is Kept - Constituent is retained as COPC because it has an inhalation pathway interim measure action level (IPIMAL) and was used to evaluate inhalation pathway interim measures (PSC, February 2003).
- EF<1 - Constituent is not retained as a COPC because the maximum detected value / minimum RBSC (EF) is less than one

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMININATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Philip Services Corporation Georgetown
Facility Address: 734 S. Lucile Street, Seattle, Washington, 98108
Facility EPA ID #: WAD000812909

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC), been **considered** in this EI determination?

✔ If yes – check here and continue with #2 below.

______ If no – re-evaluate existing data, or

______ If data is not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g. reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site wide).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objectives of the RCRA Corrective Action program the EI are near-term objectives, which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e.,, further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determination

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status code must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"** [1]above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

✓ If yes – continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

____ If no – skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference (s):

The attached tables from the Human Health and Ecological Risk Assessment, Part II of the Final Comprehensive Remedial Investigation (RI) Report provides a summary of the chemicals of potential concern in groundwater associated with releases from the facility along with the MTCA cleanup levels used to identify them. The nature and extent of groundwater contamination is discussed in Section 9 of the Final Comprehensive RI Report.

Footnotes:

[1] "Contamination" and "Contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater" [2] as defined by the monitoring locations designated at the time of this determination)?

✔ If yes – continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference (s):

As discussed in Section 9 of the Final Comprehensive RI Report, biodegradation appears to be reducing concentrations of chemicals of potential concern in groundwater within several hundred feet downgradient of the facility. As a result, it is not likely that the plume is continuing to expand. Furthermore, PSC is in the process of installing a hydraulic control barrier wall and associated pump and treat systemaround the source area which should prevent the further migration of DNAPL constituents and result in a reduction in off-site groundwater concentrations in the future. Groundwater outside the barrier wall will be continue to be monitored after the installation of the barrier wall.

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[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

____ If yes - continue after identifying potentially affected surface water bodies.

✔ If no-skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater " contamination" does not enter surface water bodies.

____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

As discussed in Section 9 of the Final Comprehensive RI Report, contamination has been detected in groundwater from monitoring wells located between the PSC facility and the Duwamish Waterway. However, groundwater contamination associated with releases from the facility is likely to have migrated only as far as 5th Avenue South, and thus, is not likely to impact the Duwamish Waterway under current or future conditions.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e. g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes – skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no – (the discharge of "contaminated" groundwater into surface water is potentially significant) – continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing: and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown – enter "IN" status code in #8.

Rationale and Reference(s):

[3] As measured in groundwater prior to entry to the groundwater –surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes – continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site specific criteria (developed for the protection of the site's surface water, sediments, and the eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater: Or
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants in to the surface water is (in the opinion of a trained specialist, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no – (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") – skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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[4] Note, because areas of in flowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look at the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

✔ If yes – continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations, which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no – enter "NO" status code in #8.

_____ If unknown – enter "IN" status code in #8.

Rationale and Reference (s):

PSC plans to continue groundwater monitoring at wells located inside and outside the hydraulic control barrier wall to determine the effectiveness of the wall and to verify that the off-site groundwater plume associated with releases from the facility has stabilized. In addition, PSC will continue to monitor the Pre-Corrective Action Monitoring Well Network per the PCAMP (PSC, June 2002).

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility).

✔ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Philip Services Corporation Georgetown facility, EPA ID # WAD000812909, located at 734 S. Lucile Street, Seattle, Washington, 98108. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO – Unacceptable migration of contaminated groundwater is observed or expected.

____ IN – More information is needed to make a determination.

Location where References may be found:

Philip Services Corporation. November 2003, Final Comprehensive RI Report, Philip Services Corporation Georgetown Facility, Seattle, Washington. (Part II includes Human Health and Ecological Risk Assessment prepared by Pioneer Technologies Corporation).

Philip Services Corporation. June 2002. Revised Pre-Corrective Action Monitoring Plan. Philip Services Corporation Georgetown Facility, Seattle, Washington.

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Table 3-1 - Groundwater Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	VOA?[1]	COI?[2]	COI Rationale[2]	Number of Exceedances[3]	Minimum RBSC[4]	Minimum Risk Basis[5]	Minimum RBSC Basis[4]	Exceedance Factor (EF)[6]	COPC[7]	COPC Rationale[7]
7440-38-2	Arsenic	GW_INORGANIC	ug/l	282	66.31	0.0612	3	0.0726	29.5	NO	YES	Freq>5%	45	9.82E-03	CR	HH_GW_SW	3.00E+03	YES	EF> 1
7440-39-3	Barium	GW_INORGANIC	ug/l	342	44.15	4	10	4.03	198	NO	YES	Freq>5%	0	2.87E+01	NC	HH_GW_SW	6.91E+00	YES	EF> 1
7440-47-3	Chromium	GW_INORGANIC	ug/l	263	68.82	1	5.28	1.01	136	NO	YES	Freq>5%	181	--	--	--	--	YES	No RBSC
7440-50-8	Copper	GW_INORGANIC	ug/l	342	58.48	1	7.93	1	90.9	NO	YES	Freq>5%	0	2.66E+02	NC	HH_GW_SW	3.41E-01	NO	EF < 1
57-12-5	Cyanide	GW_INORGANIC	ug/l	477	20.34	10	10	1.66	64.9	NO	YES	Freq>5%	0	5.19E+03	NC	HH_GW_SW	1.25E-02	NO	EF < 1
18540-29-9	Hexavalent Chromium	GW_INORGANIC	ug/l	97	35.05	5	100	5.01	38	NO	YES	Freq>5%	0	4.86E+01	NC	HH_GW_SW	7.82E-01	NO	EF < 1
7439-92-1	Lead	GW_INORGANIC	ug/l	338	22.78	1	4.04	0.994	15.9	NO	YES	Freq>5%	77	--	--	--	--	YES	No RBSC
7439-96-5W	Manganese	GW_INORGANIC	ug/l	280	98.21	10	10	12.2	6390000	NO	YES	Freq>5%	1	3.78E+03	NC	HH_GW_SW	1.69E+03	YES	EF> 1
7440-02-0	Nickel	GW_INORGANIC	ug/l	340	67.35	1	5.09	1	67.2	NO	YES	Freq>5%	0	1.10E+02	NC	HH_GW_SW	6.09E-01	NO	EF < 1
7782-49-2	Selenium	GW_INORGANIC	ug/l	341	20.23	1	1	1.01	33.9	NO	YES	Freq>5%	0	2.70E+02	NC	HH_GW_SW	1.26E-01	NO	EF < 1
7440-62-2	Vanadium	GW_INORGANIC	ug/l	122	91.80	1	10	1.055	44.9	NO	YES	Freq>5%	0	5.67E+02	NC	HH_GW_SW	7.92E-02	NO	EF < 1
7440-66-6	Zinc	GW_INORGANIC	ug/l	175	25.71	10	76	4.11	722	NO	YES	Freq>5%	0	1.65E+03	NC	HH_GW_SW	4.36E-01	NO	EF < 1
GIS-C10-ARE	C10-C12 (EPH) Aromatics	GW_NWEPH	ug/l	152	9.87	50	100	53.8	2300	YES	YES	No RBSC	15	--	--	--	--	YES	No RBSC
GIS-C8-ALE	C8-C10 (EPH) Aliphatics	GW_NWEPH	ug/l	152	12.50	50	100	55.6	4070	YES	YES	No RBSC	19	--	--	--	--	YES	No RBSC
GIS-C8-ARE	C8-C10 (EPH) Aromatics	GW_NWEPH	ug/l	86	11.63	50	25000	51.5	13700	YES	YES	No RBSC	10	--	--	--	--	YES	No RBSC
GIS-TEPH	TotalExtractablePetroleum H	GW_NWEPH	ug/l	152	19.08	50	100	55.6	8170	NO	YES	No RBSC	29	--	--	--	--	YES	No RBSC
GIS-C8-ARV	C8-C10 (VPH) Aromatics	GW_NWVPH	ug/l	96	16.67	50	25000	50.3	36800	YES	YES	No RBSC	16	--	--	--	--	YES	No RBSC
GIS-TVPH	TotalVolatilePetroleum HC	GW_NWVPH	ug/l	152	17.11	50	25000	50.3	36800	NO	YES	No RBSC	26	--	--	--	--	YES	No RBSC
12674-11-2	Aroclor 1016	GW_PCB	ug/l	252	3.17	0.1	5.5	0.752	15.4	NO	YES	Hit>2*RBSC	8	2.97E-04	CR	HH_GW_SW	5.19E+04	YES	EF> 1
11141-16-5	Aroclor 1232	GW_PCB	ug/l	252	3.57	0.1	5	1.04	25.9	NO	YES	Hit>2*RBSC	9	1.04E-05	CR	HH_GW_SW	2.49E+06	YES	EF> 1
95-50-1	1,2-Dichlorobenzene	GW_SVOC	ug/l	918	11.11	0.5	1000	1	197	YES	YES	Freq>5%	0	4.20E+02	NC	HH_GW_SW	4.69E-01	NO	EF < 1
105-67-9	2,4-Dimethylphenol	GW_SVOC	ug/l	421	12.11	4.72	500	6.09	972	NO	YES	Freq>5%	21	5.53E+01	NC	HH_GW_SW	1.76E+01	YES	EF> 1
95-48-7	2-Methylphenol	GW_SVOC	ug/l	453	9.05	4.72	500	6.39	491	NO	YES	Freq>5%	0	2.06E+03	NC	HH_GW_SW	2.39E-01	NO	EF < 1
106-44-5	4-Methylphenol	GW_SVOC	ug/l	97	15.46	10	50	10	2230	NO	YES	Freq>5%	7	2.09E+02	NC	HH_GW_SW	1.07E+01	YES	EF> 1
117-81-7	Bis(2-ethylhexyl) phthalate	GW_SVOC	ug/l	283	2.83	0.331	2500	1	1250	NO	YES	Hit>2*RBSC	8	3.56E-01	CR	HH_GW_SW	3.51E+03	YES	EF> 1
108-10-1	Methyl isobutyl ketone (MIBK)	GW_SVOC	ug/l	1259	5.88	5	10000	5.85	2790	YES	YES	Freq>5%	0	1.04E+04	NC	HH_GW_SW	2.69E-01	NO	EF < 1
91-20-3	Naphthalene	GW_SVOC	ug/l	938	18.12	0.1	500	0.113	652	YES	YES	Freq>5%	28	5.92E+01	NC	HH_GW_IA	1.10E+01	YES	IPIM is Kept
87-86-5	Pentachlorophenol	GW_SVOC	ug/l	453	6.62	0.05	500	0.155	250	NO	YES	Freq>5%	29	4.91E-01	CR	HH_GW_SW	5.09E+02	YES	EF> 1
108-95-2	Phenol	GW_SVOC	ug/l	453	10.38	2.5	50	2.39	6630	NO	YES	Freq>5%	0	5.56E+04	NC	HH_GW_SW	1.19E-01	NO	EF < 1
68334-30-5	Diesel	GW_TPH	ug/l	372	39.78	250	1380	104	24700	NO	YES	No RBSC	148	--	--	--	--	YES	No RBSC
86290-81-5	Gasoline	GW_TPH	ug/l	372	44.62	50	100	7.93	161000	NO	YES	No RBSC	166	--	--	--	--	YES	No RBSC
GIS_LUBEOI	Lube Oil Hydrocarbons	GW_TPH	ug/l	371	15.90	500	5500	60.1	5500	nc	YES	No RBSC	59	--	--	--	--	YES	No RBSC
71-55-6	1,1,1-Trichloroethane	GW_VOC	ug/l	1383	18.15	0.5	1000	0.686	9010	YES	YES	Freq>5%	8	1.09E+03	NC	HH_GW_IA	8.23E+00	YES	IPIM is Kept
75-34-3	1,1-Dichloroethane	GW_VOC	ug/l	1454	43.47	0.5	2000	0.543	3210	YES	YES	Freq>5%	36	7.52E+02	NC	HH_GW_IA	4.27E+00	YES	IPIM is Kept
75-35-4	1,1-Dichloroethylene	GW_VOC	ug/l	1383	14.53	0.05	2000	0.052	1380	YES	YES	Freq>5%	25	5.32E+01	NC	HH_GW_IA	2.59E+01	YES	IPIM is Kept
107-06-2	1,2-Dichloroethane	GW_VOC	ug/l	1383	13.96	0.1	1000	0.1	1100	YES	YES	Freq>5%	120	1.29E+00	CR	HH_GW_IA	8.54E+02	YES	IPIM is Kept
591-78-6	2-Hexanone	GW_VOC	ug/l	1259	2.62	10	10000	6.65	523	YES	YES	Hit>2*RBSC	0	6.09E+02	NC	HH_GW_IA	8.59E-01	YES	IPIM is Kept
71-43-2	Benzene	GW_VOC	ug/l	1383	33.26	0.5	1000	0.289	103	YES	YES	Freq>5%	416	9.60E-01	CR	HH_GW_IA	1.07E+02	YES	IPIM is Kept
75-15-0	Carbon disulfide	GW_VOC	ug/l	1259	7.31	0.5	2000	0.507	46.6	YES	YES	Freq>5%	0	1.45E+02	NC	HH_GW_IA	3.22E-01	NO	EF < 1
108-90-7	Chlorobenzene	GW_VOC	ug/l	1265	5.61	0.5	1000	0.603	19.2	YES	YES	Freq>5%	0	5.19E+01	NC	HH_GW_IA	3.70E-01	NO	EF < 1
75-00-3	Chloroethane	GW_VOC	ug/l	1259	29.15	1	1000	0.825	1830	YES	YES	Freq>5%	131	8.94E+01	CR	HH_GW_SW	2.05E+01	YES	IPIM is Kept
67-66-3	Chloroform	GW_VOC	ug/l	1265	5.45	0.44	1000	0.202	82	YES	YES	Freq>5%	67	4.11E-01	CR	HH_GW_IA	2.00E+02	YES	IPIM is Kept
100-41-4	Ethylbenzene	GW_VOC	ug/l	1264	30.14	0.5	1000	0.528	21900	YES	YES	Freq>5%	121	6.91E+02	NC	HH_GW_SW	3.17E+01	YES	IPIM is Kept
75-09-2	Methylene chloride	GW_VOC	ug/l	1383	7.38	5	5000	0.86	355	YES	YES	Freq>5%	20	3.21E+01	CR	HH_GW_IA	1.10E+01	YES	EF> 1
100-42-5	Styrene	GW_VOC	ug/l	1265	1.66	0.5	1000	0.6	47.4	YES	YES	Hit>2*RBSC	0	1.40E+03	NC	HH_GW_SW	3.38E-02	NO	EF < 1
127-18-4	Tetrachloroethylene	GW_VOC	ug/l	1383	14.90	0.05	2000	0.052	282	YES	YES	Freq>5%	206	3.92E-02	CR	HH_GW_SW	7.19E+03	YES	IPIM is Kept
108-88-3	Toluene	GW_VOC	ug/l	1265	33.75	0.12	2000	0.319	66900	YES	YES	Freq>5%	126	4.96E+02	NC	HH_GW_IA	1.35E+02	YES	IPIM is Kept
79-01-6	Trichloroethylene	GW_VOC	ug/l	1454	31.02	0.02	1000	0.02	143000	YES	YES	Freq>5%	423	4.04E-02	CR	HH_GW_IA	3.54E+06	YES	IPIM is Kept
75-01-4	Vinyl chloride	GW_VOC	ug/l	1454	49.24	0.02	2000	0.024	67200	YES	YES	Freq>5%	700	1.28E-01	CR	HH_GW_IA	5.24E+05	YES	IPIM is Kept
108-38-3, 1	Xylene (total)	GW_VOC	ug/l	1281	30.99	1	3000	1.81	39430	YES	YES	Freq>5%	169	1.44E+02	NC	HH_GW_IA	2.73E+02	YES	EF> 1
156-59-2	cis-1,2-Dichloroethylene	GW_VOC	ug/l	1453	41.57	0.5	400	0.56	85400	YES	YES	Freq>5%	193	7.27E+01	NC	HH_GW_IA	1.17E+03	YES	IPIM is Kept
156-60-5	trans-1,2-Dichloroethylene	GW_VOC	ug/l	1453	19.75	0.5	1000	0.502	12800	YES	YES	Freq>5%	78	6.53E+01	NC	HH_GW_IA	1.96E+02	YES	IPIM is Kept
76-13-1	1,1,2-Trichlorotrifluoroethane	GW_VOC_SVOC	ug/l	1192	12.75	2	2000	2	2170	YES	YES	Freq>5%	1	1.21E+03	NC	HH_GW_IA	1.80E+00	YES	EF> 1
95-63-6	1,2,4-Trimethylbenzene	GW_VOC_SVOC	ug/l	862	21.69	1	1000	0.757	3080	YES	YES	Freq>5%	120	1.30E+01	NC	HH_GW_IA	2.37E+02	YES	IPIM is Kept
108-67-8	1,3,5-Trimethylbenzene	GW_VOC_SVOC	ug/l	691	14.62	1	1000	0.503	1160	YES	YES	Freq>5%	57	9.76E+00	NC	HH_GW_IA	1.19E+02	YES	IPIM is Kept
123-91-1	1,4-Dioxane	GW_VOC_SVOC	ug/l	73	41.10	1	1	1.09	1040	NO	YES	Freq>5%	8	1.84E+01	CR	HH_GW_SW	5.65E+01	YES	EF> 1
90-12-0	1-Methyl naphthalene	GW_VOC_SVOC	ug/l	54	7.41	0.1	10	0.302	7.03	YES	YES	Freq>5%	4	--	--	--	--	YES	No RBSC
91-57-6	2-Methylnaphthalene	GW_VOC_SVOC	ug/l	299	6.02	0.05	500	0.208	250	YES	YES	Freq>5%	1	2.22E+02	NC	HH_GW_SW	1.13E+00	YES	EF> 1
65-85-0	Benzoic acid	GW_VOC_SVOC	ug/l	280	6.43	9.43	500	10.6	6420	NO	YES	Freq>5%	0	6.56E+04	NC	HH_GW_SW	9.78E-02	NO	EF < 1
98-82-8	Cumene	GW_VOC_SVOC	ug/l	133	18.80	1	20	1	78.1	YES	YES	Freq>5%	2	7.49E+01	NC	HH_GW_IA	1.04E+00	YES	EF> 1
75-71-8	Dichlorodifluoromethane	GW_VOC_SVOC	ug/l	284	6.69	1	1000	1	52.6	YES	YES	Freq>5%	5	6.36E+00	NC	HH_GW_IA	8.27E+00	YES	EF> 1
74-84-0	Ethane	GW_VOC_SVOC	ug/l	330	38.48	2	10000	10.2	16700	YES	YES	No RBSC	127	--	--	--	--	YES	No RBSC
74-85-1	Ethene	GW_VOC_SVOC	ug/l	327	35.47	2	665	7.65	10000	YES	YES	No RBSC	116	--	--	--	--	YES	No RBSC
74-82-8	Methane	GW_VOC_SVOC	ug/l	330	96.67	1.2	2	2.02	64200	YES	YES	No RBSC	319	--	--	--	--	YES	No RBSC
1319-77-3	Methylphenol	GW_VOC_SVOC	ug/l	325	8.31	2.5	11.3	5.31	2680	NO	YES	Freq>5%	27	--	--	--	--	YES	No RBSC

Table 3-1 - Groundwater Constituents of Potential Concern

Cas_No	Constituent	Data Group	Units	Number of Samples	Frequency of Detect (%)	Minimum Non-Detect	Maximum Non-Detect	Minimum Detect	Maximum Detect	VOA?[1]	COI?[2]	COI Rationale[2]	Number of Exceedances[3]	Minimum RBSC[4]	Minimum Risk Basis[5]	Minimum RBSC Basis[4]	Exceedance Factor (EF)[6]	COPC[7]	COPC Rationale[7]
103-65-1	**Propylbenzene**	GW_VOC_SVOC	ug/l	148	17.57	1	500	1	172	YES	YES	Freq>5%	11	2.69E+01	NC	HH_GW_IA	6.40E+00	YES	IPIM is Kept
104-51-8	**n-Butylbenzene**	GW_VOC_SVOC	ug/l	300	5.33	1	1000	0.542	38.7	YES	YES	Freq>5%	1	3.56E+01	NC	HH_GW_SW	1.09E+00	YES	EF> 1
110-54-3	**n-Hexane**	GW_VOC_SVOC	ug/l	182	3.85	2	2000	1.06	14.4	YES	YES	Hit>2*RBSC	0	7.78E+01	NC	HH_GW_SW	1.85E-01	YES	EF < 1, VOA_No GWI_IA RBSC
99-87-6	**p-Isopropyltoluene**	GW_VOC_SVOC	ug/l	148	14.19	1	20	1	58.1	YES	YES	Freq>5%	0	7.49E+01	NC	HH_GW_IA	7.76E-01	YES	IPIM is Kept
135-98-8	**sec-Butylbenzene**	GW_VOC_SVOC	ug/l	88	15.91	1	5	1	202	YES	YES	Freq>5%	6	8.91E+00	NC	HH_GW_SW	2.27E+01	YES	IPIM is Kept

Notes:
COPCs designated YES are in **Bold**
[1] VOA - Determination of volatility was made for all detected analytes based on molecular weight (<200 g/mole) and Henry's Law (>1E-05 atm-m^3/mole) (EPA, 1991)
[2] COI Rationale Codes (see Section 2.1.5):
- Non-Detect - Constituent was not detected in any samples
- Freq>5% - Constituent was detected in more than five percent of the samples
- Hit<2*RBC - Constituent was detected at frequency of less than five percent and maximum hit was less than the RBSC
- Hit>2*RBSC - Constituent was detected at frequency of less than five percent and maximum detected value was greater than RBSC.
- No RBSC - No RBSC value available

[3] Number of Exceedances - Number of samples with detected values exceeding the minimum RBSC
[4] Minimum RBSC based on the most stringent value of: surface water concentrations that are protective of human health under MTCA Method B (HH_GW_SW), groundwater concentrations that are protective of human
[5] Minimum Risk Basis for RBSC: CR - toxicity based on carcinogen and risk of 1E-06, NC - toxicity based on non-carcinogen and Hazard Quotient (HQ) of 0.1. Eco - Aquatic Screening
[6] EF - Exceedance Factor = Maximum Detected Value / Minimum RBSC
[7] COPC - Chemical of Potential Concern based on the following criteria:
- EF>1 - Constituent is retained as a COPC because maximum detected value / minimum RBSC is greater than 1
- No RBSC - Constituent is retained as a COPC because no RBSC is available for screening purposes
- IPIM is Kept - Constituent is retained as COPC because it has an inhalation pathway interim measure action level (IPIMAL) and was used to evaluate inhalation pathway interim measures (PSC, February 2003).
- EF<1, VOA_NO GWI_IA RBSC - Constituent is retained as COPC because (although EF is less than the surface water RBSCs) it is a VOA and there is no HH_GW_IA RBSC identified at this time
- EF<1 - Constituent is not retained as a COPC because the maximum detected value / minimum RBSC (EF) is less than 1