APPENDIX A
SUPPORTING MODELING CALCULATIONS

APPENDIX A
SUPPLEMENTAL MODELING CALCULATIONS

This appendix describes supplemental calculations used in the evaluation of remedial alternatives, and is an update of the Fate and Transport Summary Memorandum (PGG, 2015).

The draft Fate and Transport Summary Memorandum (PGG, 2015) was prepared on behalf of the potentially liable parties (PLPs) [Art Brass Plating (ABP), Blaser Die Casting (BDC), Capital Industries (CI), and PSC Environmental Services, LLC[1] (PSC)] identified by the Washington State Department of Ecology (Ecology) in Agreed Order (AO) No. DE10402 for the West of 4th (W4) Site. The AO requires the four PLPs (the W4 Group) to complete a Feasibility Study (FS) and prepare a draft Cleanup Action Plan (dCAP) for the W4 Site. The environmental consultants addressing technical aspects of the FS and dCAP on behalf of the W4 Group (W4 Consultants) are: Aspect Consulting (Aspect) for ABP; Farallon Consulting (Farallon) for CI; Pacific Groundwater Group (PGG) for BDC; and Pacific Crest Environmental (Pacific Crest) for Stericycle. This analysis is specific to the Site Unit 2 (SU2) portion of the W4 site, and was prepared by PGG, Farallon, and Pacific Crest. Aspect has prepared a separate memo specific to Site Unit 1 (SU1).

OVERVIEW

This Fate and Transport Summary Appendix focuses on modeling for the SU2 evaluation of remedial alternatives as outlined in the *Revised Fate and Transport Modeling Plan* (PGG, 2015). A separate memo is being prepared for SU1 evaluation of remedial alternatives.

The fate and transport modeling includes evaluation of downgradient concentrations of chlorinated solvents, exposure pathways, groundwater plume stability/mobility, and development of preliminary remediation levels at model source areas (Figure 1). BIOCHLOR is the primary modeling tool used to estimate future groundwater chlorinated solvent concentrations along a modeled plume centerline (Aziz and Newell, 2002). Analytical calculations are also used to estimate remediation times where BIOCHLOR capabilities are limited. In general, modeling and calculations are used to:

- Estimate the effects of remedial alternatives on groundwater plume concentrations;
- Develop preliminary remediation levels for model source areas; and
- Estimate downgradient groundwater concentrations for exposure pathway evaluation.

Modeling results are compared to the preliminary cleanup levels (PCULs) protective of either air quality or surface water (Table 1) (Farallon, 2014 as revised September 2015).

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[1] Burlington Environmental, LLC is a wholly-owned subsidiary of PSC Environmental Services, LLC which is a wholly-owned subsidiary of Stericycle Environmental Solutions, Inc., hereafter referred to in this document as "Stericycle" for simplicity.

The applied modeling methods are capable of producing predictions of remediation time frames that are *precise* to within a year. However, the *accuracy* of the model predictions is related to limitations of the modeling approach including the mathematical limitations, limited calibration to site-specific conditions, and applied assumptions. Therefore, the accuracy of the modeling results should be considered approximate, and interpreted with appropriate professional judgement.

Data Organization

The modeling approach involved many BIOCHLOR modeling runs. In previous reports screenshots of each BIOCHLOR model run were included in appendices as documentation of the individual model runs. However, given the number of model runs used here, this approach would have reduced accessibility for readers. Instead, detailed tables of model inputs and outputs are compiled that are easier to refer to and allow readers to verify the BIOCHLOR results and analytical calculation results as needed:

- Model input parameters are described in Tables 2 and 3.
- Model run configurations and outputs are compiled in Table 4; For each source area: the first output is a 500 year steady state forward calculation; subsequent runs include a base case remediation level (RL) calculation and sensitivity runs; multiple modeling runs over a range of source decay rates (SDR)(see Table 3).
- Preliminary remediation levels are summarized in Table 5.
- Natural attenuation timescales are summarized in Table 6.
- Remediation time estimates with active remedies are summarized in Table 7.
- Remediation level sensitivity analyses are summarized in Table 8.

BIOCHLOR MODELING APPROACH

The BIOCHLOR input parameters and modeling approaches are conducted consistent with the Fate and Transport Modeling Plan (PGG, 2015). BIOCHLOR modeling is used in a generic approach to evaluate groundwater plume concentrations downgradient of a change in source area concentration due to an unspecified remedial action, or it can be used to estimate the source-area concentration reduction appropriate to meet a downgradient concentration objective. Model configuration specific to natural attenuation is discussed below. Source decay terms facilitate estimation of the timescales over which the plume will decrease from existing conditions to PCULs as an estimate of natural attenuation timescales (Table 3).

BIOCHLOR TRANSPORT PARAMETERS

BIOCHLOR calculates groundwater concentrations along a plume centerline based on a combination of advection and dispersion parameters, biodegradation parameters, source area concentrations, and source area general characteristics. This approach assumes that loss rates are consistent or conservative with model parameters within a model zone both laterally and longitudinally, and that there is centerline groundwater data available for comparison. Existing and expected groundwater monitoring provide adequate hydraulic and empirical chemical data to constrain the plume position and centerline concentrations in near-source and downgradient locations. Model advection and biodegradation parameter values are included in Table 2, and are consistent with values used in the W4 PLP Remedial Investigations' modeling (PGG, 2012; Aspect, 2012; Farallon, 2012). Selection of transport parameters is discussed in previous documents (PGG, 2010; PGG, 2012; PGG, 2015; Aspect, 2012, Farallon, 2012).

BIOCHLOR SOURCE AREA PARAMETERS

Model source area concentrations and general characteristics are assigned based on the specific model purpose, and are discussed in the sections below. In this document, the term "model source area" refers to a location in the aquifer that is the upgradient extent of the model.

Source Area Geometry and Locations

Three source areas were modeled in the SU2 area, and are referred to using the following abbreviations (Figure 1):

- BD: Blaser Die Casting source at the southwest corner of the Blaser building.
- C2: Downgradient of Capital Industries Plant 2
- C4: Downgradient of Capital Industries Plant 4

Model source areas are configured as single-planar sources the width of the groundwater plume and the thickness of the aquifer interval (water table, shallow, or intermediate) (Table 2). Source areas are located similarly to the respective Remedial Investigation reports for each PLP, with dimensions and COC concentrations summarized in Table 2.

Source Area Concentrations

Source area concentrations representing current conditions are based on the data in the Site Conceptual Model (Aspect, 2014b). Source area concentration ratios[2] are maintained during model adjustments, such as in the calculation of remediation levels. Because the chlorinated ethene concentrations are related through degradation, maintaining concentration ratios reduces the degrees of freedom for source area parameters. The source area concentrations for the Capital Industries Plant 4 location for the shallow and intermediate zones were corrected to be consistent with the Site Conceptual Model (Aspect, 2014b) and data from the CI-7 well cluster. The prior value for vinyl chloride in the Plant 4 area presented in the Revised Fate and Transport Modeling Plan dated February 27, 2015 was overstated.

Source Area Decay

Source area concentrations in release areas are expected to decrease through mass loss due to advection out of the source area, volatilization, and chemical and biologic degradation processes. A decaying source area is used in models of natural attenuation. Source decay is described by a

[2] For example, the ratios of PCE to TCE, TCE to DCE, and DCE to vinyl chloride.

constant (ks) and accounts for all of the processes reducing the source area concentration, and is different from the biodegradation rate (λ), which only addresses the rate of biologic transformation. The ks constant is used in a natural-logarithmic decay mathematically similar to the application of biodegradation rate constants. Literature values are unlikely to be representative of the source decay in these locations because the ks constant includes both advection and degradation. The U.S. Environmental Protection Agency recommends estimating source area depletion rates using concentration-time plots at the most contaminated wells (Newell, et al., 2008). Unlike biodegradation rates, BIOCHLOR only allows one value for the source decay rate. Source area decay rates are based on trends for the total molar mass of chlorinated ethenes rather than calculating based on individual constituents (Tables 3a,b). The molar approach sidesteps the need to reconcile concentration trends dependency on daughter-parent stoichiometry and rates of change, while still quantitatively reflecting contaminant mass reduction over time.

Source area decay rates (ks) are calculated as the best-fit line for an exponential curve as described in EPA literature with the modification that they are calculated based on the total molar mass of HVOCs instead of individual constituent trends (Aziz, 2002; Newell, 2002); two-tail 90% upper and lower confidence intervals are also calculated from the same data (Table 3). Values for ks and supporting statistics are calculated using the LINEST array function in Excel. HVOC data from monitoring wells BDC-3-WT, BDC-3-40, BDC-3-60, CG-137-WT, CG-137-40, CG-137-50, and CI-MW-7 are used to estimate source decay rates for model source areas at those locations (Table 3). Vinyl chloride concentrations at Capital Industries Plant 4 are currently compliant with the PCULs and were therefore not modeled. Best-fit curves for the estimated ks value are plotted for each well[3]. ks is calculated both based on full time-series available at individual wells (Table 3a), based on 2010 and later data (Table 3b), and based on 2011 and later data as requested by Ecology (Table 3c). Table 3d provides a comparison of the ks values calculated in Tables 3a, 3b, and 3c.

Calculating ks based on 2010 and 2011 and later data resulted in moderate to minor changes in most ks values. R^2 values are near zero in Blaser shallow and intermediate zone wells BDC-3-40 and -60, and Capital Industries well CI-MW-7 where concentration variability at low concentrations leads to low statistical significance (Table 3). Due to the low statistical significance in the later data, these specific ks values are not considered valid. The long-term trend at these locations is qualitatively towards lower concentrations. Negative ks values, if real, would likely indicate variations in groundwater flow lines or longitudinal variations in plume concentration.

Discussion

Given the importance of source decay rate in estimating remediation times, it is important to ask what the data are telling us about the hydrogeologic context and if the values are consistent with the site conceptual model. SDR values calculated on a total molar basis generally indicate decreasing concentration trends, consistent with a conceptual model based on mature, decreasing groundwater plumes. Additional evidence of plume mass reduction, as measured at individual wells, includes:

[3] Note that in Table 3b the best fit curve is plotted to dates before 2010 (elapsed years less than zero) for comparison, even though the earlier data is not used in estimation of the best fit and calculation of ks.

- Detection of ethene and/or ethane in all aquifer interval wells indicating complete destruction of CVOCs beyond vinyl chloride.
- Ethene / ethane is not detected in the water table interval. Lack of detection may be due to: presence below the reporting limit due to volatilization, presence below reporting limits, or incomplete degradation of vinyl chloride. Mass balance suggests that destruction of CVOCs is occurring.
- Decreasing abundance of parent compounds (TCE or DCE) relative to degradation products (DCE, vinyl chloride) at down gradient locations indicating biodegradation.

There are deviations from the decreasing trends such as pre-2008 increasing trends at CG-137-40, and the relatively flat best-fit trendlines in the post-2012 data at BDC-3-40 and BDC-3-60. These variations may be attributed to variations in source area concentrations/loading leading to downgradient concentration variability, subtle variations in plume alignment leading to variations at individual wells, or variability at lower concentrations. Slight, or subtle changes in plume alignment due to variations in groundwater flow are expected, and are not taken to indicate macroscopic plume instability. Regardless, these variations remain within the framework of the overall site conceptual model of mass reduction by natural attenuation. The SDR estimates in Table 3 are consistent with the site conceptual model. Groundwater concentrations have continued decreasing beyond the levels used in Table 3 for the estimation of SDR rates (Appendix D).

Based on studies at other solvent sites, the SDR values calculated for SU2 are consistent with literature summaries of observed solvent plume SDR values, including the range of variability (Newell, 2006). A key finding of the Newell (2006) aggregate study of 23 groundwater solvent plumes is that remediation times are measured in decades and it is difficult to significantly reduce remediation times with active remedies.

In summary, the estimated SDR values are consistent with the site conceptual model, and the expected behavior of solvent plumes as reported in the literature.

PRELIMINARY REMEDIATION LEVELS

Preliminary remediation levels for groundwater at the source areas are estimated by adjusting model source area concentrations until model results meet preliminary cleanup levels at the closest point of discharge to surface water in the Duwamish (Table 5). The distance between the source area and the Duwamish is estimated along a groundwater flow path from the source area to the receptor as indicated by the groundwater contours on figures in the Site Conceptual Model (Aspect, 2014b), and tabulated in Table 2. All other advection and transport terms are held constant at the values in Table 2. Next, the source-area concentrations are adjusted until the calculated steady-state downgradient concentrations are at or below concentrations protective of surface water at the point of discharge. Remediation levels calculated with this method are only applicable at or upgradient of the modeled source area; applying remediation levels upgradient of the source area is conservative. Remediation levels calculated using this method are not unique solutions because it is assumed that concentration ratios within the source area are constant. Concentration ratios may change over time. However, because progressive degradation of the source area is likely to decrease the TCE to VC ratio, the approach used here is most likely to be conservative[4].

Very high remediation levels are calculated for the shallow and intermediate intervals, due to the low hydraulic conductivity in those aquifer intervals. The calculated remediation level is sensitive to both the hydraulic conductivity and the biodegradation rate. The low hydraulic conductivity results in long transport times to surface water discharge allowing more time for biodegradation. The sensitivity of remediation levels to hydraulic conductivity and biodegradation rate are discussed in the sensitivity section, below.

Current model source area concentrations are below preliminary remediation levels indicating that current conditions in upgradient source areas are protective of surface water (Table 1 and 5).

NATURAL ATTENUATION ESTIMATES

The objective of the natural attenuation configuration is to estimate the time required for biodegradation and other processes to reduce concentrations of the chlorinated solvents to levels less than the preliminary cleanup levels (Table 1) (Farallon 2015) along the entire model domain[5]. Reaching this condition requires both source area decay to the target cleanup levels and dissipation of the groundwater plume. The natural attenuation configuration uses a decaying source with initial concentrations set at the concentrations in the Site Conceptual Model for that location. The source decay rate is based on the exponential best-fit curve for nearby monitoring well data (Table 3). The model is initially run for 30 years and then the simulation time is adjusted until concentrations satisfy PCULs. Water Table interval source areas uses surface water or air quality based PCULs as the most stringent criteria. Shallow and Intermediate aquifers use PCULs protective of surface water.

Because BIOCHLOR allows only a limited range of parameters at low seepage velocities, it does not allow calculation of natural attenuation time scales for the Shallow and Intermediate intervals consistent with observed source decay rates. Values for ks are limited by numerical stability in BIOCHLOR[6], and the upper value limit for numerical stability is often less than the ks value from monitoring data (Table 3). Table 4 shows runs where empirically-derived ks value ranges cannot be modeled in BIOCHLOR. This numerical stability limitation affects BICHLOR runs by overestimating natural attenuation timescales. In the Shallow and Intermediate intervals, the maximum ks values allowed by BIOCHLOR are 0.013 and 0.048, respectively (Table 4). Observed ks values in Table 3a are generally in the range of 0.1 to 0.25, which BIOCHLOR is not capable of modeling in the Shallow and Intermediate parameter spaces. In these cases, the maximum allowed BIOCHLOR source decay rate is used for the calculation (Table 4).

[4] Calculated remediation levels are generally limited by VC concentrations. If the TCE:VC ratio were to increase, it would shift production of VC further downgradient. For an equivalent total VOC contaminant mass, this change in ratio would result in higher VC concentrations at the downgradient limit of the model.
[5] This assumes that the modeled groundwater plume accurately reflects the groundwater centerline concentrations.
[6] Use is restricted to $\{ks < 1/R*(\lambda+Vs/4\alpha)\}$ where Vs is the seepage velocity, R is the retardation factor, α is the dispersivity, and λ is the first order degradation rate constant. BIOCHLOR then subtracts a 20% safety factor from the calculated ks limit. In the model runs here, the intervals with lower seepage velocities result in lower usable source decay rates that are below observed trends and result in overly conservative estimates of source area decay. Future modeling included in other documents may use other analytical methods to avoid this limitation.

In some cases, BIOCHLOR is not able to estimate source decay due to the limits of the source decay algorithm. Therefore, supplemental remediation times are calculated for all intervals using an analytical solution (Table 7a and 7b) (Newell, 2002):

t = -ln (Cgoal / Cstart) / ks**Results**

Table 7a completes the calculations based on the source decay rates (ks) in Table 3a. Table 7b completes the calculations based on the source decay rates (ks) from 2010 and later data in Table 3b. Table 7c completes the calculations based on the source decay rates (ks) from 2011 and later data in Table 3c. Table 4 in the main text summarizes these results.

Natural attenuation timescales from BIOCHLOR model runs are summarized in Table 6. Modeled natural attenuation timescales calculated in BIOCHLOR source decay runs range from 20- to 85-years with most values falling in the 20- to 40-year time bracket. The longer timescales, such as the 85 year at C2-IN, reflect calculations for which the allowable range of SDR (ks) are below observed SDR from monitoring data and are not considered valid (Table 3 and 6). Where BIOCHLOR does not produce valid results due to limitations in the range of ks values, model runs were completed using the maximum available BIOCHLOR rate. Supplemental calculations based on the analytical solution are also provided in the sensitivity analyses listed in Table 6, and in parentheses below. Natural Attenuation timescales based on BIOCHLOR modeling results for each model source area in the Water Table, Shallow, and Intermediate intervals are:

- Blaser Area: 23, 51, and 48 years;
- Capital Industries Plant 2 Area: 20, 27 and 85 years; and,
- Capital Industries Plant 4 Area: 35 and 40 years in the Water Table and Shallow intervals; the Intermediate interval is currently below PCULs.

Natural Attenuation timescales based on the SDR analytical solution for each model source area using a range of SDR values in Table 3a,b,c in the Water Table, Shallow, and Intermediate intervals are:

- Blaser Area: 22 to 31, 86 to -259, and 18 to -222 years;
- Capital Industries Plant 2 Area: 24 to 64, 30 to 40, and 7 to 9 years; and,
- Capital Industries Plant 4 Area: 42 to -1,166, 41 to 71 years in the Water Table and Shallow intervals; the Intermediate interval is currently below PCULs.

EFFECT OF REMEDIAL ACTIONS

Remedial Alternatives include source removal and lines of injections as permeable reactive barriers or plume cutoff features that will reduce concentrations as groundwater passes through the treatment interval. Each cutoff feature will create a detached plume, the tail of which will migrate down gradient away from the cutoff feature. The time to reach PCULs at a point further downgradient will depend on the time for effects to propagate/breakthrough down gradient, and the expected change in SDR as a result of the remediation. Biodegradation and partitioning relationships are assumed to remain constant in downgradient areas beyond the immediate influence of the cutoff feature. However the SDR will increase in down gradient areas as the tail of the detached plume arrives and concentrations decrease. Therefore, at an arbitrary down gradient point, concentrations will decrease at the background SDR front until the plume tail arrives—at which point the SDR will increase due to flushing. It is difficult to predict the change in downgradient SDR because the SDR estimation method does not differentiate between concentration reduction mechanisms such as volatilization, biodegradation, chemical degradation, and advection/dilution.

An approximation of the remediation timeframe at a downgradient point may be calculated as the flushing time to reach PCULs. This remediation time is calculated assuming a 300 foot down gradient distance- the approximate distance between active treatment lines (Wiedemeir, 1999):

$$PV = -0.93 \log_{10} (C_1/C_2) + 0.75$$

And:

$$t = (PV * L * R) / v$$

Where C_1 and C_2 are the starting and target concentrations, PV is the pore volume turnover for transition from C_1 to C_2, R is the retardation factor, and v is the seepage velocity. Calculations were completed for all aquifer intervals and BIOCHLOR source areas (Tables 7a and 7b). The analytical approaches described above make several assumptions:

- The flushing calculation does not account for biodegradation, which would shorten remediation times, and does not account for possible back-diffusion from low-permeability layers, which could increase remediation times. SDR based calculations empirically include both degradation and naturally-occurring flushing effects even though they are not differentiated from other natural attenuation processes.
- The flushing calculation assumes that degradation rates are not increased down gradient of active remediation lines. This assumption is likely not true in the first few feet downgradient, which will still be within the geochemical influence of the treatment interval. However, approaches such as injection of zero-valent iron or electron donors will have a limited transport distance within the aquifer and the assumption that they do not significantly directly change degradation rates down gradient is likely consistent with expected outcomes.
- Initial concentrations are assumed to be homogeneous within the downgradient calculation volume (the 300 foot interval). Field data show decreases in concentrations downgradient along plume centerlines consistent with the combined effects of degradation and advection-dispersion processes. Therefore, the assumption of uniform concentration likely biases flushing estimates to longer times (more PVs). For reference, if the limiting down gradient concentration ratio shifted from 0.1 to 0.05, the PV estimate would shift from 2 to 1.7, which would shorten the estimated cleanup times by approximately 15%.

The PV equation is a log-linear approximation of a more complex solution that cannot be directly solved for PV due to an error-function type solution (Wiedemeir, 1999). The more complex solution diverges only slightly to a lower PV than the linear approximation at C_1/C_2 ratios between 0.1 and 0.7, and diverge sharply between 0.7 and 1 (increasing ratios indicate an approach to cleanup levels at $C_1=C_2$). At ratios greater than 0.1 the linear approximation will overestimate the number of pore volumes to reach cleanup levels. Initial ratios used in calculation of SU2 flushing times range up to 0.12. Over this range the divergence from linear is slight and application of PV calculated from the log-linear approximation is considered acceptable for the intended purpose (Table 7c). This is offset by a greater than 300 foot actual spacing between conceptual model source areas and conceptual treatment areas.

The ratio of the calculated SDR-based remediation time and flushing-based remediation times provides a coarse measure of the relative benefit of active remediation over the area downgradient of the treatment interval. Where flushing times are long relative to SDR-based times, the system is limited by transport times and natural attenuation rates are likely to be the most efficient way to a permanent reduction in groundwater concentrations. Where flushing times are short relative to SDR rates, the relative benefit of active remediation increases.

Sensitivity analyses are also included in Tables 7a and 7b. Each model source area was calculated: over three SDR rates between the empirical best fit in Table 3 and three times the SDR; and at 0.5 and 2 times the seepage velocity. Table 7c includes SDR calculations at the 90% upper and lower confidence limits for the best fit for the Blaser shallow and intermediate zones and the C4 water table zone where SDR best fit values indicated a negative slope and very poor curve fits (R^2 near zero). These SDR values have limited value due to the data variability and poor curve fits.

Results

Estimated remediation times based on the flushing analytical solution for each model source area in Tables 7a,b,c in the Water Table, Shallow, and Intermediate intervals are:

- Blaser Area: 22, 27, and 69 years;
- Capital Industries Plant 2 Area: 17, 33 and 99 years; and,
- Capital Industries Plant 4 Area: 22 and 24 years in the Water Table and Shallow intervals; the Intermediate interval is currently below PCULs.

Estimated flushing times range from faster to slower than remediation times predicted from natural attenuation alone. These differences reflect both the uncertainty in the calculation methods and also the differences in the contaminant fate and transport within SU2. Active remediation will have a demonstrable impact at and immediately downgradient of the treatment area (one metric of remediation benefit). This impact will propagate downgradient through flushing of reduced concentration groundwater. The overall remediation time frame (another way to assess remediation benefit) will be limited by either the rate that flushing will reach down gradient areas or by the rate that natural attenuation processes reduce concentrations, as estimated by SDR analytical calculations or BIOCHLOR calculations. In the case of high degradation rates and low groundwater velocities, areas at the downgradient end of the calculation space (300 feet) can reach PCULS by natural attenuation before flushing and the benefit of active remediation in reducing the *overall remediation time* is minimal. In the case of low degradation rates and high groundwater seepage velocities, flushing can exceed the natural degradation rates at the downgradient end of the calculation space and the benefit of the active remedial action is the difference between the flushing and SDR-analytical time. Where flushing times and natural attenuation times are similar, the overall remediation time will also be reduced. The reduction in remediation time at the downgradient end is not quantified because the analytical solutions do not simultaneously solve for both flushing and SDR.

EVALUATION OF EXPOSURE PATHWAYS

Exposure pathways are evaluated from steady state[7], continuous source modeling results by comparing down gradient plume concentrations to the preliminary cleanup levels specific to the exposure pathway. Pathways such as soil direct contact that do not require modeling assessment are not discussed in this memo. Exposure pathways include:

- Groundwater discharge to surface water
- Water table interval groundwater to soil gas

Current model source area concentrations are protective of surface water quality at the point of discharge for source areas, consistent with monitoring data. Groundwater exceeds air quality criteria at and downgradient of water table interval source areas, also generally consistent with modeling results. Figures 2, 3, and 4 show estimated downgradient concentrations compared to surface water and air quality based PCULs for each source area.

SENSITIVITY ANALYSIS AND VERIFICATION

Sensitivity analysis of model results to input parameters is conducted to assess the variation in results within a reasonable range of input parameters. Sensitivity analyses are conducted by varying one parameter per modeling run over a range of values consistent with the approach used in the W4 RI reports. Sensitivity analysis results are included in Tables 4, 6, 7, and 8. Sensitivity analyses are run for a limited set of parameters in most source areas because the pattern of changes in output is similar across source areas. Steady state condition model runs were completed in respective Remedial Investigation reports and are not repeated here.Remediation Levels

Remediation level sensitivity analysis runs are compiled in Table 8. Biodegradation rate and groundwater seepage rate have nearly identical impacts on remediation levels because they both affect the time available for degradation. Doubled seepage velocity and biodegradation half-lives have similar impacts on remediation levels.

Calculated remediation levels vary from base-run concentrations by a factor of over 100 with variations in seepage velocity and biodegradation rate. Halved seepage velocity and biodegradation half-life result in very high remediation levels, with some calculated values exceeding possible concentrations (either as a solubility limit or as a free liquid). Doubled seepage velocity and biodegradation half-life result in lower remediation levels that remain above current concentrations in the targeted areas.

[7] Steady state is defined as a configuration for which a longer simulation time does not change the model output.

Natural Attenuation Time Frames

Sensitivity in natural attenuation models is estimated over a range of SDRs, biodegradation rates, and seepage velocities. BIOCHLOR runs were completed at 50% of the best-fit SDR, the maximum BIOCHLOR rate where that is a limiting constraint, and analytical solutions at the best-fit SDR for reference where BIOCHLOR did not allow best-fit values (Table 6). Runs were also completed at twice and half the input values for half-lives and seepage velocities in Table 2. While not completed for this purpose, the data exclusion in SDR/ks calculations in Tables 3a-c and summarized in Table 3d provide a metric of the sensitivity of the SDR to the selected data. As discussed earlier, the lower SDR values are related to low statistical significance. The average ks departure from the mean of the three data sets ranged from 14% to 248%. If the three locations with low R^2 values near zero are excluded, the average departure ranges from 14% to 47% and averages 22%.

Where SDR values were low in BIOCHLOR calculations, the remediation time was limited by the source decay and variations of seepage velocity and biodegradation rate had little effect. Where SDR was higher and also where parent compounds (TCE) were prevalent, the variations in downgradient biodegradation rate had greater influence on calculated natural attenuation times as the limiting concentration was often vinyl chloride at a downgradient location.

Remediation time estimates under existing conditions are sensitive to SDR. The SDR rates in analytical solutions varied nearly linearly with selected SDR; a halving of the SDR would approximately double the remediation time (Tables 7a-c). In BIOCHLOR runs, a halving of the SDR result in an approximate 34% increase in remediation time. If the analytical solution is taken as the more conservative metric of sensitivity with a nearly linear sensitivity to SDR, and if the 22% variability in calculated SDR based on windowing of the concentration data is used as the bulk uncertainty in SDR, then the calculated remediation times are likely to also have a 20-25% uncertainty (with some individual uncertainty values obviously higher or lower).

Steady State

Steady state Water Table interval BIOCHLOR model runs using pre-interim action source data were compared to downgradient concentrations to confirm that the model configuration is conservative (or that it over predicts down gradient concentrations). This approach is applicable between source areas, but not down gradient where additional contaminant mass from downgradient sources cannot be accounted for in the model. The applied model configurations are considered acceptable for the intended use within the uncertainty allowed by the comparison between model results at BDC-3 and the BDC-6 well clusters (see FS Figure 2):

- The BDC-WT pre-interim action model predicts 350 ug/L TCE and 260 ug/L VC at BDC-6-WT. These predicted values are higher than the maximum observed TCE (230 ug/L) and VC (20 ug/L) concentrations, respectively (Table 3).
- The BD-SH model predicts 1.9 ug/L cis-1,2 DCE and 2.6 ug/L VC at the BDC-6 location, which are lower than the BDC-6-30 concentrations for TCE (16 ug/L; DCE 20 ug/L; VC 9.8 ug/L). However, the BDC-6-30 concentrations are higher than the BDC-3-40 concentrations and also include detections of TCE, consistent with the shallower BDC-6-30 screen interval including more of the core of the plume and not representing a true flow tube from the BDC-

3-40 well location. Given this blending between aquifer intervals, the BDC-SH model results are considered acceptable given the low probability of impacting surface water receptors under different biodegradation or seepage velocity input parameters.

- Concurrent Intermediate zone data from 2008 at BDC-3-60 (9.8 ug/L VC) and BDC-6-60 (43 ug/L VC) show higher vinyl chloride concentrations downgradient (Table 3). A higher downgradient concentration is consistent with several conceptual models including: source decay is faster than biodegradation rates (resulting in a detached plume), or that the wells are not on the same flow tube.
- The CG-137-WT (CI Plant 2) input concentrations estimate TCE (4.2 ug/L) and VC (4.0 ug/L) concentrations at 360 feet downgradient lower than observed CI-10-WT TCE (36 ug/L) and higher than observed VC (non-detect at 0.2 ug/L); and TCE (0.7 ug/L) and VC (1.8 ug/L) concentrations at 720 feet downgradient similar or higher than observed CI-14-WT TCE (1.3 ug/L) and higher than observed VC (non-detect at 0.2 ug/L). this is consistent with a higher concentration portion of the groundwater plume near the Olympic Medical building, and overall consistent with the model input parameters being consistent with site conditions.
- The CI-MW-7 (WT) (Plant 4) input concentrations estimate TCE (31.9 ug/L) and VC (20.6 ug/L) concentrations at 240 feet downgradient equal to or higher than observed CI-9-WT TCE (23 ug/L) and VC (non-detect at 0.2 ug/L) concentrations located approximately 260 feet downgradient.

These results suggest that the fate and transport values are acceptable and that remediation levels calculated based on the steady state runs are likely to be conservatively protective of surface water. Additional comparison of steady state runs using equivalent input parameters are included in the Remedial Investigation Reports (PGG, 2012; Farallon, 2012).

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TABLES AND FIGURES

modeling appendix 8-8-16.docx
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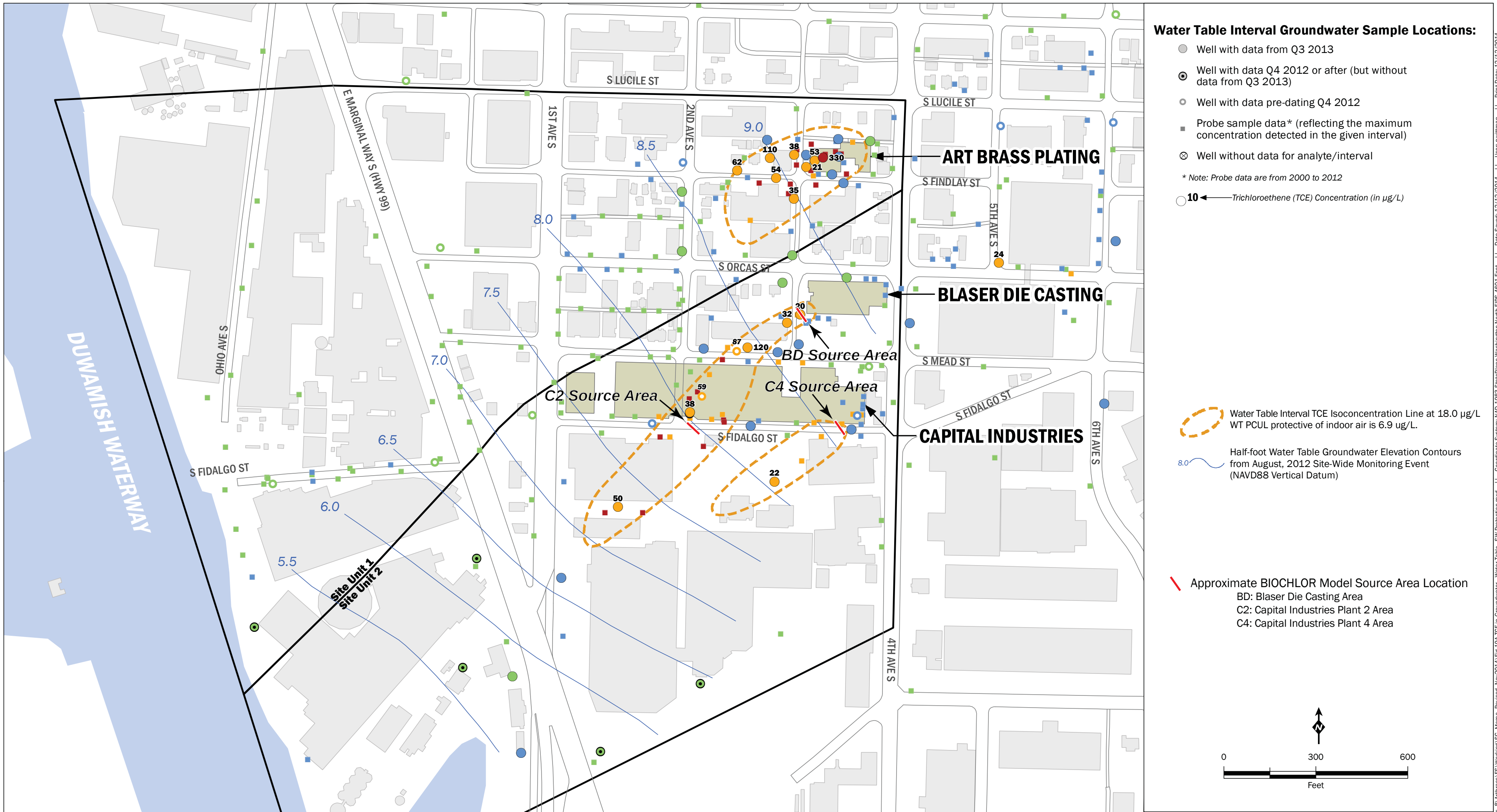


Figure 1. Site Diagram
W4 SU2 Fate and Transport Modeling

Figure modified from SCM Figure 19A (Aspect, 2014)

Aspect Consulting	DEC-2014	BY: PPW	PGG
	PROJECT NO. 050067	REV BY: RAA	

Table 1. Preliminary Groundwater Cleanup Levels
West of Fourth, Seattle, Washington

Constituent of Concern	Carcinogen or Non-Carcinogen	Preliminary Cleanup Levels (PCULs)											
		Puget Sound Background Concentrations for Metals	Soil Cleanup Level Protective of Direct Contact Pathway (Unrestricted Land Use)[1]	Soil Cleanup Level Protective of Direct Contact Pathway (Industrial Land Use)[1]	Soil Cleanup Level Protective of Air Quality based on Protection of Groundwater as Potable Drinking Water[2]	Soil Cleanup Level Protective of Groundwater Concentrations Protective of Surface Water Quality[3]	Groundwater Cleanup Level Protective of Air Quality Water Table Zone (Unrestricted Land Use)[4]	Groundwater Cleanup Level Protective of Air Quality Water Table Zone (Industrial Land Use)[4]	Groundwater Cleanup Level Protective of Surface Water[5]	Air Cleanup Level Protective of Inhalation Pathway (Unrestricted Land Use)[1]	Air Cleanup Level Protective of Inhalation Pathway (Industrial Land Use)[1]	Surface Water Cleanup Level Protective of Human Health[6]	Surface Water Cleanup Level Protective of Aquatic Life
		(Milligrams/kilogram)					(Micrograms/liter)			(Micrograms/cubic meter)		(Micrograms/liter)	
Tetrachloroethene	Carcinogen	--	476	21,000	0.08	0.44	116	482	29	9.6	40	29	--
Trichloroethene	Carcinogen	--	12	1,750	0.03	0.057	6.9	37	7	0.37	2	7	194 [10]
cis-1,2-Dichloroethene	Non-Carcinogen	--	160	7,000	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	Non-Carcinogen	--	1,600	70,000	0.59	62	559	1,224	4,000	27.4	60	4,000	--
1,1-Dichloroethene	Non-Carcinogen	--	4,000	175,000	0.055	0.025	538	1,176	3.2	91.4	200	3.2	--
Vinyl chloride	Carcinogen	--	0.67	87.5	0.002	0.010	1.3	12.7	1.6	0.28	2.8	1.6	210 [11]
1,4-Dioxane	Carcinogen	--	10	1,310	0.004	0.32	2,551	25,510	78	0.5	5	78	--
Arsenic	Carcinogen	20	20	87.5	Not Applicable	0.082	Not Applicable	Not Applicable	0.14 / 5 [8]	Not Applicable	Not Applicable	0.14 / 5 [8]	36 [12]
Barium	Non-Carcinogen	--	16,000	700,000	Not Applicable	824	Not Applicable	Not Applicable	--	Not Applicable	Not Applicable	--	--
Cadmium	Non-Carcinogen	1	80	3,500	Not Applicable	1.2	Not Applicable	Not Applicable	8.8	Not Applicable	Not Applicable	--	8.8 [13]
Copper	Non-Carcinogen	36	3,200	140,000	Not Applicable	1.1	Not Applicable	Not Applicable	3.1 [9]	Not Applicable	Not Applicable	--	3.1 [13]
Iron	Non-Carcinogen	58,700	58,700	2,450,000	Not Applicable	--	Not Applicable	Not Applicable	--	Not Applicable	Not Applicable	1,000	--
Manganese	Non-Carcinogen	1,200	11,200	490,000	Not Applicable	--	Not Applicable	Not Applicable	100	Not Applicable	Not Applicable	100	--
Nickel	Non-Carcinogen	48	1,600	70,000	Not Applicable	11	Not Applicable	Not Applicable	8.2	Not Applicable	Not Applicable	4,600	8.2 [13]
Zinc	Non-Carcinogen	85	24,000	1,050,000	Not Applicable	101	Not Applicable	Not Applicable	81	Not Applicable	Not Applicable	26,000	81 [13]

NOTES:

Preliminary cleanup levels presented represent the most stringent cleanup levels for the constituent of concern listed in the media indicated.

-- indicates no value is available. In the case of ARARs, the reference sources do not publish values for the noted chemicals. In the case of calculated values, one or more input parameters are not available.

"Not Applicable" is used where the constituent of concern will not affect the media of potential concern due to an incomplete pathway.

[1] Cleanup level is based on standard Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method B (unrestricted land use) or Method C (industrial land use) values from the Cleanup and Risk Calculations tables (CLARC).

[2] Soil cleanup levels for protection of air quality are calculated using MTCA Equation 747-1 where the potable Method B groundwater cleanup level was used as Cw. Concentrations of hazardous substances in soil that meet the potable groundwater protection standard currently are considered sufficiently protective of the air pathway for unrestricted and industrial land uses.

[3] Soil cleanup levels for protection of surface water quality are calculated using MTCA Equation 747-1 where the groundwater cleanup level protective of surface water in this table was used as Cw.

[4] Groundwater cleanup levels protective of the air pathway for unrestricted land use (residential and commercial sites) and industrial land use were derived using the following equation: Gwcul = Aircul/GIVF.

[5] Human health and marine aquatic ecologic receptors were considered. Refer to the Surface Water Cleanup Levels Protective of Human Health and Aquatic Life. The more stringent value of the two receptors has been listed for the Groundwater Cleanup Level Protective of Surface Water.

[6] The most stringent exposure pathway for human health receptors are for consumption of fish. Listed values are based on ARARs listed in CLARC with one exception. 1,4-dioxane is derived from MTCA Method B default values

[8] Arsenic Cleanup level of 5 ug/L based on background concentrations for state of Washington (MTCA Table 720-1).

[9] The surface water cleanup level for copper had previously been tabulated as 2.4ug/L; however this value is based on an approach using site-specific water effects ratio which has not been determined. We have replaced this with 3.1 ug/L, National Recommended Water Quality Criteria published by EPA under 304 of the Federal Clean Water Act - Aquatic Life Criteria Table.

[10] Oak Ridge Nation Laboratory (ORNL) Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota

[11] Peer Review Literature - DeRooij et al., 2004, *Euro Chlor Risk Assessment for the Marine Environment OSPARCOM Region – North Sea – Environmental Monitoring and Assessment*

[12] WAC- 173-201A-240

[13] National Recommended Water Quality Criteria published by EPA under 304 of the Federal Clean Water Act - Aquatic Life Criteria Table

Table updated August 14, 2015 based on revisions to AWQC and July 20, 2016 based on Ecology comments on the Draft FS Reports for SU1 and SU2 (clarify footnotes, add sediment values, add surface water CULs protective of aquatic life).

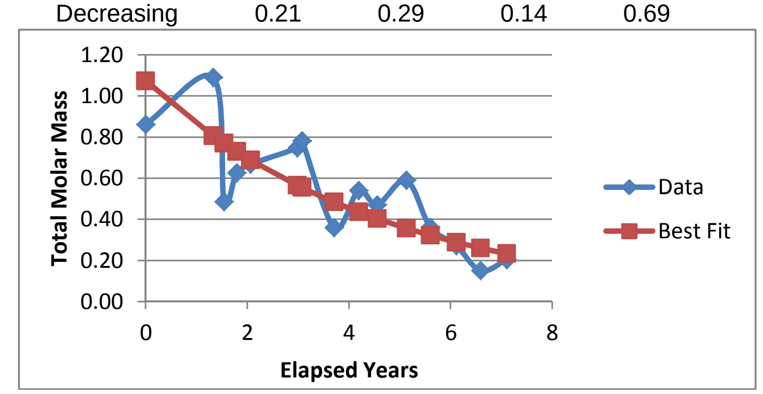
Table 2. Fate and Transport Modeling Parameters
West of Fourth, Seattle, Washington

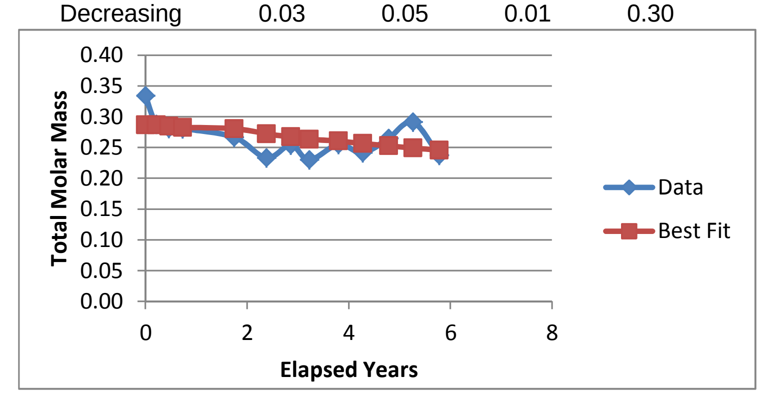
Model Parameter	Units	Data Source	Water Table	Shallow	Intermediate
Computer Program			BIOCHLOR	BIOCHLOR	BIOCHLOR
Source Area Dimensions					
CI Source Area 1 Width	ft	Farallon 2011	50	50	50
CI Plant 4 Source Area Width	ft	Farallon 2011	50	50	50
Blaser Source Width	ft	PGG 2012	50	50	50
East Marginal	ft	--	200	200	200
Source Area Thickness	ft	--	15	20	20
CI Plant 2 Source Area Concentrations (C2) (1,200 ft to Duwamish)					
PCE	ug/L	Aspect 2014	0	0	0
TCE	ug/L	Aspect 2014	45	68	0
cis-1,2 DCE	ug/L	Aspect 2014	26	24	0
VC	ug/L	Aspect 2014	0.21	10	83
CI Plant 4 Source Area Concentrations (C4) (1,200 ft to Duwamish)					
PCE	ug/L	Aspect 2014	6.2	0	0
TCE	ug/L	Aspect 2014	170	0	0
cis-1,2 DCE	ug/L	Aspect 2014	120	17.4	0
VC	ug/L	Aspect 2014	4.6	2.3	0.47
Blaser Source Area Concentrations (BD) (1,750 ft to Duwamish)					
PCE	ug/L	Aspect 2014	0	0	0
TCE	ug/L	Aspect 2014	110	0	0
cis-1,2 DCE	ug/L	Aspect 2014	60	22	4.2
VC	ug/L	Aspect 2014	9.2	7.2	12
Blaser Source Area Pre-Interim Action Concentrations (BD)*					
PCE	ug/L	PGG 2012	0	--	--
TCE	ug/L	PGG 2012	2000	--	--
cis-1,2 DCE	ug/L	PGG 2012	1800	--	--
VC	ug/L	PGG 2012	550	--	--
Hydraulic Gradient (G)					
Mean	ft/ft	PGG 2012	0.0012	0.0011	0.0014
Number of Observations	--	PGG 2012	8	8	7
Hydraulic Conductivity (K)	cm/sec	Aquifer Slug Tests [2]	1.7E-02	9.99E-03	2.8E-03
Effective Porosity (n)	--	Nominal Value	0.25	0.25	0.25
Seepage Velocity (v)	ft/year	Calculated as: v = (K*G)/n	83	45	16
Anisotropy Factor	--		n/a	n/a	n/a
Dispersivity					
Longitudinal (α_x)	--	Xu - Eckstein [3]	31.2	31.2	31.2
Transverse (α_y)	--	(α x) * 0.1	3.1	3.1	3.1
Vertical (α_z)	--	No Vertical Dispersion	1.0E-99	1.0E-99	1.0E-99
Plume length for calculation	ft	Map Distance	varies	varies	varies
Soil Bulk Density	kg/L	MTCA Common Assumption	1.51	1.51	1.51
Soil Fraction Organic Carbon (foc)	%	Soil Measurements	0.2	0.2	0.2
Koc					
Tetrachloroethene	L/kg	MTCA CLARC Tables	265	265	265
Trichloroethene	L/kg	MTCA CLARC Tables	94	94	94
cis-1,2 Dichloroethene	L/kg	MTCA CLARC Tables	35.5	35.5	35.5
Vinyl Chloride	L/kg	MTCA CLARC Tables	18.6	18.6	18.6
Retardation Factor (R) [1]					
PCE	--	Calculated	4.2	4.2	4.2
TCE	--	Calculated	2.1	2.1	2.1
cis-1,2 DCE	--	Calculated	1.4	1.4	1.4
VC	--	Calculated	1.2	1.2	1.2
Average Value			2.25	2.25	2.25
Biodegradation Rates (as half-lives)					
PCE	years	Newell (2000) 25th Percentile	1.2	1.2	1.2
TCE	years	Newell (2000) 25th Percentile	1.8	1.8	1.8
cis-1,2 DCE	years	Newell (2000) 25th Percentile	1.6	1.6	1.6
VC	years	Newell (2000) 25th Percentile	1.7	1.7	1.7
Simulation Time					
Steady State Run	years		500	500	500

nr - Not reported in literature reference
n/a - Not applicable to the model
[1] R = 1 + (p/n) * Kd
*Kd = foc * Koc*
p = dry bulk density
n = porosity
[2] See Remedial Investigations for discussion of hydraulic conductivity values (PGG, 2012; Aspect, 2012, Farallon, 2012).
[3] Xu, M. and Y. Eckstein, 1995, *Use of Weighted Least-Squares Method in Evaluation of the Relationship Between Dispersivity and Scale.* J. Ground Water, 33(6): 905-908.
Units: ft= feet; cm/sec = centimeters per second; ug/L = micrograms per liter; L/kg = liters per kilogram.
See Table 2 for source decay term (ks)
Art Brass modeling of metals fate and transport specific to SU1 is described in Aspect, 2014.

Table 3a. Source Decay Estimates - Based on Total Moles CVOC
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*SDR, k_s (/year) 90% upper*	*SDR, k_s (/year) 90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*	umol/L	*Max*	*0.60*	*0.75*	*0.46*	*0.89*	*4.61*
											Min	*-0.04*	*-0.02*	*-0.06*	*0.12*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.24*	*0.11*	*0.59*	*1.52*
BDC-2-WT	BDC	2/1/2008	0.00	0.7	15	0.1	3.7	86	0.4	0.86	Decreasing	0.21	0.29	0.14	0.69	1.1
BDC-2-WT	BDC	6/1/2009	1.33	2	36	0.1	5.5	81	1.5	1.09						
BDC-2-WT	BDC	8/18/2009	1.54	0.88	13	0.01	3.2	40	0.38	0.49						
BDC-2-WT	BDC	11/17/2009	1.79	0.72	13	0.01	3.9	58	0.14	0.63						
BDC-2-WT	BDC	2/24/2010	2.06	1.1	23	0.1	3.5	45	2.5	0.67						
BDC-2-WT	BDC	1/27/2011	2.99	0.97	26	0.01	3.2	51	3	0.75						
BDC-2-WT	BDC	3/1/2011	3.08	1.1	27	0.01	3.5	53	3.3	0.78						
BDC-2-WT	BDC	10/18/2011	3.71	0.29	6.6	0.01	2	35	0.098	0.36						
BDC-2-WT	BDC	4/11/2012	4.19	0.43	14	0.01	2.5	39	4.3	0.54						
BDC-2-WT	BDC	8/22/2012	4.56	0.49	12	0.01	3.6	39	0.49	0.47						
BDC-2-WT	BDC	3/20/2013	5.13	0.57	22	0.01	2.7	33	4.9	0.59						
BDC-2-WT	BDC	9/9/2013	5.60	0.28	8.7	0.01	2.2	32	0.2	0.36						
BDC-2-WT	BDC	3/14/2014	6.11	0.27	6.3	0.01	1.8	24	0.18	0.27						
BDC-2-WT	BDC	9/5/2014	6.59	0.11	2.5	0.01	0.64	15	0.17	0.15						
BDC-2-WT	BDC	3/12/2015	7.11	0.17	4.8	0.01	1.1	18	0.23	0.20						
BDC-3-40	BDC	6/1/2009	0.00	0.16	21	0.01	0.01	0.01	7.2	0.33	Decreasing	0.03	0.05	0.01	0.30	0.3
BDC-3-40	BDC	8/18/2009	0.21	0.17	17	0.01	0.01	0.01	6.9	0.29						
BDC-3-40	BDC	11/17/2009	0.46	0.15	19	0.01	0.01	0.01	5.2	0.28						
BDC-3-40	BDC	2/24/2010	0.73	0.14	20	0.01	0.062	0.01	4.5	0.28						
BDC-3-40	BDC	3/1/2011	1.75	0.24	22	0.01	0.025	0.01	2.3	0.27						
BDC-3-40	BDC	10/18/2011	2.38	0.16	19	0.01	0.01	0.01	2.2	0.23						
BDC-3-40	BDC	4/11/2012	2.86	0.18	21	0.01	0.025	0.01	2.2	0.25						
BDC-3-40	BDC	8/22/2012	3.22	0.21	18	0.01	0.026	0.01	2.6	0.23						
BDC-3-40	BDC	3/20/2013	3.80	0.2	20	0.01	0.029	0.01	2.9	0.26						
BDC-3-40	BDC	9/9/2013	4.27	0.17	19	0.01	0.026	0.01	2.7	0.24						
BDC-3-40	BDC	3/14/2014	4.78	0.21	20	0.01	0.038	0.01	3.5	0.26						
BDC-3-40	BDC	9/5/2014	5.26	0.15	22	0.01	0.028	0.01	3.9	0.29						
BDC-3-40	BDC	3/12/2015	5.78	0.14	16	0.01	0.034	0.01	4.4	0.24						
BDC-3-60	BDC	6/1/2009	0.00	0.01	1.8	0.01	0.01	0.01	9.8	0.18	Decreasing	0.12	0.31	-0.06	0.12	0.2
BDC-3-60	BDC	8/18/2009	0.21	0.01	2.3	0.01	0.01	0.01	12	0.22						
BDC-3-60	BDC	11/17/2009	0.46	0.01	0.5	0.01	0.01	0.01	4.2	0.07						
BDC-3-60	BDC	2/24/2010	0.73	0.01	0.32	0.01	0.01	0.01	2.7	0.05						
BDC-3-60	BDC	3/1/2011	1.75	0.01	0.32	0.01	0.01	0.01	2	0.04						
BDC-3-60	BDC	10/18/2011	2.38	0.01	3	0.01	0.01	0.01	5.3	0.12						
BDC-3-60	BDC	4/11/2012	2.86	0.01	0.58	0.01	0.01	0.01	2.2	0.04						
BDC-3-60	BDC	8/22/2012	3.22	0.03	4.2	0.01	0.01	0.01	4.9	0.12						
BDC-3-60	BDC	3/20/2013	3.80	0.01	0.94	0.01	0.01	0.01	1.3	0.03						
BDC-3-60	BDC	9/9/2013	4.27	0.021	3.4	0.01	0.01	0.01	4.9	0.11						
BDC-3-60	BDC	3/14/2014	4.78	0.01	0.17	0.01	0.01	0.01	1.2	0.02						
BDC-3-60	BDC	9/5/2014	5.26	0.01	2.9	0.01	0.01	0.01	5.9	0.12						
BDC-3-60	BDC	3/12/2015	5.78	0.01	1.6	0.01	0.01	0.01	2.2	0.05						





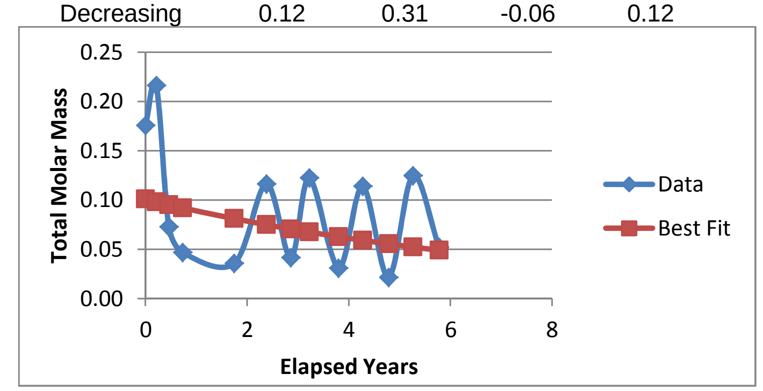
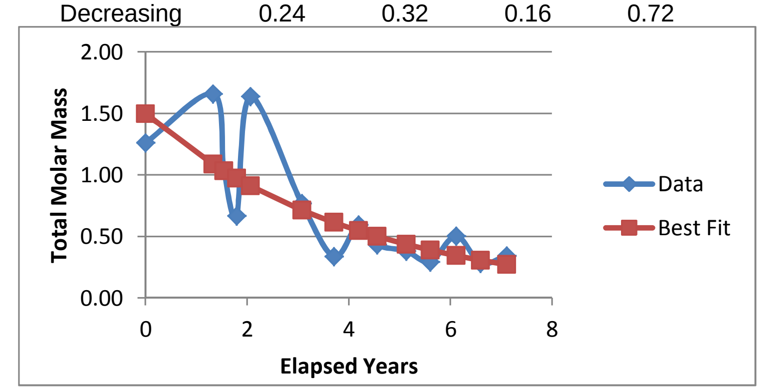
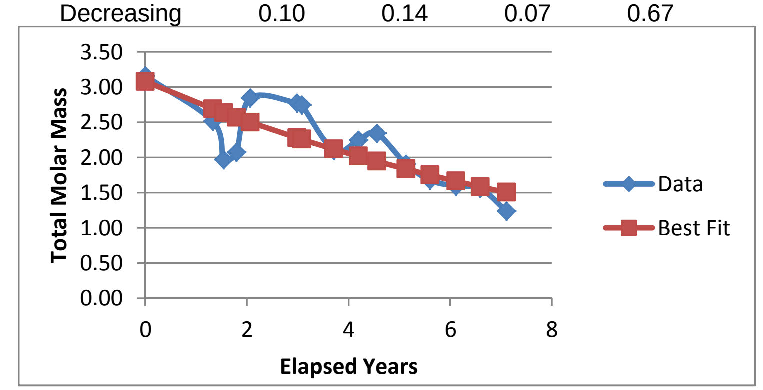


Table 3a. Source Decay Estimates - Based on Total Moles CVOC

West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*90% upper*	*90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*		*Max*	*0.60*	*0.75*	*0.46*	*0.89*	*4.61*
										umol/L	*Min*	*-0.04*	*-0.02*	*-0.06*	*0.12*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.24*	*0.11*	*0.59*	*1.52*
BDC-3-WT	BDC	2/1/2008	0.00	1.2	52		6	75	5	1.26	Decreasing	0.24	0.32	0.16	0.72	1.7
BDC-3-WT	BDC	6/1/2009	1.33	2	59	0.1	13	110	3.6	1.66						
BDC-3-WT	BDC	8/18/2009	1.54	0.4	27	0.1	9.1	87	0.2	1.04						
BDC-3-WT	BDC	11/17/2009	1.79	0.34	17	0.01	5.2	57	0.11	0.67						
BDC-3-WT	BDC	2/24/2010	2.06	2	60	0.1	8.6	100	9.2	1.64						
BDC-3-WT	BDC	3/1/2011	3.08	0.72	29	0.01	4.2	48	3.4	0.77						
BDC-3-WT	BDC	10/18/2011	3.71	0.13	9.8	0.01	2.8	27	0.063	0.34						
BDC-3-WT	BDC	4/11/2012	4.19	0.45	25	0.01	3.7	32	3.2	0.60						
BDC-3-WT	BDC	8/22/2012	4.56	0.2	17	0.01	3.9	28	0.11	0.43						
BDC-3-WT	BDC	3/20/2013	5.13	0.26	15	0.01	2.5	21	2.4	0.38						
BDC-3-WT	BDC	9/9/2013	5.60	0.12	11	0.01	2.5	20	0.11	0.29						
BDC-3-WT	BDC	3/14/2014	6.11	0.3	22	0.01	3.9	21	4.6	0.50						
BDC-3-WT	BDC	9/5/2014	6.59	0.11	14	0.01	2	15	0.17	0.28						
BDC-3-WT	BDC	3/12/2015	7.11	0.13	17	0.01	2.9	17	0.44	0.34						
BDC-6-WT	BDC	2/1/2008	0.00	7	110		6.4	230	8.5	3.16	Decreasing	0.10	0.14	0.07	0.67	3.2
BDC-6-WT	BDC	6/1/2009	1.33	3.5	69	0.1	4.8	200	12	2.51						
BDC-6-WT	BDC	8/18/2009	1.54	2.7	43	0.1	3.4	150	20	1.97						
BDC-6-WT	BDC	11/17/2009	1.79	3.6	56	0.5	4.5	160	12	2.07						
BDC-6-WT	BDC	2/24/2010	2.06	5.7	110	0.1	7	180	13	2.84						
BDC-6-WT	BDC	1/27/2011	2.99	6.4	130	0.5	7.3	160	4.3	2.77						
BDC-6-WT	BDC	3/1/2011	3.08	5.8	120	0.1	7.8	170	4.6	2.75						
BDC-6-WT	BDC	10/18/2011	3.71	3.5	83	0.05	5.5	140	5.3	2.10						
BDC-6-WT	BDC	4/11/2012	4.19	3.7	92	0.01	6.5	140	7.7	2.24						
BDC-6-WT	BDC	8/22/2012	4.56	2.9	92	1	6.4	150	9.2	2.34						
BDC-6-WT	BDC	3/20/2013	5.13	2.6	71	0.02	4.9	130	6.6	1.90						
BDC-6-WT	BDC	9/9/2013	5.60	2	56	0.01	5.4	120	6.7	1.67						
BDC-6-WT	BDC	3/14/2014	6.11	2.4	59	0.01	4.8	110	4.5	1.59						
BDC-6-WT	BDC	9/5/2014	6.59	1.6	52	0.01	3.9	120	3.2	1.56						
BDC-6-WT	BDC	3/12/2015	7.11	1.4	40	0.01	3.6	98	1.7	1.24						
BDC-6-30	BDC	2/1/2008	0.00	0.9	20		0.4	16	6.6	0.45	Decreasing	0.23	0.29	0.18	0.82	0.5
BDC-6-30	BDC	6/1/2009	1.33	0.7	19	0.01	0.25	12	9.8	0.45						
BDC-6-30	BDC	8/18/2009	1.54	0.4	8.9	0.01	0.13	5.1	15	0.38						
BDC-6-30	BDC	11/17/2009	1.79	0.45	13	0.01	0.16	7.9	7.3	0.32						
BDC-6-30	BDC	2/24/2010	2.06	0.49	14	0.01	0.17	6.1	3.3	0.25						
BDC-6-30	BDC	3/1/2011	3.08	0.52	14	0.01	0.28	6.6	0.68	0.21						
BDC-6-30	BDC	10/18/2011	3.71	0.29	8.8	0.01	0.18	3.2	0.29	0.12						
BDC-6-30	BDC	4/11/2012	4.19	0.21	9.8	0.01	0.17	6.3	0.84	0.17						
BDC-6-30	BDC	8/22/2012	4.56	0.19	6	0.01	0.11	3	0.47	0.10						
BDC-6-30	BDC	3/20/2013	5.13	0.12	6.7	0.01	0.12	5	1.2	0.13						
BDC-6-30	BDC	9/9/2013	5.60	0.13	6.4	0.01	0.11	3.3	0.49	0.10						
BDC-6-30	BDC	3/14/2014	6.11	0.11	5.5	0.01	0.12	5.4	0.87	0.11						
BDC-6-30	BDC	9/5/2014	6.59	0.15	6.5	0.01	0.16	4.4	1.4	0.13						
BDC-6-30	BDC	3/12/2015	7.11	0.077	4.8	0.01	0.11	4.5	1.7	0.11						





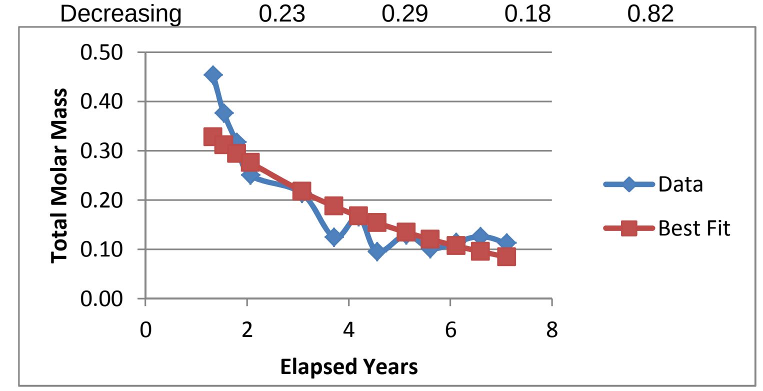
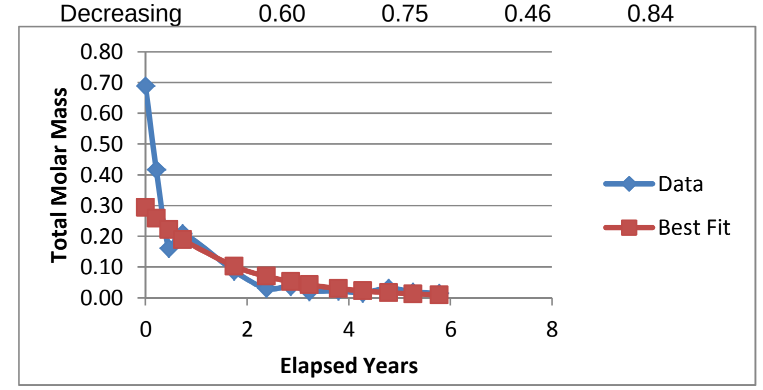


Table 3a. Source Decay Estimates - Based on Total Moles CVOC
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*90% upper*	*90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*		*Max*	*0.60*	*0.75*	*0.46*	*0.89*	*4.61*
										umol/L	*Min*	*-0.04*	*-0.02*	*-0.06*	*0.12*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.24*	*0.11*	*0.59*	*1.52*
BDC-6-60	BDC	6/1/2009	0.00	0.01	0.034	0.01	0.01	0.024	43	0.69	Decreasing	0.60	0.75	0.46	0.84	0.7
BDC-6-60	BDC	8/18/2009	0.21	0.01	0.01	0.01	0.01	0.01	26	0.42						
BDC-6-60	BDC	11/17/2009	0.46	0.01	0.01	0.01	0.01	0.01	10	0.16						
BDC-6-60	BDC	2/24/2010	0.73	0.01	0.031	0.01	0.01	0.01	13	0.21						
BDC-6-60	BDC	3/1/2011	1.75	0.01	0.026	0.01	0.01	0.01	5.4	0.09						
BDC-6-60	BDC	10/18/2011	2.38	0.01	0.01	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	4/11/2012	2.86	0.01	0.022	0.01	0.01	0.01	2.3	0.04						
BDC-6-60	BDC	8/22/2012	3.22	0.01	0.01	0.01	0.01	0.01	1.3	0.02						
BDC-6-60	BDC	3/20/2013	3.80	0.01	0.01	0.01	0.01	0.01	1.4	0.02						
BDC-6-60	BDC	9/9/2013	4.27	0.01	0.01	0.01	0.01	0.01	0.97	0.02						
BDC-6-60	BDC	3/14/2014	4.78	0.01	0.063	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	9/5/2014	5.26	0.1	0.1	0.1	0.01	0.01	0.99	0.02						
BDC-6-60	BDC	3/12/2015	5.78	0.01	0.042	0.01	0.01	0.01	0.84	0.01						
CG-137-WT	C2	5/8/2002	0.00	2.77	80.9	0.5	5.28	479	2.45	4.61	Decreasing	0.12	0.14	0.11	0.89	4.6
CG-137-WT	C2	7/17/2002	0.19	2.87	74	0.5	5.48	472	3.79	4.51						
CG-137-WT	C2	11/4/2002	0.49	1.48	42.2	0.025	3.3	283	2.7	2.68						
CG-137-WT	C2	2/17/2003	0.78	1.72	48.4	0.5	4.08	312	2.72	2.98						
CG-137-WT	C2	5/8/2003	1.00	2.12	63.1	0.5	5.46	329	2.07	3.27						
CG-137-WT	C2	8/6/2003	1.25	1.92	55.7	0.5	5.09	355	1.66	3.38						
CG-137-WT	C2	10/29/2003	1.48	2.5	44.2	2.5	2.5	244	2.5	2.42						
CG-137-WT	C2	2/4/2004	1.74	2.58	57.4	0.025	5.3	386	2.59	3.65						
CG-137-WT	C2	5/7/2004	2.00	2.16	47.3	0.025	5.38	308	1.48	2.93						
CG-137-WT	C2	11/8/2004	2.50	1.28	36.5	0.025	5	223	1.67	2.17						
CG-137-WT	C2	2/1/2005	2.74	1.54	44	0.5	4.42	269	2.02	2.60						
CG-137-WT	C2	11/4/2005	3.49	1.2	38	0.25	3.6	230	0.77	2.21						
CG-137-WT	C2	2/3/2006	3.74	1.9	75	0.25	12	260	1.8	2.93						
CG-137-WT	C2	11/2/2006	4.49	1.7	54	0.25	8.7	210	1.1	2.28						
CG-137-WT	C2	1/31/2007	4.73	2.1	65	0.25	15	250	2.6	2.79						
CG-137-WT	C2	11/14/2007	5.52	1.1	66	0.065	11	250	0.31	2.71						
CG-137-WT	C2	2/13/2008	5.77	1.6	63	0.065	11	210	1.8	2.41						
CG-137-WT	C2	11/10/2008	6.51	1.4	56	0.0385	10	200	1.3	2.24						
CG-137-WT	C2	2/12/2009	6.77	1.3	60	0.0385	10	150	2.1	1.91						
CG-137-WT	C2	11/2/2009	7.49	1.2	63	0.033	11	120	2.1	1.72						
CG-137-WT	C2	2/19/2010	7.79	1.7	53	0.16	10	130	5.3	1.74						
CG-137-WT	C2	3/24/2010	7.88	1.1	49	0.2	9.8	98	3.3	1.42						
CG-137-WT	C2	6/16/2010	8.11	0.63	50	0.2	7.7	98	0.92	1.36						
CG-137-WT	C2	9/28/2010	8.39	0.74	50	0.2	9.7	92	1.4	1.35						
CG-137-WT	C2	11/4/2010	8.49	0.94	64	0.0495	10	96	1.5	1.53						
CG-137-WT	C2	12/15/2010	8.60	1.1	48	0.5	9.4	93	4.2	1.38						
CG-137-WT	C2	2/9/2011	8.76	1.2	61	0.0495	11	92	2.7	1.50						
CG-137-WT	C2	3/15/2011	8.85	0.5	47	0.5	8.6	82	2	1.24						
CG-137-WT	C2	5/4/2012	9.99	0	46	0	8.7	62	0.83	1.05						
CG-137-WT	C2	9/26/2012	10.39	0	38	0	8.7	64	1	0.98						
CG-137-WT	C2	3/15/2013	10.85	0	40	0	7.2	39	0.49	0.79						
CG-137-WT	C2	8/8/2013	11.25	0	38	0	9.2	38	0.77	0.79						
CG-137-WT	C2	3/13/2014	11.85	0	48	0	9	31	0.86	0.84						
CG-137-WT	C2	9/24/2014	12.38	0	54	0	9.2	28	0.73	0.88						



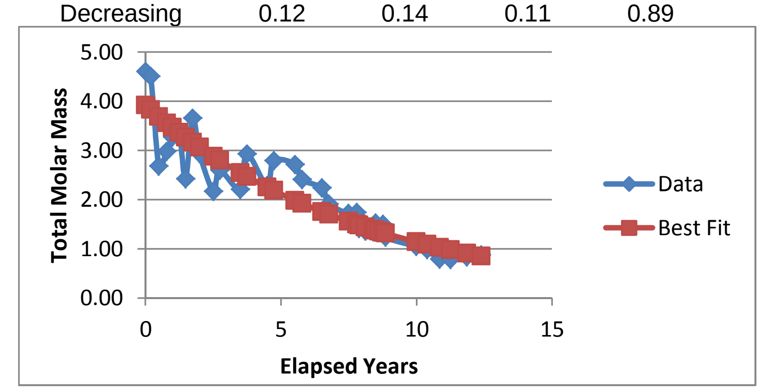
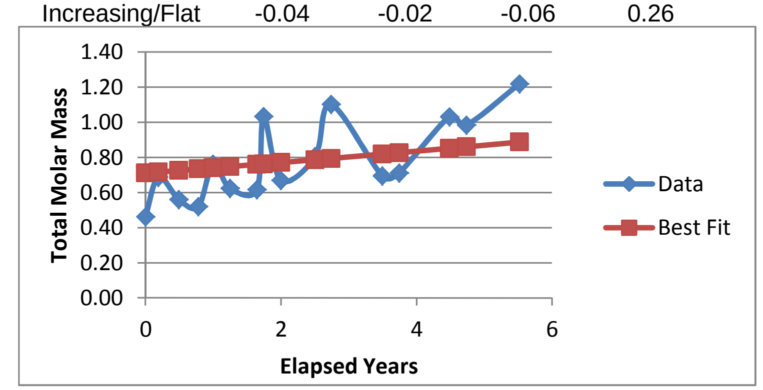
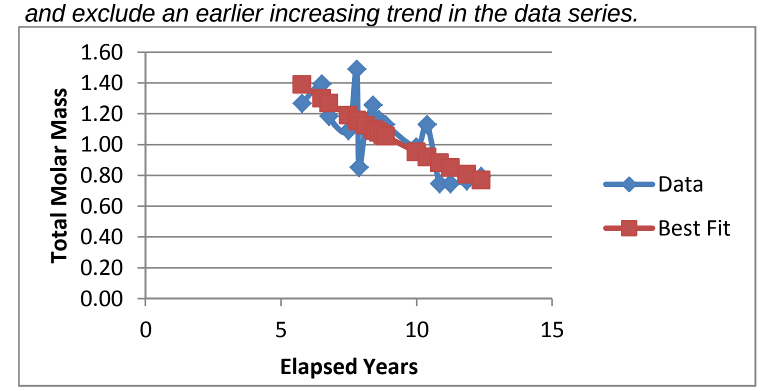


Table 3a. Source Decay Estimates - Based on Total Moles CVOC
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*SDR, k_s (/year) 90% upper*	*SDR, k_s (/year) 90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*		*Max*	*0.60*	*0.75*	*0.46*	*0.89*	*4.61*
										umol/L	*Min*	*-0.04*	*-0.02*	*-0.06*	*0.12*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.24*	*0.11*	*0.59*	*1.52*
CG-137-40	C2	5/8/2002	0.00	0.5	0.5	0.5	0.5	0.5	27.4	0.46	Increasing/Flat	-0.04	-0.02	-0.06	0.26	1.5
CG-137-40	C2	7/17/2002	0.19	0.025	0.5	0.025	0.5	0.028	42.3	0.69						
CG-137-40	C2	11/4/2002	0.49	0.025	0.5	0.025	0.5	0.01	34.3	0.56						
CG-137-40	C2	2/17/2003	0.78	0.025	0.5	0.025	0.5	0.01	31.8	0.52						
CG-137-40	C2	5/8/2003	1.00	0.025	0.5	0.025	0.5	0.028	46.9	0.76						
CG-137-40	C2	8/6/2003	1.25	0.025	0.5	0.025	0.5	0.025	38.3	0.62						
CG-137-40	C2	12/30/2003	1.65	0.025	0.5	0.025	0.5	0.01	37.8	0.62						
CG-137-40	C2	2/4/2004	1.74	0.025	0.5	0.025	0.5	0.01	63.8	1.03						
CG-137-40	C2	5/7/2004	2.00	0.025	0.5	0.025	0.5	0.55	40.9	0.67						
CG-137-40	C2	11/8/2004	2.50	0.025	0.5	0.025	0.5	0.025	49.6	0.80						
CG-137-40	C2	2/1/2005	2.74	0.025	0.5	0.025	0.5	0.025	68.2	1.10						
CG-137-40	C2	11/4/2005	3.49	0.01	0.25	0.25	0.25	0.013	43	0.69						
CG-137-40	C2	2/3/2006	3.74	0.01	0.25	0.25	0.25	0.054	44	0.71						
CG-137-40	C2	11/2/2006	4.49	0.01	0.25	0.25	0.25	0.021	64	1.03						
CG-137-40	C2	1/31/2007	4.73	0.01	0.25	0.25	0.25	0.035	61	0.98						
CG-137-40	C2	11/14/2007	5.52	0.00305	0.06	0.065	0.075	0.022	76	1.22						
CG-137-40	C2	2/13/2008	5.77	0.00305	0.06	0.065	0.075	0.022	79	1.27	*Increasing/Flat*	*0.09*	*0.12*	*0.06*	*0.61*	*1.5*
CG-137-40	C2	11/10/2008	6.51	0.00475	0.0225	0.0385	0.024	0.012	87	1.39						
CG-137-40	C2	2/12/2009	6.77	0.00475	0.0225	0.0385	0.024	0.019	74	1.18						
CG-137-40	C2	11/2/2009	7.49	0.00475	0.17	0.033	0.0455	0.00455	68	1.09						
CG-137-40	C2	2/19/2010	7.79	0.00475	0.09	0.033	0.0455	0.017	93	1.49						
CG-137-40	C2	3/24/2010	7.88	0.1	0.1	0.1	0.1	0.1	53	0.85						
CG-137-40	C2	6/16/2010	8.11	0.2	0.2	0.2	0.2	0.2	68	1.10						
CG-137-40	C2	9/28/2010	8.39	0.2	0.2	0.2	0.2	0.2	78	1.26						
CG-137-40	C2	11/4/2010	8.49	0.00475	0.0335	0.0495	0.0455	0.00455	68	1.09						
CG-137-40	C2	12/15/2010	8.60	0.2	1.4	0.2	0.2	0.98	71	1.16						
CG-137-40	C2	2/9/2011	8.76	0.00295	0.0335	0.0495	0.0285	0.0019	70	1.12						
CG-137-40	C2	3/15/2011	8.85	0.2	0.2	0.2	0.2	0.2	70	1.13						
CG-137-40	C2	5/4/2012	9.99	0.2	0.2	0.2	0.2	0.2	61	0.98						
CG-137-40	C2	9/26/2012	10.39	0.2	0.2	0.2	0.2	0.2	70	1.13						
CG-137-40	C2	3/15/2013	10.85	0.2	0.2	0.2	0.2	0.2	46	0.74						
CG-137-40	C2	8/8/2013	11.25	0.2	0.2	0.2	0.2	0.2	46	0.74						
CG-137-40	C2	3/13/2014	11.85	0.1	0.61	0.1	0.1	0.38	47	0.76						
CG-137-40	C2	9/24/2014	12.38	0.2	0.2	0.2	0.2	0.2	49	0.79						
CI-137-50	C2	3/24/2010	0.00	0.1	0.1	0.1	0.1	0.1	11	0.18	Decreasing	0.42	0.55	0.28	0.81	0.31
CI-137-50	C2	6/16/2010	0.23	0.1	0.1	0.1	0.1	0.1	15	0.24						
CI-137-50	C2	9/28/2010	0.52	0.1	0.1	0.1	0.1	0.1	16	0.26						
CI-137-50	C2	12/15/2010	0.73	0.1	0.1	0.1	0.1	0.1	19	0.31						
CI-137-50	C2	3/15/2011	0.98	0.1	0.1	0.1	0.1	0.1	17	0.28						
CI-137-50	C2	5/4/2012	2.12	0.1	0.1	0.1	0.1	0.1	12	0.20						
CI-137-50	C2	9/26/2012	2.51	0.1	0.1	0.1	0.1	0.1	6.5	0.11						
CI-137-50	C2	3/14/2013	2.98	0.1	0.1	0.1	0.1	0.1	4.1	0.07						
CI-137-50	C2	8/8/2013	3.38	0.1	0.1	0.1	0.1	0.1	3.9	0.07						
CI-137-50	C2	3/13/2014	3.97	0.1	0.1	0.1	0.1	0.1	3.1	0.05						



**Values in italics are for well CG-137-40 from 2008 to 2014 and exclude an earlier increasing trend in the data series.*



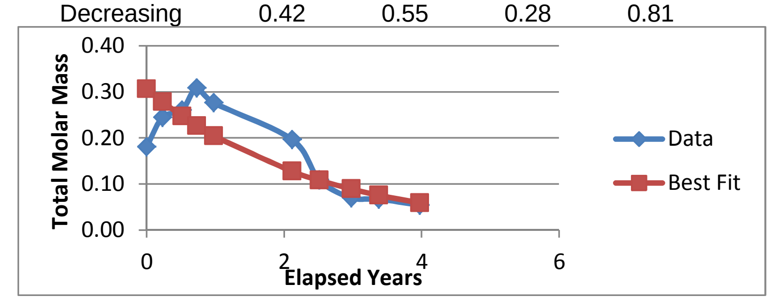


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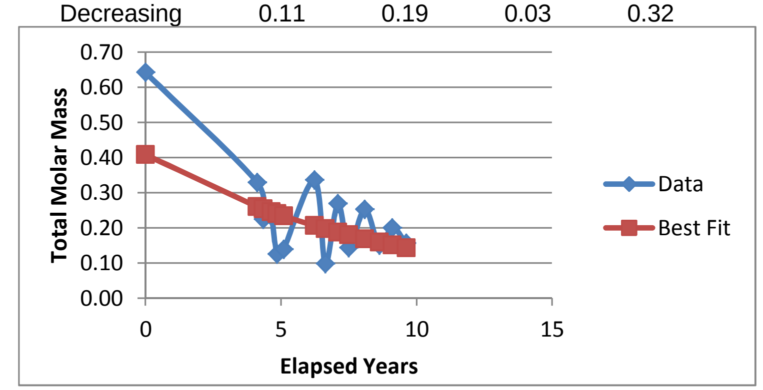
Table 3a. Source Decay Estimates - Based on Total Moles CVOC
West of Fourth, Seattle, Washington

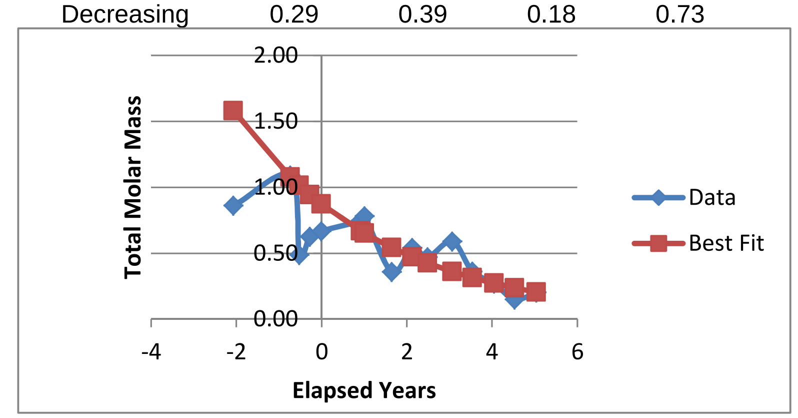
Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*SDR, k_s (/year) 90% upper*	*SDR, k_s (/year) 90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*		*Max*	*0.60*	*0.75*	*0.46*	*0.89*	*4.61*
										umol/L	*Min*	*-0.04*	*-0.02*	*-0.06*	*0.12*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.24*	*0.11*	*0.59*	*1.52*
CI-MW-7	C4	2/9/2006	0.00	0.36	6.7	46	0.1	38	0.1	0.64	Decreasing	0.11	0.19	0.03	0.32	0.64
CI-MW-7	C4	3/24/2010	4.12	0.3	5.9	22	0.1	17	0.1	0.33						
CI-MW-7	C4	6/16/2010	4.35	0.44	6.2	13	0.1	9.3	0.38	0.22						
CI-MW-7	C4	9/28/2010	4.64	0.35	3.8	18	0.1	9.6	0.45	0.23						
CI-MW-7	C4	12/15/2010	4.85	0.63	4.3	2.4	0.1	6.5	0.57	0.12						
CI-MW-7	C4	3/15/2011	5.10	0.5	3.5	5.3	0.1	7.9	0.28	0.14						
CI-MW-7	C4	5/4/2012	6.24	0.2	2.9	26	0.1	19	0.1	0.34						
CI-MW-7	C4	9/26/2012	6.63	0.45	3.2	3.6	0.1	4.7	0.1	0.10						
CI-MW-7	C4	3/13/2013	7.09	0.3	2.9	21	0.1	14	0.1	0.27						
CI-MW-7	C4	8/8/2013	7.50	0.58	4.7	8.6	0.1	4.6	0.1	0.14						
CI-MW-7	C4	3/12/2014	8.09	0.29	2.8	21	0.1	12	0.1	0.25						
CI-MW-7	C4	9/23/2014	8.63	0.43	3.3	11	0.1	5.5	0.2	0.15						
CI-MW-7	C4	3/17/2015	9.10	0.54	4.3	13	0.1	8.7	0.25	0.20						
CI-MW-7	C4	9/23/2015	9.63	0.41	3.1	12	0.1	4.6	0.74	0.16						

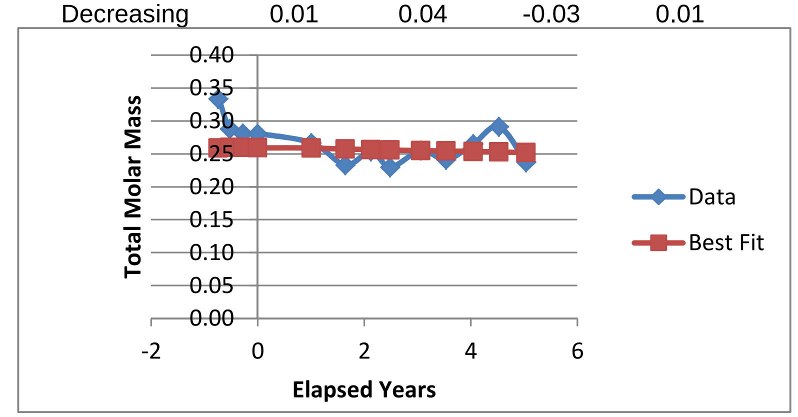


Notes:
Non-detect result values included at half the reporting limit

Table 3b. Source Decay Estimates - Based on Total Moles CVOC 2010 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498	umol/L	Max	0.45	0.62	0.27	0.93	4.61
											Min	-0.04	0.04	-0.30	0.01	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.17	0.27	0.07	0.56	1.52
BDC-2-WT	BDC	2/1/2008	-2.06	0.7	15	0.1	3.7	86	0.4	0.86	Decreasing	0.29	0.39	0.18	0.73	1.1
BDC-2-WT	BDC	6/1/2009	-0.73	2	36	0.1	5.5	81	1.5	1.09						
BDC-2-WT	BDC	8/18/2009	-0.52	0.88	13	0.01	3.2	40	0.38	0.49						
BDC-2-WT	BDC	11/17/2009	-0.27	0.72	13	0.01	3.9	58	0.14	0.63						
BDC-2-WT	BDC	2/24/2010	0.00	1.1	23	0.1	3.5	45	2.5	0.67						
BDC-2-WT	BDC	1/27/2011	0.92	0.97	26	0.01	3.2	51	3	0.75						
BDC-2-WT	BDC	3/1/2011	1.01	1.1	27	0.01	3.5	53	3.3	0.78						
BDC-2-WT	BDC	10/18/2011	1.65	0.29	6.6	0.01	2	35	0.098	0.36						
BDC-2-WT	BDC	4/11/2012	2.13	0.43	14	0.01	2.5	39	4.3	0.54						
BDC-2-WT	BDC	8/22/2012	2.49	0.49	12	0.01	3.6	39	0.49	0.47						
BDC-2-WT	BDC	3/20/2013	3.07	0.57	22	0.01	2.7	33	4.9	0.59						
BDC-2-WT	BDC	9/9/2013	3.54	0.28	8.7	0.01	2.2	32	0.2	0.36						
BDC-2-WT	BDC	3/14/2014	4.05	0.27	6.3	0.01	1.8	24	0.18	0.27						
BDC-2-WT	BDC	9/5/2014	4.53	0.11	2.5	0.01	0.64	15	0.17	0.15						
BDC-2-WT	BDC	3/12/2015	5.04	0.17	4.8	0.01	1.1	18	0.23	0.20						
BDC-3-40	BDC	6/1/2009	-0.73	0.16	21	0.01	0.01	0.01	7.2	0.33	Decreasing	0.01	0.04	-0.03	0.01	0.3
BDC-3-40	BDC	8/18/2009	-0.52	0.17	17	0.01	0.01	0.01	6.9	0.29						
BDC-3-40	BDC	11/17/2009	-0.27	0.15	19	0.01	0.01	0.01	5.2	0.28						
BDC-3-40	BDC	2/24/2010	0.00	0.14	20	0.01	0.062	0.01	4.5	0.28						
BDC-3-40	BDC	3/1/2011	1.01	0.24	22	0.01	0.025	0.01	2.3	0.27						
BDC-3-40	BDC	10/18/2011	1.65	0.16	19	0.01	0.01	0.01	2.2	0.23						
BDC-3-40	BDC	4/11/2012	2.13	0.18	21	0.01	0.025	0.01	2.2	0.25						
BDC-3-40	BDC	8/22/2012	2.49	0.21	18	0.01	0.026	0.01	2.6	0.23						
BDC-3-40	BDC	3/20/2013	3.07	0.2	20	0.01	0.029	0.01	2.9	0.26						
BDC-3-40	BDC	9/9/2013	3.54	0.17	19	0.01	0.026	0.01	2.7	0.24						
BDC-3-40	BDC	3/14/2014	4.05	0.21	20	0.01	0.038	0.01	3.5	0.26						
BDC-3-40	BDC	9/5/2014	4.53	0.15	22	0.01	0.028	0.01	3.9	0.29						
BDC-3-40	BDC	3/12/2015	5.04	0.14	16	0.01	0.034	0.01	4.4	0.24						
BDC-3-60	BDC	6/1/2009	-0.73	0.01	1.8	0.01	0.01	0.01	9.8	0.18	Increasing	-0.04	0.23	-0.30	0.01	0.2
BDC-3-60	BDC	8/18/2009	-0.52	0.01	2.3	0.01	0.01	0.01	12	0.22						
BDC-3-60	BDC	11/17/2009	-0.27	0.01	0.5	0.01	0.01	0.01	4.2	0.07						
BDC-3-60	BDC	2/24/2010	0.00	0.01	0.32	0.01	0.01	0.01	2.7	0.05						
BDC-3-60	BDC	3/1/2011	1.01	0.01	0.32	0.01	0.01	0.01	2	0.04						
BDC-3-60	BDC	10/18/2011	1.65	0.01	3	0.01	0.01	0.01	5.3	0.12						
BDC-3-60	BDC	4/11/2012	2.13	0.01	0.58	0.01	0.01	0.01	2.2	0.04						
BDC-3-60	BDC	8/22/2012	2.49	0.03	4.2	0.01	0.01	0.01	4.9	0.12						
BDC-3-60	BDC	3/20/2013	3.07	0.01	0.94	0.01	0.01	0.01	1.3	0.03						
BDC-3-60	BDC	9/9/2013	3.54	0.021	3.4	0.01	0.01	0.01	4.9	0.11						
BDC-3-60	BDC	3/14/2014	4.05	0.01	0.17	0.01	0.01	0.01	1.2	0.02						
BDC-3-60	BDC	9/5/2014	4.53	0.01	2.9	0.01	0.01	0.01	5.9	0.12						
BDC-3-60	BDC	3/12/2015	5.04	0.01	1.6	0.01	0.01	0.01	2.2	0.05						





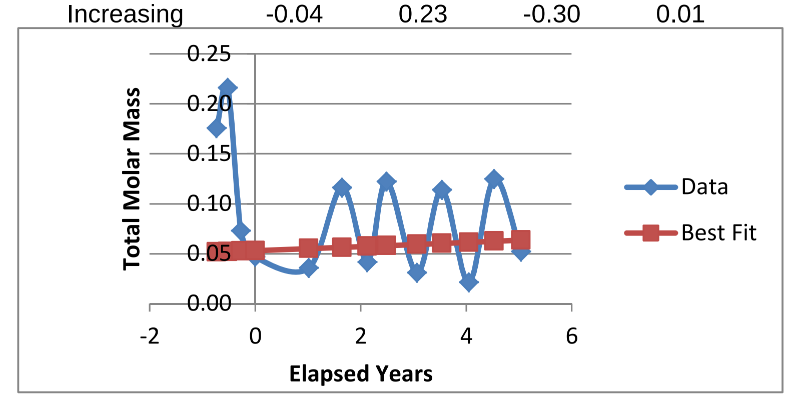


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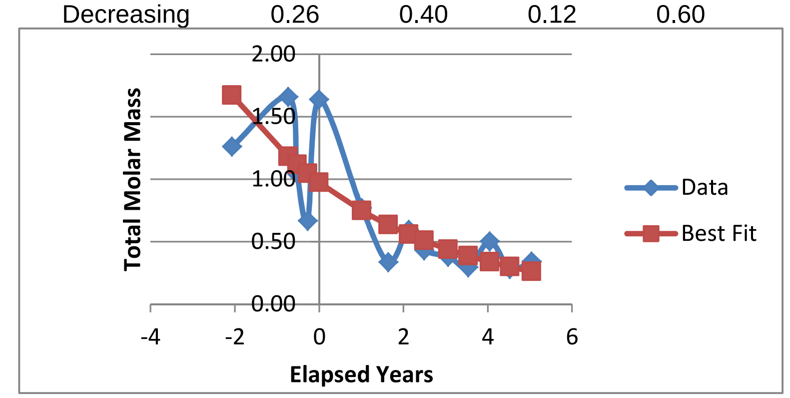
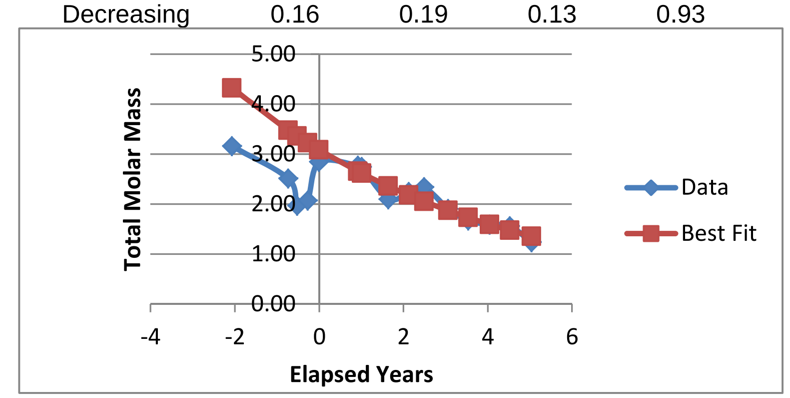
Table 3b. Source Decay Estimates - Based on Total Moles CVOC 2010 and later

West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*		*Max*	*0.45*	*0.62*	*0.27*	*0.93*	*4.61*
										umol/L	*Min*	*-0.04*	*0.04*	*-0.30*	*0.01*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.17*	*0.27*	*0.07*	*0.56*	*1.52*
BDC-3-WT	BDC	2/1/2008	-2.06	1.2	52		6	75	5	1.26	Decreasing	0.26	0.40	0.12	0.60	1.7
BDC-3-WT	BDC	6/1/2009	-0.73	2	59	0.1	13	110	3.6	1.66						
BDC-3-WT	BDC	8/18/2009	-0.52	0.4	27	0.1	9.1	87	0.2	1.04						
BDC-3-WT	BDC	11/17/2009	-0.27	0.34	17	0.01	5.2	57	0.11	0.67						
BDC-3-WT	BDC	2/24/2010	0.00	2	60	0.1	8.6	100	9.2	1.64						
BDC-3-WT	BDC	3/1/2011	1.01	0.72	29	0.01	4.2	48	3.4	0.77						
BDC-3-WT	BDC	10/18/2011	1.65	0.13	9.8	0.01	2.8	27	0.063	0.34						
BDC-3-WT	BDC	4/11/2012	2.13	0.45	25	0.01	3.7	32	3.2	0.60						
BDC-3-WT	BDC	8/22/2012	2.49	0.2	17	0.01	3.9	28	0.11	0.43						
BDC-3-WT	BDC	3/20/2013	3.07	0.26	15	0.01	2.5	21	2.4	0.38						
BDC-3-WT	BDC	9/9/2013	3.54	0.12	11	0.01	2.5	20	0.11	0.29						
BDC-3-WT	BDC	3/14/2014	4.05	0.3	22	0.01	3.9	21	4.6	0.50						
BDC-3-WT	BDC	9/5/2014	4.53	0.11	14	0.01	2	15	0.17	0.28						
BDC-3-WT	BDC	3/12/2015	5.04	0.13	17	0.01	2.9	17	0.44	0.34						
BDC-6-WT	BDC	2/1/2008	-2.06	7	110		6.4	230	8.5	3.16	Decreasing	0.16	0.19	0.13	0.93	3.2
BDC-6-WT	BDC	6/1/2009	-0.73	3.5	69	0.1	4.8	200	12	2.51						
BDC-6-WT	BDC	8/18/2009	-0.52	2.7	43	0.1	3.4	150	20	1.97						
BDC-6-WT	BDC	11/17/2009	-0.27	3.6	56	0.5	4.5	160	12	2.07						
BDC-6-WT	BDC	2/24/2010	0.00	5.7	110	0.1	7	180	13	2.84						
BDC-6-WT	BDC	1/27/2011	0.92	6.4	130	0.5	7.3	160	4.3	2.77						
BDC-6-WT	BDC	3/1/2011	1.01	5.8	120	0.1	7.8	170	4.6	2.75						
BDC-6-WT	BDC	10/18/2011	1.65	3.5	83	0.05	5.5	140	5.3	2.10						
BDC-6-WT	BDC	4/11/2012	2.13	3.7	92	0.01	6.5	140	7.7	2.24						
BDC-6-WT	BDC	8/22/2012	2.49	2.9	92	1	6.4	150	9.2	2.34						
BDC-6-WT	BDC	3/20/2013	3.07	2.6	71	0.02	4.9	130	6.6	1.90						
BDC-6-WT	BDC	9/9/2013	3.54	2	56	0.01	5.4	120	6.7	1.67						
BDC-6-WT	BDC	3/14/2014	4.05	2.4	59	0.01	4.8	110	4.5	1.59						
BDC-6-WT	BDC	9/5/2014	4.53	1.6	52	0.01	3.9	120	3.2	1.56						
BDC-6-WT	BDC	3/12/2015	5.04	1.4	40	0.01	3.6	98	1.7	1.24						
BDC-6-30	BDC	2/1/2008	-2.06	0.9	20		0.4	16	6.6	0.45	Decreasing	0.15	0.24	0.06	0.56	0.5
BDC-6-30	BDC	6/1/2009	-0.73	0.7	19	0.01	0.25	12	9.8	0.45						
BDC-6-30	BDC	8/18/2009	-0.52	0.4	8.9	0.01	0.13	5.1	15	0.38						
BDC-6-30	BDC	11/17/2009	-0.27	0.45	13	0.01	0.16	7.9	7.3	0.32						
BDC-6-30	BDC	2/24/2010	0.00	0.49	14	0.01	0.17	6.1	3.3	0.25						
BDC-6-30	BDC	3/1/2011	1.01	0.52	14	0.01	0.28	6.6	0.68	0.21						
BDC-6-30	BDC	10/18/2011	1.65	0.29	8.8	0.01	0.18	3.2	0.29	0.12						
BDC-6-30	BDC	4/11/2012	2.13	0.21	9.8	0.01	0.17	6.3	0.84	0.17						
BDC-6-30	BDC	8/22/2012	2.49	0.19	6	0.01	0.11	3	0.47	0.10						
BDC-6-30	BDC	3/20/2013	3.07	0.12	6.7	0.01	0.12	5	1.2	0.13						
BDC-6-30	BDC	9/9/2013	3.54	0.13	6.4	0.01	0.11	3.3	0.49	0.10						
BDC-6-30	BDC	3/14/2014	4.05	0.11	5.5	0.01	0.12	5.4	0.87	0.11						
BDC-6-30	BDC	9/5/2014	4.53	0.15	6.5	0.01	0.16	4.4	1.4	0.13						
BDC-6-30	BDC	3/12/2015	5.04	0.077	4.8	0.01	0.11	4.5	1.7	0.11						





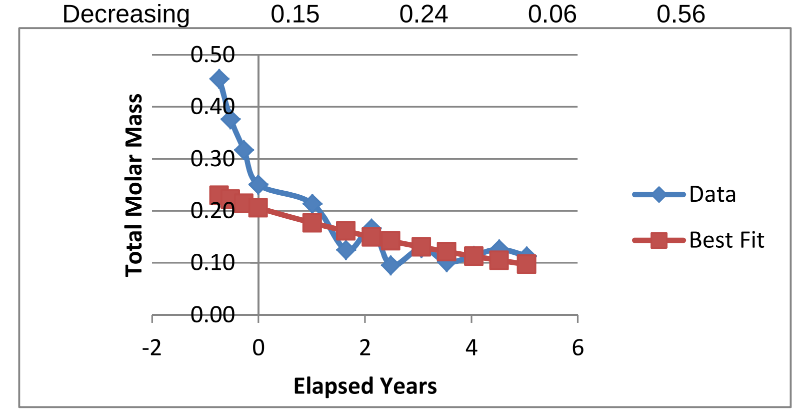
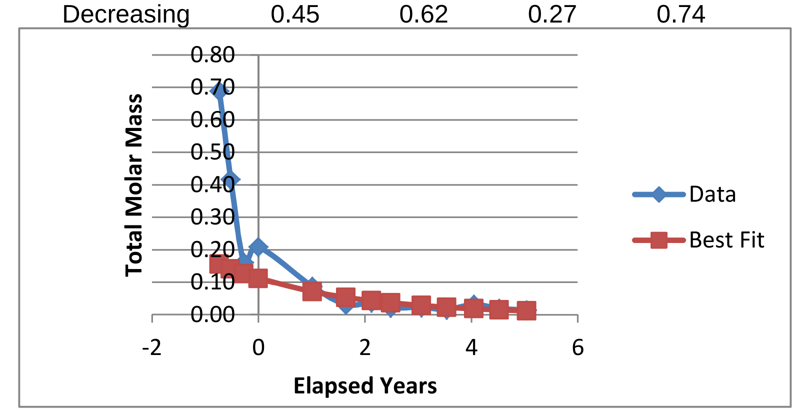


Table 3b. Source Decay Estimates - Based on Total Moles CVOC 2010 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498	umol/L	Max	0.45	0.62	0.27	0.93	4.61
											Min	-0.04	0.04	-0.30	0.01	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.17	0.27	0.07	0.56	1.52
BDC-6-60	BDC	6/1/2009	-0.73	0.01	0.034	0.01	0.01	0.024	43	0.69	Decreasing	0.45	0.62	0.27	0.74	0.7
BDC-6-60	BDC	8/18/2009	-0.52	0.01	0.01	0.01	0.01	0.01	26	0.42						
BDC-6-60	BDC	11/17/2009	-0.27	0.01	0.01	0.01	0.01	0.01	10	0.16						
BDC-6-60	BDC	2/24/2010	0.00	0.01	0.031	0.01	0.01	0.01	13	0.21						
BDC-6-60	BDC	3/1/2011	1.01	0.01	0.026	0.01	0.01	0.01	5.4	0.09						
BDC-6-60	BDC	10/18/2011	1.65	0.01	0.01	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	4/11/2012	2.13	0.01	0.022	0.01	0.01	0.01	2.3	0.04						
BDC-6-60	BDC	8/22/2012	2.49	0.01	0.01	0.01	0.01	0.01	1.3	0.02						
BDC-6-60	BDC	3/20/2013	3.07	0.01	0.01	0.01	0.01	0.01	1.4	0.02						
BDC-6-60	BDC	9/9/2013	3.54	0.01	0.01	0.01	0.01	0.01	0.97	0.02						
BDC-6-60	BDC	3/14/2014	4.05	0.01	0.063	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	9/5/2014	4.53	0.1	0.1	0.1	0.01	0.01	0.99	0.02						
BDC-6-60	BDC	3/12/2015	5.04	0.01	0.042	0.01	0.01	0.01	0.84	0.01						
CG-137-WT	C2	5/8/2002	-7.79	2.77	80.9	0.5	5.28	479	2.45	4.61	Decreasing	0.16	0.20	0.13	0.86	4.6
CG-137-WT	C2	7/17/2002	-7.59	2.87	74	0.5	5.48	472	3.79	4.51						
CG-137-WT	C2	11/4/2002	-7.29	1.48	42.2	0.025	3.3	283	2.7	2.68						
CG-137-WT	C2	2/17/2003	-7.01	1.72	48.4	0.5	4.08	312	2.72	2.98						
CG-137-WT	C2	5/8/2003	-6.79	2.12	63.1	0.5	5.46	329	2.07	3.27						
CG-137-WT	C2	8/6/2003	-6.54	1.92	55.7	0.5	5.09	355	1.66	3.38						
CG-137-WT	C2	10/29/2003	-6.31	2.5	44.2	2.5	2.5	244	2.5	2.42						
CG-137-WT	C2	2/4/2004	-6.04	2.58	57.4	0.025	5.3	386	2.59	3.65						
CG-137-WT	C2	5/7/2004	-5.79	2.16	47.3	0.025	5.38	308	1.48	2.93						
CG-137-WT	C2	11/8/2004	-5.28	1.28	36.5	0.025	5	223	1.67	2.17						
CG-137-WT	C2	2/1/2005	-5.05	1.54	44	0.5	4.42	269	2.02	2.60						
CG-137-WT	C2	11/4/2005	-4.29	1.2	38	0.25	3.6	230	0.77	2.21						
CG-137-WT	C2	2/3/2006	-4.04	1.9	75	0.25	12	260	1.8	2.93						
CG-137-WT	C2	11/2/2006	-3.30	1.7	54	0.25	8.7	210	1.1	2.28						
CG-137-WT	C2	1/31/2007	-3.05	2.1	65	0.25	15	250	2.6	2.79						
CG-137-WT	C2	11/14/2007	-2.27	1.1	66	0.065	11	250	0.31	2.71						
CG-137-WT	C2	2/13/2008	-2.02	1.6	63	0.065	11	210	1.8	2.41						
CG-137-WT	C2	11/10/2008	-1.28	1.4	56	0.0385	10	200	1.3	2.24						
CG-137-WT	C2	2/12/2009	-1.02	1.3	60	0.0385	10	150	2.1	1.91						
CG-137-WT	C2	11/2/2009	-0.30	1.2	63	0.033	11	120	2.1	1.72						
CG-137-WT	C2	2/19/2010	0.00	1.7	53	0.16	10	130	5.3	1.74						
CG-137-WT	C2	3/24/2010	0.09	1.1	49	0.2	9.8	98	3.3	1.42						
CG-137-WT	C2	6/16/2010	0.32	0.63	50	0.2	7.7	98	0.92	1.36						
CG-137-WT	C2	9/28/2010	0.60	0.74	50	0.2	9.7	92	1.4	1.35						
CG-137-WT	C2	11/4/2010	0.71	0.94	64	0.0495	10	96	1.5	1.53						
CG-137-WT	C2	12/15/2010	0.82	1.1	48	0.5	9.4	93	4.2	1.38						
CG-137-WT	C2	2/9/2011	0.97	1.2	61	0.0495	11	92	2.7	1.50						
CG-137-WT	C2	3/15/2011	1.06	0.5	47	0.5	8.6	82	2	1.24						



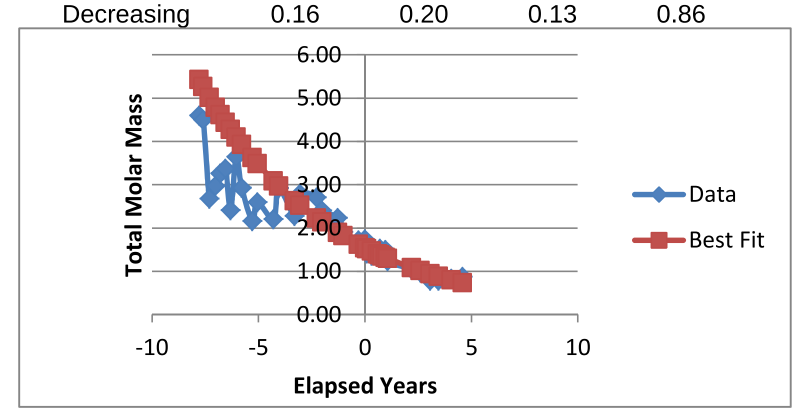


Table 3b. Source Decay Estimates - Based on Total Moles CVOC 2010 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	best-fit	SDR, k_s (/year) 90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498	umol/L	Max	0.45	0.62	0.27	0.93	4.61
											Min	-0.04	0.04	-0.30	0.01	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.17	0.27	0.07	0.56	1.52
CG-137-WT	C2	5/4/2012	2.20	0	46	0	8.7	62	0.83	1.05						
CG-137-WT	C2	9/26/2012	2.60	0	38	0	8.7	64	1	0.98						
CG-137-WT	C2	3/15/2013	3.06	0	40	0	7.2	39	0.49	0.79						
CG-137-WT	C2	8/8/2013	3.46	0	38	0	9.2	38	0.77	0.79						
CG-137-WT	C2	3/13/2014	4.06	0	48	0	9	31	0.86	0.84						
CG-137-WT	C2	9/24/2014	4.59	0	54	0	9.2	28	0.73	0.88						
CG-137-40	C2	5/8/2002	-7.79	0.5	0.5	0.5	0.5	0.5	27.4	0.46	Decreasing	0.11	0.15	0.06	0.57	1.5
CG-137-40	C2	7/17/2002	-7.59	0.025	0.5	0.025	0.5	0.028	42.3	0.69						
CG-137-40	C2	11/4/2002	-7.29	0.025	0.5	0.025	0.5	0.01	34.3	0.56						
CG-137-40	C2	2/17/2003	-7.01	0.025	0.5	0.025	0.5	0.01	31.8	0.52						
CG-137-40	C2	5/8/2003	-6.79	0.025	0.5	0.025	0.5	0.028	46.9	0.76						
CG-137-40	C2	8/6/2003	-6.54	0.025	0.5	0.025	0.5	0.025	38.3	0.62						
CG-137-40	C2	12/30/2003	-6.14	0.025	0.5	0.025	0.5	0.01	37.8	0.62						
CG-137-40	C2	2/4/2004	-6.04	0.025	0.5	0.025	0.5	0.01	63.8	1.03						
CG-137-40	C2	5/7/2004	-5.79	0.025	0.5	0.025	0.5	0.55	40.9	0.67						
CG-137-40	C2	11/8/2004	-5.28	0.025	0.5	0.025	0.5	0.025	49.6	0.80						
CG-137-40	C2	2/1/2005	-5.05	0.025	0.5	0.025	0.5	0.025	68.2	1.10						
CG-137-40	C2	11/4/2005	-4.29	0.01	0.25	0.25	0.25	0.013	43	0.69						
CG-137-40	C2	2/3/2006	-4.04	0.01	0.25	0.25	0.25	0.054	44	0.71						
CG-137-40	C2	11/2/2006	-3.30	0.01	0.25	0.25	0.25	0.021	64	1.03						
CG-137-40	C2	1/31/2007	-3.05	0.01	0.25	0.25	0.25	0.035	61	0.98						
CG-137-40	C2	11/14/2007	-2.27	0.00305	0.06	0.065	0.075	0.022	76	1.22						
CG-137-40	C2	2/13/2008	-2.02	0.00305	0.06	0.065	0.075	0.022	79	1.27						
CG-137-40	C2	11/10/2008	-1.28	0.00475	0.0225	0.0385	0.024	0.012	87	1.39						
CG-137-40	C2	2/12/2009	-1.02	0.00475	0.0225	0.0385	0.024	0.019	74	1.18						
CG-137-40	C2	11/2/2009	-0.30	0.00475	0.17	0.033	0.0455	0.00455	68	1.09						
CG-137-40	C2	2/19/2010	0.00	0.00475	0.09	0.033	0.0455	0.017	93	1.49						
CG-137-40	C2	3/24/2010	0.09	0.1	0.1	0.1	0.1	0.1	53	0.85						
CG-137-40	C2	6/16/2010	0.32	0.2	0.2	0.2	0.2	0.2	68	1.10						
CG-137-40	C2	9/28/2010	0.60	0.2	0.2	0.2	0.2	0.2	78	1.26						
CG-137-40	C2	11/4/2010	0.71	0.00475	0.0335	0.0495	0.0455	0.00455	68	1.09						
CG-137-40	C2	12/15/2010	0.82	0.2	1.4	0.2	0.2	0.98	71	1.16						
CG-137-40	C2	2/9/2011	0.97	0.00295	0.0335	0.0495	0.0285	0.0019	70	1.12						
CG-137-40	C2	3/15/2011	1.06	0.2	0.2	0.2	0.2	0.2	70	1.13						
CG-137-40	C2	5/4/2012	2.20	0.2	0.2	0.2	0.2	0.2	61	0.98						
CG-137-40	C2	9/26/2012	2.60	0.2	0.2	0.2	0.2	0.2	70	1.13						
CG-137-40	C2	3/15/2013	3.06	0.2	0.2	0.2	0.2	0.2	46	0.74						
CG-137-40	C2	8/8/2013	3.46	0.2	0.2	0.2	0.2	0.2	46	0.74						
CG-137-40	C2	3/13/2014	4.06	0.1	0.61	0.1	0.1	0.38	47	0.76						
CG-137-40	C2	9/24/2014	4.59	0.2	0.2	0.2	0.2	0.2	49	0.79						

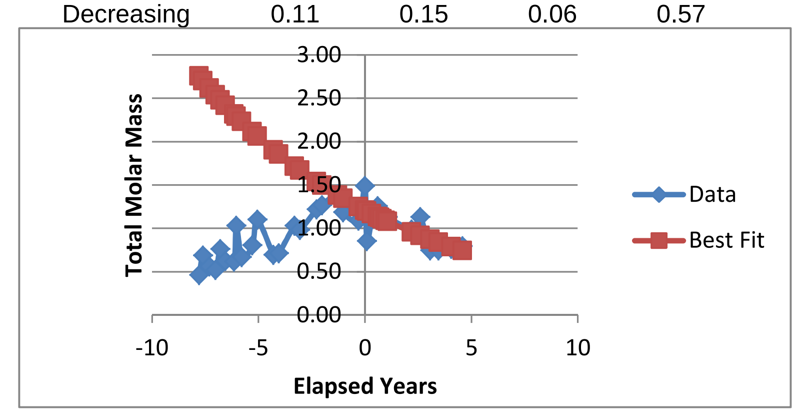


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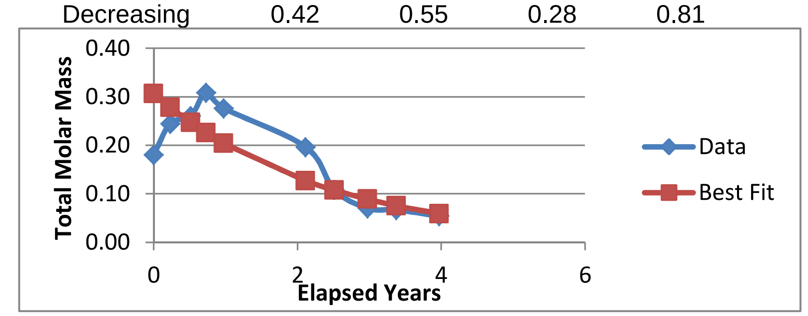
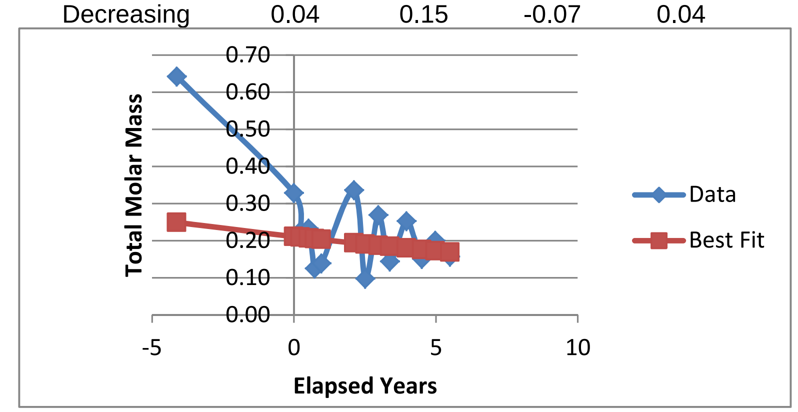
Table 3b. Source Decay Estimates - Based on Total Moles CVOC 2010 and later

West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498	umol/L	Max	0.45	0.62	0.27	0.93	4.61
											Min	-0.04	0.04	-0.30	0.01	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.17	0.27	0.07	0.56	1.52
CI-137-50	C2	3/24/2010	0.00	0.1	0.1	0.1	0.1	0.1	11	0.18	Decreasing	0.42	0.55	0.28	0.81	0.31
CI-137-50	C2	6/16/2010	0.23	0.1	0.1	0.1	0.1	0.1	15	0.24						
CI-137-50	C2	9/28/2010	0.52	0.1	0.1	0.1	0.1	0.1	16	0.26						
CI-137-50	C2	12/15/2010	0.73	0.1	0.1	0.1	0.1	0.1	19	0.31						
CI-137-50	C2	3/15/2011	0.98	0.1	0.1	0.1	0.1	0.1	17	0.28						
CI-137-50	C2	5/4/2012	2.12	0.1	0.1	0.1	0.1	0.1	12	0.20						
CI-137-50	C2	9/26/2012	2.51	0.1	0.1	0.1	0.1	0.1	6.5	0.11						
CI-137-50	C2	3/14/2013	2.98	0.1	0.1	0.1	0.1	0.1	4.1	0.07						
CI-137-50	C2	8/8/2013	3.38	0.1	0.1	0.1	0.1	0.1	3.9	0.07						
CI-137-50	C2	3/13/2014	3.97	0.1	0.1	0.1	0.1	0.1	3.1	0.05						
CI-MW-7	C4	2/9/2006	-4.12	0.36	6.7	46	0.1	38	0.1	0.64	Decreasing	0.04	0.15	-0.07	0.04	0.64
CI-MW-7	C4	3/24/2010	0.00	0.3	5.9	22	0.1	17	0.1	0.33						
CI-MW-7	C4	6/16/2010	0.23	0.44	6.2	13	0.1	9.3	0.38	0.22						
CI-MW-7	C4	9/28/2010	0.52	0.35	3.8	18	0.1	9.6	0.45	0.23						
CI-MW-7	C4	12/15/2010	0.73	0.63	4.3	2.4	0.1	6.5	0.57	0.12						
CI-MW-7	C4	3/15/2011	0.98	0.5	3.5	5.3	0.1	7.9	0.28	0.14						
CI-MW-7	C4	5/4/2012	2.12	0.2	2.9	26	0.1	19	0.1	0.34						
CI-MW-7	C4	9/26/2012	2.51	0.45	3.2	3.6	0.1	4.7	0.1	0.10						
CI-MW-7	C4	3/13/2013	2.97	0.3	2.9	21	0.1	14	0.1	0.27						
CI-MW-7	C4	8/8/2013	3.38	0.58	4.7	8.6	0.1	4.6	0.1	0.14						
CI-MW-7	C4	3/12/2014	3.97	0.29	2.8	21	0.1	12	0.1	0.25						
CI-MW-7	C4	9/23/2014	4.51	0.43	3.3	11	0.1	5.5	0.2	0.15						
CI-MW-7	C4	3/17/2015	4.98	0.54	4.3	13	0.1	8.7	0.25	0.20						
CI-MW-7	C4	9/23/2015	5.51	0.41	3.1	12	0.1	4.6	0.74	0.16						





Notes:

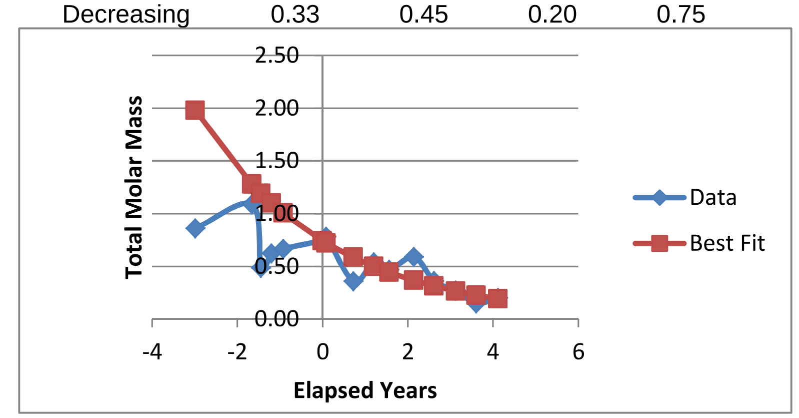
Non-detect result values included at half the reporting limit

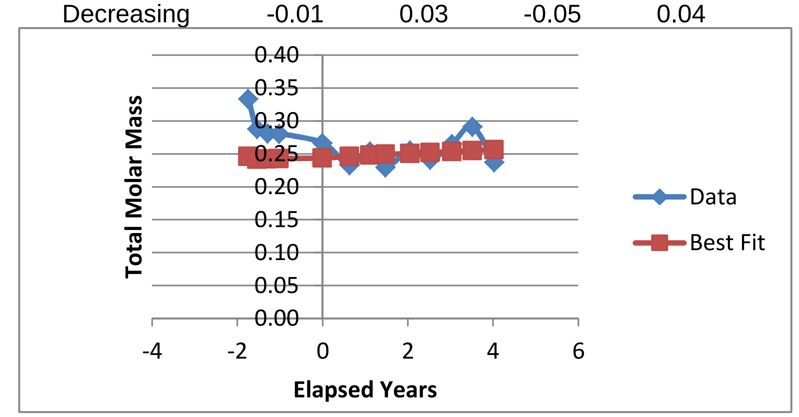
All plots include best-fit curve extrapolated over full data range, with fit based on 2010 and later data.

Gray rows are before 2010 and are excluded from trend fitting and source decay rate (SDR) calculations

Table 3c. Source Decay Estimates - Based on Total Moles CVOC 2011 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498		Max	0.33	0.50	0.20	0.93	4.61
										umol/L	Min	-0.01	0.03	-0.38	0.00	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.15	0.27	0.03	0.51	1.52
BDC-2-WT	BDC	2/1/2008	-2.99	0.7	15	0.1	3.7	86	0.4	0.86	Decreasing	0.33	0.45	0.20	0.75	1.1
BDC-2-WT	BDC	6/1/2009	-1.66	2	36	0.1	5.5	81	1.5	1.09						
BDC-2-WT	BDC	8/18/2009	-1.44	0.88	13	0.01	3.2	40	0.38	0.49						
BDC-2-WT	BDC	11/17/2009	-1.19	0.72	13	0.01	3.9	58	0.14	0.63						
BDC-2-WT	BDC	2/24/2010	-0.92	1.1	23	0.1	3.5	45	2.5	0.67						
BDC-2-WT	BDC	1/27/2011	0.00	0.97	26	0.01	3.2	51	3	0.75						
BDC-2-WT	BDC	3/1/2011	0.09	1.1	27	0.01	3.5	53	3.3	0.78						
BDC-2-WT	BDC	10/18/2011	0.72	0.29	6.6	0.01	2	35	0.098	0.36						
BDC-2-WT	BDC	4/11/2012	1.20	0.43	14	0.01	2.5	39	4.3	0.54						
BDC-2-WT	BDC	8/22/2012	1.57	0.49	12	0.01	3.6	39	0.49	0.47						
BDC-2-WT	BDC	3/20/2013	2.14	0.57	22	0.01	2.7	33	4.9	0.59						
BDC-2-WT	BDC	9/9/2013	2.62	0.28	8.7	0.01	2.2	32	0.2	0.36						
BDC-2-WT	BDC	3/14/2014	3.13	0.27	6.3	0.01	1.8	24	0.18	0.27						
BDC-2-WT	BDC	9/5/2014	3.61	0.11	2.5	0.01	0.64	15	0.17	0.15						
BDC-2-WT	BDC	3/12/2015	4.12	0.17	4.8	0.01	1.1	18	0.23	0.20						
BDC-3-40	BDC	6/1/2009	-1.75	0.16	21	0.01	0.01	0.01	7.2	0.33	Decreasing	-0.01	0.03	-0.05	0.04	0.3
BDC-3-40	BDC	8/18/2009	-1.53	0.17	17	0.01	0.01	0.01	6.9	0.29						
BDC-3-40	BDC	11/17/2009	-1.28	0.15	19	0.01	0.01	0.01	5.2	0.28						
BDC-3-40	BDC	2/24/2010	-1.01	0.14	20	0.01	0.062	0.01	4.5	0.28						
BDC-3-40	BDC	3/1/2011	0.00	0.24	22	0.01	0.025	0.01	2.3	0.27						
BDC-3-40	BDC	10/18/2011	0.63	0.16	19	0.01	0.01	0.01	2.2	0.23						
BDC-3-40	BDC	4/11/2012	1.11	0.18	21	0.01	0.025	0.01	2.2	0.25						
BDC-3-40	BDC	8/22/2012	1.48	0.21	18	0.01	0.026	0.01	2.6	0.23						
BDC-3-40	BDC	3/20/2013	2.05	0.2	20	0.01	0.029	0.01	2.9	0.26						
BDC-3-40	BDC	9/9/2013	2.53	0.17	19	0.01	0.026	0.01	2.7	0.24						
BDC-3-40	BDC	3/14/2014	3.04	0.21	20	0.01	0.038	0.01	3.5	0.26						
BDC-3-40	BDC	9/5/2014	3.51	0.15	22	0.01	0.028	0.01	3.9	0.29						
BDC-3-40	BDC	3/12/2015	4.03	0.14	16	0.01	0.034	0.01	4.4	0.24						
BDC-3-60	BDC	6/1/2009	-1.75	0.01	1.8	0.01	0.01	0.01	9.8	0.18	Increasing	-0.01	0.36	-0.38	0.00	0.2
BDC-3-60	BDC	8/18/2009	-1.53	0.01	2.3	0.01	0.01	0.01	12	0.22						
BDC-3-60	BDC	11/17/2009	-1.28	0.01	0.5	0.01	0.01	0.01	4.2	0.07						
BDC-3-60	BDC	2/24/2010	-1.01	0.01	0.32	0.01	0.01	0.01	2.7	0.05						
BDC-3-60	BDC	3/1/2011	0.00	0.01	0.32	0.01	0.01	0.01	2	0.04						
BDC-3-60	BDC	10/18/2011	0.63	0.01	3	0.01	0.01	0.01	5.3	0.12						
BDC-3-60	BDC	4/11/2012	1.11	0.01	0.58	0.01	0.01	0.01	2.2	0.04						
BDC-3-60	BDC	8/22/2012	1.48	0.03	4.2	0.01	0.01	0.01	4.9	0.12						
BDC-3-60	BDC	3/20/2013	2.05	0.01	0.94	0.01	0.01	0.01	1.3	0.03						
BDC-3-60	BDC	9/9/2013	2.53	0.021	3.4	0.01	0.01	0.01	4.9	0.11						
BDC-3-60	BDC	3/14/2014	3.04	0.01	0.17	0.01	0.01	0.01	1.2	0.02						
BDC-3-60	BDC	9/5/2014	3.51	0.01	2.9	0.01	0.01	0.01	5.9	0.12						
BDC-3-60	BDC	3/12/2015	4.03	0.01	1.6	0.01	0.01	0.01	2.2	0.05						





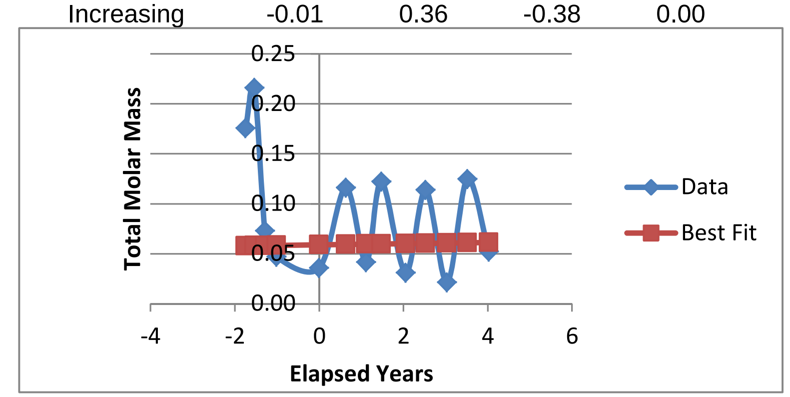
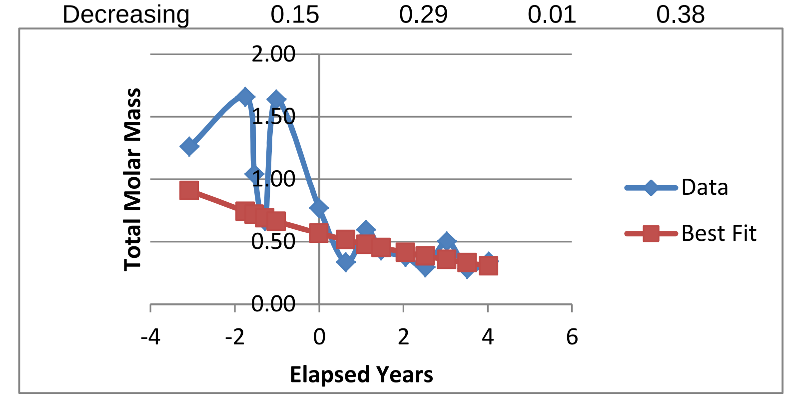
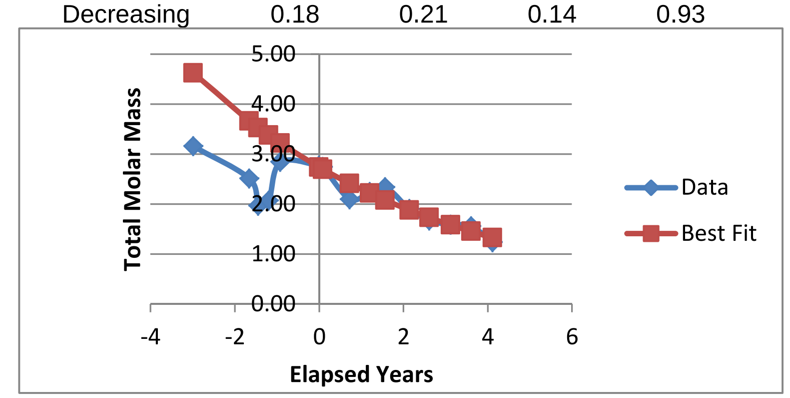


Table 3c. Source Decay Estimates - Based on Total Moles CVOC 2011 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498		Max	0.33	0.50	0.20	0.93	4.61
										umol/L	Min	-0.01	0.03	-0.38	0.00	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.15	0.27	0.03	0.51	1.52
BDC-3-WT	BDC	2/1/2008	-3.08	1.2	52		6	75	5	1.26	Decreasing	0.15	0.29	0.01	0.38	1.7
BDC-3-WT	BDC	6/1/2009	-1.75	2	59	0.1	13	110	3.6	1.66						
BDC-3-WT	BDC	8/18/2009	-1.53	0.4	27	0.1	9.1	87	0.2	1.04						
BDC-3-WT	BDC	11/17/2009	-1.28	0.34	17	0.01	5.2	57	0.11	0.67						
BDC-3-WT	BDC	2/24/2010	-1.01	2	60	0.1	8.6	100	9.2	1.64						
BDC-3-WT	BDC	3/1/2011	0.00	0.72	29	0.01	4.2	48	3.4	0.77						
BDC-3-WT	BDC	10/18/2011	0.63	0.13	9.8	0.01	2.8	27	0.063	0.34						
BDC-3-WT	BDC	4/11/2012	1.11	0.45	25	0.01	3.7	32	3.2	0.60						
BDC-3-WT	BDC	8/22/2012	1.48	0.2	17	0.01	3.9	28	0.11	0.43						
BDC-3-WT	BDC	3/20/2013	2.05	0.26	15	0.01	2.5	21	2.4	0.38						
BDC-3-WT	BDC	9/9/2013	2.53	0.12	11	0.01	2.5	20	0.11	0.29						
BDC-3-WT	BDC	3/14/2014	3.04	0.3	22	0.01	3.9	21	4.6	0.50						
BDC-3-WT	BDC	9/5/2014	3.51	0.11	14	0.01	2	15	0.17	0.28						
BDC-3-WT	BDC	3/12/2015	4.03	0.13	17	0.01	2.9	17	0.44	0.34						
BDC-6-WT	BDC	2/1/2008	-2.99	7	110		6.4	230	8.5	3.16	Decreasing	0.18	0.21	0.14	0.93	3.2
BDC-6-WT	BDC	6/1/2009	-1.66	3.5	69	0.1	4.8	200	12	2.51						
BDC-6-WT	BDC	8/18/2009	-1.44	2.7	43	0.1	3.4	150	20	1.97						
BDC-6-WT	BDC	11/17/2009	-1.19	3.6	56	0.5	4.5	160	12	2.07						
BDC-6-WT	BDC	2/24/2010	-0.92	5.7	110	0.1	7	180	13	2.84						
BDC-6-WT	BDC	1/27/2011	0.00	6.4	130	0.5	7.3	160	4.3	2.77						
BDC-6-WT	BDC	3/1/2011	0.09	5.8	120	0.1	7.8	170	4.6	2.75						
BDC-6-WT	BDC	10/18/2011	0.72	3.5	83	0.05	5.5	140	5.3	2.10						
BDC-6-WT	BDC	4/11/2012	1.20	3.7	92	0.01	6.5	140	7.7	2.24						
BDC-6-WT	BDC	8/22/2012	1.57	2.9	92	1	6.4	150	9.2	2.34						
BDC-6-WT	BDC	3/20/2013	2.14	2.6	71	0.02	4.9	130	6.6	1.90						
BDC-6-WT	BDC	9/9/2013	2.62	2	56	0.01	5.4	120	6.7	1.67						
BDC-6-WT	BDC	3/14/2014	3.13	2.4	59	0.01	4.8	110	4.5	1.59						
BDC-6-WT	BDC	9/5/2014	3.61	1.6	52	0.01	3.9	120	3.2	1.56						
BDC-6-WT	BDC	3/12/2015	4.12	1.4	40	0.01	3.6	98	1.7	1.24						
BDC-6-30	BDC	2/1/2008	-3.08	0.9	20		0.4	16	6.6	0.45	Decreasing	0.11	0.22	0.00	0.34	0.5
BDC-6-30	BDC	6/1/2009	-1.75	0.7	19	0.01	0.25	12	9.8	0.45						
BDC-6-30	BDC	8/18/2009	-1.53	0.4	8.9	0.01	0.13	5.1	15	0.38						
BDC-6-30	BDC	11/17/2009	-1.28	0.45	13	0.01	0.16	7.9	7.3	0.32						
BDC-6-30	BDC	2/24/2010	-1.01	0.49	14	0.01	0.17	6.1	3.3	0.250497093						
BDC-6-30	BDC	3/1/2011	0.00	0.52	14	0.01	0.28	6.6	0.68	0.21						
BDC-6-30	BDC	10/18/2011	0.63	0.29	8.8	0.01	0.18	3.2	0.29	0.12						
BDC-6-30	BDC	4/11/2012	1.11	0.21	9.8	0.01	0.17	6.3	0.84	0.17						
BDC-6-30	BDC	8/22/2012	1.48	0.19	6	0.01	0.11	3	0.47	0.10						
BDC-6-30	BDC	3/20/2013	2.05	0.12	6.7	0.01	0.12	5	1.2	0.13						
BDC-6-30	BDC	9/9/2013	2.53	0.13	6.4	0.01	0.11	3.3	0.49	0.10						
BDC-6-30	BDC	3/14/2014	3.04	0.11	5.5	0.01	0.12	5.4	0.87	0.11						
BDC-6-30	BDC	9/5/2014	3.51	0.15	6.5	0.01	0.16	4.4	1.4	0.13						
BDC-6-30	BDC	3/12/2015	4.03	0.077	4.8	0.01	0.11	4.5	1.7	0.11						





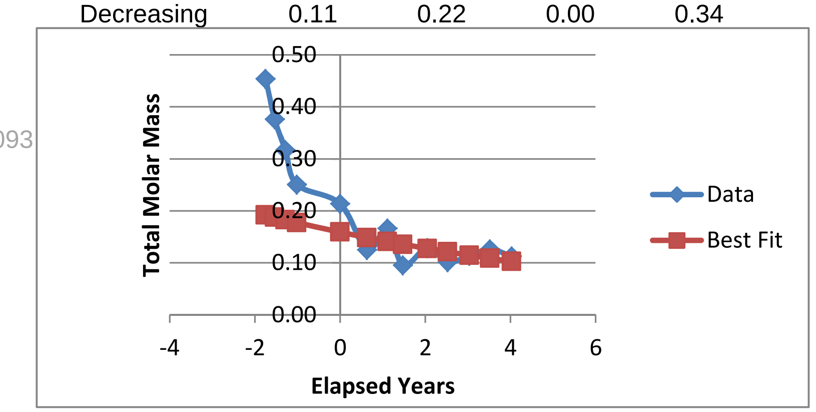
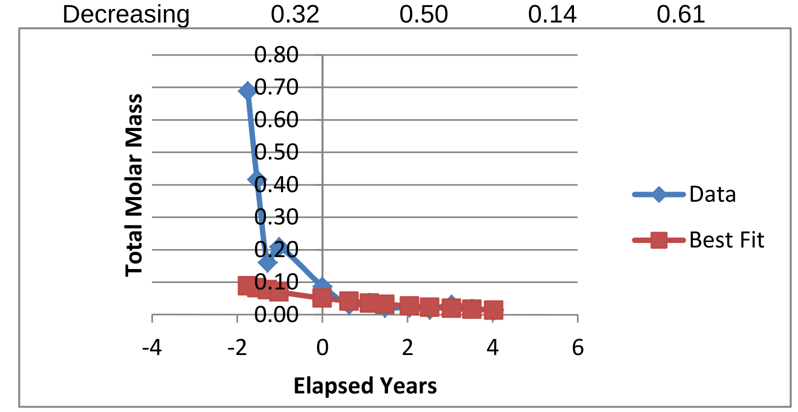


Table 3c. Source Decay Estimates - Based on Total Moles CVOC 2011 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	*Trend*	*SDR, k_s (/year) best-fit*	*90% upper*	*90% lower*	*R^2 (SDR, k_s)*	*Maximum Concentration umol-L*
			g/mol ->	*96.95*	*96.95*	*165.83*	*96.95*	*131.4*	*62.498*	umol/L	*Max*	*0.33*	*0.50*	*0.20*	*0.93*	*4.61*
											Min	*-0.01*	*0.03*	*-0.38*	*0.00*	*0.22*
				ug/L	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Mean*	*0.15*	*0.27*	*0.03*	*0.51*	*1.52*
BDC-6-60	BDC	6/1/2009	-1.75	0.01	0.034	0.01	0.01	0.024	43	0.69	Decreasing	0.32	0.50	0.14	0.61	0.7
BDC-6-60	BDC	8/18/2009	-1.53	0.01	0.01	0.01	0.01	0.01	26	0.42						
BDC-6-60	BDC	11/17/2009	-1.28	0.01	0.01	0.01	0.01	0.01	10	0.16						
BDC-6-60	BDC	2/24/2010	-1.01	0.01	0.031	0.01	0.01	0.01	13	0.21						
BDC-6-60	BDC	3/1/2011	0.00	0.01	0.026	0.01	0.01	0.01	5.4	0.09						
BDC-6-60	BDC	10/18/2011	0.63	0.01	0.01	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	4/11/2012	1.11	0.01	0.022	0.01	0.01	0.01	2.3	0.04						
BDC-6-60	BDC	8/22/2012	1.48	0.01	0.01	0.01	0.01	0.01	1.3	0.02						
BDC-6-60	BDC	3/20/2013	2.05	0.01	0.01	0.01	0.01	0.01	1.4	0.02						
BDC-6-60	BDC	9/9/2013	2.53	0.01	0.01	0.01	0.01	0.01	0.97	0.02						
BDC-6-60	BDC	3/14/2014	3.04	0.01	0.063	0.01	0.01	0.01	1.9	0.03						
BDC-6-60	BDC	9/5/2014	3.51	0.1	0.1	0.1	0.01	0.01	0.99	0.02						
BDC-6-60	BDC	3/12/2015	4.03	0.01	0.042	0.01	0.01	0.01	0.84	0.01						



Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	best-fit	90% upper	90% lower	R^2	Maximum Concentration
CG-137-WT	C2	5/8/2002	-7.79	2.77	80.9	0.5	5.28	479	2.45	4.61	Decreasing	0.16	0.20	0.13	0.86	4.6
CG-137-WT	C2	7/17/2002	-7.59	2.87	74	0.5	5.48	472	3.79	4.51						
CG-137-WT	C2	11/4/2002	-7.29	1.48	42.2	0.025	3.3	283	2.7	2.68						
CG-137-WT	C2	2/17/2003	-7.01	1.72	48.4	0.5	4.08	312	2.72	2.98						
CG-137-WT	C2	5/8/2003	-6.79	2.12	63.1	0.5	5.46	329	2.07	3.27						
CG-137-WT	C2	8/6/2003	-6.54	1.92	55.7	0.5	5.09	355	1.66	3.38						
CG-137-WT	C2	10/29/2003	-6.31	2.5	44.2	2.5	2.5	244	2.5	2.42						
CG-137-WT	C2	2/4/2004	-6.04	2.58	57.4	0.025	5.3	386	2.59	3.65						
CG-137-WT	C2	5/7/2004	-5.79	2.16	47.3	0.025	5.38	308	1.48	2.93						
CG-137-WT	C2	11/8/2004	-5.28	1.28	36.5	0.025	5	223	1.67	2.17						
CG-137-WT	C2	2/1/2005	-5.05	1.54	44	0.5	4.42	269	2.02	2.60						
CG-137-WT	C2	11/4/2005	-4.29	1.2	38	0.25	3.6	230	0.77	2.21						
CG-137-WT	C2	2/3/2006	-4.04	1.9	75	0.25	12	260	1.8	2.93						
CG-137-WT	C2	11/2/2006	-3.30	1.7	54	0.25	8.7	210	1.1	2.28						
CG-137-WT	C2	1/31/2007	-3.05	2.1	65	0.25	15	250	2.6	2.79						
CG-137-WT	C2	11/14/2007	-2.27	1.1	66	0.065	11	250	0.31	2.71						
CG-137-WT	C2	2/13/2008	-2.02	1.6	63	0.065	11	210	1.8	2.41						
CG-137-WT	C2	11/10/2008	-1.28	1.4	56	0.0385	10	200	1.3	2.24						
CG-137-WT	C2	2/12/2009	-1.02	1.3	60	0.0385	10	150	2.1	1.91						
CG-137-WT	C2	11/2/2009	-0.30	1.2	63	0.033	11	120	2.1	1.72						
CG-137-WT	C2	2/19/2010	0.00	1.7	53	0.16	10	130	5.3	1.74						
CG-137-WT	C2	3/24/2010	0.09	1.1	49	0.2	9.8	98	3.3	1.42						
CG-137-WT	C2	6/16/2010	0.32	0.63	50	0.2	7.7	98	0.92	1.36						
CG-137-WT	C2	9/28/2010	0.60	0.74	50	0.2	9.7	92	1.4	1.35						
CG-137-WT	C2	11/4/2010	0.71	0.94	64	0.0495	10	96	1.5	1.53						
CG-137-WT	C2	12/15/2010	0.82	1.1	48	0.5	9.4	93	4.2	1.38						
CG-137-WT	C2	2/9/2011	0.97	1.2	61	0.0495	11	92	2.7	1.50						
CG-137-WT	C2	3/15/2011	1.06	0.5	47	0.5	8.6	82	2	1.24						

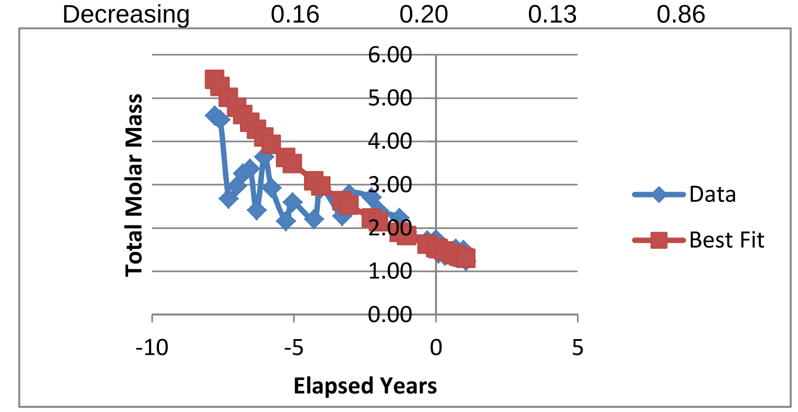


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Table 3c. Source Decay Estimates - Based on Total Moles CVOC 2011 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498	umol/L	Max	0.33	0.50	0.20	0.93	4.61
											Min	-0.01	0.03	-0.38	0.00	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.15	0.27	0.03	0.51	1.52
CG-137-WT	C2	5/4/2012	2.20	0	46	0	8.7	62	0.83	1.05						
CG-137-WT	C2	9/26/2012	2.60	0	38	0	8.7	64	1	0.98						
CG-137-WT	C2	3/15/2013	3.06	0	40	0	7.2	39	0.49	0.79						
CG-137-WT	C2	8/8/2013	3.46	0	38	0	9.2	38	0.77	0.79						
CG-137-WT	C2	3/13/2014	4.06	0	48	0	9	31	0.86	0.84						
CG-137-WT	C2	9/24/2014	4.59	0	54	0	9.2	28	0.73	0.88						
CG-137-40	C2	5/8/2002	-8.76	0.5	0.5	0.5	0.5	0.5	27.4	0.46	Decreasing	0.12	0.19	0.06	0.68	1.5
CG-137-40	C2	7/17/2002	-8.57	0.025	0.5	0.025	0.5	0.028	42.3	0.69						
CG-137-40	C2	11/4/2002	-8.26	0.025	0.5	0.025	0.5	0.01	34.3	0.56						
CG-137-40	C2	2/17/2003	-7.98	0.025	0.5	0.025	0.5	0.01	31.8	0.52						
CG-137-40	C2	5/8/2003	-7.76	0.025	0.5	0.025	0.5	0.028	46.9	0.76						
CG-137-40	C2	8/6/2003	-7.51	0.025	0.5	0.025	0.5	0.025	38.3	0.62						
CG-137-40	C2	12/30/2003	-7.11	0.025	0.5	0.025	0.5	0.01	37.8	0.62						
CG-137-40	C2	2/4/2004	-7.01	0.025	0.5	0.025	0.5	0.01	63.8	1.03						
CG-137-40	C2	5/7/2004	-6.76	0.025	0.5	0.025	0.5	0.55	40.9	0.67						
CG-137-40	C2	11/8/2004	-6.25	0.025	0.5	0.025	0.5	0.025	49.6	0.80						
CG-137-40	C2	2/1/2005	-6.02	0.025	0.5	0.025	0.5	0.025	68.2	1.10						
CG-137-40	C2	11/4/2005	-5.26	0.01	0.25	0.25	0.25	0.013	43	0.69						
CG-137-40	C2	2/3/2006	-5.02	0.01	0.25	0.25	0.25	0.054	44	0.71						
CG-137-40	C2	11/2/2006	-4.27	0.01	0.25	0.25	0.25	0.02	64	1.03						
CG-137-40	C2	1/31/2007	-4.02	0.01	0.25	0.25	0.25	0.04	61	0.98						
CG-137-40	C2	11/14/2007	-3.24	0.00	0.06	0.07	0.08	0.02	76	1.22						
CG-137-40	C2	2/13/2008	-2.99	0.00	0.06	0.07	0.08	0.02	79	1.27						
CG-137-40	C2	11/10/2008	-2.25	0.00	0.02	0.04	0.02	0.01	87	1.39						
CG-137-40	C2	2/12/2009	-1.99	0.00	0.02	0.04	0.02	0.02	74	1.18						
CG-137-40	C2	11/2/2009	-1.27	0.00	0.17	0.03	0.05	0.00	68	1.09						
CG-137-40	C2	2/19/2010	-0.97	0.00	0.09	0.03	0.05	0.02	93	1.49						
CG-137-40	C2	3/24/2010	-0.88	0.10	0.10	0.10	0.10	0.10	53	0.85						
CG-137-40	C2	6/16/2010	-0.65	0.20	0.20	0.20	0.20	0.20	68	1.10						
CG-137-40	C2	9/28/2010	-0.37	0.20	0.20	0.20	0.20	0.20	78	1.26						
CG-137-40	C2	11/4/2010	-0.26	0.00	0.03	0.05	0.05	0.00	68	1.09						
CG-137-40	C2	12/15/2010	-0.15	0.20	1.40	0.20	0.20	0.98	71	1.16						
CG-137-40	C2	2/9/2011	0.00	0.00	0.03	0.05	0.03	0.00	70	1.12						
CG-137-40	C2	3/15/2011	0.09	0.20	0.20	0.20	0.20	0.20	70	1.13						
CG-137-40	C2	5/4/2012	1.23	0.20	0.20	0.20	0.20	0.20	61	0.98						
CG-137-40	C2	9/26/2012	1.63	0.20	0.20	0.20	0.20	0.20	70	1.13						
CG-137-40	C2	3/15/2013	2.09	0.20	0.20	0.20	0.20	0.20	46	0.74						
CG-137-40	C2	8/8/2013	2.49	0.20	0.20	0.20	0.20	0.20	46	0.74						
CG-137-40	C2	3/13/2014	3.09	0.10	0.61	0.10	0.10	0.38	47	0.76						
CG-137-40	C2	9/24/2014	3.62	0.20	0.20	0.20	0.20	0.20	49	0.79						

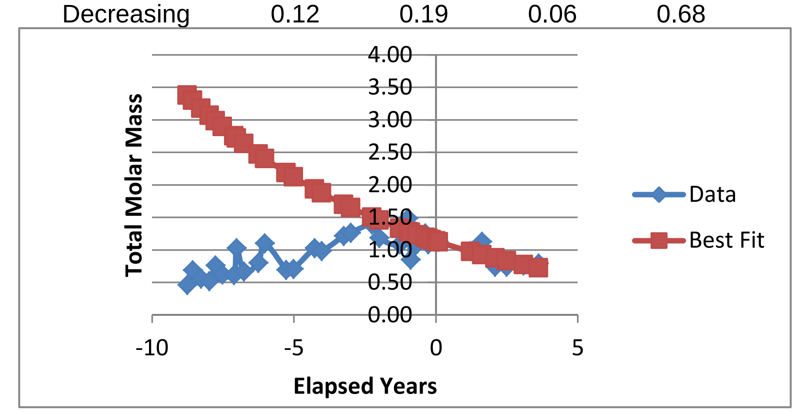
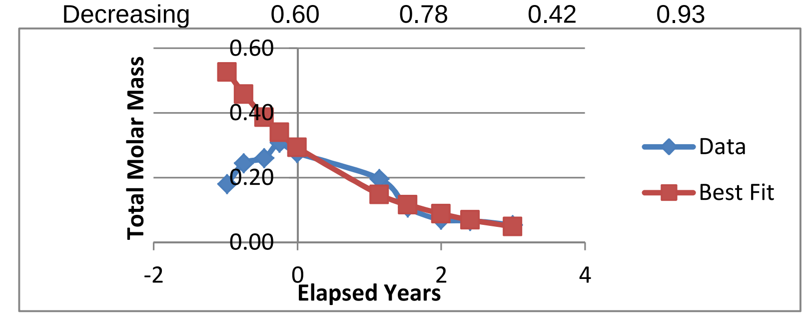
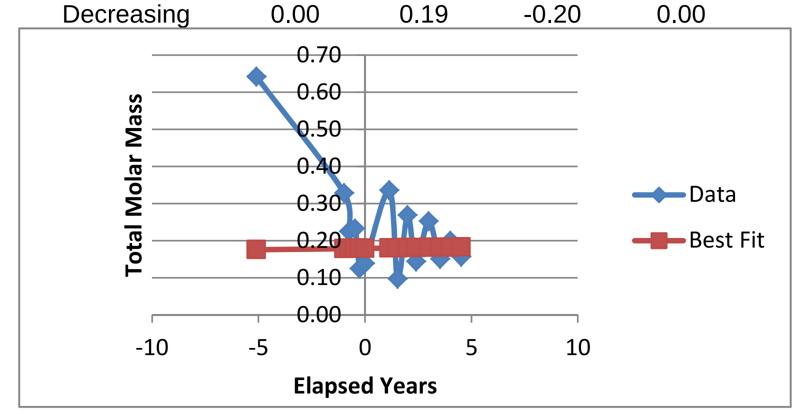


Table 3c. Source Decay Estimates - Based on Total Moles CVOC 2011 and later
West of Fourth, Seattle, Washington

Well	BIOCHLOR Source Area	Date	Elapsed Years	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Total Molar Mass	Trend	SDR, k_s (/year) best-fit	90% upper	90% lower	R^2 (SDR, k_s)	Maximum Concentration umol-L
			g/mol ->	96.95	96.95	165.83	96.95	131.4	62.498		Max	0.33	0.50	0.20	0.93	4.61
										umol/L	Min	-0.01	0.03	-0.38	0.00	0.22
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		Mean	0.15	0.27	0.03	0.51	1.52
CI-137-50	C2	3/24/2010	-0.98	0.10	0.10	0.10	0.10	0.10	11	0.18	Decreasing	0.60	0.78	0.42	0.93	0.31
CI-137-50	C2	6/16/2010	-0.75	0.10	0.10	0.10	0.10	0.10	15	0.24						
CI-137-50	C2	9/28/2010	-0.46	0.10	0.10	0.10	0.10	0.10	16	0.26						
CI-137-50	C2	12/15/2010	-0.25	0.10	0.10	0.10	0.10	0.10	19	0.31						
CI-137-50	C2	3/15/2011	0.00	0.1	0.1	0.1	0.1	0.1	17	0.28						
CI-137-50	C2	5/4/2012	1.14	0.1	0.1	0.1	0.1	0.1	12	0.20						
CI-137-50	C2	9/26/2012	1.54	0.1	0.1	0.1	0.1	0.1	6.5	0.11						
CI-137-50	C2	3/14/2013	2.00	0.1	0.1	0.1	0.1	0.1	4.1	0.07						
CI-137-50	C2	8/8/2013	2.40	0.1	0.1	0.1	0.1	0.1	3.9	0.07						
CI-137-50	C2	3/13/2014	3.00	0.1	0.1	0.1	0.1	0.1	3.1	0.05						
CI-MW-7	C4	2/9/2006	-5.10	0.36	6.7	46	0.1	38	0.1	0.64	Decreasing	0.00	0.19	-0.20	0.00	0.64
CI-MW-7	C4	3/24/2010	-0.98	0.3	5.9	22	0.1	17	0.1	0.33						
CI-MW-7	C4	6/16/2010	-0.75	0.44	6.2	13	0.1	9.3	0.38	0.22						
CI-MW-7	C4	9/28/2010	-0.46	0.35	3.8	18	0.1	9.6	0.45	0.23						
CI-MW-7	C4	12/15/2010	-0.25	0.63	4.3	2.4	0.1	6.5	0.57	0.12						
CI-MW-7	C4	3/15/2011	0.00	0.5	3.5	5.3	0.1	7.9	0.28	0.14						
CI-MW-7	C4	5/4/2012	1.14	0.2	2.9	26	0.1	19	0.1	0.34						
CI-MW-7	C4	9/26/2012	1.54	0.45	3.2	3.6	0.1	4.7	0.1	0.10						
CI-MW-7	C4	3/13/2013	2.00	0.3	2.9	21	0.1	14	0.1	0.27						
CI-MW-7	C4	8/8/2013	2.40	0.58	4.7	8.6	0.1	4.6	0.1	0.14						
CI-MW-7	C4	3/12/2014	3.00	0.29	2.8	21	0.1	12	0.1	0.25						
CI-MW-7	C4	9/23/2014	3.53	0.43	3.3	11	0.1	5.5	0.2	0.15						
CI-MW-7	C4	3/17/2015	4.01	0.54	4.3	13	0.1	8.7	0.25	0.20						
CI-MW-7	C4	9/23/2015	4.53	0.41	3.1	12	0.1	4.6	0.74	0.16						





Notes:
Non-detect result values included at half the reporting limit
All plots include best-fit curve extrapolated over full data range, with fit based on 2010 and later data.
Gray rows are before 2010 and are excluded from trend fitting and source decay rate (SDR) calculations

Table 3d. Comparison of Source Decay Estimates
West of Fourth, Seattle, Washington

	Well		BDC-2-WT	BDC-3-40	BDC-3-60	BDC-3-WT	BDC-6-30	BDC-6-60	BDC-6-WT	CG-137-40	CG-137-WT	CI-137-50	CI-MW-7
	Source Area		BDC	BDC	BDC	BDC	BDC	BDC	BDC	C2	C2	C2	C4
SDR based on 2006 and later data, as available *(Table 3a)*	SDR: ks (/year)	best-fit	0.21	0.03	0.12	0.24	0.23	0.60	0.10	0.09	0.12	0.42	0.11
		90% upper	0.29	0.05	0.31	0.32	0.29	0.75	0.14	0.12	0.14	0.55	0.19
		90% lower	0.14	0.01	-0.06	0.16	0.18	0.46	0.07	0.06	0.11	0.28	0.03
		R2 (ks)	0.69	0.30	0.12	0.72	0.82	0.84	0.67	0.61	0.89	0.81	0.32
	Maximum Concentration	umol-L	1.09	0.33	0.22	1.66	0.45	0.69	3.16	1.49	4.61	0.31	0.64
SDR based on 2010 and later data *(Table 3b)*	SDR: ks (/year)	best-fit	0.29	0.01	-0.04	0.26	0.15	0.45	0.16	0.11	0.05	0.42	0.04
		90% upper	0.39	0.04	0.23	0.40	0.24	0.62	0.19	0.15	0.06	0.55	0.15
		90% lower	0.18	-0.03	-0.30	0.12	0.06	0.27	0.13	0.06	0.04	0.28	-0.07
		R2 (ks)	0.73	0.01	0.01	0.60	0.56	0.74	0.93	0.57	0.88	0.81	0.04
	Maximum Concentration	umol-L	1.09	0.33	0.22	1.66	0.45	0.69	3.16	1.49	4.61	0.31	0.64
SDR based on 2011 and later data *(Table 3c)*	SDR: ks (/year)	best-fit	0.33	-0.01	-0.01	0.15	0.11	0.45	0.18	0.12	0.05	0.60	0.00
		90% upper	0.45	0.03	0.36	0.29	0.22	0.62	0.21	0.19	0.06	0.78	0.19
		90% lower	0.20	-0.05	-0.38	0.01	0.00	0.27	0.14	0.06	0.04	0.42	-0.20
		R2 (ks)	0.75	0.04	0.00	0.38	0.34	0.74	0.93	0.68	0.88	0.93	0.00
	Maximum Concentration	umol-L	1.09	0.33	0.22	1.66	0.45	0.69	3.16	1.49	4.61	0.31	0.64
		Max ks	*0.33*	*0.03*	*0.12*	*0.26*	*0.23*	*0.60*	*0.18*	*0.12*	*0.12*	*0.60*	*0.11*
		Min ks	*0.21*	*-0.01*	*-0.04*	*0.15*	*0.11*	*0.45*	*0.10*	*0.09*	*0.05*	*0.42*	*0.00*
		Mean ks	*0.28*	*0.01*	*0.03*	*0.22*	*0.16*	*0.50*	*0.15*	*0.11*	*0.07*	*0.48*	*0.05*
		Average Absolute Difference From Mean	*15%*	*178%*	*248%*	*20%*	*29%*	*14%*	*21%*	*11%*	*47%*	*17%*	*84%*

Table 4a. BIOCHLOR Model Output- BD Source Area

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
BD-WT-Steady-1	Current																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	110.0	29.82	10.86	4.43	1.91	0.84	0.38	0.17	0.08	0.04	0.02
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	60.00	28.36	14.40	7.41	3.80	1.93	0.97	0.49	0.24	0.12	0.06
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	9.20	13.29	10.52	7.24	4.62	2.80	1.64	0.94	0.52	0.29	0.16
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	4.23	7.13	8.86	9.70	9.94	9.83	9.54	9.18	8.80	8.43
BD*-WT-Steady-1	Pre-Interim Action																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	2,000	542.3	197.5	80.63	34.65	15.33	6.91	3.16	1.46	0.68	0.32
		C1 TCE (ug/L)	2,000	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,800	693.4	321.6	157.4	77.99	38.74	19.23	9.53	4.72	2.33	1.15
		C1 DCE (ug/L)	1,800	(Alpha y) / (Alpha x)	0.1			VC	550.0	424.2	283.1	178.2	107.4	62.58	35.59	19.85	10.90	5.91	3.17
		C1 VC (ug/L)	550	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	151.4	224.8	261.2	274.5	274.4	267.3	257.0	245.9	234.8	224.5
BD-WT-RL-1	RL																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	1,120	303.7	110.6	45.15	19.40	8.58	3.87	1.77	0.82	0.38	0.18
		C1 TCE (ug/L)	1120	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	610.9	288.8	146.6	75.50	38.65	19.64	9.92	4.98	2.49	1.24	0.61
		C1 DCE (ug/L)	611	(Alpha y) / (Alpha x)	0.1			VC	93.67	135.3	107.1	73.73	46.99	28.50	16.69	9.52	5.32	2.93	1.59
		C1 VC (ug/L)	94	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	43.11	72.55	90.25	98.75	101.2	100.1	97.16	93.47	89.59	85.81
BD-WT-RL-2	2x K																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.3	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	93.50	35.42	18.02	10.28	6.17	3.82	2.40	1.53	0.99	0.64	0.42
		C1 TCE (ug/L)	76.0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	51.00	27.43	17.91	12.37	8.67	6.09	4.28	3.00	2.10	1.47	1.02
		C1 DCE (ug/L)	41.5	(Alpha y) / (Alpha x)	0.1			VC	7.82	9.12	8.72	7.81	6.67	5.51	4.44	3.51	2.73	2.10	1.60
		C1 VC (ug/L)	6.4	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.46	2.63	3.64	4.46	5.08	5.54	5.84	6.03	6.12	6.14
BD-WT-RL-3	0.5x K																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.3	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	193,000	29,069	5,881	1,334	318.4	78.25	19.60	4.97	1.27	0.33	0.09
		C1 TCE (ug/L)	193,000	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	105,273	35,407	10,622	3,095	881.9	247.5	68.73	18.94	5.19	1.42	0.38
		C1 DCE (ug/L)	105,273	(Alpha y) / (Alpha x)	0.1			VC	16,142	23,813	11,647	4,644	1,672	565.5	183.4	57.67	17.72	5.35	1.59
		C1 VC (ug/L)	16,142	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	16,345	22,627	23,430	22,228	20,599	19,070	17,762	16,663	15,737	14,947
BD-WT-RL-4	2x biodegradation half life																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.3	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	93.20	35.31	17.97	10.25	6.15	3.80	2.40	1.53	0.99	0.64	0.42
		C1 TCE (ug/L)	93.2	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	50.84	27.34	17.85	12.33	8.64	6.07	4.27	2.99	2.10	1.46	1.02
		C1 DCE (ug/L)	50.8	(Alpha y) / (Alpha x)	0.1			VC	7.79	9.09	8.69	7.78	6.65	5.49	4.43	3.50	2.72	2.09	1.59
		C1 VC (ug/L)	7.8	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.46	2.62	3.63	4.44	5.07	5.52	5.82	6.01	6.10	6.12
BD-WT-RL-5	0.5x biodegradation half life																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.3	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	193,000	29,069	5,881	1,334	318.4	78.25	19.60	4.97	1.27	0.33	0.09
		C1 TCE (ug/L)	193,000	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	105,273	35,407	10,622	3,095	881.9	247.5	68.73	18.94	5.19	1.42	0.38
		C1 DCE (ug/L)	105,273	(Alpha y) / (Alpha x)	0.1			VC	16,142	23,813	11,647	4,644	1,672	565.5	183.4	57.67	17.72	5.35	1.59
		C1 VC (ug/L)	16,142	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	16,345	22,627	23,430	22,228	20,599	19,070	17,762	16,663	15,737	14,947
BD-WT-Decay-1	SDR 0.05																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.05	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	56	λ DCE (1/yr)	0.433	TCE	6.69	2.20	0.97	0.48	0.25	0.13	0.07	0.04	0.02	0.01	0.01
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.65	2.14	1.32	0.83	0.51	0.32	0.19	0.12	0.07	0.04	0.02
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.56	1.04	1.01	0.85	0.65	0.48	0.34	0.24	0.16	0.10	0.07
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.37	0.77	1.20	1.64	2.12	2.63	3.16	3.66	3.99	3.99

Table 4a. BIOCHLOR Model Output- BD Source Area

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
BD-WT-Decay-2	SDR 0.1																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.1	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	31	λ DCE (1/yr)	0.433	TCE	4.96	1.99	1.08	0.65	0.41	0.26	0.15	0.07	0.03	0.01	0.00
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.70	1.99	1.52	1.17	0.88	0.63	0.39	0.21	0.08	0.03	0.01
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.41	1.02	1.22	**1.26**	1.17	1.01	0.67	0.38	0.16	0.05	0.01
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.41	1.07	2.04	3.17	3.97	3.89	2.78	1.13	0.39	0.09
BD-WT-Decay-3	SDR 0.15																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.15	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	31	λ DCE (1/yr)	0.433	TCE	1.05	0.53	0.35	0.26	0.21	0.16	0.11	0.06	0.02	0.01	0.00
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.57	0.54	0.52	0.49	0.46	0.39	0.33	0.16	0.07	0.02	0.00
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.09	0.29	0.44	0.56	0.64	0.63	**1.24**	0.29	0.13	0.04	0.01
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.14	0.46	1.09	2.02	2.89	2.74	2.36	1.17	0.33	0.08
BD-WT-Decay-4	SDR 0.2																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.2	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	23	λ DCE (1/yr)	0.433	TCE	1.11	0.70	0.59	0.52	0.42	0.27	0.12	0.03	0.00	0.00	0.00
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.60	0.75	0.90	1.00	0.92	0.62	0.29	0.06	0.01	0.00	0.00
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.09	0.43	0.80	1.14	**1.22**	0.90	0.41	0.10	0.02	0.00	0.00
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.23	0.87	1.96	2.79	2.47	1.33	0.44	0.08	0.01	0.00
BD-WT-Decay-8	2x seepage velocity																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.2	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	21	λ DCE (1/yr)	0.433	TCE	1.65	0.97	0.77	0.68	0.64	0.61	0.57	0.50	0.40	0.27	0.15
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.90	0.79	0.82	0.89	0.97	1.05	1.07	1.03	0.87	0.61	0.35
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.14	0.29	0.44	0.63	0.84	1.06	1.22	**1.27**	1.14	0.84	0.49
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.06	0.17	0.37	0.73	1.26	1.92	2.49	2.27	1.84	1.16
BD-WT-Decay-9	0.5x seepage velocity (Note: also reduced ks due to BIOCHLOR limits)																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.125	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	30	λ DCE (1/yr)	0.433	TCE	2.59	0.95	0.45	0.21	0.07	0.01	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1.41	1.31	0.93	0.51	0.18	0.04	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.22	1.07	**1.19**	0.83	0.33	0.10	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.28	3.33	3.81	2.01	0.46	0.05	0.00	0.00	0.00	0.00
BD-WT-Decay-8	0.5x Biodegradation Half Life																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.2	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	17	λ DCE (1/yr)	0.866	TCE	3.67	1.11	0.45	0.19	0.07	0.02	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	2.00	1.49	0.89	0.47	0.19	0.05	0.01	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.31	1.16	1.13	0.79	0.37	0.00	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.28	3.31	4.40	3.11	1.22	0.20	0.02	0.00	0.00	0.00
BD-WT-Decay-9	2x Biodegradation Half Life																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.2	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	33	λ DCE (1/yr)	0.217	TCE	0.15	0.15	0.20	0.29	0.42	0.55	0.58	0.48	0.24	0.10	0.03
		C1 TCE (ug/L)	110	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	0.08	0.13	0.23	0.42	0.69	0.98	1.10	0.95	0.47	0.20	0.06
		C1 DCE (ug/L)	60	(Alpha y) / (Alpha x)	0.1			VC	0.01	0.05	0.15	0.34	0.65	1.02	**1.22**	0.86	0.54	0.23	0.07
		C1 VC (ug/L)	9.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.02	0.08	0.25	0.64	1.19	1.59	1.62	1.14	0.60	0.10
BD-SH-Steady-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	22.00	3.16	0.61	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	7.20	3.50	1.18	0.37	0.11	0.03	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	2.80	3.14	2.68	1.77	0.81	0.24	0.03	0.00	0.00	0.00
BD-SH-RL-1	RL																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5		0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ PCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ TCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ DCE (1/yr)	0.408	DCE	520,000	74,650	14,395	3,112	708.0	165.9	39.59	9.58	2.34	0.58	0.14
		C1 DCE (ug/L)	520,000	(Alpha y) / (Alpha x)	0.1	λ VC (1/yr)		VC	170,182	82,671	27,948	8,816	2,681	797.1	233.4	67.62	19.43	5.55	1.58

Table 4a. BIOCHLOR Model Output- BD Source Area

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		C1 VC (ug/L)	170,182	(Alpha z) / (Alpha x)	1E-99			ETH	0.01	66,356	75,847	71,904	65,593	59,805	55,021	51,129	47,929	45,254	42,978
BD-SH-RL-2	RL																		
	K*2	k (cm/s)	0.01998	Vs (ft/yr)	91.0		0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ PCE (1/yr)	0.385	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ TCE (1/yr)	0.433	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ DCE (1/yr)	0.408	3850	2,320	611.6	216.6	85.98	35.92	15.45	6.78	3.01	1.35	0.61	0.28
		C1 DCE (ug/L)	2,320	(Alpha y) / (Alpha x)	0.1	λ VC (1/yr)		1260	759.3	475.1	269.5	148.8	80.31	42.67	22.41	11.67	6.03	3.10	1.59
		C1 VC (ug/L)	759	(Alpha z) / (Alpha x)	1E-99			2.72E-05	0.00	167.5	229.1	250.7	252.4	245.0	234.0	222.1	210.8	200.3	191.0
BD-SH-RL-3	RL																		
	K*0.5	k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,000,000	52,554	3,710	293.6	24.45	2.10	0.18	0.02	0.00	0.00	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	327,273	84,766	11,296	1,362	156.9	17.61	1.94	0.21	0.02	0.00	0.00
		C1 VC (ug/L)	327,273	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	187,365	171,896	146,936	128,775	115,782	106,033	98,389	92,190	87,031	82,652
BD-SH-RL-4	Biodegradation half life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	2,320	611.6	216.6	85.98	35.92	15.45	6.78	3.01	1.35	0.61	0.28
		C1 DCE (ug/L)	2,320	(Alpha y) / (Alpha x)	0.1			VC	759.3	475.1	269.5	148.8	80.31	42.67	22.41	11.67	6.03	3.10	1.59
		C1 VC (ug/L)	759	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	167.5	229.1	250.7	252.4	245.0	234.0	222.1	210.8	200.3	191.0
BD-SH-RL-5	Biodegradation half life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	1,000,000	52,554	3,710	293.6	24.45	2.10	0.18	0.02	0.00	0.00	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	327,273	84,766	11,296	1,362	156.9	17.61	1.94	0.21	0.02	0.00	0.00
		C1 VC (ug/L)	327,273	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	187,365	171,896	146,936	128,775	115,782	106,033	98,389	92,190	87,031	82,652
BD-SH-Decay-1	SDR Best Fit at 0.03																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.76	0.82	0.19	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.56	0.94	0.38	0.14	0.05	0.02	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.85	1.23	1.46	1.54	1.37	0.94	0.39	0.12	0.03	0.00
BD-SH-Decay-2	SDR x 0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.015	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	101	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.84	0.76	0.16	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.58	0.85	0.32	0.11	0.04	0.01	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.73	0.93	1.00	1.04	1.08	1.13	1.18	1.21	1.18	1.07
BD-SH-Decay-3	Biodegradation Half Life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	4.76	1.55	0.68	0.33	0.17	0.09	0.04	0.01	0.00	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.56	1.25	0.89	0.61	0.40	0.24	0.12	0.05	0.01	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.49	0.86	1.17	1.34	1.25	0.88	0.36	0.12	0.03	0.00
BD-SH-Decay-4	Biodegradation Half Life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	4.76	0.29	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.56	0.48	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.21	1.42	1.53	1.57	1.38	0.95	0.39	0.13	0.03	0.00
BD-SH-Decay-5	Seepage Velocity x0.5																		
		k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.76	0.33	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 4a. BIOCHLOR Model Output- BD Source Area

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.56	0.57	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.60	1.87	1.27	0.43	0.07	0.00	0.00	0.00	0.00	0.00
BD-SH-Decay-6	Seepage Velocity x2																		
		k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ ΠΧΕ (1/ψρ)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.03	λ ΤΧΕ (1/ψρ)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ ΔΧΕ (1/ψρ)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ ςΧ (1/ψρ)	0.408	DCE	4.76	1.39	0.55	0.24	0.11	0.05	0.03	0.01	0.01	0.00	0.00
		C1 DCE (ug/L)	22	(Alpha y) / (Alpha x)	0.1			VC	1.56	1.10	0.70	0.43	0.26	0.15	0.09	0.05	0.03	0.02	0.01
		C1 VC (ug/L)	7.2	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.41	0.63	0.79	0.90	0.99	1.07	1.14	1.18	1.17	1.07
BD-IN-Steady-1																			
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.20	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	4.2	(Alpha y) / (Alpha x)	0.1			VC	12.00	0.54	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	12	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	3.37	2.68	2.23	1.95	1.75	1.60	1.49	1.39	1.32	1.25
BD-IN-RL-1	Remediation Level																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,000,000	26,538	946.0	37.80	1.59	0.07	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	2,857,142	128,245	6,707	365.6	20.06	1.10	0.06	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	2,857,143	(Alpha z) / (Alpha x)	1E-99			ETH	0.23	801,711	638,054	531,606	464,121	417,081	381,937	354,399	332,069	313,487	297,702
BD-IN-RL-2	K*2																		
		k (cm/s)	0.0056	Vs (ft/yr)	32.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,000,000	93,367	11,709	1,646	243.6	37.12	5.76	0.91	0.14	0.02	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	2,857,143	381,182	63,427	11,308	2,059	377.5	69.42	12.77	2.35	0.43	0.08
		C1 VC (ug/L)	2,857,143	(Alpha z) / (Alpha x)	1E-99			ETH	0.13	668,610	609,432	526,220	463,134	416,901	381,904	354,394	332,069	313,490	297,715
BD-IN-RL-3	K*0.5																		
		k (cm/s)	0.0014	Vs (ft/yr)	8.1	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,000,000	3,864	20.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	2,857,142	22,943	194.6	1.67	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	2,857,143	(Alpha z) / (Alpha x)	1E-99			ETH	0.37	855,630	641,249	531,765	464,005	416,352	377,194	339,330	293,883	235,524	167,403
BD-IN-RL-4	Biodegradation Half Life *2																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.289	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	1,000,000	93,367	11,709	1,646	243.6	37.12	5.76	0.91	0.14	0.02	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	2,857,143	381,182	63,427	11,308	2,059	377.5	69.42	12.77	2.35	0.43	0.08
		C1 VC (ug/L)	2,857,143	(Alpha z) / (Alpha x)	1E-99			ETH	0.13	668,610	609,432	526,220	463,134	416,901	381,904	354,393	332,068	313,487	297,702
BD-IN-RL-5	Biodegradation Half Life *0.5																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	1.155	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	1,000,000	3,864	20.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	1,000,000	(Alpha y) / (Alpha x)	0.1			VC	2,857,142	22,943	194.6	1.67	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	2,857,143	(Alpha z) / (Alpha x)	1E-99			ETH	0.37	855,630	641,251	531,780	464,130	417,081	381,937	354,399	332,069	313,487	297,702
BD-IN-Decay-1	SDR Best fit is 0.12. Run at BIOCHLOR Maximum of 0.047																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	175.0	350.0	525.0	700.0	875.0	1,050	1,225	1,400	1,575	1,750
		R	2.25	SDR ks (1/yr)	0.047	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	48	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.44	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	4.2	(Alpha y) / (Alpha x)	0.1			VC	1.26	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	12	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.04	0.88	0.24	0.02	0.00	0.00	0.00	0.00	0.00	0.00

PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: cis-1,2 Dichloroethene
VC: Vinyl Chloride

C1: Input Concentration
SDR ks: Source Decay Rate
λ : Biodegradation Rate
Sim. Time: Simulation Time

Table 4a. BIOCHLOR Model Output- BD Source Area

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary	BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)* *Model Source Area* ... *Discharge at Duwamish*

ETH: Ethene

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
C2-WT-Steady-1	WT																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	45.00	17.69	8.20	4.21	2.27	1.26	0.71	0.41	0.23	0.14	0.08
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	26.00	15.17	9.21	5.79	3.66	2.31	1.45	0.91	0.57	0.36	0.22
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.21	4.36	4.64	4.03	3.21	2.43	1.77	1.26	0.88	0.61	0.42
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.89	1.80	2.55	3.09	3.44	3.65	3.74	3.76	3.72	3.66
C2-WT-RL-1																			
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	173.0	68.01	31.54	16.20	8.73	4.83	2.73	1.56	0.90	0.52	0.31
		C1 TCE (ug/L)	173	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	99.99	58.34	35.41	22.25	14.06	8.88	5.59	3.51	2.20	1.37	0.85
		C1 DCE (ug/L)	99.99	(Alpha y) / (Alpha x)	0.1			VC	0.81	16.76	17.85	15.49	12.33	9.32	6.82	4.86	3.40	2.35	1.60
		C1 VC (ug/L)	0.8131	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	3.41	6.93	9.80	11.88	13.24	14.03	14.39	14.45	14.31	14.05
C2-WT-RL-2	RL K*2																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	41.50	20.52	11.97	7.73	5.24	3.65	2.59	1.86	1.35	0.99	0.73
		C1 TCE (ug/L)	41.5	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	23.98	15.08	10.62	8.00	6.18	4.81	3.76	2.95	2.31	1.81	1.42
		C1 DCE (ug/L)	23.9778	(Alpha y) / (Alpha x)	0.1			VC	0.19	2.56	3.23	3.39	3.30	3.08	2.79	2.48	2.16	1.87	1.60
		C1 VC (ug/L)	0.19367	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.26	0.58	0.90	1.21	1.49	1.73	1.93	2.10	2.23	2.33
C2-WT-RL-3	RL K*0.5																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	4,500	1,182	366.3	125.7	45.26	16.75	6.32	2.41	0.93	0.36	0.14
		C1 TCE (ug/L)	4,500	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2,600	1,236	539.5	234.1	100.3	42.57	17.91	7.49	3.12	1.29	0.53
		C1 DCE (ug/L)	2,600	(Alpha y) / (Alpha x)	0.1			VC	21.00	565.3	426.1	255.3	138.2	70.52	34.58	16.48	7.69	3.52	1.59
		C1 VC (ug/L)	21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	237.4	405.0	484.4	506.9	499.7	479.8	456.1	432.6	410.9	391.4
C2-WT-RL-4	RL Biodegradation h																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	41.50	20.52	11.97	7.73	5.24	3.65	2.59	1.86	1.35	0.99	0.73
		C1 TCE (ug/L)	41.5	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	23.98	15.08	10.62	8.00	6.18	4.81	3.76	2.95	2.31	1.81	1.42
		C1 DCE (ug/L)	23.97778	(Alpha y) / (Alpha x)	0.1			VC	0.19	2.56	3.23	3.39	3.30	3.08	2.79	2.48	2.16	1.87	1.60
		C1 VC (ug/L)	0.193667	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.26	0.58	0.90	1.21	1.49	1.73	1.93	2.10	2.23	2.33
C2-WT-RL-5	RL Biodegradation h																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	4,510	1,185	367.1	126.0	45.36	16.79	6.33	2.42	0.93	0.36	0.14
		C1 TCE (ug/L)	4,510	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	2,606	1,239	540.7	234.6	100.6	42.66	17.95	7.51	3.12	1.29	0.53
		C1 DCE (ug/L)	2,606	(Alpha y) / (Alpha x)	0.1			VC	21.05	566.5	427.1	255.8	138.5	70.68	34.66	16.52	7.70	3.53	1.60
		C1 VC (ug/L)	21.04667	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	237.9	405.9	485.5	508.0	500.8	480.9	457.1	433.6	411.8	392.3
C2-WT-Decay-1	0.05																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.05	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	39	λ DCE (1/yr)	0.433	TCE	**6.40**	2.87	1.52	0.89	0.55	0.34	0.22	0.14	0.09	0.06	0.04
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.70	2.51	1.75	1.26	0.91	0.65	0.47	0.34	0.24	0.17	0.12
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	0.76	0.93	0.92	0.84	0.72	0.60	0.49	0.39	0.30	0.22
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.17	0.40	0.66	0.93	1.20	1.47	1.71	1.91	2.02	1.86
C2-WT-Decay-2	0.075																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.075	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	26	λ DCE (1/yr)	0.433	TCE	**6.40**	3.07	1.74	1.09	0.72	0.48	0.32	0.21	0.12	0.07	0.03
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.70	2.71	2.03	1.57	1.21	0.92	0.68	0.48	0.29	0.17	0.08
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	0.85	1.11	1.18	1.14	1.03	0.87	0.65	0.44	0.26	0.13
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.20	0.51	0.89	1.29	1.64	1.84	1.79	1.49	1.03	0.58
C2-WT-Decay-3	0.1																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.1	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	21	λ DCE (1/yr)	0.433	TCE	5.51	2.84	1.72	1.16	0.80	0.55	0.35	0.20	0.10	0.03	0.01
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.18	2.53	2.04	1.68	1.36	1.04	0.73	0.44	0.26	0.08	0.02
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	0.81	1.14	**1.29**	**1.29**	1.14	0.88	0.58	0.00	0.11	0.03
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.21	0.55	0.97	1.37	1.58	1.48	1.09	1.07	0.31	0.11
C2-WT-Decay-4	SDR Best Fit 0.12																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.12	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	20	λ DCE (1/yr)	0.433	TCE	4.08	2.23	1.43	1.01	0.73	0.52	0.33	0.18	0.08	0.03	0.01
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.36	2.00	1.72	1.49	1.26	0.98	0.68	0.39	0.17	0.06	0.02

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.02	0.66	0.98	1.16	**1.20**	1.07	0.81	0.50	0.00	0.08	0.02
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.18	0.49	0.90	1.27	1.44	1.28	0.89	0.69	0.21	0.07
C2-WT-Decay-5	SDR x 0.5																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.06	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	32	λ DCE (1/yr)	0.433	TCE	**6.60**	3.04	1.65	0.99	0.63	0.41	0.27	0.18	0.12	0.07	0.04
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.81	2.66	1.91	1.41	1.05	0.78	0.57	0.41	0.29	0.19	0.12
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	0.82	1.03	1.05	0.98	0.86	0.74	0.63	0.46	0.33	0.22
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.19	0.46	0.77	1.11	1.45	1.75	1.94	1.99	1.81	1.48
C2-WT-Decay-6	Biodegradation Half Life x2																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.12	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	23	λ DCE (1/yr)	0.217	TCE	2.85	2.04	1.72	1.59	1.50	1.37	1.16	0.86	0.54	0.28	0.10
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	1.65	1.56	1.62	1.76	1.89	1.89	1.71	1.33	0.86	0.42	0.15
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.01	0.32	0.58	0.86	1.12	**1.28**	1.27	1.05	0.69	1.39	0.13
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.04	0.13	0.28	0.47	0.64	0.71	0.64	0.47	0.00	0.15
C2-WT-Decay-7	Biodegradation Half Life x0.5																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.12	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	16	λ DCE (1/yr)	0.866	TCE	**6.60**	2.28	0.93	0.42	0.19	0.09	0.03	0.01	0.00	0.00	0.00
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	3.81	2.49	1.45	0.82	0.45	0.22	0.09	0.03	0.01	0.00	0.00
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	1.26	1.25	0.97	0.65	0.37	0.17	0.05	0.01	0.00	0.00
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.68	1.51	2.15	2.29	1.83	1.08	0.46	0.14	0.03	0.00
C2-WT-Decay-8	Seepage Velocity x0.5																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.12	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	22	λ DCE (1/yr)	0.433	TCE	3.21	1.51	0.81	0.43	0.19	0.06	0.01	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1.86	1.73	1.31	0.84	0.41	0.14	0.03	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.01	0.97	**1.20**	0.97	0.54	0.19	0.04	0.02	0.00	0.00	0.00
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.60	1.35	1.59	1.10	0.46	0.11	0.01	0.00	0.00	0.00

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
C2-WT-Decay-9	Seepage Velocity x2																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.12	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	17	λ DCE (1/yr)	0.433	TCE	5.85	3.45	2.40	1.85	1.50	1.24	1.04	0.88	0.72	0.55	0.40
		C1 TCE (ug/L)	45	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.38	2.58	2.19	1.99	1.83	1.70	1.58	1.44	1.27	1.01	0.77
		C1 DCE (ug/L)	26	(Alpha y) / (Alpha x)	0.1			VC	0.03	0.47	0.72	0.91	1.05	1.17	1.24	**1.27**	1.16	1.03	0.82
		C1 VC (ug/L)	0.21	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.06	0.15	0.28	0.44	0.64	0.86	1.05	1.21	1.24	1.13
C2-SH-Steady-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	68.0	18.9	6.2	2.2	0.85	0.33	0.13	0.05	0.02	0.01	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	24.0	15.4	7.7	3.6	1.7	0.77	0.35	0.15	0.07	0.03	0.01
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	10.0	9.0	6.2	3.9	2.2	1.2	0.62	0.32	0.16	0.08	0.04
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	4.1	6.2	7.2	7.5	7.4	7.2	6.8	6.5	6.2	5.9
C2-SH-RL-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	2,970	823.8	269.5	97.6	37.1	14.5	5.8	2.33	0.95	0.39	0.16
		C1 TCE (ug/L)	2,970	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,048	672.2	334.3	159.1	73.7	33.5	15.1	6.7	3.0	1.31	0.57
		C1 DCE (ug/L)	1,048	(Alpha y) / (Alpha x)	0.1			VC	436.8	392.7	272.5	168.3	96.1	52.1	27.2	13.8	6.8	3.32	1.60
		C1 VC (ug/L)	436.7647	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	178.0	269.9	313.9	327.4	323.9	312.4	298.1	283.5	269.7	257.2
C2-SH-RL-2	RL																		
	K*2	k (cm/s)	0.01998	Vs (ft/yr)	91.0	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	148.0	60	28.7	15.2	8.5	4.8	2.8	1.66	0.99	0.59	0.36
		C1 TCE (ug/L)	148	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	52	38	26	17.3	11.6	7.7	5.1	3.3	2.2	1.42	0.92
		C1 DCE (ug/L)	52.23529	(Alpha y) / (Alpha x)	0.1			VC	22	18	15.4	12.7	10.1	7.8	5.9	4.4	3.2	2.25	1.59
		C1 VC (ug/L)	21.76471	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	4.2	6.8	9	10	11	12	12.0	12.1	12.0	11.81
C2-SH-RL-3	RL																		
	K*0.5	k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	878,000	129,022	22,363	4,293	864.4	179.0	37.7	8.06	1.74	0.38	0.08
		C1 TCE (ug/L)	878,000	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	309,882	139,657	38,375	9,728	2,372	565.5	132.8	30.9	7.1	1.64	0.37
		C1 DCE (ug/L)	309,882	(Alpha y) / (Alpha x)	0.1			VC	129,118	103,910	43,699	14,986	4,608	1,325	363.8	96.7	25.1	6.38	1.60
		C1 VC (ug/L)	129,118	(Alpha z) / (Alpha x)	1E-99			ETH	0.01	99,713	126,147	124,509	115,275	105,661	97,416	90,624	85,016	80,317	76,314
C2-SH-RL-4	Biodegradation half life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	148.0	60	28.7	15.2	8.5	4.8	2.8	1.66	0.99	0.59	0.36
		C1 TCE (ug/L)	148	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	52	38	26	17.3	11.6	7.7	5.1	3.3	2.2	1.42	0.92
		C1 DCE (ug/L)	52.23529	(Alpha y) / (Alpha x)	0.1			VC	22	18	15.4	12.7	10.1	7.8	5.9	4.4	3.2	2.25	1.59
		C1 VC (ug/L)	21.76471	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	4.2	6.8	9	10	11	12	12.0	12.1	12.0	11.81
C2-SH-RL-5	Biodegradation half life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	878,000	129,022	22,363	4,293	864.4	179.0	37.7	8.06	1.74	0.38	0.08
		C1 TCE (ug/L)	878,000	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	309,882	139,657	38,375	9,728	2,372	565.5	132.8	30.9	7.1	1.64	0.37
		C1 DCE (ug/L)	309,882	(Alpha y) / (Alpha x)	0.1			VC	129,118	103,910	43,699	14,986	4,608	1,325	363.8	96.7	25.1	6.38	1.60
		C1 VC (ug/L)	129,118	(Alpha z) / (Alpha x)	1E-99			ETH	0.01	99,713	126,147	124,509	115,275	105,661	97,416	90,624	85,016	80,317	76,314
C2-SH-Decay-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.05	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	46	λ DCE (1/yr)	0.433	TCE	**6.82**	2.35	0.95	0.43	0.20	0.10	0.05	0.02	0.01	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.41	2.00	1.24	0.74	0.42	0.24	0.13	0.07	0.03	0.02	0.01
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	1.00	1.22	1.08	0.83	0.59	0.39	0.24	0.14	0.08	0.04	0.02
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.67	1.34	2.03	2.67	3.15	3.28	2.95	2.24	1.41	0.70
C2-SH-Decay-2																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.075	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	31	λ DCE (1/yr)	0.433	TCE	**6.65**	2.57	1.17	0.58	0.30	0.15	0.06	0.02	0.01	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.35	2.24	1.57	1.03	0.63	0.35	0.17	0.07	0.02	0.00	0.00
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.98	1.41	1.40	1.19	0.88	0.56	0.29	0.00	0.03	0.01	0.00
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.84	1.83	2.73	3.12	2.71	1.76	0.93	0.29	0.07	0.01
C2-SH-Decay-3	SDR Best Fit at 0.09																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.09	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	27	λ DCE (1/yr)	0.433	TCE	5.99	2.48	1.21	0.64	0.33	0.15	0.06	0.02	0.00	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.11	2.20	1.65	1.13	0.69	0.35	0.14	0.04	0.01	0.00	0.00

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.88	1.41	**1.49**	1.30	0.94	0.53	0.23	0.20	0.01	0.00	0.00
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.88	1.93	2.76	2.80	2.01	1.00	0.28	0.08	0.01	0.00
C2-SH-Decay-4	SDR x 0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.045	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	51	λ DCE (1/yr)	0.433	TCE	**6.85**	2.31	0.91	0.40	0.19	0.09	0.04	0.02	0.01	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.42	1.95	1.19	0.69	0.39	0.21	0.12	0.06	0.03	0.02	0.01
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	1.01	1.19	1.02	0.77	0.54	0.35	0.21	0.13	0.07	0.04	0.02
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.64	1.24	1.85	2.43	2.93	3.23	3.20	2.78	2.06	1.25
C2-SH-Decay-5	Biodegradation Half Life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.09	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	34	λ DCE (1/yr)	0.217	TCE	3.19	2.09	1.61	1.33	1.09	0.81	0.52	0.27	0.11	0.03	0.01
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	1.13	1.45	1.61	1.70	1.63	1.34	0.91	0.49	0.20	0.05	0.01
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.47	0.76	1.09	1.39	**1.52**	1.38	0.99	0.55	0.29	0.05	0.01
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.25	0.64	1.17	1.63	1.74	1.40	0.84	0.35	0.14	0.03
C2-SH-Decay-6	Biodegradation Half Life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.09	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	26	λ DCE (1/yr)	0.866	TCE	**6.55**	1.32	0.31	0.08	0.02	0.01	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	2.31	1.52	0.58	0.20	0.07	0.02	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.96	1.21	0.71	0.33	0.14	0.05	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.65	3.02	3.74	3.37	2.17	0.97	0.30	0.06	0.01	0.00
C2-SH-Decay-7	Seepage Velocity x0.5; Run at BIOCHLOR SDR maximum of 0.066																		
		k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.066	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	35	λ DCE (1/yr)	0.433	TCE	**6.75**	1.60	0.44	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.38	1.89	0.83	0.30	0.09	0.02	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.99	1.57	1.04	0.49	0.16	0.03	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	2.16	3.54	3.04	1.46	0.39	0.06	0.00	0.00	0.00	0.00
C2-SH-Decay-8	Seepage Velocity x2																		
		k (cm/s)	0.01998	Vs (ft/yr)	91.0	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.09	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	26	λ DCE (1/yr)	0.433	TCE	**6.55**	3.33	2.00	1.33	0.93	0.66	0.47	0.33	0.23	0.13	0.07
		C1 TCE (ug/L)	68	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.31	2.19	1.88	1.61	1.36	1.12	0.91	0.70	0.55	0.30	0.17
		C1 DCE (ug/L)	24	(Alpha y) / (Alpha x)	0.1			VC	0.96	1.10	1.20	1.27	1.27	1.22	1.11	0.95	1.63	0.46	0.27
		C1 VC (ug/L)	10	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.30	0.63	1.05	1.54	2.04	2.43	2.56	1.93	1.87	1.26
C2-IN-Steady-1																			
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	83.0	7.3	0.75	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	20.6	17.6	15.0	13.1	11.8	10.9	10.1	9.5	8.9	8.5
C2-IN-RL-1																			
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	3009999501	263511256.7	27210286.71	3111568.229	373305.6707	46,051	5,785	736.1	94.55	12.24	1.59
		C1 VC (ug/L)	3.01E+09	(Alpha z) / (Alpha x)	1E-99			ETH	224.2	746381670.5	639689414.1	542804267.9	476444046.3	429175288.6	393581979.7	365576363.1	342803545.4	323815168.8	307667628.3
C2-IN-RL-2	RL																		
	K*2	k (cm/s)	0.0056	Vs (ft/yr)	32.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	755,000	151,467	35,842	9,392	2,582	730.0	210.1	61.27	18.04	5.35	1.60
		C1 VC (ug/L)	755,000	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	148,833	147,408	132,280	118,388	107,327	98,629	91,670	85,978	81,220	77,172
C2-IN-RL-3	RL																		
	K*0.5	k (cm/s)	0.0014	Vs (ft/yr)	8.1	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	1.039E+15	2.54201E+13	7.33566E+11	23443037208	786009209.2	27097450.4	951,307	33,828	1,214	43.91	1.60
		C1 VC (ug/L)	1.04E+15	(Alpha z) / (Alpha x)	1E-99			ETH	127011491.9	2.87105E+14	2.24703E+14	1.87839E+14	1.64515E+14	1.48139E+14	1.35813E+14	1.26035E+14	1.17923E+14	1.10032E+14	1.02358E+14
C2-IN-RL-4	Biodegradation half life x2																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	755,000	151,467	35,842	9,392	2,582	730.0	210.1	61.27	18.04	5.35	1.60
		C1 VC (ug/L)	755,000	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	148,833	147,408	132,280	118,388	107,327	98,629	91,670	85,978	81,220	77,172
C2-IN-RL-5	Biodegradation half life x0.5																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	1.039E+15	2.54201E+13	7.33566E+11	23443037208	786009209.2	27097450.4	951,307	33,828	1,214	43.91	1.60
		C1 VC (ug/L)	1.04E+15	(Alpha z) / (Alpha x)	1E-99			ETH	127011492.1	2.87105E+14	2.24703E+14	1.87839E+14	1.64518E+14	1.48151E+14	1.35859E+14	1.26191E+14	1.1833E+14	1.11775E+14	1.06202E+14
C2-IN-Decay-1	SDR best fit at 0.42; ran at BIOCHLOR SDR maximum of 0.047																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.047	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	85	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	**1.53**	0.20	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.09	2.01	3.04	3.62	3.24	2.11	0.99	0.33	0.08	0.01
C2-IN-Decay-2	Biodegradation Half Life x2																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.047	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	85	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	**1.53**	0.52	0.21	0.09	0.04	0.02	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.94	1.93	3.00	3.60	3.23	2.11	0.99	0.33	0.08	0.01
C2-IN-Decay-3	Biodegradation Half Life x0.5																		
		k (cm/s)	0.0028	Vs (ft/yr)	16.2	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.047	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	85	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	**1.53**	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.16	2.02	3.04	3.62	3.24	2.11	0.99	0.33	0.08	0.01

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
C2-IN-Decay-4	Seepage Velocity x0.5; ran at BIOCLOR SDR maximum of 0.023																		
		k (cm/s)	0.0014	Vs (ft/yr)	8.1	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.023	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	172	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	**1.59**	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.17	2.02	3.04	3.64	3.30	2.19	1.05	0.36	0.09	0.01
C2-IN-Decay-5	Seepage Velocity x2; ran at BIOCHLOR SDR maximum of 0.095																		
		k (cm/s)	0.0056	Vs (ft/yr)	32.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.095	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	42	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	0	(Alpha y) / (Alpha x)	0.1			VC	**1.54**	0.53	0.21	0.10	0.04	0.02	0.01	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	83	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.96	1.96	3.05	3.62	3.19	2.03	0.93	0.30	0.07	0.01
C4-WT-Steady-1	WT																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	6.2	2.0	0.74	0.31	0.14	0.06	0.03	0.01	0.01	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	170.0	67.9	31.9	16.6	9.0	5.0	2.8	1.63	0.95	0.55	0.32
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	120.0	65.7	38.7	24.0	15.0	9.4	5.9	3.7	2.32	1.45	0.90
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	4.6	20.5	20.6	17.4	13.6	10.2	7.4	5.2	3.7	2.51	1.71
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.0	4.3	8.3	11.5	13.7	15.2	15.9	16.3	16.3	16.1	15.8
C4-WT-RL-1																			
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	5.76	1.84	0.69	0.29	0.13	0.06	0.03	0.01	0.01	0.00	0.00
		C1 PCE (ug/L)	5.8	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	158.0	63.14	29.66	15.39	8.36	4.66	2.65	1.52	0.88	0.51	0.30
		C1 TCE (ug/L)	158	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	111.5	61.03	35.98	22.27	13.95	8.77	5.50	3.45	2.16	1.35	0.84
		C1 DCE (ug/L)	111.5	(Alpha y) / (Alpha x)	0.1			VC	4.28	19.09	19.14	16.17	12.66	9.47	6.87	4.87	3.40	2.34	1.59
		C1 VC (ug/L)	4.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	4.02	7.76	10.69	12.77	14.09	14.82	15.13	15.14	14.97	14.67
C4-WT-RL-2	K*2																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	1.35	0.59	0.31	0.18	0.11	0.07	0.04	0.03	0.02	0.01	0.01
		C1 PCE (ug/L)	1.3	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	37.00	18.47	10.87	7.07	4.82	3.38	2.41	1.74	1.27	0.93	0.69
		C1 TCE (ug/L)	37	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	26.12	15.74	10.80	8.00	6.10	4.71	3.66	2.86	2.23	1.75	1.37
		C1 DCE (ug/L)	26.1	(Alpha y) / (Alpha x)	0.1			VC	1.00	3.09	3.57	3.61	3.44	3.16	2.83	2.49	2.16	1.85	1.58
		C1 VC (ug/L)	1.0	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.33	0.67	1.01	1.33	1.61	1.84	2.04	2.20	2.33	2.42
C4-WT-RL-3	K*0.5																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	152.3	28.13	6.13	1.48	0.37	0.10	0.03	0.01	0.00	0.00	0.00
		C1 PCE (ug/L)	152.3	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	4,175	1,125	354.8	123.2	44.75	16.66	6.31	2.42	0.93	0.36	0.14
		C1 TCE (ug/L)	4,175	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2,947	1,285	546.4	234.7	100.2	42.47	17.87	7.48	3.11	1.29	0.53
		C1 DCE (ug/L)	2,947	(Alpha y) / (Alpha x)	0.1			VC	113.0	620.9	447.6	262.9	140.9	71.41	34.88	16.58	7.72	3.54	1.60
		C1 VC (ug/L)	113.0	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	268.4	442.1	520.6	540.4	530.5	508.3	482.6	457.5	434.4	413.8
C4-WT-RL-4	Biodegradation half life x2																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	1.35	0.59	0.31	0.18	0.11	0.07	0.04	0.03	0.02	0.01	0.01
		C1 PCE (ug/L)	1.3	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	37.00	18.47	10.87	7.07	4.82	3.38	2.41	1.74	1.27	0.93	0.69
		C1 TCE (ug/L)	37	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	26.12	15.74	10.80	8.00	6.10	4.71	3.66	2.86	2.23	1.75	1.37
		C1 DCE (ug/L)	26.1	(Alpha y) / (Alpha x)	0.1			VC	1.00	3.09	3.57	3.61	3.44	3.16	2.83	2.49	2.16	1.85	1.58
		C1 VC (ug/L)	1.0	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.33	0.67	1.01	1.33	1.61	1.84	2.04	2.20	2.33	2.42

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
C4-WT-RL-5	Biodegradation half life x0.5																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	152.3	28.13	6.13	1.48	0.37	0.10	0.03	0.01	0.00	0.00	0.00
		C1 PCE (ug/L)	152.3	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	4,175	1,125	354.8	123.2	44.75	16.66	6.31	2.42	0.93	0.36	0.14
		C1 TCE (ug/L)	4,175	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	2,947	1,285	546.4	234.7	100.2	42.47	17.87	7.48	3.11	1.29	0.53
		C1 DCE (ug/L)	2,947	(Alpha y) / (Alpha x)	0.1			VC	113.0	620.9	447.6	262.9	140.9	71.41	34.88	16.58	7.72	3.54	1.60
		C1 VC (ug/L)	113.0	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	268.4	442.1	520.6	540.4	530.5	508.3	482.6	457.5	434.4	413.8
C4-WT-Decay-1	SDR 0.05																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.05	λ TCE (1/yr)	0.385	PCE	0.24	0.09	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	65	λ DCE (1/yr)	0.433	TCE	**6.59**	3.01	1.61	0.95	0.59	0.38	0.24	0.16	0.10	0.07	0.05
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.65	2.95	2.00	1.42	1.01	0.73	0.52	0.37	0.27	0.19	0.13
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.18	0.97	1.12	1.08	0.97	0.82	0.68	0.55	0.44	0.34	0.27
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.23	0.51	0.81	1.12	1.44	1.77	2.12	2.48	2.87	3.30
C4-WT-Decay-2	SDR 0.075																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.075	λ TCE (1/yr)	0.385	PCE	0.21	0.08	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	45	λ DCE (1/yr)	0.433	TCE	5.82	2.84	1.63	1.03	0.69	0.47	0.32	0.23	0.16	0.11	0.08
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.11	2.81	2.05	1.56	1.20	0.92	0.71	0.54	0.41	0.31	0.24
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.16	0.95	1.17	**1.22**	1.17	1.07	0.95	0.82	0.70	0.58	0.48
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.24	0.57	0.99	1.48	2.06	2.73	3.50	4.34	5.19	5.92
C4-WT-Decay-3	SDR Best Fit at 0.11																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.11	λ TCE (1/yr)	0.385	PCE	0.13	0.06	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	35	λ DCE (1/yr)	0.433	TCE	3.62	1.95	1.24	0.87	0.64	0.48	0.37	0.28	0.21	0.16	0.11
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.55	1.96	1.59	1.34	1.14	0.97	0.82	0.68	0.55	0.43	0.32
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.10	0.69	0.95	1.09	1.16	**1.17**	1.14	1.07	0.94	0.79	0.62
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.19	0.51	0.98	1.64	2.50	3.54	4.62	5.54	5.97	5.72
C4-WT-Decay-4	SDR x 0.5																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.055	λ TCE (1/yr)	0.385	PCE	0.24	0.09	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	59	λ DCE (1/yr)	0.433	TCE	**6.62**	3.06	1.66	1.00	0.63	0.40	0.26	0.18	0.12	0.08	0.05
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.68	3.01	2.07	1.49	1.08	0.79	0.57	0.41	0.30	0.22	0.16
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.18	0.99	1.16	1.14	1.03	0.89	0.75	0.62	0.50	0.39	0.31
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.24	0.53	0.87	1.22	1.60	1.99	2.41	2.87	3.38	3.91
C4-WT-Decay-5	Biodegradation Half Life x2																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.11	λ TCE (1/yr)	0.193	PCE	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	49	λ DCE (1/yr)	0.217	TCE	0.78	0.54	0.45	0.41	0.39	0.38	0.38	0.39	0.39	0.40	0.40
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	0.55	0.48	0.47	0.49	0.53	0.58	0.63	0.69	0.75	0.81	0.85
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.02	0.11	0.18	0.26	0.34	0.44	0.56	0.69	0.82	0.97	**1.10**
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.01	0.04	0.10	0.18	0.31	0.51	0.80	1.20	1.72	2.34
C4-WT-Decay-6	Biodegradation Half Life x0.5																		
		k (cm/s)	0.017	Vs (ft/yr)	84.4	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.11	λ TCE (1/yr)	0.770	PCE	0.20	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	31	λ DCE (1/yr)	0.866	TCE	5.62	1.95	0.79	0.35	0.17	0.08	0.04	0.02	0.01	0.00	0.00
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	3.96	2.31	1.28	0.71	0.39	0.21	0.11	0.06	0.03	0.02	0.01
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.15	**1.21**	1.14	0.86	0.60	0.39	0.24	0.15	0.09	0.05	0.03
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.68	1.53	2.50	3.60	4.82	6.03	6.93	7.16	6.53	5.17
C4-WT-Decay-7	Seepage Velocity x0.5																		
		k (cm/s)	0.0085	Vs (ft/yr)	42.2	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.11	λ TCE (1/yr)	0.385	PCE	0.11	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	37	λ DCE (1/yr)	0.433	TCE	2.90	1.34	0.72	0.42	0.25	0.15	0.08	0.04	0.01	0.00	0.00
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	2.05	1.65	1.22	0.89	0.63	0.41	0.23	0.11	0.04	0.01	0.00
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.08	0.97	**1.20**	1.19	1.02	0.76	0.48	0.21	0.08	0.02	0.01
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.75	2.16	4.11	5.87	6.41	5.29	3.29	1.51	0.51	0.13
C4-WT-Decay-8	Seepage Velocity x2																		
		k (cm/s)	0.034	Vs (ft/yr)	168.9	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.11	λ TCE (1/yr)	0.385	PCE	0.18	0.09	0.06	0.04	0.03	0.02	0.01	0.01	0.01	0.01	0.00
		C1 PCE (ug/L)	6.2	Sim. Time (years)	32	λ DCE (1/yr)	0.433	TCE	5.03	2.95	2.04	1.56	1.25	1.03	0.86	0.73	0.63	0.54	0.47
		C1 TCE (ug/L)	170	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3.55	2.55	2.07	1.82	1.63	1.49	1.36	1.25	1.15	1.06	0.97
		C1 DCE (ug/L)	120	(Alpha y) / (Alpha x)	0.1			VC	0.14	0.53	0.73	0.88	0.98	1.06	1.12	1.16	1.19	**1.20**	**1.20**
		C1 VC (ug/L)	4.6	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.06	0.16	0.28	0.43	0.62	0.85	1.12	1.44	1.81	2.23
C4-SH-Steady-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	17.40	6.92	2.73	1.06	0.41	0.16	0.06	0.02	0.01	0.00	0.00

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

Run ID	Note	Input Parameter Summary						BIOCHLOR First-Order Biodegradation Results *(downgradient distance as headers; model output concentrations as ug/L)*	*Model Source Area*										*Discharge at Duwamish*
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	2.30	4.51	3.26	1.87	0.96	0.46	0.22	0.10	0.04	0.02	0.01
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	2.04	3.76	4.72	5.12	5.20	5.14	5.01	4.86	4.71	4.57
C4-SH-RL-1																			
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	3,250	1,292	509.2	197.4	76	29	11	4.3	1.6	0.6	0.2
		C1 DCE (ug/L)	3,250	(Alpha y) / (Alpha x)	0.1			VC	429.6	843.1	609.5	348.8	179.3	86.8	40.5	18.5	8.3	3.6	1.60
		C1 VC (ug/L)	429.5977	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	381.5	702.8	881.9	956.2	972.1	960.0	936.2	908.5	880.4	853.4
C4-SH-RL-2	K*2																		
		k (cm/s)	0.01998	Vs (ft/yr)	91.0	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	93.00	56.11	33.54	19.72	11.50	6.68	3.88	2.26	1.31	0.77	0.45
		C1 DCE (ug/L)	93	(Alpha y) / (Alpha x)	0.1			VC	12.29	24.31	24.90	20.91	15.94	11.50	8.02	5.46	3.66	2.42	1.58
		C1 VC (ug/L)	12.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	5.29	11.26	16.24	19.80	22.07	23.36	23.95	24.09	23.93	23.60
C4-SH-RL-3	K*0.5																		
		k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	1,715,000	342,396	67,726	13,182	2,543	489.0	94.01	18.09	3.49	0.67	0.13
		C1 DCE (ug/L)	1,715,000	(Alpha y) / (Alpha x)	0.1			VC	226,695	336,836	128,726	38,069	10,047	2,492	594.9	138.5	31.67	7.15	1.60
		C1 VC (ug/L)	226,695	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	348,367	515,888	557,420	553,449	536,751	517,627	498,988	481,577	465,514	450,738
C4-SH-RL-4	Biodegradation half life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	93.00	56.11	33.54	19.72	11.50	6.68	3.88	2.26	1.31	0.77	0.45
		C1 DCE (ug/L)	93	(Alpha y) / (Alpha x)	0.1			VC	12.29	24.31	24.90	20.91	15.94	11.50	8.02	5.46	3.66	2.42	1.58
		C1 VC (ug/L)	12.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	5.29	11.26	16.24	19.80	22.07	23.36	23.95	24.09	23.93	23.60
C4-SH-RL-5	Biodegradation half life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	500	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	1,715,000	342,396	67,726	13,182	2,543	489.0	94.01	18.09	3.49	0.67	0.13
		C1 DCE (ug/L)	1,715,000	(Alpha y) / (Alpha x)	0.1			VC	226,695	336,836	128,726	38,069	10,047	2,492	594.9	138.5	31.67	7.15	1.60
		C1 VC (ug/L)	226,695	(Alpha z) / (Alpha x)	1E-99			ETH	0.03	348,367	515,888	557,420	553,449	536,751	517,627	498,988	481,577	465,514	450,738
C4-SH-Decay-1	SDR Best Fit at 0.03																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	40	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	5.24	2.36	1.05	0.46	0.20	0.09	0.04	0.01	0.01	0.00	0.00
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.69	**1.60**	1.31	0.85	0.49	0.27	0.14	0.06	0.03	0.01	0.00
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.81	1.73	2.49	2.99	3.10	2.74	2.01	1.19	0.56	0.16
C4-SH-Decay-2	SDR x 0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.015	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	75	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	5.65	2.39	1.00	0.41	0.17	0.07	0.03	0.01	0.00	0.00	0.00
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.75	**1.59**	1.22	0.74	0.41	0.21	0.10	0.05	0.02	0.01	0.01
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.76	1.51	2.05	2.42	2.68	2.88	3.03	3.14	3.15	2.90
C4-SH-Decay-3	Biodegradation Half Life x2																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	0.289	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.193	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	48	λ DCE (1/yr)	0.217	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.204	DCE	4.12	2.88	1.99	1.35	0.91	0.61	0.40	0.25	0.15	0.08	0.04
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.54	1.30	**1.56**	1.52	1.34	1.10	0.86	0.62	0.39	0.22	0.11
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.32	0.79	1.34	1.88	2.31	2.51	2.37	1.93	1.32	0.60
C4-SH-Decay-4	Biodegradation Half Life x0.5																		
		k (cm/s)	0.00999	Vs (ft/yr)	45.5	λ PCE (1/yr)	1.155	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.770	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	30	λ DCE (1/yr)	0.866	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.815	DCE	7.07	1.56	0.34	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.94	**1.57**	0.67	0.22	0.06	0.02	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.81	3.05	3.58	3.40	2.58	1.49	0.64	0.20	0.05	0.00
C4-SH-Decay-5	Seepage Velocity x0.5																		
		k (cm/s)	0.004995	Vs (ft/yr)	22.7	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200

Table 4b. BIOCHLOR Model Output- C2 and C4 Source Areas

West of Fourth, Seattle, Washington

									Model Source Area										*Discharge at Duwamish*
Run ID	**Note**	**Input Parameter Summary**						**BIOCHLOR First-Order Biodegradation Results** *(downgradient distance as headers; model output concentrations as ug/L)*											
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	34	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	6.27	1.53	0.37	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.83	**1.59**	0.74	0.25	0.06	0.01	0.00	0.00	0.00	0.00	0.00
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	1.87	2.89	2.30	1.03	0.25	0.03	0.00	0.00	0.00	0.00
C4-SH-Decay-6	Seepage Velocity x2																		
		k (cm/s)	0.01998	Vs (ft/yr)	91.0	λ PCE (1/yr)	0.578	X, (ft)	0.00	120.0	240.0	360.0	480.0	600.0	720.0	840.0	960.0	1,080	1,200
		R	2.25	SDR ks (1/yr)	0.03	λ TCE (1/yr)	0.385	PCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 PCE (ug/L)	0	Sim. Time (years)	42	λ DCE (1/yr)	0.433	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		C1 TCE (ug/L)	0	Alpha x	31.2	λ VC (1/yr)	0.408	DCE	4.94	3.20	2.05	1.30	0.81	0.51	0.32	0.20	0.12	0.08	0.05
		C1 DCE (ug/L)	17.4	(Alpha y) / (Alpha x)	0.1			VC	0.65	1.42	**1.56**	1.41	1.16	0.90	0.67	0.49	0.36	0.25	0.18
		C1 VC (ug/L)	2.3	(Alpha z) / (Alpha x)	1E-99			ETH	0.00	0.32	0.75	1.18	1.56	1.89	2.18	2.43	2.64	2.79	2.81

PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: cis-1,2 Dichloroethene
VC: Vinyl Chloride
ETH: Ethene

C1: Input Concentration
SDR ks: Source Decay Rate
λ : Biodegradation Rate

Table 5. Summary of Preliminary Remediation Levels
West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	Tetrachloroethene	Trichloroethene	cis-1,2 DCE	Vinyl Chloride
PCUL-VI	*WT*	*116*	*6.9*	*NR*	*1.3*
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*
BD	WT	--	1,120	611	94
BD	SH	--	--	520,000	170,182
BD	IN	--	--	1,000,000 *	1,000,000 *
C2	WT	--	173	100	0.8
C2	SH	--	2,970	1,048	436.8
C2	IN	--	--	--	1,000,000 *
C4	WT	6	158	112	4.3
C4	SH	--	--	3,250	429.6
C4	IN	--	--	--	--

Notes:

PCUL-VI Preliminary Cleanup Level protective of air quality (Unrestricted Land Use) (Farallon, 2014; revised Sept. 2015)
PCUL-SW Preliminary cleanup level protective of surface water (Farallon, 2014; revised Sept. 2015)
NR Value not researched
-- Value not estimated due to lack of detection. PCUL applies.

Source areas

BD SW corner of Blaser Facility
C4 CI Plant 4
C2 Down gradient of Capital Industries Plant 2

* Remediation level calculations exceed 1,000,000 ug/L.

Table 6. Summary of BIOCHLOR Remediation Timescales

West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	PCE	TCE	cis-1,2 DCE	VC	SDR (ks, 1/yr)	Years to PCULs	Basis
		Source Area Concentrations (ug/L)						
BD	WT	0	110	60	9.2	0.20	23	BIOCHLOR, SDR Best Fit (actual best fit is 0.24)
BD	SH	0	0	22	7.2	0.03	51	BIOCHLOR, SDR Best Fit
BD	IN	0	0	4.2	12	0.047	48	BIOCHLOR Maximum Rate (actual best fit is 0.12)
C2	WT	0	45	26	0.21	0.12	20	BIOCHLOR, SDR Best Fit
C2	SH	0	68	24	10	0.09	27	BIOCHLOR, SDR Best Fit
C2	IN	0	0	0	83	0.047	85	BIOCHLOR Maximum Rate (actual best fit is 0.42)
C4	WT	6.2	170	120	4.6	0.11	35	BIOCHLOR, SDR Best Fit
C4	SH	0	0	17.4	2.3	0.03	40	BIOCHLOR, SDR Best Fit
C4	IN	0	0	0	0.47	0.1	0	Currently Compliant with PCULs
Remediation Time Sensitivity Analysis Results								
BD	WT	0	110	60	9.2	0.1	31	BIOCHLOR, SDR Best Fit x0.5
BD	WT	0	110	60	9.2	0.2	35	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
BD	WT	0	110	60	9.2	0.2	17	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
BD	WT	0	110	60	9.2	0.2	21	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
BD	WT	0	110	60	9.2	0.125	30	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5
BD	SH	0	0	22	7.2	0.015	101	BIOCHLOR, SDR Best Fit x0.5
BD	SH	0	0	22	7.2	0.03	51	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
BD	SH	0	0	22	7.2	0.03	51	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
BD	SH	0	0	22	7.2	0.03	51	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
BD	SH	0	0	22	7.2	0.03	51	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5
BD	IN	0	0	4.2	12	0.12	13	Analytical for VC
C2	WT	0	45	26	0.21	0.06	32	BIOCHLOR, SDR Best Fit x0.5
C2	WT	0	45	26	0.21	0.12	23	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
C2	WT	0	45	26	0.21	0.12	16	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
C2	WT	0	45	26	0.21	0.12	17	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
C2	WT	0	45	26	0.21	0.12	22	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5
C2	SH	0	68	24	10	0.045	51	BIOCHLOR, SDR Best Fit x0.5
C2	SH	0	68	24	10	0.09	34	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
C2	SH	0	68	24	10	0.09	26	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
C2	SH	0	68	24	10	0.09	26	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
C2	SH	0	68	24	10	0.066	35	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5; run at BIOCLOR Max Rate of 0.066 (actual best fit 0.09)
C2	SH	0	68	24	10	0.05	27	Analytical, TCE
C2	IN	0	0	0	83	0.047	85	BIOCHLOR, SDR Max Rate (actual best fit 0.42), Biodegradation Half Life x2
C2	IN	0	0	0	83	0.047	85	BIOCHLOR, SDR Max Rate (actual best fit 0.42), Biodegradation Half Life x0.5
C2	IN	0	0	0	83	0.023	42	BIOCHLOR, SDR Max Rate (actual best fit 0.42), Seepage Velocity x2
C2	IN	0	0	0	83	0.095	172	BIOCHLOR, SDR Max Rate (actual best fit 0.42), Seepage Velocity x0.5
C2	IN	0	0	0	83	0.05	71	Analytical, VC
C2	IN	0	0	0	83	0.1	35	Analytical, VC
C2	IN	0	0	0	83	0.15	24	Analytical, VC
C2	IN	0	0	0	83	0.2	18	Analytical, VC
C2	IN	0	0	0	83	0.42	8	Analytical, VC
C4	WT	6.2	170	120	4.6	0.055	59	BIOCHLOR, SDR Best Fit x0.5
C4	WT	6.2	170	120	4.6	0.11	49	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
C4	WT	6.2	170	120	4.6	0.11	31	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
C4	WT	6.2	170	120	4.6	0.11	32	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
C4	WT	6.2	170	120	4.6	0.11	37	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5
C4	SH	0	0	0	2.3	0.015	75	BIOCHLOR, SDR Best Fit x0.5
C4	SH	0	0	0	2.3	0.03	48	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x2
C4	SH	0	0	0	2.3	0.03	30	BIOCHLOR, SDR Best Fit, Biodegradation Half Life x0.5
C4	SH	0	0	0	2.3	0.03	42	BIOCHLOR, SDR Best Fit, Seepage Velocity x2
C4	SH	0	0	0	2.3	0.03	34	BIOCHLOR, SDR Best Fit, Seepage Velocity x0.5
C4	IN	0	0	0	0.47	0.1	--	NA

Notes:

Source areas

BD SW corner of Blaser Facility

C4 CI Plant 4

C2 Down gradient of Capital Industries Plant 2

Analytical solution is $t = -\ln[C_{goal} / C_{current}] / ks$

See Table 4 for BIOCHLOR run summaries.

SDR estimates from Table 3.

PCULs from Table 1.

NA: Not Applicable because value is currently below PCULs.

Model run output and inputs are included in Table 4.

Table 7a. Summary of Analytical Remediation Timescales

West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	*Modeled Plume Concentrations (ug/L)* PCE	TCE	cis-1,2 DCE	VC	Total HVOC (umol/L)	SDR (ks, 1/yr)	Seepage Velocity (ft year)	R	Dowgradient Distance (ft)	Transit Time (years)	C1/C2 [PCUL / Total HVOC]	Target PV Turnover [1]	Flushing Time [2] (years)	SDR Degradation Time	SDT / FT [3]	SDR Basis
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
BD	WT	0	120	120	40	2.8	0.21	83	2.25	300	8	0.01	2.7	22	**22**	1.0	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	WT	0	120	120	40	2.8	0.105	83	2.25	300	8	0.01	2.7	22	45	2.0	SDR at 0.5x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.42	83	2.25	300	8	0.01	2.7	22	11	0.5	SDR at 2x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.63	83	2.25	300	8	0.01	2.7	22	7	0.3	SDR at 3x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.21	166	2.25	300	4	0.01	2.7	11	22	2.0	SDR at Pre-Remediation Best Fit, 2x Vs
BD	WT	0	120	120	40	2.8	0.21	41.5	2.25	300	16	0.01	2.7	44	22	0.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	SH	0	0	22	7.2	0.3	0.03	45	2.25	300	15	0.07	1.8	27	**86**	3.2	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	SH	0	0	22	7.2	0.3	0.015	45	2.25	300	15	0.07	1.9	28	173	6.1	SDR at 0.5x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.06	45	2.25	300	15	0.07	1.8	27	43	1.6	SDR at 2x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.09	45	2.25	300	15	0.07	1.8	27	29	1.1	SDR at 3x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.03	90	2.25	300	8	0.07	1.8	13	86	6.4	SDR at Pre-Remediation Best Fit, 2x Vs
BD	SH	0	0	22	7.2	0.3	0.03	22.5	2.25	300	30	0.07	1.8	54	86	1.6	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	0.12	16	2.25	300	42	0.11	1.6	69	**18**	0.3	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	IN	0	0	4.2	12	0.2	0.06	16	2.25	300	42	0.11	1.6	69	37	0.5	SDR at 0.5x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.24	16	2.25	300	42	0.11	1.6	69	9	0.1	SDR at 2x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.36	16	2.25	300	42	0.11	1.6	69	6	0.1	SDR at 3x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.12	32	2.25	300	21	0.11	1.6	35	18	0.5	SDR at Pre-Remediation Best Fit, 2x Vs
BD	IN	0	0	4.2	12	0.2	0.12	8	2.25	300	84	0.11	1.6	139	18	0.1	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	0.047	16	2.25	300	42	0.11	1.6	69	**47**	0.7	SDR at BIOCHLOR Maximum Allowed value
BD	IN	0	0	4.2	12	0.2	0.094	16	2.25	300	42	0.11	1.6	69	24	0.3	SDR at 2x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	0.141	16	2.25	300	42	0.11	1.6	69	16	0.2	SDR at 3x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	0.047	32	2.25	300	21	0.11	1.6	35	47	1.4	SDR BIOHCLOR Maximum, 2x Vs
BD	IN	0	0	4.2	12	0.2	0.047	8	2.25	300	84	0.11	1.6	139	47	0.3	SDR at BIOHCLOR Maximum, 0.5x Vs
C2	WT	0	45	26	0.21	0.6	0.12	83	2.25	300	8	0.03	2.1	17	**26**	1.5	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	WT	0	45	26	0.21	0.6	0.06	83	2.25	300	8	0.03	2.1	17	53	3.1	SDR at 0.5x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.24	83	2.25	300	8	0.03	2.1	17	13	0.8	SDR at 2x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.36	83	2.25	300	8	0.03	2.1	17	9	0.5	SDR at 3x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.12	166	2.25	300	4	0.03	2.1	9	26	3.1	SDR at Pre-Remediation Best Fit, 2x Vs
C2	WT	0	45	26	0.21	0.6	0.12	41.5	2.25	300	16	0.03	2.1	34	26	0.8	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	SH	0	68	24	10	0.9	0.09	45	2.25	300	15	0.03	2.2	33	**40**	1.2	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	SH	0	68	24	10	0.9	0.045	45	2.25	300	15	0.03	2.2	33	80	2.4	SDR at 0.5x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.18	45	2.25	300	15	0.03	2.2	33	20	0.6	SDR at 2x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.27	45	2.25	300	15	0.03	2.2	33	13	0.4	SDR at 3x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.09	90	2.25	300	8	0.03	2.2	16	40	2.4	SDR at Pre-Remediation Best Fit, 2x Vs
C2	SH	0	68	24	10	0.9	0.09	22.5	2.25	300	30	0.03	2.2	66	40	0.6	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	IN	0	0	0	83	1.3	0.42	16	2.25	300	42	0.02	2.3	99	**9**	0.1	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	IN	0	0	0	83	1.3	0.21	16	2.25	300	42	0.02	2.3	99	19	0.2	SDR at 0.5x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	0.84	16	2.25	300	42	0.02	2.3	99	5	0.0	SDR at 2x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	1.26	16	2.25	300	42	0.02	2.3	99	3	0.0	SDR at 3x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	0.42	32	2.25	300	21	0.02	2.3	49	9	0.2	SDR at Pre-Remediation Best Fit, 2x Vs
C2	IN	0	0	0	83	1.3	0.42	8	2.25	300	84	0.02	2.3	198	9	0.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	WT	6.2	170	120	4.6	2.6	0.11	83	2.25	300	8	0.01	2.7	22	**42**	1.9	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	WT	0	170	120	4.6	2.6	0.055	83	2.25	300	8	0.01	2.7	22	84	3.8	SDR at 0.5x Pre-Remediation Best Fit
C4	WT	6.2	170	120	4.6	2.6	0.22	83	2.25	300	8	0.01	2.7	22	21	1.0	SDR at 2x Pre-Remediation Best Fit
C4	WT	6.2	170	120	4.6	2.6	0.33	83	2.25	300	8	0.01	2.7	22	14	0.6	SDR at 3x Pre-Remediation Best Fit

Table 7a. Summary of Analytical Remediation Timescales

West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	*Modeled Plume Concentrations (ug/L)*				Total HVOC (umol/L)	SDR (ks, 1/yr)	Seepage Velocity (ft year)	R	Dowgradient Distance (ft)	Transit Time (years)	C1/C2 [PCUL / Total HVOC]	Target PV Turnover [1]	Flushing Time [2] *(years)*	SDR Degradation Time	SDT / FT [3]	SDR Basis
		PCE	TCE	cis-1,2 DCE	VC												
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
C4	WT	6.2	170	120	4.6	2.6	0.11	166	2.25	300	4	0.01	*2.7*	*11*	42	3.8	SDR at Pre-Remediation Best Fit, 2x Vs
C4	WT	6.2	170	120	4.6	2.6	0.11	41.5	2.25	300	16	0.01	*2.7*	*44*	42	1.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	45	2.25	300	15	0.12	*1.6*	*24*	**71**	2.9	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	SH	0	0	17.4	2.3	0.2	0.015	45	2.25	300	15	0.12	*1.7*	*25*	142	5.6	SDR at 0.5x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.06	45	2.25	300	15	0.12	*1.6*	*24*	36	1.5	SDR at 2x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.09	45	2.25	300	15	0.12	*1.6*	*24*	24	1.0	SDR at 3x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.03	90	2.25	300	8	0.12	*1.6*	*12*	71	5.9	SDR at Pre-Remediation Best Fit, 2x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	22.5	2.25	300	30	0.12	*1.6*	*48*	71	1.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	IN	*Not Calculated: Currently Compliant with PCULs.*															

Notes:

Model Source Areas:

BD SW corner of Blaser Facility
C4 CI Plant 4
C2 Down gradient of Capital Industries Plant 2

WT- Water Table Interval
SH- Shallow Interval
IN- Intermediate Interval

SDT: Source Decay Time
FT: Flushing Time (no source decay)

* ks assumed to be 0.1, calculated based on concentration of analyte indicated.

Analytical solution is $t = -ln[C_{goal} / C_{current}] / ks$ where Cgoal is the VC PCUL expressed as a molar quantity and $C_{current}$ is the total HVOC concentration.

[1] Target Pore Volume (PV) turnover is the number of pore volumes flushed to remove CVOCs (ignoring biodegradation) is calculated as: $PV = -0.93 \log_{10} ([[PCU/Ltotal HVOC]]) +0.75$ (Weidemeier, et al, 1999, eqn. 2.7)

[2] Flushing time calculated as: $t = (PV * downgradient distance * R) / (Vs)$

3 Ratio of source decay rate based remediation time (SDT) to straight flushing time (FT) with no biodegradation.

See Table 3a,b for Source Decay Rates (SDRs)

SDR: Source Decay Rate

Vs: Seepage Velocity from Table 1

R: Retardation Factor

PCULs from Table 1.

NA: Not Applicable because value is currently below PCULs.

Table 7b. Summary of Analytical Remediation Timescales (SDR based on 2010+ monitoring data)

West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	PCE	TCE	cis-1,2 DCE	VC	Total HVOC (umol/L)	SDR (ks, 1/yr)	Seepage Velocity (ft year)	R	Dowgradient Distance (ft)	Transit Time (years)	C1/C2 [PCUL / Total HVOC]	Target PV Turnover [1]	Flushing Time [2] (years)	SDR Degradation Time	SDT / FT [3]	SDR Basis
		Modeled Plume Concentrations (ug/L)															
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
BD	WT	0	120	120	40	2.8	0.287	83	2.25	300	8	0.01	*2.7*	*22*	**16**	0.7	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	WT	0	120	120	40	2.8	0.1435	83	2.25	300	8	0.01	*2.7*	*22*	33	1.5	SDR at 0.5x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.574	83	2.25	300	8	0.01	*2.7*	*22*	8	0.4	SDR at 2x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.861	83	2.25	300	8	0.01	*2.7*	*22*	5	0.2	SDR at 3x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.287	166	2.25	300	4	0.01	*2.7*	*11*	16	1.5	SDR at Pre-Remediation Best Fit, 2x Vs
BD	WT	0	120	120	40	2.8	0.287	41.5	2.25	300	16	0.01	*2.7*	*44*	16	0.4	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	SH	0	0	22	7.2	0.3	0.006	45	2.25	300	15	0.07	*1.8*	*27*	**432**	16.0	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	SH	0	0	22	7.2	0.3	0.003	45	2.25	300	15	0.07	*1.9*	*28*	864	30.6	SDR at 0.5x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.012	45	2.25	300	15	0.07	*1.8*	*27*	216	8.0	SDR at 2x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.018	45	2.25	300	15	0.07	*1.8*	*27*	144	5.3	SDR at 3x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	0.006	90	2.25	300	8	0.07	*1.8*	*13*	432	32.1	SDR at Pre-Remediation Best Fit, 2x Vs
BD	SH	0	0	22	7.2	0.3	0.006	22.5	2.25	300	30	0.07	*1.8*	*54*	432	8.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	0.15	16	2.25	300	42	0.11	*1.6*	*69*	**15**	0.2	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	IN	0	0	4.2	12	0.2	0.075	16	2.25	300	42	0.11	*1.6*	*69*	30	0.4	SDR at 0.5x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.3	16	2.25	300	42	0.11	*1.6*	*69*	7	0.1	SDR at 2x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.45	16	2.25	300	42	0.11	*1.6*	*69*	5	0.1	SDR at 3x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	0.15	32	2.25	300	21	0.11	*1.6*	*35*	15	0.4	SDR at Pre-Remediation Best Fit, 2x Vs
BD	IN	0	0	4.2	12	0.2	0.15	8	2.25	300	84	0.11	*1.6*	*139*	15	0.1	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	0.047	16	2.25	300	42	0.11	*1.6*	*69*	**47**	0.7	SDR at BIOCHLOR Maximum Allowed value
BD	IN	0	0	4.2	12	0.2	0.094	16	2.25	300	42	0.11	*1.6*	*69*	24	0.3	SDR at 2x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	0.141	16	2.25	300	42	0.11	*1.6*	*69*	16	0.2	SDR at 3x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	0.047	32	2.25	300	21	0.11	*1.6*	*35*	47	1.4	SDR BIOHCLOR Maximum, 2x Vs
BD	IN	0	0	4.2	12	0.2	0.047	8	2.25	300	84	0.11	*1.6*	*139*	47	0.3	SDR at BIOHCLOR Maximum, 0.5x Vs
C2	WT	0	45	26	0.21	0.6	0.046	83	2.25	300	8	0.03	*2.1*	*17*	**69**	4.0	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	WT	0	45	26	0.21	0.6	0.023	83	2.25	300	8	0.03	*2.1*	*17*	138	8.0	SDR at 0.5x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.092	83	2.25	300	8	0.03	*2.1*	*17*	35	2.0	SDR at 2x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.138	83	2.25	300	8	0.03	*2.1*	*17*	23	1.3	SDR at 3x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.046	166	2.25	300	4	0.03	*2.1*	*9*	69	8.0	SDR at Pre-Remediation Best Fit, 2x Vs
C2	WT	0	45	26	0.21	0.6	0.046	41.5	2.25	300	16	0.03	*2.1*	*34*	69	2.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	SH	0	68	24	10	0.9	0.106	45	2.25	300	15	0.03	*2.2*	*33*	**34**	1.0	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	SH	0	68	24	10	0.9	0.053	45	2.25	300	15	0.03	*2.2*	*33*	68	2.1	SDR at 0.5x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.212	45	2.25	300	15	0.03	*2.2*	*33*	17	0.5	SDR at 2x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.318	45	2.25	300	15	0.03	*2.2*	*33*	11	0.3	SDR at 3x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.106	90	2.25	300	8	0.03	*2.2*	*16*	34	2.1	SDR at Pre-Remediation Best Fit, 2x Vs
C2	SH	0	68	24	10	0.9	0.106	22.5	2.25	300	30	0.03	*2.2*	*66*	34	0.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	IN	0	0	0	83	1.3	0.42	16	2.25	300	42	0.02	*2.3*	*99*	**9**	0.1	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	IN	0	0	0	83	1.3	0.21	16	2.25	300	42	0.02	*2.3*	*99*	19	0.2	SDR at 0.5x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	0.84	16	2.25	300	42	0.02	*2.3*	*99*	5	0.0	SDR at 2x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	1.26	16	2.25	300	42	0.02	*2.3*	*99*	3	0.0	SDR at 3x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	0.42	32	2.25	300	21	0.02	*2.3*	*49*	9	0.2	SDR at Pre-Remediation Best Fit, 2x Vs
C2	IN	0	0	0	83	1.3	0.42	8	2.25	300	84	0.02	*2.3*	*198*	9	0.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	WT	6.2	170	120	4.6	2.6	0.04	83	2.25	300	8	0.01	*2.7*	*22*	**116**	5.3	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	WT	0	170	120	4.6	2.6	0.02	83	2.25	300	8	0.01	*2.7*	*22*	232	10.5	SDR at 0.5x Pre-Remediation Best Fit
C4	WT	6.2	170	120	4.6	2.6	0.08	83	2.25	300	8	0.01	*2.7*	*22*	58	2.6	SDR at 2x Pre-Remediation Best Fit
C4	WT	6.2	170	120	4.6	2.6	0.12	83	2.25	300	8	0.01	*2.7*	*22*	39	1.8	SDR at 3x Pre-Remediation Best Fit

Table 7b. Summary of Analytical Remediation Timescales (SDR based on 2010+ monitoring data)

West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	*Modeled Plume Concentrations (ug/L)* PCE	TCE	cis-1,2 DCE	VC	Total HVOC (umol/L)	SDR (ks, 1/yr)	Seepage Velocity (ft year)	R	Dowgradient Distance (ft)	Transit Time (years)	C1/C2 [PCUL / Total HVOC]	Target PV Turnover [1]	Flushing Time [2] *(years)*	SDR Degradation Time	SDT / FT [3]	SDR Basis
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
C4	WT	6.2	170	120	4.6	2.6	0.04	166	2.25	300	4	0.01	*2.7*	*11*	116	10.5	SDR at Pre-Remediation Best Fit, 2x Vs
C4	WT	6.2	170	120	4.6	2.6	0.04	41.5	2.25	300	16	0.01	*2.7*	*44*	116	2.6	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	45	2.25	300	15	0.12	*1.6*	*24*	**71**	2.9	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	SH	0	0	17.4	2.3	0.2	0.015	45	2.25	300	15	0.12	*1.7*	*25*	142	5.6	SDR at 0.5x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.06	45	2.25	300	15	0.12	*1.6*	*24*	36	1.5	SDR at 2x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.09	45	2.25	300	15	0.12	*1.6*	*24*	24	1.0	SDR at 3x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.03	90	2.25	300	8	0.12	*1.6*	*12*	71	5.9	SDR at Pre-Remediation Best Fit, 2x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	22.5	2.25	300	30	0.12	*1.6*	*48*	71	1.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	IN	*Not Calculated: Currently Compliant with PCULs.*															

Notes:

Model Source Areas:

BD	SW corner of Blaser Facility	WT- Water Table Interval	SDT: Source Decay Time
C4	CI Plant 4	SH- Shallow Interval	FT: Flushing Time (no source decay)
C2	Down gradient of Capital Industries Plant 2	IN- Intermediate Interval	

* ks assumed to be 0.1, calculated based on concentration of analyte indicated.

Analytical solution is $t = -ln[C_{goal} / C_{current}] / ks$ where Cgoal is the VC PCUL expressed as a molar quantity and $C_{current}$ is the total HVOC concentration.

[1] Target Pore Volume (PV) turnover is the number of pore volumes flushed to remove CVOCs (ignoring biodegradation) is calculated as: $PV = -0.93 \log_{10}([total\ HVOC] / [PCUL]) +0.75$ (Weidemeier, et al, 1999, eqn. 2.7)

[2] Flushing time calculated as: $t = (PV * downgradient\ distance * R) / (Vs)$

3 Ratio of source decay rate based remediation time (SDT) to straight flushing time (FT) with no biodegradation.

See Table 3a,b for Source Decay Rates (SDRs)

SDR: Source Decay Rate

Vs: Seepage Velocity from Table 1

R: Retardation Factor

PCULs from Table 1.

NA: Not Applicable because value is currently below PCULs.

Table 7c. Summary of Analytical Remediation Timescales (SDR based on 2011+ monitoring data)
West of Fourth, Seattle, Washington

Source Area	Aquifer Inverval	*Modeled Plume Concentrations (ug/L)* PCE	TCE	cis-1,2 DCE	VC	Total HVOC (umol/L)	SDR (ks, 1/yr)	Seepage Velocity (ft year)	R	Dowgradient Distance (ft)	Transit Time (years)	C1/C2 [PCUL / Total HVOC]	Target PV Turnover [1]	Flushing Time [2] *(years)*	SDR Degradation Time	SDT / FT [3]	SDR Basis
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
BD	WT	0	120	120	40	2.8	0.15	83	2.25	300	8	0.01	*2.7*	*22*	**31**	1.4	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	WT	0	120	120	40	2.8	0.075	83	2.25	300	8	0.01	*2.7*	*22*	63	2.8	SDR at 0.5x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.3	83	2.25	300	8	0.01	*2.7*	*22*	16	0.7	SDR at 2x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.45	83	2.25	300	8	0.01	*2.7*	*22*	10	0.5	SDR at 3x Pre-Remediation Best Fit
BD	WT	0	120	120	40	2.8	0.15	166	2.25	300	4	0.01	*2.7*	*11*	31	2.8	SDR at Pre-Remediation Best Fit, 2x Vs
BD	WT	0	120	120	40	2.8	0.15	41.5	2.25	300	16	0.01	*2.7*	*44*	31	0.7	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	SH	0	0	22	7.2	0.3	-0.01	45	2.25	300	15	0.07	*1.8*	*27*	**-259**	-9.6	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	SH	0	0	22	7.2	0.3	0.03	45	2.25	300	15	0.07	*1.9*	*28*	86	3.1	SDR at Upper 90th Percentile SDR Best Fit
BD	SH	0	0	22	7.2	0.3	-0.05	45	2.25	300	15	0.07	*1.8*	*27*	-52	-1.9	SDR at Lower 90th Percentile SDR Best Fit
BD	SH	0	0	22	7.2	0.3	-0.03	45	2.25	300	15	0.07	*1.8*	*27*	-86	-3.2	SDR at 3x Pre-Remediation Best Fit
BD	SH	0	0	22	7.2	0.3	-0.01	90	2.25	300	8	0.07	*1.8*	*13*	-259	-19.2	SDR at Pre-Remediation Best Fit, 2x Vs
BD	SH	0	0	22	7.2	0.3	-0.01	22.5	2.25	300	30	0.07	*1.8*	*54*	-259	-4.8	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	-0.01	16	2.25	300	42	0.11	*1.6*	*69*	**-222**	-3.2	SDR at Pre-Remediation Best Fit (NA Estimate)
BD	IN	0	0	4.2	12	0.2	0.36	16	2.25	300	42	0.11	*1.6*	*69*	6	0.1	SDR at Upper 90th Percentile SDR Best Fit
BD	IN	0	0	4.2	12	0.2	-0.38	16	2.25	300	42	0.11	*1.6*	*69*	-6	-0.1	SDR at Lower 90th Percentile SDR Best Fit
BD	IN	0	0	4.2	12	0.2	-0.03	16	2.25	300	42	0.11	*1.6*	*69*	-74	-1.1	SDR at 3x Pre-Remediation Best Fit
BD	IN	0	0	4.2	12	0.2	-0.01	32	2.25	300	21	0.11	*1.6*	*35*	-222	-6.4	SDR at Pre-Remediation Best Fit, 2x Vs
BD	IN	0	0	4.2	12	0.2	-0.01	8	2.25	300	84	0.11	*1.6*	*139*	-222	-1.6	SDR at Pre-Remediation Best Fit, 0.5x Vs
BD	IN	0	0	4.2	12	0.2	0.4	16	2.25	300	42	0.11	*1.6*	*69*	**6**	0.1	SDR at BIOCHLOR Maximum Allowed value
BD	IN	0	0	4.2	12	0.2	0.8	16	2.25	300	42	0.11	*1.6*	*69*	3	0.0	SDR at 2x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	1.2	16	2.25	300	42	0.11	*1.6*	*69*	2	0.0	SDR at 3x BIOHCLOR Maximum
BD	IN	0	0	4.2	12	0.2	0.4	32	2.25	300	21	0.11	*1.6*	*35*	6	0.2	SDR BIOHCLOR Maximum, 2x Vs
BD	IN	0	0	4.2	12	0.2	0.4	8	2.25	300	84	0.11	*1.6*	*139*	6	0.0	SDR at BIOHCLOR Maximum, 0.5x Vs
C2	WT	0	45	26	0.21	0.6	0.05	83	2.25	300	8	0.03	*2.1*	*17*	**64**	3.7	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	WT	0	45	26	0.21	0.6	0.025	83	2.25	300	8	0.03	*2.1*	*17*	127	7.4	SDR at 0.5x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.1	83	2.25	300	8	0.03	*2.1*	*17*	32	1.8	SDR at 2x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.15	83	2.25	300	8	0.03	*2.1*	*17*	21	1.2	SDR at 3x Pre-Remediation Best Fit
C2	WT	0	45	26	0.21	0.6	0.05	166	2.25	300	4	0.03	*2.1*	*9*	64	7.4	SDR at Pre-Remediation Best Fit, 2x Vs
C2	WT	0	45	26	0.21	0.6	0.05	41.5	2.25	300	16	0.03	*2.1*	*34*	64	1.8	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	SH	0	68	24	10	0.9	0.12	45	2.25	300	15	0.03	*2.2*	*33*	**30**	0.9	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	SH	0	68	24	10	0.9	0.06	45	2.25	300	15	0.03	*2.2*	*33*	60	1.8	SDR at 0.5x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.24	45	2.25	300	15	0.03	*2.2*	*33*	15	0.5	SDR at 2x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.36	45	2.25	300	15	0.03	*2.2*	*33*	10	0.3	SDR at 3x Pre-Remediation Best Fit
C2	SH	0	68	24	10	0.9	0.12	90	2.25	300	8	0.03	*2.2*	*16*	30	1.8	SDR at Pre-Remediation Best Fit, 2x Vs
C2	SH	0	68	24	10	0.9	0.12	22.5	2.25	300	30	0.03	*2.2*	*66*	30	0.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C2	IN	0	0	0	83	1.3	0.6	16	2.25	300	42	0.02	*2.3*	*99*	**7**	0.1	SDR at Pre-Remediation Best Fit (NA Estimate)
C2	IN	0	0	0	83	1.3	0.3	16	2.25	300	42	0.02	*2.3*	*99*	13	0.1	SDR at 0.5x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	1.2	16	2.25	300	42	0.02	*2.3*	*99*	3	0.0	SDR at 2x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	1.8	16	2.25	300	42	0.02	*2.3*	*99*	2	0.0	SDR at 3x Pre-Remediation Best Fit
C2	IN	0	0	0	83	1.3	0.6	32	2.25	300	21	0.02	*2.3*	*49*	7	0.1	SDR at Pre-Remediation Best Fit, 2x Vs
C2	IN	0	0	0	83	1.3	0.6	8	2.25	300	84	0.02	*2.3*	*198*	7	0.0	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	WT	6.2	170	120	4.6	2.6	0.00	83	2.25	300	8	0.01	*2.7*	*22*	**-1166**	-53.0	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	WT	0	170	120	4.6	2.6	0.19	83	2.25	300	8	0.01	*2.7*	*22*	24	1.1	SDR at Upper 90th Percentile SDR Best Fit
C4	WT	6.2	170	120	4.6	2.6	-0.20	83	2.25	300	8	0.01	*2.7*	*22*	-23	-1.1	SDR at Lower 90th Percentile SDR Best Fit
C4	WT	6.2	170	120	4.6	2.6	-0.01	83	2.25	300	8	0.01	*2.7*	*22*	-389	-17.7	SDR at 3x Pre-Remediation Best Fit

Table 7c. Summary of Analytical Remediation Timescales (SDR based on 2011+ monitoring data)

West of Fourth, Seattle, Washington

		Modeled Plume Concentrations (ug/L)															
Source Area	**Aquifer Inverval**	**PCE**	**TCE**	**cis-1,2 DCE**	**VC**	**Total HVOC (umol/L)**	**SDR (ks, 1/yr)**	**Seepage Velocity (ft year)**	**R**	**Dowgradient Distance (ft)**	**Transit Time (years)**	**C1/C2 [PCUL / Total HVOC]**	**Target PV Turnover [1]**	**Flushing Time [2] *(years)***	**SDR Degradation Time**	**SDT / FT [3]**	**SDR Basis**
PCUL-Air	*WT*	*116*	*6.9*	*NR*	*1.3*	*0.0208*											
PCUL-SW	*WT, SH, IN*	*29*	*7*	*NR*	*1.6*	*0.0256*											
Molecular Weight (ug/mol)		165.83	131.4	96.95	62.5												
C4	WT	6.2	170	120	4.6	2.6	0.00	166	2.25	300	4	0.01	*2.7*	*11*	-1166	-106.0	SDR at Pre-Remediation Best Fit, 2x Vs
C4	WT	6.2	170	120	4.6	2.6	0.00	41.5	2.25	300	16	0.01	*2.7*	*44*	-1166	-26.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	45	2.25	300	15	0.12	*1.6*	*24*	**71**	2.9	SDR at Pre-Remediation Best Fit (NA Estimate)
C4	SH	0	0	17.4	2.3	0.2	0.015	45	2.25	300	15	0.12	*1.7*	*25*	142	5.6	SDR at 0.5x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.06	45	2.25	300	15	0.12	*1.6*	*24*	36	1.5	SDR at 2x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.09	45	2.25	300	15	0.12	*1.6*	*24*	24	1.0	SDR at 3x Pre-Remediation Best Fit
C4	SH	0	0	17.4	2.3	0.2	0.03	90	2.25	300	8	0.12	*1.6*	*12*	71	5.9	SDR at Pre-Remediation Best Fit, 2x Vs
C4	SH	0	0	17.4	2.3	0.2	0.03	22.5	2.25	300	30	0.12	*1.6*	*48*	71	1.5	SDR at Pre-Remediation Best Fit, 0.5x Vs
C4	IN					*Not Calculated: Currently Compliant with PCULs.*											

Notes:

Model Source Areas:

BD	SW corner of Blaser Facility	WT- Water Table Interval	SDT: Source Decay Time
C4	CI Plant 4	SH- Shallow Interval	FT: Flushing Time (no source decay)
C2	Down gradient of Capital Industries Plant 2	IN- Intermediate Interval	

* ks assumed to be 0.1, calculated based on concentration of analyte indicated.

Analytical solution is $t = -\ln[C_{goal} / C_{current}] / ks$ where Cgoal is the VC PCUL expressed as a molar quantity and $C_{current}$ is the total HVOC concentration.

[1] Target Pore Volume (PV) turnover is the number of pore volumes flushed to remove CVOCs (ignoring biodegradation) is calculated as: $PV = -0.93 \log_{10}([PCUL] / [total\ HVOC]) + 0.75$ (Weidemeier, et al, 1999, eqn. 2.7)

[2] Flushing time calculated as: $t = (PV * downgradient\ distance * R) / (Vs)$

3 Ratio of source decay rate based remediation time (SDT) to straight flushing time (FT) with no biodegradation.

See Table 3a,b for Source Decay Rates (SDRs)

SDR: Source Decay Rate

Vs: Seepage Velocity from Table 1

R: Retardation Factor

PCULs from Table 1.

NA: Not Applicable because value is currently below PCULs.

Table 8. Remediation Level Sensitivity Analysis

West of Fourth, Seattle, Washington

Variable	BDC-WT	BDC-SH	BDC-IN *	C2-WT	C2-SH	C2-IN	C4-WT	C4-SH	C4-IN
Base Run									
PCE	0.00	0.00	0.00	0.00	0.00	0.00	5.76	0.00	--
TCE	1,120	0.00	0.00	173.0	2,970	0.00	158.0	0.00	--
DCE	610.9	520,000	1,000,000 *	99.99	1,048	0.00	111.5	3,250	--
VC	93.67	170,182	1,000,000 *	0.81	436.8	1,000,000 *	4.28	429.6	--
0.5x Seepage Velocity									
PCE	0.00	0.00	0.00	0.00	0.00	0.00	152.3	0.00	--
TCE	193,000	0.00	0.00	4,500	878,000	0.00	4,175	0.00	--
DCE	105,273	1,000,000 *	1,000,000 *	2,600	309,882	0.00	2,947	1,000,000 *	--
VC	16,142	327,273	1,000,000 *	21.00	129,118	1,000,000 *	113.0	226,695	--
2x Seepage Velocity									
PCE	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00	--
TCE	93.50	0.00	0.00	41.50	148.0	0.00	37.00	0.00	--
DCE	51.00	2,320	1,000,000 *	23.98	52.24	0.00	26.12	93.00	--
VC	7.82	759.3	1,000,000 *	0.19	21.76	755,000	1.00	12.29	--
2x Biodegradation Half Life									
PCE	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00	--
TCE	93.20	0.00	0.00	41.50	148.0	0.00	37.00	0.00	--
DCE	50.84	2,320	1,000,000	23.98	52.24	0.00	26.12	93.00	--
VC	7.79	759.3	1,000,000 *	0.19	21.76	755,000	1.00	12.29	--
0.5x Biodegradation Half Life									
PCE	0.00	0.00	0.00	0.00	0.00	0.00	152.3	0.00	--
TCE	193,000	0.00	0.00	4,510	878,000	0.00	4,175	0.00	--
DCE	105,273	1,000,000 *	1,000,000 *	2,606	309,882	0.00	2,947	1,000,000 *	--
VC	16,142	327,273	1,000,000 *	21.05	129,118	1,000,000 *	113.0	226,695	--

Notes:

* Sensitivity runs all meet criteria; input concentrations capped at 1,000,000 ug/L.

Notes:

Model Source Areas:

BD	SW corner of Blaser Facility	WT- Water Table Interval
C4	CI Plant 4	SH- Shallow Interval
C2	Down gradient of Capital Industries Plant 2	IN- Intermediate Interval

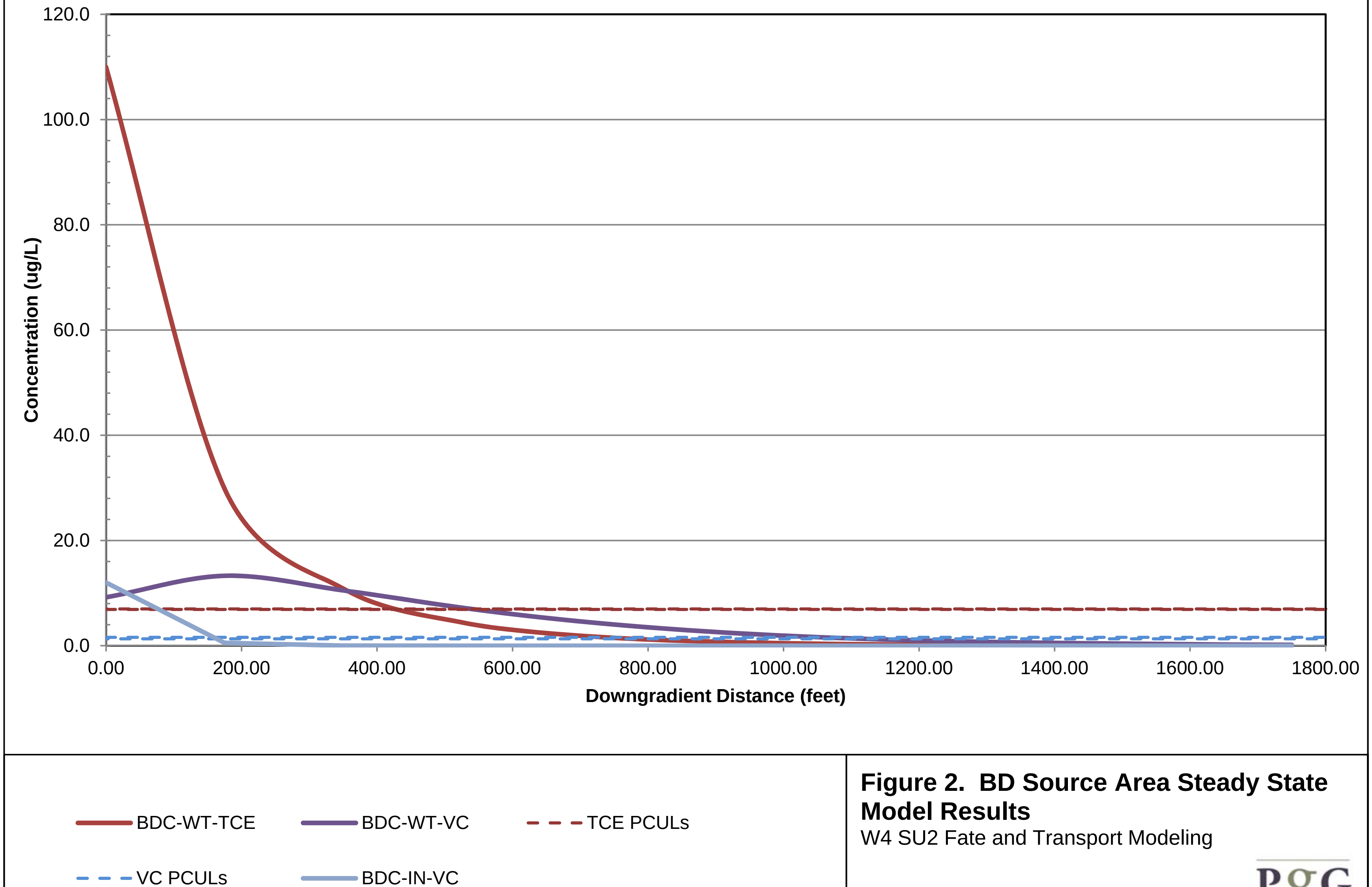


Figure 2. BD Source Area Steady State Model Results

W4 SU2 Fate and Transport Modeling

PGG

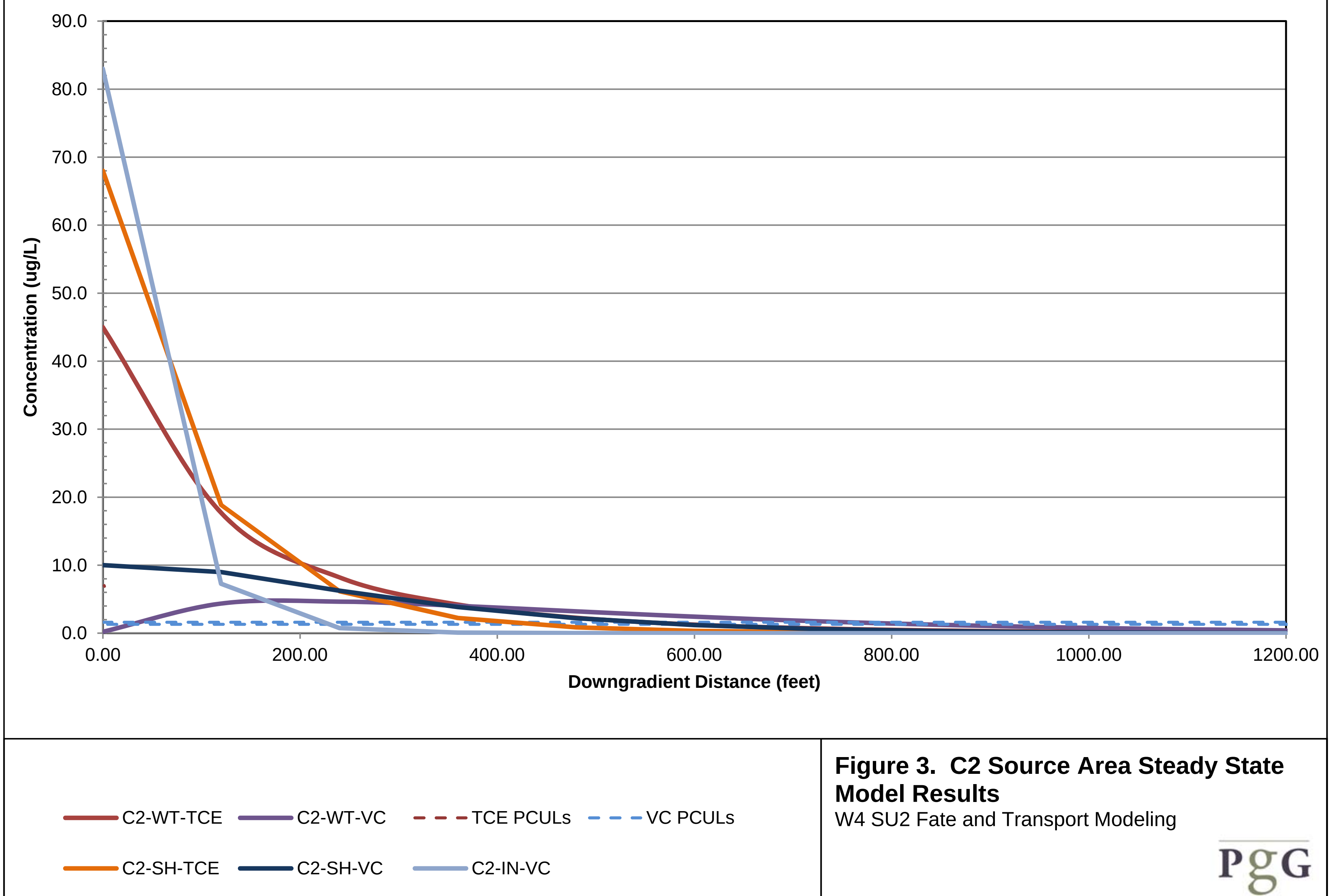


Figure 3. C2 Source Area Steady State Model Results

W4 SU2 Fate and Transport Modeling

PGG

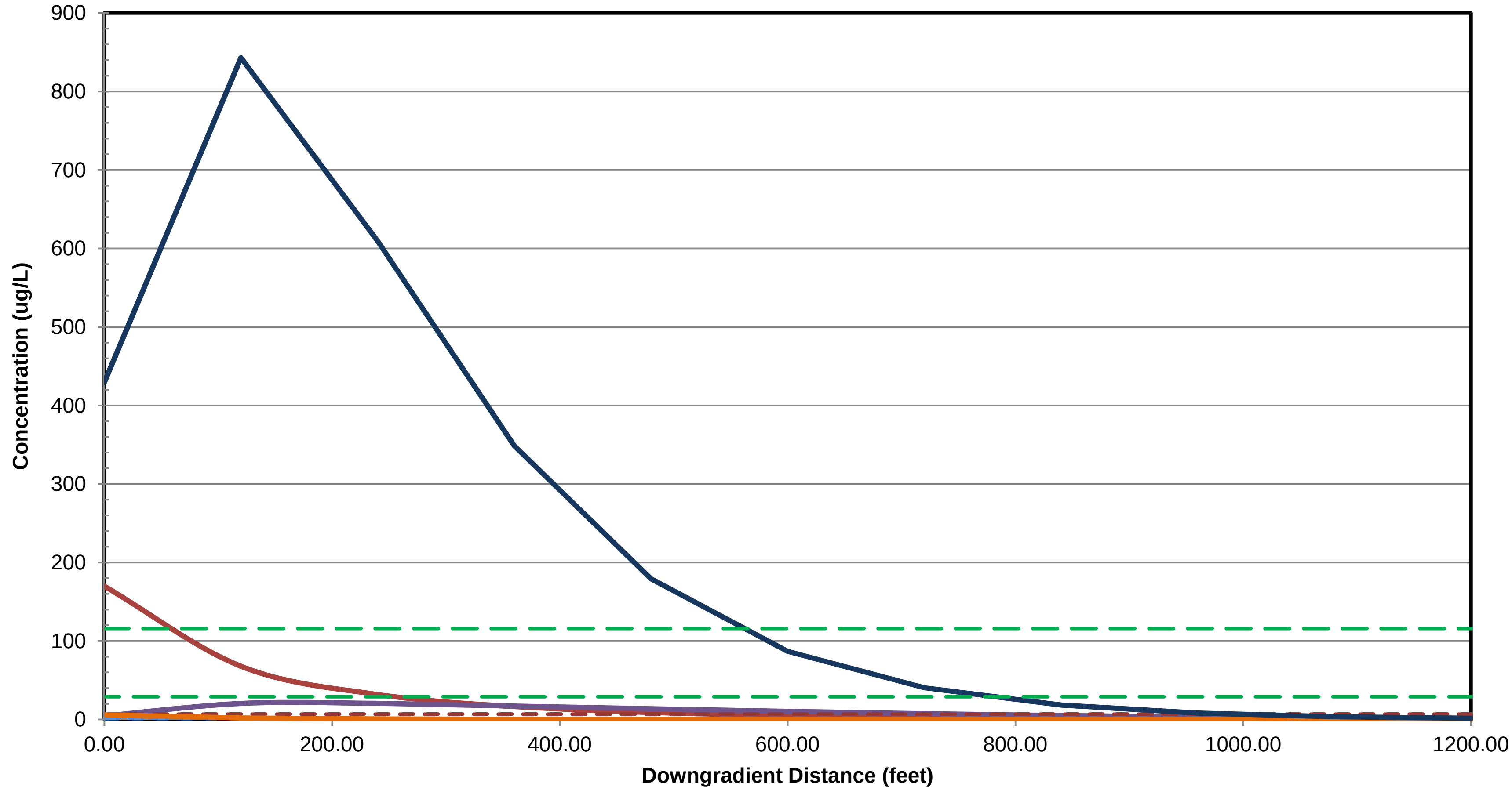


Figure 4. C4 Source Area Steady State Model Results
W4 SU2 Fate and Transport Modeling

PGG

APPENDIX B
COST BASIS TABLES

Table B1. Alternative 1 Cost Basis

West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Engineering Design Report	lump	$35,000	Plans and specifications for system installation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$95,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	25	
Total Well Costs		**$150,000**	
Groundwater Monitoring Costs			
60 Years of Monitoring	lump	**$903,114**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
			Natural Attenuation, see Groundwater Monitoring

Soil Treatment

Description	Unit	Value	Details
In-Situ Chemical Oxidation General Costs			
Typical Cost per Cubic Yard	$/cy	$94	Krembs et al (2010); median project cost
Captial Industries Plant 4			
Treatment Area Length	ft	100	
Treatment Area Depth (thickness)	ft	6	
Treatment Area Width	ft	80	
Treatment Volume	cy	1,778	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$177,111**	

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$364,156	From Table B6 at 60 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenant	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Cost Summary

Description	Unit	Value	Details
Sum of Direct Expenses	$	$1,705,381	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$426,345	
Total Estimated Alternative Cost	**$**	**$2,130,000**	Rounded to nearest ten thousand dollars

Notes:

Krembs, F.J., Siegrist, R.L., Crimi, M.L., Furrer, R.F., and B.G. Petri. 2010. ISCO for Groundwater Remediation: Analysis of Field Applications and Performance. Groundwater Monitoring and Remediation. Vol. 30, Issue No. 4. Fall 2010. p. 42-53.

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html

NPV: Net Present Value. See Table B5.

cy: cubic yard

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes multiple applications
Large In-Situ ZVI Line			
Treatment Area Length	ft	250	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,778	
Contingency Data Gaps Evaluation	lump	$40,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report with final loading
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$759,444**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	

Assumed Contingency Placeholder	**$1,018,000**	Rounded to nearest thousand dollars

Table B2a. Alternative 2A Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Treatability Study	lump	$35,000	Pilot treatability study.
Engineering Design Report	lump	$35,000	Plans and specifications for system installation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$130,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	15	
Total Well Costs		**$90,000**	
Groundwater Monitoring Costs			
40 Years of Monitoring	lump	**$1,288,875**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
Enhanced Anaerobic Biodegradation General Costs			
Typical Cost per Cubic Yard	$/cy	$150	FRTR Range is 20 to 80 $/cy [2]; final value selected for consistency with SU1 FS cost estimates.
Blaser Die Casting Line 1			
Treatment Area Length	ft	70	Source area width at corner of building
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,361	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$214,167**	
Blaser Die Casting Line 2			
Treatment Area Length	ft	150	Plume width at Mead Street, installed as PRB
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,917	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$447,500**	
Capital Industries Plant 2 (C2 Line 1)			
Treatment Area Length	ft	180	Includes treatment south of Plant 2
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	2,333	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$360,000**	
Capital Industries Plant 4 (C4 Line 1)			
Treatment Area Length	ft	210	Treatment in select area
Treatment Area Depth (thickness)	ft	25	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	1,944	
Site Specific Logistical Costs	lump	$10,000	Access and see note 1
Total Cost	**$**	**$301,667**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 1)			
Treatment Area Length	ft	290	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	
Treatment Volume	cy	5,639	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$860,833**	

Soil Treatment

Description	Unit	Value	Details
In-Situ Chemical Oxidation General Costs			
Typical Cost per Cubic Yard	$/cy	$94	Krembs et al (2010); median project cost
Capital Industries Plant 4			
Treatment Area Length	ft	100	ISCO
Treatment Area Depth (thickness)	ft	7	
Treatment Area Width	ft	80	
Treatment Volume	cy	2,074	
Site Specific Logistical Costs	lump	$40,000	See note 1; concrete repair/replace
Total Cost	**$**	**$234,963**	

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$251,149	From Table B6 at 30 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenant	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Table B2a. Alternative 2A Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Cost Summary

Description	Unit	Value	Details
Sum of Direct Expenses	$	$4,195,154	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$1,048,788	
Total Estimated Alternative Cost	**$**	**$5,240,000**	Rounded to nearest ten thousand dollars

Notes:
Krembs, F.J., Siegrist, R.L., Crimi, M.L., Furrer, R.F., and B.G. Petri. 2010. ISCO for Groundwater Remediation: Analysis of Field Applications and Performance. Groundwater Monitoring and Remediation. Vol. 30, Issue No. 4. Fall 2010. p. 42-53.

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html

PRB: Permeable Reactive Barrier
NPV: Net Present Value. See Table B5.
cy: cubic yard

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes reduced application rate as supplement to earlier work
Large In-Situ ZVI Line			
Treatment Area Length	ft	100	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1111	
Contingency Data Gaps Evaluation	lump	$70,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$20,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$377,778**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	

Assumed Contingency Placeholder	**$637,000**	Rounded to nearest thousand dollars

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Table B2b. Alternative 2B Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Treatability Study	lump	$35,000	Pilot treatability study.
Engineering Design Report	lump	$35,000	Plans and specifications for system installation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$130,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	15	
Total Well Costs		**$90,000**	
Groundwater Monitoring Costs			
40 Years of Monitoring	lump	**$1,288,875**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
Enhanced Anaerobic Biodegradation General Costs			
Typical Cost per Cubic Yard	$/cy	$150	FRTR Range is 20 to 80 $/cy [2]; final value selected for consistency with SU1 FS cost estimates.
Blaser Die Casting Line 1			
Treatment Area Length	ft	70	Source area width at corner of building
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,361	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$214,167**	
Blaser Die Casting Line 2			
Treatment Area Length	ft	150	Plume width at Mead Street, installed as PRB
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,917	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$447,500**	
Capital Industries Plant 2 (C2 Line 1)			
Treatment Area Length	ft	180	Includes treatment south of Plant 2
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	2,333	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$360,000**	
Capital Industries Plant 4 (C4 Line 1)			
Treatment Area Length	ft	210	Treatment in select area
Treatment Area Depth (thickness)	ft	25	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	1,944	
Site Specific Logistical Costs	lump	$10,000	Access and see note 1
Total Cost	**$**	**$301,667**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 1)			
Treatment Area Length	ft	290	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	
Treatment Volume	cy	5,639	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$860,833**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 2)			
Treatment Area Length	ft	720	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	40	Shallow and Intermediate Intervals
Treatment Area Width	ft	15	
Treatment Volume	cy	16,000	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$2,415,000**	

Soil Treatment

Description	Unit	Value	Details
Excavation and Off-Site Disposal General Cost			
Typical Cost per Cubic Yard	$/cy	$100	$35 disposal, $40 handling, $25 backfill
Capital Industries Plant 4			
Treatment Area Length	ft	60	Excavation
Treatment Area Depth (thickness)	ft	7	
Treatment Area Width	ft	45	
Treatment Volume	cy	700	
Site Specific Logistical Costs	lump	$40,000	See note 1; concrete repair/replace
Total Cost	**$**	**$110,000**	

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$251,149	From Table B6 at 30 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenant	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Table B2b. Alternative 2B Cost Basis

West of Fourth, Site Unit 2, Seattle, Washington

Cost Summary

Description	Unit	Value	Details
Sum of Direct Expenses	$	$6,485,191	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$1,621,298	
Total Estimated Alternative Cost	**$**	**$8,110,000**	Rounded to nearest ten thousand dollars

Notes:

Krembs, F.J., Siegrist, R.L., Crimi, M.L., Furrer, R.F., and B.G. Petri. 2010. ISCO for Groundwater Remediation: Analysis of Field Applications and Performance. Groundwater Monitoring and Remediation. Vol. 30, Issue No. 4. Fall 2010. p. 42-53.

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html

PRB: Permeable Reactive Barrier

NPV: Net Present Value. See Table B5.

cy: cubic yard

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes reduced application rate as supplement to earlier work
Large In-Situ ZVI Line			
Treatment Area Length	ft	100	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,111	
Contingency Data Gaps Evaluation	lump	$70,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$20,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$377,778**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	
Assumed Contingency Placeholder		**$637,000**	Rounded to nearest thousand dollars

Table B3a. Alternative 3A Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Treatability Study	lump	$35,000	Pilot treatability study.
Engineering Design Report	lump	$35,000	Plans and specifications for system installation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$130,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	15	
Total Well Costs		**$90,000**	
Groundwater Monitoring Costs			
40 Years of Monitoring	lump	**$1,288,875**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3000/day incl. observation
Cost per Cuic Yard	$/cy	$250	Assumes two applications
Blaser Die Casting Line 1			
Treatment Area Length	ft	70	Source Area Width
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,361	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$350,278**	
Blaser Die Casting Line 2			
Treatment Area Length	ft	150	Plume width at Mead Street, installed as PRB
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,917	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$739,167**	
Capital Industries Plant 2 (C2 Line 1)			
Treatment Area Length	ft	180	Includes line down gradient of Plant 2
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	2,333	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$593,333**	
Capital Industries Plant 4 (C4 Line 1)			
Treatment Area Length	ft	210	Treatment in select area
Treatment Area Depth (thickness)	ft	25	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	1,944	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$496,111**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 1)			
Treatment Area Length	ft	290	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	35	
Treatment Area Width	ft	15	
Treatment Volume	cy	5639	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$1,424,722**	

Soil Treatment

Description	Unit	Value	Details
In-Situ Chemical Oxidation General Costs			
Typical Cost per Cubic Yard	$/cy	$94	Krembs et al (2010); median project cost
Capital Industries Plant 4			
Treatment Area Length	ft	100	ISCO
Treatment Area Depth (thickness)	ft	7	
Treatment Area Width	ft	80	
Treatment Volume	cy	2,074	
Site Specific Logistical Costs	lump	$40,000	See note 1; concrete repair/replace
Total Cost	**$**	**$234,963**	

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$251,149	From Table B6 at 30 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenant	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Table B3a. Alternative 3A Cost Basis

West of Fourth, Site Unit 2, Seattle, Washington

Cost Summary

Description	Unit	Value	Details
Sum of Direct Expenses	$	$5,614,598	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$1,403,650	
Total Estimated Alternative Cost	**$**	**$7,020,000**	Rounded to nearest ten thousand dollars

Notes:

Krembs, F.J., Siegrist, R.L., Crimi, M.L., Furrer, R.F., and B.G. Petri. 2010. ISCO for Groundwater Remediation: Analysis of Field Applications and Performance. Groundwater Monitoring and Remediation. Vol. 30, Issue No. 4. Fall 2010. p. 42-53.

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html

PRB: Permeable Reactive Barrier

NPV: Net Present Value. See Table B5.

cy: cubic yard

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes reduced application rate as supplement to earlier work
Large In-Situ ZVI Line			
Treatment Area Length	ft	100	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,111	
Contingency Data Gaps Evaluation	lump	$70,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$20,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$377,778**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	
Assumed Contingency Placeholder		**$637,000**	Rounded to nearest thousand dollars

Table B3b. Alternative 3B Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Treatability Study	lump	$35,000	Pilot treatability study.
Engineering Design Report	lump	$35,000	Plans and specifications for system installation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$130,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	25	
Total Well Costs		**$150,000**	
Groundwater Monitoring Costs			
60 Years of Monitoring	lump	**$1,087,865**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes multiple applications
Blaser Die Casting Line 1			
Treatment Area Length	ft	70	Source Area Width
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,361	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$350,278**	
Blaser Die Casting Line 2			
Treatment Area Length	ft	150	Plume width at Mead Street, installed as PRB
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,917	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$739,167**	
Capital Industries Plant 2 (C2 Line 1)			
Treatment Area Length	ft	180	Includes lines down gradient of Plant 2
Treatment Area Depth (thickness)	ft	35	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	2,333	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$593,333**	
Capital Industries Plant 4 (C4 Line 1)			
Treatment Area Length	ft	210	Treatment in select area
Treatment Area Depth (thickness)	ft	25	Water Table and Shallow Intervals
Treatment Area Width	ft	10	
Treatment Volume	cy	1,944	
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$496,111**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 1)			
Treatment Area Length	ft	290	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	35	
Treatment Area Width	ft	10	
Treatment Volume	cy	3,759	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$954,815**	
Blaser Die Casting / Capital Industries / Stericycle Down Gradient Area (Downgradient Line 2)			
Treatment Area Length	ft	720	Water Table and Shallow Intervals
Treatment Area Depth (thickness)	ft	40	Shallow and Intermediate Intervals
Treatment Area Width	ft	15	
Treatment Volume	cy	16,000	
Logistics	lump	$15,000	Access and see note 1
Total Cost	**$**	**$4,015,000**	

Soil Treatment

Description	Unit	Value	Details
In-Situ Chemical Oxidation General Costs			
Typical Cost per Cubic Yard	$/cy	$94	Krembs et al (2010); median project cost
Capital Industries Plant 4			
Treatment Area Length	ft	100	ISCO
Treatment Area Depth (thickness)	ft	7	
Treatment Area Width	ft	80	
Treatment Volume	cy	2,074	
Site Specific Logistical Costs	lump	$40,000	See note 1; concrete repair/replace
Total Cost	**$**	**$122,963**	

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$251,149	From Table B6 at 30 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenants	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Cost Summary

Description	Unit	Value	Details

Table B3b. Alternative 3B Cost Basis

West of Fourth, Site Unit 2, Seattle, Washington

Sum of Direct Expenses	$	$8,906,681	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$2,226,670	
Total Estimated Alternative Cost	**$**	**$11,130,000**	Rounded to nearest ten thousand dollars

Notes:

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html
PRB: Permeable Reactive Barrier
NPV: Net Present Value. See Table B5.
cy: cubic yard

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes reduced application rate as supplement to earlier work
Large In-Situ ZVI Line			
Treatment Area Length	ft	100	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	1,111	
Contingency Data Gaps Evaluation	lump	$70,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$20,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$377,778**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	
Assumed Contingency Placeholder		**$637,000**	Rounded to nearest thousand dollars

Table B4. Alternative 4 Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Reporting

Description	Unit	Value	Details
Compliance Monitoring Plan	lump	$20,000	Describes Groundwater Monitoring Plan
Engineering Design Report	lump	$25,000	Design for CI active remediation
Remedial Action Completion Report	lump	$40,000	Documentation of remedial actions
Groundwater Monitoring Reports	lump	--	Included in groundwater monitoring costs, Table B5
Total Reporting Costs		**$85,000**	

Groundwater Monitoring

Description	Unit	Value	Details
Monitoring Well Replacements			
Well Replacement Cost	lump	$6,000	Minimum cost to replace 1 well in 2015 dollars
Number of Assumed Replacements	#	25	
Total Well Costs		**$150,000**	
Groundwater Monitoring Costs			
60 Years of Monitoring	lump	**$1,087,865**	From Table B5; includes NPV adjustment

Groundwater Treatment

Description	Unit	Value	Details
Capital Industries Plant 4			*See soil section for WT Interval*

Soil Treatment

Description	Unit	Value	Details
Air Sparge / Soil Vapor Extraction			
Mechanical	lump	$70,000	Blower assemblies, connections, vapor treatment system
5 Year O&M		$150,000	20 hrs/month and $500 for electricity, carbon, parts
AS/SVE Mechanical Sub Total		$220,000	Base cost for moderate sized AS/SVE not including wells
Cost Per AS/Well	$/well	$8,000	Includes $3000 for trenching per well
Capital Industries Plant 4 (Includes Groundwater)			*AS/SVE: vadose zone and WT Interval*
Treatment Area Length	ft	75	See Figure 4d
Treatment Area Width	ft	75	
Treatment Area	sqft	5,625	
Area per AS well	sqft	490	Assume about a 15 ft radius of influence with 30% overlap
Number of AS Wells	#	30	15 water table and 15 shallow interval AS wells
Cost Per Horizontal SVE well	$/well	$15,000	
Number of Horizontal SVE Wells	#	3	
Site Specific Logistical Costs	lump	$15,000	See note 1
Total Cost	**$**	**$520,000**	Includes mechanical, O&M, and installation

Vapor Intrusion Mitigation

Description	Unit	Value	Details
Vapor Intrusion Mitigation and Monitoring			
Vapor Intrusion Mitigation and Monitoring	lump	$364,156	From Table B6 at 60 years; NPV adjusted.

Institutional Controls

Description	Unit	Value	Details
Institutional Controls			
Draft and File Environmental Covenant	lump	$15,000	Assumes covenant per source area.
Amend Lease Language	lump	$1,000	For tenants in Blaser facility
Sum of Institutional Controls		**$16,000**	

Cost Summary

Description	Unit	Value	Details
Sum of Direct Expenses	$	$2,223,021	
Contingency	%	25%	Contingency applies to uncertainty in costs above and does not include contingency for additional remedial action
Contingency Amount	$	$555,755	
Total Estimated Alternative Cost	**$**	**$2,780,000**	Rounded to nearest ten thousand dollars

Notes:

1 Indirect logistics costs associated with moving equipment, building modifications, etc. to accommodate the remedial action. Includes access costs for areas not located on PLP property.

2 https://frtr.gov/matrix2/section4/4-2.html
PRB: Permeable Reactive Barrier
NPV: Net Present Value. See Table B5.
cy: cubic yard

AS / SVE: Air Sparge / Soil Vapor Extraction

Contingency Assumptions

Assessment and Reporting

Description	Unit	Value	Details
Contingency Assessment Report	lump	$20,000	Assesses need for contingency and proposed approach
Engineering Design Report	lump	$25,000	Targeted design report building on previous EDR.
Remedial Action Report	lump	$20,000	Describes implemenation of the contingency action
Total Reporting Costs		**$65,000**	

Groundwater Treatment

Description	Unit	Value	Details
In Situ Chemical Reduction General Costs			
Materials Cost per Cubic Yard	$/cy	$100	0.5% by mass at $25/pound ZVI; 15.1 lbs ZVI per cy aquifer.
Installation Cost per Cubic Yard	$/cy	$150	Assumes 30 cy/day injection at $3,000/day incl. observation
Cost per Cubic Yard	$/cy	$250	Assumes multiple applications
Large In-Situ ZVI Line			
Treatment Area Length	ft	250	Line Length
Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	2,778	
Contingency Data Gaps Evaluation	lump	$70,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$20,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$794,444**	
Hot Spot In-Situ ZVI Line			
Treatment Area Length	ft	50	Line Length

Table B4. Alternative 4 Cost Basis
West of Fourth, Site Unit 2, Seattle, Washington

Treatment Area Depth (thickness)	ft	20	Vertical Treatment Interval (assume 20-40 ft bgs)
Treatment Area Width	ft	15	Flow-path thickness of treatment zone
Treatment Volume	cy	556	
Contingency Data Gaps Evaluation	lump	$30,000	Supplemental investigation to fill contingency data gaps
Contingency EDR	lump	$15,000	Design report for contingency implementation
Site Specific Logistical Costs	lump	$10,000	See note 1
Total Cost	**$**	**$193,889**	
Assumed Contingency Placeholder		**$1,053,000**	Rounded to nearest thousand dollars

Table B5. Groundwater Monitoring Costs

West of Fourth, Site Unit 2, Seattle, Washington

Individual Event Cost

Description	Unit	Value	Notes
Plume Performance Monitoring Network Sampling			
Sample 35 wells	lump	$8,225	Labor and equipment
Analyze 40 samples	lump	$6,600	Assumes $150/sample for VOCs; includes QA samples
Monitoring Reports	lump	$15,000	Assumes 2 data transmittal reports (CI and BDC), upload to Ecology Database
Total Full Single-Event Cost		**$29,825**	
Plume Compliance Monitoring *(wells assumed included in Performance Monitoring, described above)*			
Sample 15 wells	lump	$4,925	Labor and equipment
Analyze 18 samples	lump	$2,970	Assumes $150/sample for VOCs; includes QA samples
Monitoring Reports	lump	$10,000	Assumes 2 data transmittal reports (CI and BDC), upload to Ecology Database
Total Priority Single-Event Cost		**$17,895**	

2.50% *Net Present Value (NPV) Future Discount Rate* [1]

	40 Year (Alternatives 2 and 3)				60 Year (Alternative 1)				60 Year (Alternative 4)			
Year	**Performance Events**	**Compliance Events**	**2015 Cost**	**NPV**	**Performance Events**	**Compliance Events**	**2015 Cost**	**NPV**	**Performance Events**	**Compliance Events**	**2015 Cost**	**NPV**
0	4	0	$119,300	$119,300	2	0	$59,650	$59,650	2	0	$59,650	$59,650
1	4	0	$119,300	$116,390	2	0	$59,650	$58,195	2	0	$59,650	$58,195
2	4	0	$119,300	$113,551	1	0	$29,825	$28,388	2	0	$59,650	$56,776
3	4	0	$119,300	$110,782	1	0	$29,825	$27,695	2	0	$59,650	$55,391
4	4	0	$119,300	$108,080	1	0	$29,825	$27,020	2	0	$59,650	$54,040
5	2	0	$59,650	$52,722	1	0	$29,825	$26,361	2	0	$59,650	$52,722
6	2	0	$59,650	$51,436	1	0	$29,825	$25,718	2	0	$59,650	$51,436
7	2	0	$59,650	$50,181	1	0	$29,825	$25,091	2	0	$59,650	$50,181
8	2	0	$59,650	$48,958	1	0	$29,825	$24,479	2	0	$59,650	$48,958
9	2	0	$59,650	$47,763	1	0	$29,825	$23,882	1	0	$29,825	$23,882
10	1	0	$29,825	$23,299	1	0	$29,825	$23,299	1	0	$29,825	$23,299
11	1	0	$29,825	$22,731	1	0	$29,825	$22,731	1	0	$29,825	$22,731
12	1	0	$29,825	$22,177	0	1	$17,895	$13,306	0	1	$17,895	$13,306
13	1	0	$29,825	$21,636	1	0	$29,825	$21,636	1	0	$29,825	$21,636
14	1	0	$29,825	$21,108	0	1	$17,895	$12,665	0	1	$17,895	$12,665
15	1	0	$29,825	$20,593	1	0	$29,825	$20,593	1	0	$29,825	$20,593
16	0	1	$17,895	$12,055	0	1	$17,895	$12,055	0	1	$17,895	$12,055
17	1	0	$29,825	$19,601	1	0	$29,825	$19,601	1	0	$29,825	$19,601
18	0	1	$17,895	$11,474	0	1	$17,895	$11,474	0	1	$17,895	$11,474
19	1	0	$29,825	$18,656	1	0	$29,825	$18,656	1	0	$29,825	$18,656
20	0	1	$17,895	$10,921	0	1	$17,895	$10,921	0	1	$17,895	$10,921
21	1	0	$29,825	$17,757	1	0	$29,825	$17,757	1	0	$29,825	$17,757
22	0	1	$17,895	$10,395	0	1	$17,895	$10,395	0	1	$17,895	$10,395
23	1	0	$29,825	$16,902	1	0	$29,825	$16,902	1	0	$29,825	$16,902
24	0	1	$17,895	$9,894	0	1	$17,895	$9,894	0	1	$17,895	$9,894
25	1	0	$29,825	$16,087	1	0	$29,825	$16,087	1	0	$29,825	$16,087
26	0	1	$17,895	$9,417	0	1	$17,895	$9,417	0	1	$17,895	$9,417
27	1	0	$29,825	$15,312	1	0	$29,825	$15,312	1	0	$29,825	$15,312
28	0	1	$17,895	$8,963	0	1	$17,895	$8,963	0	1	$17,895	$8,963
29	1	0	$29,825	$14,574	1	0	$29,825	$14,574	1	0	$29,825	$14,574
30	0	1	$17,895	$8,531	0	1	$17,895	$8,531	0	1	$17,895	$8,531
31	1	0	$29,825	$13,872	1	0	$29,825	$13,872	1	0	$29,825	$13,872
32	0	1	$17,895	$8,120	0	1	$17,895	$8,120	0	1	$17,895	$8,120
33	1	0	$29,825	$13,204	1	0	$29,825	$13,204	1	0	$29,825	$13,204
34	0	1	$17,895	$7,729	0	1	$17,895	$7,729	0	1	$17,895	$7,729
35	1	0	$29,825	$12,567	1	0	$29,825	$12,567	1	0	$29,825	$12,567
36	0	1	$17,895	$7,357	0	1	$17,895	$7,357	0	1	$17,895	$7,357
37	1	0	$29,825	$11,962	1	0	$29,825	$11,962	1	0	$29,825	$11,962
38	0	1	$17,895	$7,002	0	1	$17,895	$7,002	0	1	$17,895	$7,002
39	1	0	$29,825	$11,385	1	0	$29,825	$11,385	1	0	$29,825	$11,385
40	4	0	$119,300	$44,431	0	1	$17,895	$6,665	0	1	$17,895	$6,665
41	0	0	$0	$0	1	0	$29,825	$10,837	1	0	$29,825	$10,837
42	0	0	$0	$0	0	1	$17,895	$6,344	0	1	$17,895	$6,344
43	0	0	$0	$0	1	0	$29,825	$10,315	1	0	$29,825	$10,315
44	0	0	$0	$0	0	1	$17,895	$6,038	0	1	$17,895	$6,038
45	0	0	$0	$0	1	0	$29,825	$9,818	1	0	$29,825	$9,818
46	0	0	$0	$0	0	1	$17,895	$5,747	0	1	$17,895	$5,747
47	0	0	$0	$0	1	0	$29,825	$9,345	1	0	$29,825	$9,345
48	0	0	$0	$0	0	1	$17,895	$5,470	0	1	$17,895	$5,470
49	0	0	$0	$0	1	0	$29,825	$8,894	1	0	$29,825	$8,894
50	0	0	$0	$0	0	1	$17,895	$5,206	0	1	$17,895	$5,206
51	0	0	$0	$0	1	0	$29,825	$8,466	1	0	$29,825	$8,466
52	0	0	$0	$0	0	1	$17,895	$4,956	0	1	$17,895	$4,956
53	0	0	$0	$0	1	0	$29,825	$8,058	1	0	$29,825	$8,058
54	0	0	$0	$0	0	1	$17,895	$4,717	0	1	$17,895	$4,717
55	0	0	$0	$0	1	0	$29,825	$7,670	1	0	$29,825	$7,670
56	0	0	$0	$0	0	1	$17,895	$4,489	0	1	$17,895	$4,489
57	0	0	$0	$0	1	0	$29,825	$7,300	1	0	$29,825	$7,300
58	0	0	$0	$0	0	1	$17,895	$4,273	0	1	$17,895	$4,273
59	0	0	$0	$0	1	0	$29,825	$6,948	1	0	$29,825	$6,948
60	0	0	$0	$0	4	0	$119,300	$27,115	4	0	$119,300	$27,115
	40 Year (Alternatives 2 and 3)				*60 Year (Alternative 1)*				*60 Year (Alternative 4)*			
			2015 Cost	**NPV**			**2015 Cost**	**NPV**			**2015 Cost**	**NPV**
		Total Cost	*$1,765,640*	*$1,288,875*		Total Cost	*$1,682,130*	*$903,114*		Total Cost	*$1,890,905*	*$1,087,865*

Notes:

Specific groundwater monitoring wells have not been assigned. Wells will be specified in the Cleanup Action Plan and/or Compliance Monitoring Plan.

[1] Discount Rate from: http://www.whitehouse.gov/OMB/circulars/a094/a094.html

Alternatives 2 and 3 groundwater monitoring assumes higher frequency monitoring than Alternative 1 in years 1 through 15 to track active remedy progress.

The cost estimate assumes monitoring at 35 wells. In practice, individual wells may be removed from monitoring when SU2 areas are shown to meet PCULs.

Table B6. Vapor Intrusion Mitigation

West of Fourth, Site Unit 2, Seattle, Washington

Annual Expenses

Description	Unit	Value	Notes
System Inspections	lump	$3,630	
Analyze indoor air samples	lump	$1,188	
Monitoring Report	lump	$5,000	
Total Annual Cost		**$9,818**	

Periodic Costs (assume 5-year interval)

Description	Unit	Value	Notes
VI sampling	lump	$2,000	Supplemental VI Sample For Specific Data Gap
Replace/Repair SSD Blower	lump	$5,000	Cost for contractor to repair/replace failed unit
Report	lump	$2,000	Tech Memo documenting work element above.
Total Periodic Costs		**$9,000**	

2.50% *Net Present Value (NPV) Future Discount Rate* [1]

Year	Baseline Costs	Periodic Costs	NPV	Running NPV Total
0	$9,818		$9,818	$9,818
1	$9,818		$9,579	$19,397
2	$9,818		$9,345	$28,741
3	$9,818		$9,117	$37,858
4	$9,818		$8,895	$46,753
5	$9,818	$9,000	$16,632	$63,385
6	$9,818		$8,466	$71,851
7	$9,818		$8,260	$80,111
8	$9,818		$8,058	$88,169
9	$9,818		$7,862	$96,031
10	$9,818	$9,000	$14,701	$110,731
11	$9,818		$7,483	$118,214
12	$9,818		$7,300	$125,514
13	$9,818		$7,122	$132,636
14	$9,818		$6,948	$139,585
15	$9,818	$9,000	$12,993	$152,578
16	$9,818		$6,614	$159,192
17	$9,818		$6,452	$165,644
18	$9,818		$6,295	$171,939
19	$9,818		$6,141	$178,080
20	$9,818	$9,000	$11,484	$189,564
21	$9,818		$5,846	$195,410
22	$9,818		$5,703	$201,113
23	$9,818		$5,564	$206,677
24	$9,818		$5,428	$212,105
25	$9,818	$9,000	$10,150	$222,255
26	$9,818		$5,167	$227,422
27	$9,818		$5,041	$232,462
28	$9,818		$4,918	$237,380
29	$9,818		$4,798	$242,178
30	$9,818	$9,000	$8,971	**$251,149**
31	$9,818		$4,566	$255,715
32	$9,818		$4,455	$260,171
33	$9,818		$4,346	$264,517
34	$9,818		$4,240	$268,757
35	$9,818	$9,000	$7,929	$276,687
36	$9,818		$4,036	$280,723
37	$9,818		$3,938	$284,661
38	$9,818		$3,842	$288,502
39	$9,818		$3,748	$292,250
40	$9,818	$9,000	$7,008	$299,259
41	$9,818		$3,567	$302,826
42	$9,818		$3,480	$306,306
43	$9,818		$3,395	$309,702
44	$9,818		$3,313	$313,014
45	$9,818	$9,000	$6,194	$319,209
46	$9,818		$3,153	$322,362
47	$9,818		$3,076	$325,438
48	$9,818		$3,001	$328,439
49	$9,818		$2,928	$331,367
50	$9,818	$9,000	$5,475	$336,842
51	$9,818		$2,787	$339,629
52	$9,818		$2,719	$342,347
53	$9,818		$2,653	$345,000
54	$9,818		$2,588	$347,588
55	$9,818	$9,000	$4,839	$352,427
56	$9,818		$2,463	$354,890
57	$9,818		$2,403	$357,293
58	$9,818		$2,344	$359,637
59	$9,818		$2,287	$361,925
60	$9,818		$2,231	**$364,156**

Notes:

[1] Discount Rate from: http://www.whitehouse.gov/OMB/circulars/a094/a094.html

All costs in this table assume that no additional groundwater data is needed beyond that in Table B5

Per-Annum costs are assumed to be the same for all Alternatives.

Periodic costs include items that arise during the VI program beyond normal scope items such as equipment failure, or unexpected data needs.

APPENDIX C
SUPPORTING TECHNICAL MEMORANDA
(ELECTRONIC ONLY)

APPENDIX D
SU2 DATA COLLECTED 2012 THROUGH 2016

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
	CG-137-WT	5/10/2010	CG-137-WT-WL-051010				7.33	8.42
	CG-137-WT	8/2/2010	CG-137-WT-WL-080210				7.87	7.88
	CG-137-WT	10/25/2010	CG-137-WT-WL-102510				7.84	7.91
	CG-137-WT	1/28/2011	CG-137-WT-WL-012811				6.54	9.21
	CG-137-WT	8/1/2011	CG-137-WT-WL-080111				7.50	8.25
	CG-137-WT	2/3/2012	CG-137-WT-WL-020312				7.04	8.71
	CG-137-WT	4/23/2012	CG-137-WT-WL-042312	15.75	5.75 to -4.25	10 to 20	6.96	8.79
	CG-137-WT	3/12/2013	CG-137-WT-WL-031213				7.21	8.54
	CG-137-WT	8/5/2013	CG-137-WT-WL-080513				7.96	7.79
	CG-137-WT	3/10/2014	CG-137-WT-WL-031014				6.70	9.05
	CG-137-WT	9/22/2014	CG-137-WT-WL-092214				8.10	7.65
	CG-137-WT	3/13/2015	CG-137-WT-WL-031215				7.31	8.44
	CG-137-WT	9/21/2015	CG-137-WT-WL-092115				7.65	8.10
	CG-137-WT	3/21/2016	CG-137-WT-WL-032116				6.14	9.61
	CG-141-WT	5/10/2010	CG-141-WT-WL-051010				9.29	7.72
	CG-141-WT	8/2/2010	CG-141-WT-WL-080210				9.74	7.27
	CG-141-WT	10/25/2010	CG-141-WT-WL-102510				9.65	7.36
	CG-141-WT	1/28/2011	CG-141-WT-WL-012811				8.37	8.64
	CG-141-WT	8/1/2011	CG-141-WT-WL-080111				9.40	7.61
	CG-141-WT	4/23/2012	CG-141-WT-WL-042312				8.97	8.04
	CG-141-WT	3/12/2013	CG-141-WT-WL-031213	17.01	7.01 to -2.99	10 to 20	9.25	7.76
	CG-141-WT	8/5/2013	CG-141-WT-WL-080513				9.90	7.11
	CG-141-WT	3/10/2014	CG-141-WT-WL-031014				8.50	8.51
	CG-141-WT	9/22/2014	CG-141-WT-WL-092214				9.92	7.09
	CG-141-WT	3/13/2015	CG-141-WT-WL-031315				9.20	7.81
	CG-141-WT	9/21/2015	CG-141-WT-WL-092115				7.12	9.89
	CG-141-WT	3/21/2016	CG-141-WT-WL-032116				8.12	8.89
	CI-10-WT	5/10/2010	CI-10-WT-WL-051010				7.94	7.74
	CI-10-WT	8/2/2010	CI-10-WT-WL-080210				8.49	7.19
	CI-10-WT	10/25/2010	CI-10-WT-WL-102510				8.40	7.28
	CI-10-WT	1/28/2011	CI-10-WT-WL-012811				7.22	8.46
	CI-10-WT	8/1/2011	CI-10-WT-WL-080111				8.15	7.53
	CI-10-WT	2/3/2012	CI-10-WT-WL-020312				7.68	8.00
	CI-10-WT	4/23/2012	CI-10-WT-WL-042312	15.68	5.68 to -4.32	10 to 20	7.69	7.99
	CI-10-WT	3/12/2013	CI-10-WT-WL-031213				7.48	8.20
	CI-10-WT	8/5/2013	CI-10-WT-WL-080513				8.54	7.14
	CI-10-WT	3/10/2014	CI-10-WT-WL-031014				7.50	8.18
	CI-10-WT	9/22/2014	CI-10-WT-WL-092214				8.62	7.06
	CI-10-WT	3/13/2015	CI-10-WT-WL-031615				7.96	7.72
	CI-10-WT	9/21/2015	CI-10-WT-WL-092115				7.09	8.59
	CI-10-WT	3/21/2016	CI-10-WT-WL-032116				6.96	8.72
	CI-11-WT	8/2/2010	CI-11-WT-WL-080210				6.98	6.44
	CI-11-WT	10/25/2010	CI-11-WT-WL-102510				6.50	6.92
	CI-11-WT	1/28/2011	CI-11-WT-WL-012811				5.65	7.77
	CI-11-WT	8/1/2011	CI-11-WT-WL-080111				6.81	6.61
	CI-11-WT	2/3/2012	CI-11-WT-WL-020312				6.22	7.20
Capital Industries, Inc.	CI-11-WT	4/23/2012	CI-11-WT-WL-042312				6.47	6.95
	CI-11-WT	3/12/2013	CI-11-WT-WL-031213	13.42	3.42 to -6.58	10 to 20	6.51	6.91
	CI-11-WT	8/5/2013	CI-11-WT-WL-080513				7.16	6.26
	CI-11-WT	3/10/2014	CI-11-WT-WL-031014				5.56	7.86
	CI-11-WT	9/22/2014	CI-11-WT-WL-092214				7.05	6.37
	CI-11-WT	3/13/2015	CI-11-WT-WL-031315				6.30	7.12
	CI-11-WT	9/21/2015	CI-11-WT-WL-092115				6.44	6.98
	CI-11-WT	3/21/2016	CI-11-WT-WL-032116				5.56	7.86
	CI-12-WT	5/10/2010	CI-12-WT-WL-051010				8.89	6.55
	CI-12-WT	8/2/2010	CI-12-WT-WL-080210				9.15	6.29
	CI-12-WT	10/25/2010	CI-12-WT-WL-102510				9.70	5.74
	CI-12-WT	1/28/2011	CI-12-WT-WL-012811				8.00	7.44
	CI-12-WT	8/1/2011	CI-12-WT-WL-080111				9.03	6.41
	CI-12-WT	4/23/2012	CI-12-WT-WL-042312				8.66	6.78
	CI-12-WT	3/12/2013	CI-12-WT-WL-031213	15.44	5.44 to -4.56	10 to 20	8.75	6.69
	CI-12-WT	8/5/2013	CI-12-WT-WL-080513				9.28	6.16
	CI-12-WT	3/10/2014	CI-12-WT-WL-031013				8.08	7.36
	CI-12-WT	9/22/2014	CI-12-WT-WL-092214				9.14	6.30
	CI-12-WT	3/13/2015	CI-12-WT-WL-031315				8.40	7.04
	CI-12-WT	9/21/2015	CI-12-WT-WL-092115				6.32	9.12
	CI-12-WT	3/21/2016	CI-12-WT-WL-032116				NM	--
	CI-13-WT	8/2/2010	CI-13-WT-WL-080210				9.79	5.79
	CI-13-WT	10/25/2010	CI-13-WT-WL-102510				9.08	6.50
	CI-13-WT	1/28/2011	CI-13-WT-WL-012811				8.28	7.30
	CI-13-WT	8/1/2011	CI-13-WT-WL-080111				10.74	4.84
	CI-13-WT	2/3/2012	CI-13-WT-WL-020312				8.82	6.76
	CI-13-WT	4/23/2012	CI-13-WT-WL-042312				10.32	5.26
	CI-13-WT	3/12/2013	CI-13-WT-WL-031213	15.58	5.58 to -4.42	10 to 20	9.91	5.67
	CI-13-WT	8/5/2013	CI-13-WT-WL-080513				10.91	4.67
	CI-13-WT	3/10/2014	CI-13-WT-WL-031014				8.53	7.05
	CI-13-WT	9/22/2014	CI-13-WT-WL-092214				NM	--
	CI-13-WT	11/5/2014	CI-13-WT-WL-110514				9.01	6.57
	CI-13-WT	3/13/2015	CI-13-WT-WL-031315				8.86	6.72
	CI-13-WT	9/21/2015	CI-13-WT-WL-092115				6.14	9.44
	CI-13-WT	3/21/2016	CI-13-WT-WL-032116				8.70	6.88
	CI-14-WT	8/2/2010	CI-14-WT-WL-080210				8.40	6.68
	CI-14-WT	10/25/2010	CI-14-WT-WL-102510				8.25	6.83
	CI-14-WT	1/28/2011	CI-14-WT-WL-012811				7.21	7.87
	CI-14-WT	8/1/2011	CI-14-WT-WL-080111				8.16	6.92
	CI-14-WT	4/23/2012	CI-14-WT-WL-042312				7.67	7.41
	CI-14-WT	3/12/2013	CI-14-WT-WL-031213	15.08	5.08 to -4.92	10 to 20	7.94	7.14
	CI-14-WT	8/5/2013	CI-14-WT-WL-080513				8.46	6.62
	CI-14-WT	3/10/2014	CI-14-WT-WL-031014				7.45	7.63
	CI-14-WT	9/22/2014	CI-14-WT-WL-092214				8.44	6.64
	CI-14-WT	3/13/2015	CI-14-WT-WL-031315				7.82	7.26
	CI-14-WT	9/21/2015	CI-14-WT-WL-092115				6.76	8.32
	CI-14-WT	3/21/2016	CI-14-WT-WL-032116				6.95	8.13

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
Capital Industries, Inc. (continued)	CI-16-WT	4/23/2012	CI-16-WT-WL-042312	14.40	4.4 to -5.6	10 to 20	8.29	6.11
	CI-16-WT	3/12/2013	CI-16-WT-WL-031213				7.93	6.47
	CI-16-WT	8/5/2013	CI-16-WT-WL-080513				8.90	5.50
	CI-16-WT	3/10/2014	CI-16-WT-WL-031014				7.13	7.27
	CI-16-WT	9/22/2014	CI-16-WT-WL-092214				8.60	5.80
	CI-16-WT	3/13/2015	CI-16-WT-WL-031315				7.69	6.71
	CI-16-WT	9/21/2015	CI-16-WT-WL-092115				6.22	8.18
	CI-16-WT	3/21/2016	CI-16-WT-WL-032116				7.31	7.09
	CI-17-WT	4/23/2012	CI-17-WT-WL-042312	14.72	4.72 to -5.28	10 to 20	11.30	3.42
	CI-17-WT	3/12/2013	CI-17-WT-WL-031213				8.51	6.21
	CI-17-WT	8/5/2013	CI-17-WT-WL-080513				11.73	2.99
	CI-17-WT	3/10/2014	CI-17-WT-WL-031013				7.79	6.93
	CI-17-WT	9/22/2014	CI-17-WT-WL-092214				NM	--
	CI-17-WT	11/5/2014	CI-17-WT-WL-110514				9.79	4.93
	CI-17-WT	3/13/2015	CI-17-WT-WL-031315				7.91	6.81
	CI-17-WT	9/21/2015	CI-17-WT-WL-092115				6.64	8.08
	CI-17-WT	3/21/2016	CI-17-WT-WL-032116				8.84	5.88
	CI-18-WT	4/23/2012	CI-18-WT-WL-042312	16.73	6.73 to -3.27	10 to 20	11.32	5.41
	CI-18-WT	3/12/2013	CI-18-WT-WL-031213				11.00	5.73
	CI-18-WT	8/5/2013	CI-18-WT-WL-080513				12.00	4.73
	CI-18-WT	3/10/2014	CI-18-WT-WL-031014				9.88	6.85
	CI-18-WT	9/22/2014	CI-18-WT-WL-092214				NM	--
	CI-18-WT	3/13/2015	CI-18-WT-WL-031315				10.12	6.61
	CI-18-WT	9/21/2015	CI-18-WT-WL-092115				6.08	10.65
	CI-18-WT	3/21/2016	CI-18-WT-WL-032116				9.77	6.96
	CI-19-WT	4/23/2012	CI-19-WT-WL-042312	15.79	5.79 to -4.21	10 to 20	12.86	2.93
	CI-19-WT	3/12/2013	CI-19-WT-WL-031213				13.80	1.99
	CI-19-WT	8/5/2013	CI-19-WT-WL-080513				10.40	5.39
	CI-19-WT	3/10/2014	CI-19-WT-WL-031014				9.44	6.35
	CI-19-WT	9/22/2014	CI-19-WT-WL-092214				14.46	1.33
	CI-19-WT	3/13/2015	CI-19-WT-WL-031315				8.72	7.07
	CI-19-WT	9/21/2015	CI-19-WT-WL-092115				6.87	8.92
	CI-19-WT	3/21/2016	CI-19-WT-WL-032116				11.62	4.17
	CI-9-WT	8/2/2010	CI-9-WT-WL-080210	15.83	5.83 to -4.17	10 to 20	7.87	7.96
	CI-9-WT	10/25/2010	CI-9-WT-WL-102510				7.89	7.94
	CI-9-WT	1/28/2011	CI-9-WT-WL-012811				6.59	9.24
	CI-9-WT	8/1/2011	CI-9-WT-WL-080111				7.48	8.35
	CI-9-WT	4/23/2012	CI-9-WT-WL-042312				7.01	8.82
	CI-9-WT	3/12/2013	CI-9-WT-WL-031213				7.21	8.62
	CI-9-WT	8/5/2013	CI-9-WT-WL-080513				7.91	7.92
	CI-9-WT	3/10/2014	CI-9-WT-WL-031014				6.96	8.87
	CI-9-WT	9/22/2014	CI-9-WT-WL-092214				8.08	7.75
	CI-9-WT	3/13/2015	CI-9-WT-WL-031315				7.29	8.54
	CI-9-WT	9/21/2015	CI-9-WT-WL-092115				7.73	8.10
	CI-9-WT	3/21/2016	CI-9-WT-WL-032116				6.17	9.66
	CI-MW-1-WT	2/5/2010	CI-MW-1-WT-WL-020510	16.45	6.45 to -3.55	10 to 20	7.21	9.24
	CI-MW-1-WT	5/10/2010	CI-MW-1-WT-WL-051010				7.56	8.89
	CI-MW-1-WT	8/2/2010	CI-MW-1-WT-WL-080210				8.44	8.01
	CI-MW-1-WT	10/25/2010	CI-MW-1-WT-WL-102510				8.11	8.34
	CI-MW-1-WT	1/28/2011	CI-MW-1-WT-WL-012811				6.83	9.62
	CI-MW-1-WT	4/23/2012	CI-MW-1-WT-WL-042312				7.07	9.38
	CI-MW-1-WT	3/12/2013	CI-MW-1-WT-WL-031213				7.28	9.17
	CI-MW-1-WT	8/5/2013	CI-MW-1-WT-WL-080513				8.13	8.32
	CI-MW-1-WT	3/10/2014	CI-MW-1-WT-WL-031014				6.98	9.47
	CI-MW-1-WT	9/22/2014	CI-MW-1-WT-WL-092214				8.03	8.42
	CI-MW-1-WT	3/13/2015	CI-MW-1-WT-WL-031315				6.94	9.51
	CI-MW-1-WT	9/21/2015	CI-MW-1-WT-WL-092115				8.51	7.94
	CI-MW-1-WT	3/21/2016	CI-MW-1-WT-WL-032116				5.77	10.68
	MW-2	2/5/2010	MW-2-WL-020510	16.58	6.58 to -3.42	10 to 20	7.69	8.89
	MW-2	5/10/2010	MW-2-WL-051010				8.06	8.52
	MW-2	8/2/2010	MW-2-WL-080210				8.62	7.96
	MW-2	10/25/2010	MW-2-WL-102510				8.60	7.98
	MW-2	1/28/2011	MW-2-WL-012811				7.28	9.3
	MW-2	8/1/2011	MW-2-WL-080111				8.25	8.33
	MW-2	4/23/2012	MW-2-WL-042312				7.71	8.87
	MW-2	3/12/2013	MW-2-WL-031213				7.94	8.64
	MW-2	8/5/2013	MW-2-WL-080513				8.73	7.85
	MW-2	3/10/2014	MW-2-WL-031014				7.49	9.09
	MW-2	9/22/2014	MW-2-WL-092214				8.87	7.71
	MW-2	3/13/2015	MW-2-WL-031315				8.05	8.53
	MW-2	9/21/2015	MW-2-WL-092115				7.71	8.87
	MW-2	3/21/2016	MW-2-WL-032116				6.82	9.76
	MW-3	2/5/2010	MW-3-WL-020510	15.85	5.85 to -4.15	10 to 20	6.99	8.86
	MW-3	8/2/2010	MW-3-WL-080210				8.11	7.74
	MW-3	10/25/2010	MW-3-WL-102510				8.14	7.71
	MW-3	1/28/2011	MW-3-WL-012811				6.79	9.06
	MW-3	8/1/2011	MW-3-WL-080111				7.80	8.05
	MW-3	4/23/2012	MW-3-WL-042312				7.27	8.58
	MW-3	3/12/2013	MW-3-WL-031213				7.52	8.33
	MW-3	8/5/2013	MW-3-WL-080513				8.19	7.66
	MW-3	3/10/2014	MW-3-WL-031014				7.02	8.83
	MW-3	9/22/2014	MW-3-WL-092214				8.31	7.54
	MW-3	3/13/2015	MW-3-WL-031315				7.54	8.31
	MW-3	9/21/2015	MW-3-WL-092115				7.49	8.36
	MW-3	3/21/2016	MW-3-WL-032116				6.44	9.41

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
Capital Industries, Inc. (continued)	MW-4	2/5/2010	MW-4-WL-020510	15.73	5.73 to -4.27	10 to 20	6.78	8.95
	MW-4	5/10/2010	MW-4-WL-051010				7.14	8.59
	MW-4	8/2/2010	MW-4-WL-080210				7.62	8.11
	MW-4	10/25/2010	MW-4-WL-102510				7.69	8.04
	MW-4	1/28/2011	MW-4-WL-012811				6.36	9.37
	MW-4	8/1/2011	MW-4-WL-080111				7.29	8.44
	MW-4	4/23/2012	MW-4-WL-042312				6.77	8.96
	MW-4	3/12/2013	MW-4-WL-031213				7.00	8.73
	MW-4	8/5/2013	MW-4-WL-080513				7.75	7.98
	MW-4	3/10/2014	MW-4-WL-031014				6.62	9.11
	MW-4	9/22/2014	MW-4-WL-092214				7.95	7.78
	MW-4	3/13/2015	MW-4-WL-031315				7.02	8.71
	MW-4	9/21/2015	MW-4-WL-092115				7.77	7.96
	MW-4	3/21/2016	MW-4-WL-032116				5.94	9.79
	MW-5	2/5/2010	MW-5-WL-020510	16.02	6.02 to -3.98	10 to 20	6.87	9.15
	MW-5	5/10/2010	MW-5-WL-051010				7.29	8.73
	MW-5	8/2/2010	MW-5-WL-080210				7.87	8.15
	MW-5	10/25/2010	MW-5-WL-102510				7.82	8.2
	MW-5	1/28/2011	MW-5-WL-012811				6.57	9.45
	MW-5	8/1/2011	MW-5-WL-080111				7.47	8.55
	MW-5	4/23/2012	MW-5-WL-042312				6.80	9.22
	MW-5	3/12/2013	MW-5-WL-031213				7.00	9.02
	MW-5	8/5/2013	MW-5-WL-080513				7.87	8.15
	MW-5	3/10/2014	MW-5-WL-031014				6.55	9.47
	MW-5	9/22/2014	MW-5-WL-092214				8.06	7.96
	MW-5	3/13/2015	MW-5-WL-031315				7.13	8.89
	MW-5	9/21/2015	MW-5-WL-092115				7.95	8.07
	MW-5	3/21/2016	MW-5-WL-032116				5.92	10.10
	MW-6	2/5/2010	MW-6-WL-020510	17.52	6.02 to -3.98	10 to 20	8.13	9.39
	MW-6	5/10/2010	MW-6-WL-051010				8.39	9.13
	MW-6	8/2/2010	MW-6-WL-080210				8.90	8.62
	MW-6	10/25/2010	MW-6-WL-102510				9.00	8.52
	MW-6	1/28/2011	MW-6-WL-012811				7.67	9.85
	MW-6	40756	MW-6-WL-080111				8.46	9.06
	MW-6	4/23/2012	MW-6-WL-042312				8.04	9.48
	MW-6	3/12/2013	MW-6-WL-031213				8.21	9.31
	MW-6	8/5/2013	MW-6-WL-080513				8.98	8.54
	MW-6	3/10/2014	MW-6-WL-031014				8.30	9.22
	MW-6	9/22/2014	MW-6-WL-092214				9.21	8.31
	MW-6	3/13/2015	MW-6-WL-031315				8.36	9.16
	MW-6	9/21/2015	MW-6-WL-092115				8.21	9.31
	MW-6	3/21/2016	MW-6-WL-032116				7.20	10.32
	MW-7	2/5/2010	MW-7-WL-020510	17.04	7.04 to -2.96	10 to 20	7.75	9.29
	MW-7	5/10/2010	MW-7-WL-051010				7.99	9.05
	MW-7	8/2/2010	MW-7-WL-080210				8.48	8.56
	MW-7	10/25/2010	MW-7-WL-102510				8.60	8.44
	MW-7	1/28/2011	MW-7-WL-012811				7.27	9.77
	MW-7	8/1/2011	MW-7-WL-080111				8.07	8.97
	MW-7	2/3/2012	MW-7-WL-020312				7.95	9.09
	MW-7	4/23/2012	MW-7-WL-042312				7.65	9.39
	MW-7	3/12/2013	MW-7-WL-031213				7.56	9.48
	MW-7	8/5/2013	MW-7-WL-080513				8.60	8.44
	MW-7	3/10/2014	MW-7-WL-031014				7.88	9.16
	MW-7	9/22/2014	MW-7-WL-092214				8.80	8.24
	MW-7	3/13/2015	MW-7-WL-031315				7.89	9.15
	MW-7	9/21/2015	MW-7-WL-092115				8.15	8.89
	MW-7	3/21/2016	MW-7-WL-032116				6.80	10.24
	MW-8	2/5/2010	MW-8-WL-020510	16.77	6.77 to -3.23	10 to 20	7.19	9.58
	MW-8	5/10/2010	MW-8-WL-051010				7.41	9.36
	MW-8	8/2/2010	MW-8-WL-080210				7.93	8.84
	MW-8	10/25/2010	MW-8-WL-102510				8.02	8.75
	MW-8	1/28/2011	MW-8-WL-012811				6.70	10.07
	MW-8	8/1/2011	MW-8-WL-080111				7.47	9.30
	MW-8	2/3/2012	MW-8-WL-020312				7.40	9.37
	MW-8	4/23/2012	MW-8-WL-042312				7.07	9.70
	MW-8	3/12/2013	MW-8-WL-031213				7.20	9.57
	MW-8	8/5/2013	MW-8-WL-080513				8.01	8.76
	MW-8	3/10/2014	MW-8-WL-031014				7.29	9.48
	MW-8	9/22/2014	MW-8-WL-092214				8.27	8.50
	MW-8	3/13/2015	MW-8-WL-031315				7.30	9.47
	MW-8	9/21/2015	MW-8-WL-092115				8.41	8.36
	MW-8	3/21/2016	MW-8-WL-092115				6.16	10.61
Blaser Die Casting	BDC-11-WT	5/18/2009	BDC-11-WT WL	19.59	9.19 to -0.81	10.4 to 20.4	11.25	8.34
	BDC-11-WT	6/3/2009	BDC-11-WT				11.40	8.19
	BDC-11-WT	8/4/2009	BDC-11-WT WL				11.97	7.62
	BDC-11-WT	8/18/2009	BDC-11-WT				12.01	7.58
	BDC-11-WT	10/23/2009	BDC-11-WT WL				11.86	7.73
	BDC-11-WT	11/17/2009	BDC-11-WT				11.15	8.44
	BDC-11-WT	2/5/2010	BDC-11-WT WL				10.52	9.07
	BDC-11-WT	2/24/2010	BDC-11-WT				10.51	9.08
	BDC-11-WT	05/10/2010	BDC-11-WT WL				10.87	8.72
	BDC-11-WT	8/2/2010	BDC-11-WT WL				11.49	8.10
	BDC-11-WT	10/25/2010	BDC-11-WT WL				11.35	8.24
	BDC-11-WT	1/28/2011	BDC-11-WT WL				10.11	9.48
	BDC-11-WT	3/1/2011	BDC-11-WT				10.14	9.45
	BDC-11-WT	5/6/2011	BDC-11-WT				10.31	9.28
	BDC-11-WT	8/1/2011	BDC-11-WT				11.11	8.48
	BDC-11-WT	10/24/2011	BDC-11-WT				11.63	7.96
	BDC-11-WT	2/3/2012	BDC-11-WT				10.60	8.99

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
Blaser Die Casting (continued)	BDC-1-WT	2/1/2008	BDC-1	17.08	11.18 to 1.18	5.9 to 15.9	8.00	9.08
	BDC-1-WT	5/18/2009	BDC-1-WT WL				8.25	8.83
	BDC-1-WT	8/4/2009	BDC-1-WT WL				9.04	8.04
	BDC-1-WT	10/23/2009	BDC-1-WT WL				9.00	8.08
	BDC-1-WT	11/17/2009	BDC-1-WT				8.26	8.82
	BDC-1-WT	02/05/2010	BDC-1-WT WL				7.55	9.53
	BDC-1-WT	2/24/2010	BDC-1-WT				7.51	9.57
	BDC-1-WT	5/10/2010	BDC-1-WT WL				7.82	9.26
	BDC-1-WT	8/2/2010	BDC-1-WT WL				8.46	8.62
	BDC-1-WT	10/25/2010	BDC-1-WT WL				8.23	8.85
	BDC-1-WT	1/27/2011	BDC-1-WT				6.79	10.29
	BDC-1-WT	1/28/2011	BDC-1-WT WL				7.24	9.84
	BDC-1-WT	5/6/2011	BDC-1-WT WL				7.20	9.88
	BDC-1-WT	8/1/2011	BDC-1-WT WL				8.03	9.05
	BDC-1-WT	10/24/2011	BDC-1-WT WL				8.65	8.43
	BDC-1-WT	2/3/2012	BDC-1-WT				7.62	9.46
	BDC-2-WT	2/1/2008	BDC-2	15.73	9.33 to -0.67	6.4 to 16.4	6.74	8.99
	BDC-2-WT	5/18/2009	BDC-2-WT WL				7.02	8.71
	BDC-2-WT	6/2/2009	BDC-2-WT				7.14	8.59
	BDC-2-WT	8/4/2009	BDC-2-WT WL				7.75	7.98
	BDC-2-WT	8/18/2009	BDC-2-WT				7.80	7.93
	BDC-2-WT	10/23/2009	BDC-2-WT WL				7.73	8.00
	BDC-2-WT	11/16/2009	BDC-2-WT				7.24	8.49
	BDC-2-WT	2/5/2010	BDC-2-WT WL				6.28	9.45
	BDC-2-WT	2/24/2010	BDC-2-WT				6.27	9.46
	BDC-2-WT	5/10/2010	BDC-2-WT WL				6.54	9.19
	BDC-2-WT	8/2/2010	BDC-2-WT WL				7.19	8.54
	BDC-2-WT	10/25/2010	BDC-2-WT WL				7.11	8.62
	BDC-2-WT	1/27/2011	BDC-2-WT				5.68	10.05
	BDC-2-WT	1/28/2011	BDC-2-WT WL				5.89	9.84
	BDC-2-WT	3/1/2011	BDC-2-WT				5.83	9.90
	BDC-2-WT	5/6/2011	BDC-2-WT				5.94	9.79
	BDC-2-WT	8/1/2011	BDC-2-WT				6.76	8.97
	BDC-2-WT	10/24/2011	BDC-2-WT				7.33	8.40
	BDC-2-WT	2/3/2012	BDC-2-WT				6.40	9.33
	BDC-3-WT	2/1/2008	BDC-3	15.29	7.89 to 2.89	7.4 to 12.4	6.22	9.07
	BDC-3-WT	5/18/2009	BDC-3-WT WL				6.48	8.81
	BDC-3-WT	6/2/2009	BDC-3-WT				6.68	8.61
	BDC-3-WT	8/4/2009	BDC-3-WT WL				7.23	8.06
	BDC-3-WT	8/18/2009	BDC-3-WT				7.29	8.00
	BDC-3-WT	10/23/2009	BDC-3-WT WL				7.24	8.05
	BDC-3-WT	11/16/2009	BDC-3-WT				6.72	8.57
	BDC-3-WT	2/5/2010	BDC-3-WT WL				5.77	9.52
	BDC-3-WT	2/24/2010	BDC-3-WT				5.73	9.56
	BDC-3-WT	5/10/2010	BDC-3-WT WL				6.02	9.27
	BDC-3-WT	8/2/2010	BDC-3-WT WL				6.65	8.64
	BDC-3-WT	10/25/2010	BDC-3-WT WL				6.58	8.71
	BDC-3-WT	1/28/2011	BDC-3-WT WL				5.38	9.91
	BDC-3-WT	3/1/2011	BDC-3-WT				5.31	9.98
	BDC-3-WT	5/6/2011	BDC-3-WT				5.40	9.89
	BDC-3-WT	8/1/2011	BDC-3-WT				6.22	9.07
	BDC-3-WT	10/24/2011	BDC-3-WT				6.85	8.44
	BDC-3-WT	2/3/2012	BDC-3-WT				5.91	9.38
	BDC-4-WT	2/1/2008	BDC-4	17.83	11.43 to 1.43	6.4 to 16.4	8.50	9.33
	BDC-4-WT	5/18/2009	BDC-4-WT WL				8.77	9.06
	BDC-4-WT	6/2/2009	BDC-4-WT				8.88	8.95
	BDC-4-WT	8/4/2009	BDC-4-WT WL				9.53	8.30
	BDC-4-WT	8/18/2009	BDC-4-WT				9.59	8.24
	BDC-4-WT	10/23/2009	BDC-4-WT WL				9.54	8.29
	BDC-4-WT	11/17/2009	BDC-4-WT				9.00	8.83
	BDC-4-WT	2/5/2010	BDC-4-WT WL				8.11	9.72
	BDC-4-WT	2/24/2010	BDC-4-WT				8.03	9.80
	BDC-4-WT	5/10/2010	BDC-4-WT WL				8.30	9.53
	BDC-4-WT	8/2/2010	BDC-4-WT WL				8.91	8.92
	BDC-4-WT	10/25/2010	BDC-4-WT WL				8.90	8.93
	BDC-4-WT	1/28/2011	BDC-4-WT WL				7.71	10.12
	BDC-4-WT	3/1/2011	BDC-4-WT				9.58	8.25
	BDC-4-WT	5/6/2011	BDC-4-WT				7.65	10.18
	BDC-4-WT	8/1/2011	BDC-4-WT				8.46	9.37
	BDC-4-WT	10/24/2011	BDC-4-WT				9.13	8.70
	BDC-4-WT	2/3/2012	BDC-4-WT				8.22	9.61
	BDC-6-WT	2/1/2008	BDC-6	18.25	8.85 to -1.15	9.4 to 19.4	9.47	8.78
	BDC-6-WT	5/18/2009	BDC-6-WT WL				9.73	8.52
	BDC-6-WT	6/2/2009	BDC-6-WT				9.90	8.35
	BDC-6-WT	8/4/2009	BDC-6-WT WL				10.37	7.88
	BDC-6-WT	8/18/2009	BDC-6-WT				10.51	7.74
	BDC-6-WT	10/23/2009	BDC-6-WT WL				10.38	7.87
	BDC-6-WT	11/16/2009	BDC-6-WT				9.90	8.35
	BDC-6-WT	2/5/2010	BDC-6-WT WL				9.02	9.23
	BDC-6-WT	2/24/2010	BDC-6-WT				8.99	9.26
	BDC-6-WT	5/10/2010	BDC-6-WT WL				9.30	8.95
	BDC-6-WT	8/2/2010	BDC-6-WT WL				9.92	8.33
	BDC-6-WT	10/25/2010	BDC-6-WT WL				9.84	8.41
	BDC-6-WT	1/27/2011	BDC-6-WT				8.44	9.81
	BDC-6-WT	1/28/2011	BDC-6-WT WL				8.59	9.66
	BDC-6-WT	3/1/2011	BDC-6-WT				8.61	9.64
	BDC-6-WT	5/6/2011	BDC-6-WT				8.73	9.52
	BDC-6-WT	8/1/2011	BDC-6-WT				9.53	8.72
	BDC-6-WT	10/24/2011	BDC-6-WT				10.10	8.15
	BDC-6-WT	2/3/2012	BDC-6-WT				9.12	9.13

Table 1
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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
Blaser Die Casting (continued)	CG-136-WT	5/18/2009	CG-136-WT WL	15.03	7.67 to -2.33	7.36 to 17.36	6.31	8.72
	CG-136-WT	6/2/2009	CG-136-WT				6.42	8.61
	CG-136-WT	8/4/2009	CG-136-WT WL				7.01	8.02
	CG-136-WT	10/23/2009	CG-136-WT WL				6.91	8.12
	CG-136-WT	11/16/2009	CG-136-WT				6.51	8.52
	CG-136-WT	2/5/2010	CG-136-WT WL				5.57	9.46
	CG-136-WT	5/10/2010	CG-136-WT WL				5.84	9.19
	CG-136-WT	8/2/2010	CG-136-WT WL				6.45	8.58
	CG-136-WT	10/25/2010	CG-136-WT WL				6.41	8.62
	CG-136-WT	1/28/2011	CG-136-WT WL				5.14	9.89
	CG-136-WT	3/2/2011	CG-136-WT				5.10	9.93
	CG-136-WT	5/6/2011	CG-136-WT				5.22	9.81
	CG-136-WT	10/24/2011	CG-136-WT				6.60	8.43
	CG-136-WT	2/3/2012	CG-136-WT				5.70	9.33
	CI-MW-1-WT	5/18/2009	CI-MW-1-WT WL	16.45	9.34 to -0.66	7.11 to 17.11	7.84	8.61
	CI-MW-1-WT	6/3/2009	CI-MW-1-WT				7.99	8.46
	CI-MW-1-WT	8/4/2009	CI-MW-1-WT WL				8.55	7.90
	CI-MW-1-WT	10/23/2009	CI-MW-1-WT WL				8.53	7.92
	CI-MW-1-WT	11/16/2009	CI-MW-1-WT				8.05	8.40
	CI-MW-1-WT	2/5/2010	CI-MW-1-WT WL				7.14	9.31
	CI-MW-1-WT	5/10/2010	CI-MW-1-WT WL				7.40	9.05
	CI-MW-1-WT	8/2/2010	CI-MW-1-WT WL				8.03	8.42
	CI-MW-1-WT	10/25/2010	CI-MW-1-WT WL				7.99	8.46
	CI-MW-1-WT	1/28/2011	CI-MW-1-WT WL				6.69	9.76
	CI-MW-1-WT	5/6/2011	CI-MW-1-WT WL				6.81	9.64
	CI-MW-1-WT	8/1/2011	CI-MW-1-WT WL				7.60	8.85
	CI-MW-1-WT	10/24/2011	CI-MW-1-WT WL				8.18	8.27
	CI-MW-1-WT	2/3/2012	CI-MW-1-WT				7.28	9.17
Art Brass Plating	MW-10	12/15/2008	MW-10-WL-121508	16.51	11.91 to 1.91	5 to 15	8.54	7.97
	MW-10	3/23/2009	MW-10-WL-032309				7.84	8.67
	MW-10	5/18/2009	MW-10-WL-051809				7.99	8.52
	MW-10	8/4/2009	MW-10-WL-080409				8.77	7.74
	MW-10	10/23/2009	MW-10-WL-102309				8.65	7.86
	MW-10	2/5/2010	MW-10-WL-020510				7.13	9.38
	MW-10	5/10/2010	MW-10-WL-051010				7.57	8.94
	MW-10	8/2/2010	MW-10-WL-080210				8.23	8.28
	MW-10	10/25/2010	MW-10-WL-102510				8.19	8.32
	MW-10	1/28/2011	MW-10-WL-012811				5.92	10.59
	MW-10	5/6/2011	MW-10-WL-050611				6.25	10.26
	MW-10	8/1/2011	MW-10-WL-080111				7.85	8.66
	MW-10	10/24/2011	MW-10-WL-102411				8.42	8.09
	MW-10	2/3/2012	MW-10-WL-020312				5.92	10.59
	MW-11	12/15/2008	MW-11-WL-121508	16.94	12.24 to 2.24	5 to 15	8.62	8.32
	MW-11	3/23/2009	MW-11-WL-032309				8.10	8.84
	MW-11	5/18/2009	MW-11-WL-051809				7.99	8.95
	MW-11	8/4/2009	MW-11-WL-080409				8.82	8.12
	MW-11	10/23/2009	MW-11-WL-102309				8.80	8.14
	MW-11	2/5/2010	MW-11-WL-020510				7.59	9.35
	MW-11	5/10/2010	MW-11-WL-051010				7.53	9.41
	MW-11	8/2/2010	MW-11-WL-080210				8.22	8.72
	MW-11	10/25/2010	MW-11-WL-102510				8.33	8.61
	MW-11	1/28/2011	MW-11-WL-012811				7.13	9.81
	MW-11	5/6/2011	MW-11-WL-050611				6.93	10.01
	MW-11	8/1/2011	MW-11-WL-080111				7.77	9.17
	MW-11	10/24/2011	MW-11-WL-102411				8.43	8.51
	MW-11	2/3/2012	MW-11-WL-020312				7.39	9.55
	MW-14	12/15/2008	MW-14-WL-121508	15.48	11.81 to 1.81	4 to 14	6.91	8.57
	MW-14	3/23/2009	MW-14-WL-032309				6.31	9.17
	MW-14	5/18/2009	MW-14-WL-051809				6.22	9.26
	MW-14	8/4/2009	MW-14-WL-080409				7.03	8.45
	MW-14	10/23/2009	MW-14-WL-102309				7.07	8.41
	MW-14	2/5/2010	MW-14-WL-020510				6.58	8.90
	MW-14	5/10/2010	MW-14-WL-051010				5.73	9.75
	MW-14	8/2/2010	MW-14-WL-080210				6.37	9.11
	MW-14	10/25/2010	MW-14-WL-102510				6.55	8.93
	MW-14	1/28/2011	MW-14-WL-012811				6.05	9.43
	MW-14	5/6/2011	MW-14-WL-050611				5.06	10.42
	MW-14	8/1/2011	MW-14-WL-080111				5.87	9.61
	MW-14	10/24/2011	MW-14-WL-102411				6.61	8.87
	MW-14	2/3/2012	MW-14-WL-020312				5.64	9.84
	MW-15	12/15/2008	MW-15-WL-121508	14.75	11.20 to 1.20	4 to 14	6.49	8.26
	MW-15	3/23/2009	MW-15-WL-032309				5.97	8.78
	MW-15	5/18/2009	MW-15-WL-051809				5.90	8.85
	MW-15	8/4/2009	MW-15-WL-080409				6.74	8.01
	MW-15	10/23/2009	MW-15-WL-102309				6.67	8.08
	MW-15	2/5/2010	MW-15-WL-020510				5.62	9.13
	MW-15	5/10/2010	MW-15-WL-051010				5.44	9.31
	MW-15	8/2/2010	MW-15-WL-080210				6.14	8.61
	MW-15	10/25/2010	MW-15-WL-102510				6.10	8.65
	MW-15	1/28/2011	MW-15-WL-012811				5.21	9.54
	MW-15	5/6/2011	MW-15-WL-050611				4.83	9.92
	MW-15	8/1/2011	MW-15-WL-080111				5.71	9.04
	MW-15	10/24/2011	MW-15-WL-102411				6.32	8.43
	MW-15	2/3/2012	MW-15-WL-020312				5.20	9.55

Table 1
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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Water Table Zone								
Art Brass Plating (Continued)	MW-16	3/23/2009	MW-16-WL-032309	16.9	12.34 to 2.34	5 to 15	8.32	8.58
	MW-16	5/18/2009	MW-16-WL-051809				8.21	8.69
	MW-16	8/4/2009	MW-16-WL-080409				9.05	7.85
	MW-16	10/23/2009	MW-16-WL-102309				8.97	7.93
	MW-16	2/5/2010	MW-16-WL-020510				5.69	11.21
	MW-16	5/10/2010	MW-16-WL-051010				7.03	9.87
	MW-16	8/2/2010	MW-16-WL-080210				8.50	8.40
	MW-16	10/25/2010	MW-16-WL-102510				8.45	8.45
	MW-16	1/28/2011	MW-16-WL-012811				5.04	11.86
	MW-16	5/6/2011	MW-16-WL-050611				5.73	11.17
	MW-16	8/1/2011	MW-16-WL-080111				8.07	8.83
	MW-16	10/24/2011	MW-16-WL-102411				8.70	8.20
	MW-16	2/3/2012	MW-16-WL-020312				6.81	10.09
	MW-24	5/10/2010	MW-24-WL-051010	12.32	7.63 to -2.37	5 to 15	4.32	8.00
	MW-24	8/2/2010	MW-24-WL-080210				4.22	8.10
	MW-24	10/25/2010	MW-24-WL-102510				3.83	8.49
	MW-24	1/28/2011	MW-24-WL-012811				3.72	8.60
	MW-24	5/6/2011	MW-24-WL-050611				6.63	5.69
	MW-24	8/1/2011	MW-24-WL-080111				4.12	8.20
	MW-24	10/24/2011	MW-24-WL-102411				4.29	8.03
	MW-24	2/3/2012	MW-24-WL-020312				3.65	8.67
	MW-8	12/15/2008	MW-8-WL-121508	14.99	10.39 to 0.39	5 to 15	6.40	8.59
	MW-8	3/23/2009	MW-8-WL-032309				6.06	8.93
	MW-8	5/18/2009	MW-8-WL-051809				5.98	9.01
	MW-8	8/4/2009	MW-8-WL-080409				6.81	8.18
	MW-8	10/23/2009	MW-8-WL-102309				6.76	8.23
	MW-8	2/5/2010	MW-8-WL-020510				6.29	8.70
	MW-8	5/10/2010	MW-8-WL-051010				5.50	9.49
	MW-8	8/2/2010	MW-8-WL-080210				6.17	8.82
	MW-8	10/25/2010	MW-8-WL-102510				6.29	8.70
	MW-8	1/28/2011	MW-8-WL-012811				5.85	9.14
	MW-8	5/6/2011	MW-8-WL-050611				4.86	10.13
	MW-8	8/1/2011	MW-8-WL-080111				5.75	9.24
	MW-8	10/24/2011	MW-8-WL-102411				6.39	8.60
	MW-8	2/3/2012	MW-8-WL-020312				5.33	9.66
	PSC-CG-138-WT	12/15/2008	PSC-CG-138-WT-WL-121508	16.62	12.12 to 2.12	4.5 to 14.5	8.51	8.11
	PSC-CG-138-WT	3/23/2009	PSC-CG-138-WT-WL-032309				8.01	8.61
	PSC-CG-138-WT	5/18/2009	PSC-CG-138-WT-WL-051809				7.90	8.72
	PSC-CG-138-WT	8/4/2009	PSC-CG-138-WT-WL-080409				8.73	7.89
	PSC-CG-138-WT	10/23/2009	PSC-CG-138-WT-WL-102309				8.66	7.96
	PSC-CG-138-WT	2/5/2010	PSC-CG-138-WT-WL-020510				7.34	9.28
	PSC-CG-138-WT	5/10/2010	PSC-CG-138-WT-WL-051010				7.55	9.07
	PSC-CG-138-WT	8/2/2010	PSC-CG-138-WT-WL-080210				8.20	8.42
	PSC-CG-138-WT	10/25/2010	PSC-CG-138-WT-WL-102510				8.15	8.47
	PSC-CG-138-WT	1/28/2011	PSC-CG-138-WT-WL-012811				6.96	9.66
	PSC-CG-138-WT	5/6/2011	PSC-CG-138-WT-WL-050611				6.88	9.74
	PSC-CG-138-WT	8/1/2011	PSC-CG-138-WT-WL-080111				7.78	8.84
	PSC-CG-138-WT	10/24/2011	PSC-CG-138-WT-WL-102411				8.35	8.27
	PSC-CG-142-WT	12/15/2008	PSC-CG-142-WT-WL-121508	16.73	12.73 to 2.73	4.5 to 14.5	8.93	7.80
	PSC-CG-142-WT	3/23/2009	PSC-CG-142-WT-WL-032309				8.49	8.24
	PSC-CG-142-WT	8/4/2009	PSC-CG-142-WT-WL-080409				9.18	7.55
	PSC-CG-142-WT	10/23/2009	PSC-CG-142-WT-WL-102309				9.13	7.60
	PSC-CG-142-WT	2/5/2010	PSC-CG-142-WT-WL-020510				7.91	8.82
	PSC-CG-142-WT	5/11/2010	PSC-CG-142-WT-WL-051110				8.33	8.40
	PSC-CG-142-WT	8/2/2010	PSC-CG-142-WT-WL-080210				8.83	7.90
	PSC-CG-142-WT	10/25/2010	PSC-CG-142-WT-WL-102510				8.94	7.79
	PSC-CG-142-WT	1/28/2011	PSC-CG-142-WT-WL-012811				7.62	9.11
	PSC-CG-142-WT	10/24/2011	PSC-CG-142-WT-WL-102411				9.20	7.53
	PSC-CG-142-WT	2/3/2012	PSC-CG-142-WT-WL-020312				8.36	8.37
Phillip Services Corporation	PSC-CG-131-WT	2/3/2012	PSC-CG-131-WT-WL-020312	Unknown	Unknown	Unknown	Unknown	9.68
	PSC-CG-134-WT	2/3/2012	PSC-CG-134-WT-WL-020312	Unknown	Unknown	Unknown	Unknown	9.28
Shallow Zone								
Capital Industries, Inc.	CG-137-40	5/10/2010	CG-137-40-WL-051010	15.79	-14.21 to -24.21	30 to 40	7.35	8.44
	CG-137-40	8/2/2010	CG-137-40-WL-080210				7.92	7.87
	CG-137-40	10/25/2010	CG-137-40-WL-102510				7.85	7.94
	CG-137-40	1/28/2011	CG-137-40-WL-012811				6.58	9.21
	CG-137-40	8/1/2011	CG-137-40-WL-080111				7.51	8.28
	CG-137-40	2/3/2012	CG-137-40-WL-020312				7.08	8.71
	CG-137-40	4/23/2012	CG-137-40-WL-042312				7.00	8.79
	CG-137-40	3/12/2013	CG-137-40-WL-031213				7.21	8.58
	CG-137-40	8/5/2013	CG-137-40-WL-080513				7.97	7.82
	CG-137-40	3/10/2014	CG-137-40-WL-031014				6.77	9.02
	CG-137-40	9/22/2014	CG-137-40-WL-092214				8.14	7.65
	CG-137-40	3/13/2015	CG-137-40-WL-031315				7.30	8.49
	CG-137-40	9/21/2015	CG-137-40-WL-092115				7.67	8.12
	CG-137-40	3/21/2016	CG-137-40-WL-032116				6.15	9.64
	CG-141-40	5/10/2010	CG-141-40-WL-051010	17.01	-12.99 to -22.99	30 to 40	9.30	7.71
	CG-141-40	8/2/2010	CG-141-40-WL-080210				9.77	7.24
	CG-141-40	10/25/2010	CG-141-40-WL-102510				9.68	7.33
	CG-141-40	1/28/2011	CG-141-40-WL-012811				8.40	8.61
	CG-141-40	8/1/2011	CG-141-40-WL-080111				9.44	7.57
	CG-141-40	4/23/2012	CG-141-40-WL-042312				8.95	8.06
	CG-141-40	3/12/2013	CG-141-40-WL-031213				9.21	7.80
	CG-141-40	8/5/2013	CG-141-40-WL-080513				9.84	7.17
	CG-141-40	3/10/2014	CG-141-40-WL-031014				8.69	8.32
	CG-141-40	9/22/2014	CG-141-40-WL-092214				10.00	7.01
	CG-141-40	3/13/2015	CG-141-40-WL-031315				8.91	8.10
	CG-141-40	9/21/2015	CG-141-40-WL-092115				7.13	9.88
	CG-141-40	3/21/2016	CG-141-40-WL-032116				8.12	8.89

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Shallow Zone								
Capital Industries, Inc. (continued)	CI-10-35	5/10/2010	CI-10-35-WL-051010	15.68	-9.32 to -19.32	25 to 35	8.08	7.60
	CI-10-35	8/2/2010	CI-10-35-WL-080210				8.54	7.14
	CI-10-35	10/25/2010	CI-10-35-WL-102510				8.49	7.19
	CI-10-35	1/28/2011	CI-10-35-WL-012811				7.25	8.43
	CI-10-35	8/1/2011	CI-10-35-WL-080111				8.20	7.48
	CI-10-35	2/3/2012	CI-10-35-WL-020312				7.72	7.96
	CI-10-35	4/23/2012	CI-10-35-WL-042312				7.74	7.94
	CI-10-35	3/12/2013	CI-10-35-WL-031213				8.01	7.67
	CI-10-35	8/5/2013	CI-10-35-WL-080513				8.59	7.09
	CI-10-35	3/10/2014	CI-10-35-WL-031014				7.52	8.16
	CI-10-35	9/22/2014	CI-10-35-WL-092214				8.65	7.03
	CI-10-35	3/13/2015	CI-10-35-WL-031315				7.99	7.69
	CI-10-35	9/21/2015	CI-10-35-WL-092115				7.08	8.60
	CI-10-35	3/21/2016	CI-10-35-WL-032116				7.00	8.68
	CI-11-30	8/2/2010	CI-11-30-WL-080210	13.32	-6.68 to -16.68	20 to 30	6.77	6.55
	CI-11-30	10/25/2010	CI-11-30-WL-102510				6.25	7.07
	CI-11-30	1/28/2011	CI-11-30-WL-012811				5.96	7.36
	CI-11-30	8/1/2011	CI-11-30-WL-080111				7.02	6.30
	CI-11-30	2/3/2012	CI-11-30-WL-020312				5.97	7.35
	CI-11-30	4/23/2012	CI-11-30-WL-042312				6.46	6.86
	CI-11-30	3/12/2013	CI-11-30-WL-031213				6.20	7.12
	CI-11-30	8/5/2013	CI-11-30-WL-080513				7.25	6.07
	CI-11-30	3/10/2014	CI-11-30-WL-031014				5.65	7.67
	CI-11-30	9/22/2014	CI-11-30-WL-092214				7.06	6.26
	CI-11-30	3/13/2015	CI-11-30-WL-031315				6.00	7.32
	CI-11-30	9/21/2015	CI-11-30-WL-092115				6.54	6.78
	CI-11-30	3/21/2016	CI-11-30-WL-032116				5.35	7.97
	CI-12-30	5/10/2010	CI-12-30-WL-051010	15.45	-4.55 to -14.55	20 to 30	8.92	6.53
	CI-12-30	8/2/2010	CI-12-30-WL-080210				9.15	6.30
	CI-12-30	10/25/2010	CI-12-30-WL-102510				8.65	6.80
	CI-12-30	1/28/2011	CI-12-30-WL-012811				7.97	7.48
	CI-12-30	8/1/2011	CI-12-30-WL-080111				9.13	6.32
	CI-12-30	4/23/2012	CI-12-30-WL-042312				8.71	6.74
	CI-12-30	3/12/2013	CI-12-30-WL-031212				8.82	6.63
	CI-12-30	8/5/2013	CI-12-30-WL-080513				9.40	6.05
	CI-12-30	3/10/2014	CI-12-30-WL-031014				8.14	7.31
	CI-12-30	9/22/2014	CI-12-30-WL-092214				9.30	6.15
	CI-12-30	3/13/2015	CI-12-30-WL-031315				8.58	6.87
	CI-12-30	9/21/2015	CI-12-30-WL-092115				6.31	9.14
	CI-12-30	3/21/2016	CI-12-30-WL-032116				7.80	7.65
	CI-13-30	8/2/2010	CI-13-30-WL-080210	15.83	-4.17 to -14.17	20 to 30	10.06	5.77
	CI-13-30	10/25/2010	CI-13-30-WL-102510				9.29	6.54
	CI-13-30	1/28/2011	CI-13-30-WL-012811				8.47	7.36
	CI-13-30	8/1/2011	CI-13-30-WL-080111				11.06	4.77
	CI-13-30	2/3/2012	CI-13-30-WL-020312				9.05	6.78
	CI-13-30	4/23/2012	CI-13-30-WL-042312				10.84	4.99
	CI-13-30	8/5/2013	CI-13-30-WL-080513				11.23	4.60
	CI-13-30	3/11/2014	CI-13-30-WL-031113				8.14	7.69
	CI-13-30	9/22/2014	CI-13-30-WL-092213				NM	--
	CI-13-30	3/13/2015	CI-13-30-WL-031315				9.10	6.73
	CI-13-30	9/21/2015	CI-13-30-WL-092115				6.20	9.63
	CI-13-30	3/21/2016	CI-13-30-WL-032116				8.96	6.87
	CI-14-35	8/2/2010	CI-14-35-WL-080210	15.12	-9.88 to -19.88	25 to 35	8.47	6.65
	CI-14-35	10/25/2010	CI-14-35-WL-102510				8.30	6.82
	CI-14-35	1/28/2011	CI-14-35-WL-012811				7.25	7.87
	CI-14-35	8/1/2011	CI-14-35-WL-080111				8.25	6.87
	CI-14-35	4/23/2012	CI-14-35-WL-042312				7.77	7.35
	CI-14-35	3/12/2013	CI-14-35-WL-031213				8.62	6.50
	CI-14-35	8/5/2013	CI-14-35-WL-080513				8.59	6.53
	CI-14-35	3/10/2014	CI-14-35-WL-031014				7.48	7.64
	CI-14-35	9/22/2014	CI-14-35-WL-092214				8.55	6.57
	CI-14-35	3/13/2015	CI-14-35-WL-0313154				7.90	7.22
	CI-14-35	9/21/2015	CI-14-35-WL-092115				6.73	8.39
	CI-14-35	3/21/2016	CI-14-35-WL-032116				7.01	8.11
	CI-15-40	5/10/2010	CI-15-40-WL-051010	16.60	-13.4 to -23.4	30 to 40	9.16	7.44
	CI-15-40	8/2/2010	CI-15-40-WL-080210				9.61	6.99
	CI-15-40	10/25/2010	CI-15-40-WL-102510				9.50	7.10
	CI-15-40	1/28/2011	CI-15-40-WL-012811				8.32	8.28
	CI-15-40	8/1/2011	CI-15-40-WL-080111				9.31	7.29
	CI-15-40	2/3/2012	CI-15-40-WL-020312				8.68	7.92
	CI-15-40	4/23/2012	CI-15-40-WL-042312				8.85	7.75
	CI-15-40	3/12/2013	CI-15-40-WL-031213				9.1	7.50
	CI-15-40	8/5/2013	CI-15-40-WL-080513				9.74	6.86
	CI-15-40	3/10/2014	CI-15-40-WL-031014				8.51	8.09
	CI-15-40	9/22/2014	CI-15-40-WL-092214				9.80	6.80
	CI-15-40	3/13/2015	CI-15-40-WL-031315				9.01	7.59
	CI-15-40	9/21/2015	CI-15-40-WL-092115				6.93	9.67
	CI-15-40	3/21/2016	CI-15-40-WL-032116				9.07	7.53
	CI-16-30	4/23/2012	CI-16-30-WL-042312	14.48	-5.52 to -15.52	20 to 30	9.14	5.34
	CI-16-30	3/12/2013	CI-16-30-WL-031213				7.88	6.60
	CI-16-30	8/5/2013	CI-16-30-WL-080513				8.01	6.47
	CI-16-30	3/10/2014	CI-16-30-WL-031014				6.25	8.23
	CI-16-30	9/22/2014	CI-16-30-WL-092214				9.35	5.13
	CI-16-30	3/13/2015	CI-16-30-WL-031315				7.55	6.93
	CI-16-30	9/21/2015	CI-16-30-WL-092115				6.48	8.00
	CI-16-30	3/21/2016	CI-16-30-WL-032116				7.52	6.96
	CI-17-30	4/23/2012	CI-17-30-WL-042312	14.58	-5.52 to -15.52	20 to 30	11.25	3.33
	CI-17-30	3/12/2013	CI-17-30-WL-031213				11.91	2.67
	CI-17-30	8/5/2013	CI-17-30-WL-080513				11.81	2.77
	CI-17-30	3/10/2014	CI-17-30-WL-031014				7.58	7.00
	CI-17-30	9/22/2014	CI-17-30-WL-092214				NM	--
	CI-17-30	3/13/2015	CI-17-30-WL-031315				7.82	6.76
	CI-17-30	9/21/2015	CI-17-30-WL-092115				6.46	8.12
	CI-17-30	3/21/2016	CI-17-30-WL-032116				8.74	5.84

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Shallow Zone								
Capital Industries, Inc. (continued)	CI-18-30	4/23/2012	CI-18-30-WL-042312	16.74	-5.52 to -15.52	20 to 30	11.47	5.27
	CI-18-30	3/12/2013	CI-18-30-WL-031213				11.1	5.64
	CI-18-30	8/5/2013	CI-18-30-WL-080513				12.04	4.70
	CI-18-30	3/10/2014	CI-18-30-WL-031014				9.00	7.74
	CI-18-30	9/22/2014	CI-18-30-WL-092214				NM	--
	CI-18-30	11/5/2014	CI-18-30-WL-110514				10.58	6.16
	CI-18-30	3/13/2015	CI-18-30-WL-031315				10.14	6.60
	CI-18-30	9/21/2015	CI-18-30-WL-092115				6.67	10.07
	CI-18-30	3/21/2016	CI-18-30-WL-032116				9.88	6.86
	CI-19-30	4/23/2012	CI-19-30-WL-042312	15.57	-5.52 to -15.52	20 to 30	10.15	5.42
	CI-19-30	3/12/2013	CI-19-30-WL-031213				13.5	2.07
	CI-19-30	8/5/2013	CI-19-30-WL-080513				16.29	-0.72
	CI-19-30	3/10/2014	CI-19-30-WL-031014				9.15	6.42
	CI-19-30	9/22/2014	CI-19-30-WL-092214				14.29	1.28
	CI-19-30	3/13/2015	CI-19-30-WL-031315				8.34	7.23
	CI-19-30	9/21/2015	CI-19-30-WL-092115				6.86	8.71
	CI-19-30	3/21/2016	CI-19-30-WL-032116				11.41	4.16
	CI-7-40	5/10/2010	CI-7-40-WL-051010	16.79	-13.21 to -23.21	30 to 40	7.74	9.05
	CI-7-40	8/2/2010	CI-7-40-WL-080210				8.23	8.56
	CI-7-40	10/25/2010	CI-7-40-WL-102510				8.40	8.39
	CI-7-40	1/28/2011	CI-7-40-WL-012811				7.02	9.77
	CI-7-40	8/1/2011	CI-7-40-WL-080111				7.82	8.97
	CI-7-40	4/23/2012	CI-7-40-WL-042312				7.39	9.40
	CI-7-40	3/12/2013	CI-7-40-WL-031213				7.82	8.97
	CI-7-40	8/5/2013	CI-7-40-WL-080513				8.32	8.47
	CI-7-40	3/10/2014	CI-7-40-WL-031014				7.65	9.14
	CI-7-40	9/22/2014	CI-7-40-WL-092214				8.52	8.27
	CI-7-40	3/13/2015	CI-7-40-WL-031315				7.71	9.08
	CI-7-40	9/21/2015	CI-7-40-WL-092115				8.14	8.65
	CI-7-40	3/21/2016	CI-7-40-WL-032116				6.60	10.19
	CI-8-40	8/2/2010	CI-8-40-WL-080210	16.74	-13.5 to -23.5	30 to 40	7.91	8.83
	CI-8-40	10/25/2010	CI-8-40-WL-102510				8.06	8.68
	CI-8-40	1/28/2011	CI-8-40-WL-012811				6.67	10.07
	CI-8-40	8/1/2011	CI-8-40-WL-080111				7.44	9.30
	CI-8-40	2/3/2012	CI-8-40-WL-020312				7.36	9.38
	CI-8-40	4/23/2012	CI-8-40-WL-042312				7.02	9.72
	CI-8-40	3/12/2013	CI-8-40-WL-031213				6.91	9.83
	CI-8-40	8/5/2013	CI-8-40-WL-080513				7.56	9.18
	CI-8-40	3/10/2014	CI-8-40-WL-031014				6.95	9.79
	CI-8-40	9/23/2014	CI-8-40-WL-092314				7.98	8.76
	CI-8-40	3/13/2015	CI-8-40-WL-031315				7.02	9.72
	CI-8-40	9/21/2015	CI-8-40-WL-092115				8.66	8.08
	CI-8-40	3/21/2016	CI-8-40-WL-032116				5.90	10.84
	CI-9-40	8/2/2010	CI-9-40-WL-080210	15.81	-14.19 to -24.19	30 to 40	7.83	7.98
	CI-9-40	10/25/2010	CI-9-40-WL-102510				7.88	7.93
	CI-9-40	1/28/2011	CI-9-40-WL-012811				6.57	9.24
	CI-9-40	8/1/2011	CI-9-40-WL-080111				7.46	8.35
	CI-9-40	4/23/2012	CI-9-40-WL-042312				6.97	8.84
	CI-9-40	3/12/2013	CI-9-40-WL-031213				7.21	8.60
	CI-9-40	8/5/2013	CI-9-40-WL-080513				7.91	7.90
	CI-9-40	3/10/2014	CI-9-40-WL-031014				6.98	8.83
	CI-9-40	9/22/2014	CI-9-40-WL-092214				8.04	7.77
	CI-9-40	3/13/2015	CI-9-40-WL-031315				7.30	8.51
	CI-9-40	9/21/2015	CI-9-40-WL-092115				7.73	8.08
	CI-9-40	3/21/2016	CI-9-40-WL-032116				6.14	9.67
	CI-MW-1-40	8/2/2010	CI-MW-1-40-WL-080210	16.04	-13.96 to -23.96	30 to 40	7.51	8.53
	CI-MW-1-40	10/25/2010	CI-MW-1-40-WL-102510				7.66	8.38
	CI-MW-1-40	1/28/2011	CI-MW-1-40-WL-012811				6.30	9.74
	CI-MW-1-40	8/1/2011	CI-MW-1-40-WL-080111				7.18	8.86
	CI-MW-1-40	4/23/2012	CI-MW-1-40-WL-042312				6.67	9.37
	CI-MW-1-40	3/12/2013	CI-MW-1-40-WL-031213				7.26	8.78
	CI-MW-1-40	8/5/2013	CI-MW-1-40-WL-080513				8.11	7.93
	CI-MW-1-40	3/10/2014	CI-MW-1-40-WL-031014				6.92	9.12
	CI-MW-1-40	9/22/2014	CI-MW-1-40-WL-092214				7.90	8.14
	CI-MW-1-40	3/13/2015	CI-MW-1-40-WL-031315				7.10	8.94
	CI-MW-1-40	9/21/2015	CI-MW-1-40-WL-092115				7.93	8.11
	CI-MW-1-40	3/21/2016	CI-MW-1-40-WL-032116				6.19	9.85
Blaser Die Casting	BDC-10-40	5/18/2009	BDC-10-40 WL	18.19	-12.21 to -22.21	30.4 to 40.4	9.12	9.07
	BDC-10-40	6/2/2009	BDC-10-40				9.18	9.01
	BDC-10-40	8/4/2009	BDC-10-40 WL				9.78	8.41
	BDC-10-40	10/23/2009	BDC-10-40 WL				9.89	8.30
	BDC-10-40	11/17/2009	BDC-10-40				9.44	8.75
	BDC-10-40	2/5/2010	BDC-10-40 WL				8.43	9.76
	BDC-10-40	5/10/2010	BDC-10-40 WL				8.59	9.60
	BDC-10-40	8/2/2010	BDC-10-40 WL				9.15	9.04
	BDC-10-40	10/25/2010	BDC-10-40 WL				9.33	8.86
	BDC-10-40	1/28/2011	BDC-10-40 WL				7.92	10.27
	BDC-10-40	3/1/2011	BDC-10-40				7.92	10.27
	BDC-10-40	5/6/2011	BDC-10-40				7.95	10.24
	BDC-10-40	8/1/2011	BDC-10-40				8.72	9.47
	BDC-10-40	10/24/2011	BDC-10-40				9.36	8.83
	BDC-10-40	2/3/2012	BDC-10-40				8.62	9.57

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Shallow Zone								
Blaser Die Casting (continued)	BDC-11-40	5/18/2009	BDC-11-40 WL	19.37	-11.03 to -21.03	30.4 to 40.4	11.02	8.35
	BDC-11-40	6/3/2009	BDC-11-40				11.18	8.19
	BDC-11-40	8/4/2009	BDC-11-40 WL				11.75	7.62
	BDC-11-40	8/18/2009	BDC-11-40				11.77	7.60
	BDC-11-40	10/23/2009	BDC-11-40 WL				11.65	7.72
	BDC-11-40	11/17/2009	BDC-11-40				10.98	8.39
	BDC-11-40	2/5/2010	BDC-11-40 WL				10.31	9.06
	BDC-11-40	2/24/2010	BDC-11-40				10.30	9.07
	BDC-11-40	5/10/2010	BDC-11-40 WL				10.64	8.73
	BDC-11-40	8/2/2010	BDC-11-40 WL				11.24	8.13
	BDC-11-40	10/25/2010	BDC-11-40 WL				11.15	8.22
	BDC-11-40	1/28/2011	BDC-11-40 WL				9.89	9.48
	BDC-11-40	3/1/2011	BDC-11-40				9.92	9.45
	BDC-11-40	5/6/2011	BDC-11-40				10.08	9.29
	BDC-11-40	8/1/2011	BDC-11-40				10.83	8.54
	BDC-11-40	10/24/2011	BDC-11-40				11.39	7.98
	BDC-11-40	2/3/2012	BDC-11-40				10.40	8.97
	BDC-3-40	5/18/2009	BDC-3-40 WL	15.06	-15.34 to -25.34	30.4 to 40.4	6.25	8.81
	BDC-3-40	6/2/2009	BDC-3-40				6.38	8.68
	BDC-3-40	8/4/2009	BDC-3-40 WL				6.97	8.09
	BDC-3-40	8/18/2009	BDC-3-40				7.04	8.02
	BDC-3-40	10/23/2009	BDC-3-40 WL				6.99	8.07
	BDC-3-40	11/16/2009	BDC-3-40				6.51	8.55
	BDC-3-40	2/5/2010	BDC-3-40 WL				5.55	9.51
	BDC-3-40	02/24/2010	BDC-3-40				5.51	9.55
	BDC-3-40	5/10/2010	BDC-3-40 WL				5.88	9.18
	BDC-3-40	8/2/2010	BDC-3-40 WL				6.48	8.58
	BDC-3-40	10/25/2010	BDC-3-40 WL				6.37	8.69
	BDC-3-40	1/28/2011	BDC-3-40 WL				5.13	9.93
	BDC-3-40	3/1/2011	BDC-3-40				5.10	9.96
	BDC-3-40	5/6/2011	BDC-3-40				5.17	9.89
	BDC-3-40	8/1/2011	BDC-3-40				5.98	9.08
	BDC-3-40	10/24/2011	BDC-3-40				6.61	8.45
	BDC-3-40	2/3/2012	BDC-3-40				5.66	9.40
	BDC-6-30	2/1/2008	BDC-5	18.19	-1.21 to -11.21	19.4 to 29.4	9.41	8.78
	BDC-6-30	5/18/2009	BDC-6-30 WL				9.65	8.54
	BDC-6-30	6/3/2009	BDC-6-30				9.81	8.38
	BDC-6-30	8/4/2009	BDC-6-30 WL				10.34	7.85
	BDC-6-30	8/18/2009	BDC-6-30				10.42	7.77
	BDC-6-30	10/23/2009	BDC-6-30 WL				10.31	7.88
	BDC-6-30	11/16/2009	BDC-6-30				9.82	8.37
	BDC-6-30	2/5/2010	BDC-6-30 WL				8.95	9.24
	BDC-6-30	2/24/2010	BDC-6-30				8.94	9.25
	BDC-6-30	5/10/2010	BDC-6-30 WL				9.27	8.92
	BDC-6-30	8/2/2010	BDC-6-30 WL				9.87	8.32
	BDC-6-30	10/25/2010	BDC-6-30 WL				9.79	8.40
	BDC-6-30	1/28/2011	BDC-6-30 WL				8.52	9.67
	BDC-6-30	3/1/2011	BDC-6-30				8.54	9.65
	BDC-6-30	5/6/2011	BDC-6-30				8.67	9.52
	BDC-6-30	8/1/2011	BDC-6-30				9.47	8.72
	BDC-6-30	10/24/2011	BDC-6-30				10.02	8.17
	BDC-6-30	2/3/2012	BDC-6-30				9.03	9.16
	CG-136-40	5/18/2009	CG-136-40 WL	14.72	-15.66 to -25.66	30.38 to 40.38	5.98	8.74
	CG-136-40	6/2/2009	CG-136-40				6.07	8.65
	CG-136-40	8/4/2009	CG-136-40 WL				6.65	8.07
	CG-136-40	10/23/2009	CG-136-40 WL				6.69	8.03
	CG-136-40	11/16/2009	CG-136-40				6.23	8.49
	CG-136-40	2/5/2010	CG-136-40 WL				5.25	9.47
	CG-136-40	5/10/2010	CG-136-40 WL				5.50	9.22
	CG-136-40	8/2/2010	CG-136-40 WL				6.10	8.62
	CG-136-40	10/25/2010	CG-136-40 WL				6.11	8.61
	CG-136-40	1/28/2011	CG-136-40 WL				4.82	9.90
	CG-136-40	3/2/2011	CG-136-40				4.78	9.94
	CG-136-40	5/6/2011	CG-136-40				4.89	9.83
	CG-136-40	10/24/2011	CG-136-40				6.25	8.47
	CG-136-40	2/3/2012	CG-136-40				5.41	9.31
	CI-MW-1-40	5/18/2009	CI-MW-1-40 WL	16.04	-14.36 to -24.36	30.4 to 40.4	7.44	8.6
	CI-MW-1-40	6/3/2009	CI-MW-1-40				8.68	7.36
	CI-MW-1-40	8/4/2009	CI-MW-1-40 WL				8.14	7.90
	CI-MW-1-40	10/23/2009	CI-MW-1-40 WL				8.13	7.91
	CI-MW-1-40	11/17/2009	CI-MW-1-40				7.54	8.50
	CI-MW-1-40	2/5/2010	CI-MW-1-40 WL				6.76	9.28
	CI-MW-1-40	5/10/2010	CI-MW-1-40 WL				6.99	9.05
	CI-MW-1-40	8/2/2010	CI-MW-1-40 WL				7.77	8.27
	CI-MW-1-40	10/25/2010	CI-MW-1-40 WL				7.60	8.44
	CI-MW-1-40	1/28/2011	CI-MW-1-40 WL				6.28	9.76
	CI-MW-1-40	3/1/2011	CI-MW-1-40				6.32	9.72
	CI-MW-1-40	5/6/2011	CI-MW-1-40				6.41	9.63
	CI-MW-1-40	8/1/2011	CI-MW-1-40				7.22	8.82
	CI-MW-1-40	10/24/2011	CI-MW-1-40				7.75	8.29
	CI-MW-1-40	2/3/2012	CI-MW-1-40				6.84	9.20
Art Brass Plating	MW-11-30	12/15/2008	MW-11-30-WL-121508	16.74	-2.25 to -12.25	19.5 to 29.5	8.40	8.34
	MW-11-30	3/23/2009	MW-11-30-WL-032309				7.91	8.83
	MW-11-30	5/18/2009	MW-11-30-WL-051809				7.78	8.96
	MW-11-30	8/4/2009	MW-11-30-WL-080409				8.62	8.12
	MW-11-30	10/23/2009	MW-11-30-WL-102309				8.60	8.14
	MW-11-30	2/5/2010	MW-11-30-WL-020510				7.31	9.43
	MW-11-30	5/10/2010	MW-11-30-WL-051010				7.32	9.42
	MW-11-30	8/2/2010	MW-11-30-WL-080210				8.02	8.72
	MW-11-30	10/25/2010	MW-11-30-WL-102510				8.08	8.66
	MW-11-30	1/28/2011	MW-11-30-WL-012811				6.94	9.80
	MW-11-30	5/6/2011	MW-11-30-WL-050611				6.72	10.02
	MW-11-30	8/1/2011	MW-11-30-WL-080111				7.58	9.16
	MW-11-30	10/24/2011	MW-11-30-WL-102411				8.23	8.51
	MW-11-30	2/3/2012	MW-11-30-WL-020312				7.18	9.56

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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Shallow Zone								
Art Brass Plating (continued)	MW-16-40	3/23/2009	MW-16-40-WL-032309	16.58	-12.94 to -22.94	30 to 40	8.11	8.47
	MW-16-40	5/18/2009	MW-16-40-WL-051809				7.99	8.59
	MW-16-40	8/4/2009	MW-16-40-WL-080409				8.82	7.76
	MW-16-40	10/23/2009	MW-16-40-WL-102309				8.62	7.96
	MW-16-40	2/5/2010	MW-16-40-WL-020510				7.45	9.13
	MW-16-40	8/2/2010	MW-16-40-WL-080210				8.29	8.29
	MW-16-40	10/25/2010	MW-16-40-WL-102510				8.31	8.27
	MW-16-40	1/28/2011	MW-16-40-WL-012811				6.99	9.59
	MW-16-40	5/6/2011	MW-16-40-WL-050611				7.03	9.55
	MW-16-40	8/1/2011	MW-16-40-WL-080111				7.90	8.68
	MW-16-40	10/24/2011	MW-16-40-WL-102411				8.49	8.09
	MW-16-40	2/3/2012	MW-16-40-WL-020312				7.36	9.22
	MW-17-40	3/23/2009	MW-17-40-WL-032309	16.71	-12.96 to -22.96	30 to 40	8.75	7.96
	MW-17-40	5/18/2009	MW-17-40-WL-051809				8.61	8.10
	MW-17-40	8/4/2009	MW-17-40-WL-080409				9.36	7.35
	MW-17-40	10/26/2009	MW-17-40-WL-102609				9.14	7.57
	MW-17-40	2/5/2010	MW-17-40-WL-020510				7.96	8.75
	MW-17-40	5/10/2010	MW-17-40-WL-051010				8.35	8.36
	MW-17-40	8/2/2010	MW-17-40-WL-080210				8.92	7.79
	MW-17-40	10/25/2010	MW-17-40-WL-102510				8.87	7.84
	MW-17-40	1/28/2011	MW-17-40-WL-012811				7.54	9.17
	MW-17-40	5/6/2011	MW-17-40-WL-050611				7.81	8.90
	MW-17-40	8/1/2011	MW-17-40-WL-080111				8.59	8.12
	MW-17-40	10/24/2011	MW-17-40-WL-102411				9.10	7.61
	MW-17-40	2/3/2012	MW-17-40-WL-020312				8.02	8.69
	MW-19-40	3/23/2009	MW-19-40-WL-032309	14.79	-14.65 to -24.65	30 to 40	6.70	8.09
	MW-19-40	5/18/2009	MW-19-40-WL-051809				6.54	8.25
	MW-19-40	8/4/2009	MW-19-40-WL-080409				7.34	7.45
	MW-19-40	10/23/2009	MW-19-40-WL-102309				7.21	7.58
	MW-19-40	2/5/2010	MW-19-40-WL-020510				5.82	8.97
	MW-19-40	5/10/2010	MW-19-40-WL-051010				6.29	8.50
	MW-19-40	8/2/2010	MW-19-40-WL-080210				6.89	7.90
	MW-19-40	10/25/2010	MW-19-40-WL-102510				6.75	8.04
	MW-19-40	1/28/2011	MW-19-40-WL-012811				5.51	9.28
	MW-19-40	5/6/2011	MW-19-40-WL-050611				5.78	9.01
	MW-19-40	8/1/2011	MW-19-40-WL-080111				6.53	8.26
	MW-19-40	10/24/2011	MW-19-40-WL-102411				7.05	7.74
	MW-19-40	2/3/2012	MW-19-40-WL-020312				5.93	8.86
	MW-22-30	5/10/2010	MW-22-30-WL-051010	11.97	-7.69 to -17.69	20 to 30	6.25	5.72
	MW-22-30	8/2/2010	MW-22-30-WL-080210				7.02	4.95
	MW-22-30	10/25/2010	MW-22-30-WL-102510				5.88	6.09
	MW-22-30	1/28/2011	MW-22-30-WL-012811				6.34	5.63
	MW-22-30	5/6/2011	MW-22-30-WL-050611				6.29	5.68
	MW-22-30	8/1/2011	MW-22-30-WL-080111				8.18	3.79
	MW-22-30	10/24/2011	MW-22-30-WL-102411				8.96	3.01
	MW-22-30	2/3/2012	MW-22-30-WL-020312				5.44	6.53
	MW-23-30	5/10/2010	MW-23-30-WL-051010	13.4	-6.28 to -16.28	20 to 30	7.37	6.03
	MW-23-30	8/2/2010	MW-23-30-WL-080210				8.62	4.78
	MW-23-30	10/25/2010	MW-23-30-WL-102510				7.69	5.71
	MW-23-30	1/28/2011	MW-23-30-WL-012811				7.89	5.51
	MW-23-30	5/6/2011	MW-23-30-WL-050611				7.78	5.62
	MW-23-30	8/1/2011	MW-23-30-WL-080111				9.85	3.55
	MW-23-30	10/24/2011	MW-23-30-WL-102411				10.83	2.57
	MW-23-30	2/3/2012	MW-23-30-WL-020312				6.90	6.50
	MW-24-30	5/10/2010	MW-24-30-WL-051010	12.72	-6.99 to -16.99	20 to 30	7.40	5.32
	MW-24-30	8/2/2010	MW-24-30-WL-080210				7.13	5.59
	MW-24-30	10/25/2010	MW-24-30-WL-102510				6.51	6.21
	MW-24-30	1/28/2011	MW-24-30-WL-012811				6.43	6.29
	MW-24-30	5/6/2011	MW-24-30-WL-050611				6.24	6.48
	MW-24-30	8/1/2011	MW-24-30-WL-080111				7.25	5.47
	MW-24-30	10/24/2011	MW-24-30-WL-102411				8.04	4.68
	MW-24-30	2/3/2012	MW-24-30-WL-020312				6.09	6.63
	MW-8-30	12/15/2008	MW-8-30-WL-121508	14.72	-4.23 to -14.23	19.5 to 29.5	6.18	8.54
	MW-8-30	3/23/2009	MW-8-30-WL-032309				5.81	8.91
	MW-8-30	5/18/2009	MW-8-30-WL-051809				5.62	9.10
	MW-8-30	8/4/2009	MW-8-30-WL-080409				6.50	8.22
	MW-8-30	10/23/2009	MW-8-30-WL-102309				6.49	8.23
	MW-8-30	2/5/2010	MW-8-30-WL-020510				6.01	8.71
	MW-8-30	5/10/2010	MW-8-30-WL-051010				5.22	9.50
	MW-8-30	8/2/2010	MW-8-30-WL-080210				5.90	8.82
	MW-8-30	10/25/2010	MW-8-30-WL-102510				5.94	8.78
	MW-8-30	1/28/2011	MW-8-30-WL-012811				5.58	9.14
	MW-8-30	5/6/2011	MW-8-30-WL-050611				4.56	10.16
	MW-8-30	8/1/2011	MW-8-30-WL-080111				5.43	9.29
	MW-8-30	10/24/2011	MW-8-30-WL-102411				6.11	8.61
	MW-8-30	2/3/2012	MW-8-30-WL-020312				5.05	9.67
	PSC-CG-138-40	12/15/2008	PSC-CG-138-40-WL-121508	16.66	-13.26 to -23.26	29.92 to 39.92	8.55	8.11
	PSC-CG-138-40	3/23/2009	PSC-CG-138-40-WL-032309				8.10	8.56
	PSC-CG-138-40	5/18/2009	PSC-CG-138-40-WL-051809				7.94	8.72
	PSC-CG-138-40	8/4/2009	PSC-CG-138-40-WL-080409				8.79	7.87
	PSC-CG-138-40	10/23/2009	PSC-CG-138-40-WL-102309				8.71	7.95
	PSC-CG-138-40	2/5/2010	PSC-CG-138-40-WL-020510				7.31	9.35
	PSC-CG-138-40	5/10/2010	PSC-CG-138-40-WL-051010				7.60	9.06
	PSC-CG-138-40	8/2/2010	PSC-CG-138-40-WL-080210				8.23	8.43
	PSC-CG-138-40	10/25/2010	PSC-CG-138-40-WL-102510				8.19	8.47
	PSC-CG-138-40	1/28/2011	PSC-CG-138-40-WL-012811				7.00	9.66
	PSC-CG-138-40	5/6/2011	PSC-CG-138-40-WL-050611				6.95	9.71
	PSC-CG-138-40	8/1/2011	PSC-CG-138-40-WL-080111				7.84	8.82
	PSC-CG-138-40	10/24/2011	PSC-CG-138-40-WL-102411				8.42	8.24
	PSC-CG-140-30	10/25/2010	PSC-CG-140-30-WL-102510	15.23	-4.32 to -14.32	20 to 30	8.42	6.81
	PSC-CG-140-30	5/6/2011	PSC-CG-140-30-WL-102510				8.05	7.18
	PSC-CG-140-30	8/1/2011	PSC-CG-140-30-WL-102510				8.20	7.03
	PSC-CG-140-30	10/24/2011	PSC-CG-140-30-WL-102510				9.28	5.95
	PSC-CG-140-30	2/3/2012	PSC-CG-140-30-WL-102510				8.15	7.08

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Remedial Investigation
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Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Shallow Zone								
Art Brass Plating (continued)	PSC-CG-140-40	5/10/2010	PSC-CG-140-40-WL-051010	15.2	-14.35 to -24.35	30 to 40	8.52	6.68
	PSC-CG-140-40	10/25/2010	PSC-CG-140-40-WL-102510				8.52	6.68
	PSC-CG-140-40	1/28/2011	PSC-CG-140-40-WL-012811				7.49	7.71
	PSC-CG-142-40	12/15/2008	PSC-CG-142-40-WL-121508	16.63	-12.84 to -22.84	30 to 40	9.80	6.83
	PSC-CG-142-40	3/23/2009	PSC-CG-142-40-WL-032309				9.75	6.88
	PSC-CG-142-40	8/4/2009	PSC-CG-142-40-WL-080409				10.10	6.53
	PSC-CG-142-40	10/23/2009	PSC-CG-142-40-WL-102309				9.80	6.83
	PSC-CG-142-40	2/5/2010	PSC-CG-142-40-WL-020510				8.69	7.94
	PSC-CG-142-40	5/10/2010	PSC-CG-142-40-WL-051010				9.43	7.20
	PSC-CG-142-40	8/2/2010	PSC-CG-142-40-WL-080210				9.84	6.79
	PSC-CG-142-40	10/25/2010	PSC-CG-142-40-WL-102510				9.56	7.07
	PSC-CG-142-40	1/28/2011	PSC-CG-142-40-WL-012811				8.61	8.02
	PSC-CG-142-40	5/6/2011	PSC-CG-142-40-WL-050611				8.96	7.67
	PSC-CG-142-40	8/1/2011	PSC-CG-142-40-WL-080111				9.51	7.12
	PSC-CG-142-40	10/24/2011	PSC-CG-142-40-WL-102411				10.05	6.58
	PSC-CG-142-40	2/3/2012	PSC-CG-142-40-WL-020312				9.10	7.53
	PSC-CG-144-35	5/10/2010	PSC-CG-144-35-WL-051010	15.55	-9.11 to -19.11	25 to 35	9.55	6.00
	PSC-CG-144-35	8/2/2010	PSC-CG-144-35-WL-080210				9.80	5.75
	PSC-CG-144-35	10/25/2010	PSC-CG-144-35-WL-102510				9.28	6.27
	PSC-CG-144-35	1/28/2011	PSC-CG-144-35-WL-012811				9.02	6.53
	PSC-CG-144-35	5/6/2011	PSC-CG-144-35-WL-050611				9.26	6.29
	PSC-CG-144-35	8/1/2011	PSC-CG-144-35-WL-080111				9.54	6.01
	PSC-CG-144-35	10/24/2011	PSC-CG-144-35-WL-102411				10.05	5.50
	PSC-CG-144-35	2/3/2012	PSC-CG-144-35-WL-020312				9.13	6.42
	PSC-CG-145-35	5/10/2010	PSC-CG-145-35-WL-051010	15.49	-9.17 to -19.17	25 to 35	9.50	5.99
	PSC-CG-145-35	8/2/2010	PSC-CG-145-35-WL-080210				9.76	5.73
	PSC-CG-145-35	10/25/2010	PSC-CG-145-35-WL-102510				9.19	6.30
	PSC-CG-145-35	1/28/2011	PSC-CG-145-35-WL-012811				8.66	6.83
	PSC-CG-145-35	5/6/2011	PSC-CG-145-35-WL-050611				9.24	6.25
	PSC-CG-145-35	8/1/2011	PSC-CG-145-35-WL-080111				9.52	5.97
	PSC-CG-145-35	10/24/2011	PSC-CG-145-35-WL-102411				10.04	5.45
	PSC-CG-145-35	2/3/2012	PSC-CG-145-35-WL-020312				9.99	5.50
Phillip Services Corporation	PSC-CG-131-40	2/3/2012	PSC-CG-131-40-WL-020312	Unknown	Unknown	Unknown	Unknown	9.71
	PSC-CG-134-40	2/3/2012	PSC-CG-134-40-WL-020312	Unknown	Unknown	Unknown	Unknown	9.27
Intermediate Zone								
Capital Industries, Inc.	CG-141-50	5/10/2010	CG-141-50-WL-051010	17.06	-22.94 to -32.94	40 to 50	9.30	7.76
	CG-141-50	8/2/2010	CG-141-50-WL-080210				9.79	7.27
	CG-141-50	10/25/2010	CG-141-50-WL-102510				9.70	7.36
	CG-141-50	1/28/2011	CG-141-50-WL-012811				8.42	8.64
	CG-141-50	8/1/2011	CG-141-50-WL-080111				9.45	7.61
	CG-141-50	4/23/2012	CG-141-50-WL-042312				8.93	8.13
	CG-141-50	3/12/2013	CG-141-50-WL-031213				9.23	7.83
	CG-141-50	8/5/2013	CG-141-50-WL-080513				9.86	7.20
	CG-141-50	3/10/2014	CG-141-50-WL-031014				8.48	8.58
	CG-141-50	9/22/2014	CG-141-50-WL-092214				8.81	8.25
	CG-141-50	3/13/2015	CG-141-50-WL-031315				9.28	7.78
	CG-141-50	9/21/2015	CG-141-50-WL-092115				7.08	9.98
	CG-141-50	3/21/2016	CG-141-50-WL-092115				8.15	8.91
	CI-10-65	5/10/2010	CI-10-65-WL-051010	15.63	-34.37 to -49.37	50 to 65	8.15	7.48
	CI-10-65	8/2/2010	CI-10-65-WL-080210				8.58	7.05
	CI-10-65	10/25/2010	CI-10-65-WL-102510				8.50	7.13
	CI-10-65	1/28/2011	CI-10-65-WL-012811				7.32	8.31
	CI-10-65	8/1/2011	CI-10-65-WL-080111				8.28	7.35
	CI-10-65	2/3/2012	CI-10-65-WL-020312				7.78	7.85
	CI-10-65	4/23/2012	CI-10-65-WL-042312				7.81	7.82
	CI-10-65	3/12/2013	CI-10-65-WL-031213				8.06	7.57
	CI-10-65	8/5/2013	CI-10-65-WL-080513				8.62	7.01
	CI-10-65	3/10/2014	CI-10-65-WL-031014				7.61	8.02
	CI-10-65	9/22/2014	CI-10-65-WL-092214				8.68	6.95
	CI-10-65	3/13/2015	CI-10-65-WL-031315				7.80	7.83
	CI-10-65	9/21/2015	CI-10-65-WL-092115				6.99	8.64
	CI-10-65	3/21/2016	CI-10-65-WL-032116				7.06	8.57
	CI-11-60	8/2/2010	CI-11-60-WL-080210	13.51	-36.49 to -46.49	50 to 60	6.95	6.56
	CI-11-60	10/25/2010	CI-11-60-WL-102510				6.42	7.09
	CI-11-60	1/28/2011	CI-11-60-WL-012811				5.56	7.95
	CI-11-60	8/1/2011	CI-11-60-WL-080111				7.11	6.40
	CI-11-60	4/23/2012	CI-11-60-WL-042312				6.56	6.95
	CI-11-60	3/12/2013	CI-11-60-WL-031213				6.31	7.20
	CI-11-60	8/5/2013	CI-11-60-WL-080513				7.36	6.15
	CI-11-60	3/10/2014	CI-11-60-WL-031014				5.75	7.76
	CI-11-60	9/22/2014	CI-11-60-WL-092214				7.17	6.34
	CI-11-60	3/13/2015	CI-11-60-WL-031315				6.10	7.41
	CI-11-60	9/21/2015	CI-11-60-WL-092115				6.59	6.92
	CI-11-60	3/21/2016	CI-11-60-WL-032116				5.45	8.06
	CI-12-60	5/10/2010	CI-12-60-WL-051010	15.63	-34.37 to -44.37	50 to 60	8.99	6.64
	CI-12-60	8/2/2010	CI-12-60-WL-080210				9.24	6.39
	CI-12-60	10/25/2010	CI-12-60-WL-102510				8.90	6.73
	CI-12-60	1/28/2011	CI-12-60-WL-012811				8.00	7.63
	CI-12-60	8/1/2011	CI-12-60-WL-080111				9.12	6.51
	CI-12-60	2/3/2012	CI-12-60-WL-020312				8.38	7.25
	CI-12-60	4/23/2012	CI-12-60-WL-042312				8.67	6.96
	CI-12-60	3/12/2013	CI-12-60-WL-031213				8.85	6.78
	CI-12-60	8/5/2013	CI-12-60-WL-080513				9.35	6.28
	CI-12-60	3/10/2014	CI-12-60-WL-031014				8.23	7.40
	CI-12-60	9/22/2014	CI-12-60-WL-092214				9.24	6.39
	CI-12-60	3/13/2015	CI-12-60-WL-031315				8.55	7.08
	CI-12-60	9/21/2015	CI-12-60-WL-092115				6.41	9.22
	CI-12-60	3/21/2016	CI-12-60-WL-032116				NM	--

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Intermediate Zone								
Capital Industries, Inc. (continued)	CI-13-60	8/2/2010	CI-13-60-WL-080210	15.30	-34.7 to -44.7	50 to 60	8.73	6.57
	CI-13-60	10/25/2010	CI-13-60-WL-102510				8.66	6.64
	CI-13-60	1/28/2011	CI-13-60-WL-012811				7.78	7.52
	CI-13-60	8/1/2011	CI-13-60-WL-080111				11.25	4.05
	CI-13-60	4/23/2012	CI-13-60-WL-042312				10.81	4.49
	CI-13-60	3/12/2013	CI-13-60-WL-031213				10.04	5.26
	CI-13-60	8/5/2013	CI-13-60-WL-080513				11.38	3.92
	CI-13-60	3/10/2014	CI-13-60-WL-031014				8.35	6.95
	CI-13-60	9/22/2014	CI-13-60-WL-092214				NM	--
	CI-13-60	3/13/2015	CI-13-60-WL-031315				8.42	6.88
	CI-13-60	9/21/2015	CI-13-60-WL-092115				6.21	9.09
	CI-13-60	3/21/2016	CI-13-60-WL-032116				8.65	6.65
	CG-137-50	5/10/2010	CI-137-50-WL-051010	16.55	-23.45 to -33.45	40 to 50	8.11	8.44
	CG-137-50	8/2/2010	CI-137-50-WL-080210				8.65	7.90
	CG-137-50	10/25/2010	CI-137-50-WL-102510				8.65	7.90
	CG-137-50	1/28/2011	CI-137-50-WL-012811				7.32	9.23
	CG-137-50	8/1/2011	CI-137-50-WL-080111				8.29	8.26
	CG-137-50	2/3/2012	CI-137-50-WL-020312				7.84	8.71
	CG-137-50	4/23/2012	CI-137-50-WL-042312				7.78	8.77
	CG-137-50	3/12/2013	CI-137-50-WL-031213				8.00	8.55
	CG-137-50	8/5/2013	CI-137-50-WL-080513				8.74	7.81
	CG-137-50	3/10/2014	CI-137-50-WL-031014				7.54	9.01
	CG-137-50	9/22/2014	CI-137-50-WL-092214				8.89	7.66
	CG-137-50	3/13/2015	CI-137-50-WL-092214				8.10	8.45
	CG-137-50	9/21/2015	CI-137-50-WL-092115				7.65	8.90
	CG-137-50	3/21/2016	CG-137-50-WL-032116				6.92	9.63
	CI-14-70	8/2/2010	CI-14-70-WL-080210	15.13	-44.87 to -54.87	60 to 70	8.56	6.57
	CI-14-70	10/25/2010	CI-14-70-WL-102510				8.21	6.92
	CI-14-70	1/28/2011	CI-14-70-WL-012811				7.22	7.91
	CI-14-70	8/1/2011	CI-14-70-WL-080111				8.49	6.64
	CI-14-70	4/23/2012	CI-14-70-WL-042312				8.01	7.12
	CI-14-70	3/12/2013	CI-14-70-WL-031213				8.02	7.11
	CI-14-70	8/5/2013	CI-14-70-WL-080513				8.80	6.33
	CI-14-70	3/10/2014	CI-14-70-WL-031014				7.52	7.61
	CI-14-70	9/22/2014	CI-14-70-WL-092214				8.70	6.43
	CI-14-70	3/13/2015	CI-14-70-WL-031315				7.88	7.25
	CI-14-70	9/21/2015	CI-14-70-WL-092115				6.71	8.42
	CI-14-70	3/21/2016	CI-14-70-WL-032116				7.15	7.98
	CI-15-60	5/10/2010	CI-15-60-WL-051010	16.58	-33.42 to -43.42	50 to 60	9.21	7.37
	CI-15-60	8/2/2010	CI-15-60-WL-080210				9.63	6.95
	CI-15-60	10/25/2010	CI-15-60-WL-102510				9.50	7.08
	CI-15-60	1/28/2011	CI-15-60-WL-012811				8.38	8.2
	CI-15-60	8/1/2011	CI-15-60-WL-080111				9.36	7.22
	CI-15-60	2/3/2012	CI-15-60-WL-020312				8.75	7.83
	CI-15-60	4/23/2012	CI-15-60-WL-042312				8.86	7.72
	CI-15-60	3/12/2013	CI-15-60-WL-031213				9.15	7.43
	CI-15-60	8/5/2013	CI-15-60-WL-080513				9.76	6.82
	CI-15-60	3/10/2014	CI-15-60-WL-031014				8.62	7.96
	CI-15-60	9/22/2014	CI-15-60-WL-092214				9.75	6.83
	CI-15-60	3/13/2015	CI-15-60-WL-031315				8.85	7.73
	CI-15-60	9/21/2015	CI-15-60-WL-092115				6.93	9.65
	CI-15-60	3/21/2016	CI-15-60-WL-032116				8.21	8.37
	CI-16-60	4/23/2012	CI-16-60-WL-042312	14.57	-35.43 to -45.43	50 to 60	9.24	5.33
	CI-16-60	3/12/2013	CI-16-60-WL-031213				7.93	6.64
	CI-16-60	8/5/2013	CI-16-60-WL-080513				9.70	4.87
	CI-16-60	3/10/2014	CI-16-60-WL-031014				7.44	7.13
	CI-16-60	9/22/2014	CI-16-60-WL-092214				9.40	5.17
	CI-16-60	3/13/2015	CI-16-60-WL-031315				7.60	6.97
	CI-16-60	9/21/2015	CI-16-60-WL-092115				6.51	8.06
	CI-16-60	3/21/2016	CI-16-60-WL-032116				7.53	7.04
	CI-20-80	9/21/2015	CI-20-80-092415	16.76	-58.24 to -63.24	75 to 80	6.79	9.97
	CI-20-80	12/18/2015	CI-20-80-121815				9.70	7.06
	CI-20-80	3/21/2106	CI-20-80-032316				8.56	8.20
	CI-20-80	6/28/2016	CI-20-80-062816				9.78	6.98
	CI-7-60	5/10/2010	CI-7-60-WL-051010	17.04	-32.96 to -42.96	50 to 60	7.99	9.05
	CI-7-60	8/2/2010	CI-7-60-WL-080210				8.46	8.58
	CI-7-60	10/25/2010	CI-7-60-WL-102510				8.66	8.38
	CI-7-60	1/28/2011	CI-7-60-WL-012811				7.31	9.73
	CI-7-60	8/1/2011	CI-7-60-WL-080111				8.09	8.95
	CI-7-60	4/23/2012	CI-7-60-WL-042312				7.68	9.36
	CI-7-60	3/12/2013	CI-7-60-WL-031213				7.85	9.19
	CI-7-60	8/5/2013	CI-7-60-WL-042312				8.60	8.44
	CI-7-60	3/10/2014	CI-7-60-WL-031014				7.95	9.09
	CI-7-60	9/22/2014	CI-7-60-WL-092214				8.81	8.23
	CI-7-60	3/13/2015	CI-7-60-WL-031315				7.91	9.13
	CI-7-60	9/21/2015	CI-7-60-WL-092115				8.15	8.89
	CI-7-60	3/21/2016	CI-7-60-WL-032116				7.00	10.04
	CI-8-60	5/10/2010	CI-8-60-WL-051010	16.62	-33.38 to -43.38	50 to 60	7.25	9.37
	CI-8-60	8/2/2010	CI-8-60-WL-080210				7.75	8.87
	CI-8-60	10/25/2010	CI-8-60-WL-102510				7.90	8.72
	CI-8-60	1/28/2011	CI-8-60-WL-012811				6.54	10.08
	CI-8-60	8/1/2011	CI-8-60-WL-080111				7.29	9.33
	CI-8-60	4/23/2012	CI-8-60-WL-042312				6.91	9.71
	CI-8-60	3/12/2013	CI-8-60-WL-031213				7.05	9.57
	CI-8-60	8/5/2013	CI-8-60-WL-080513				7.85	8.77
	CI-8-60	3/10/2014	CI-8-60-WL-031014				7.25	9.37
	CI-8-60	9/22/2014	CI-8-60-WL-092214				8.07	8.55
	CI-8-60	3/13/2015	CI-8-60-WL-031315				7.20	9.42
	CI-8-60	9/21/2015	CI-8-60-WL-092115				8.40	8.22
	CI-8-60	3/21/2016	CI-8-60-WL-032116				6.01	10.61

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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Intermediate Zone								
Capital Industries, Inc. (continued)	CI-9-70	8/2/2010	CI-9-70-WL-080210	15.75	-44.25 to -54.25	60 to 70	7.86	7.89
	CI-9-70	10/25/2010	CI-9-70-WL-102510				7.86	7.89
	CI-9-70	1/28/2011	CI-9-70-WL-012811				6.60	9.15
	CI-9-70	8/1/2011	CI-9-70-WL-080111				7.48	8.27
	CI-9-70	4/23/2012	CI-9-70-WL-042312				7.01	8.74
	CI-9-70	3/12/2013	CI-9-70-WL-031213				7.21	8.54
	CI-9-70	8/5/2013	CI-9-70-WL-080513				7.91	7.84
	CI-9-70	3/10/2014	CI-9-70-WL-031014				7.07	8.68
	CI-9-70	9/22/2014	CI-9-70-WL-092214				8.02	7.73
	CI-9-70	3/13/2015	CI-9-70-WL-031315				7.28	8.47
	CI-9-70	9/21/2015	CI-9-70-WL-092115				7.68	8.07
	CI-9-70	3/21/2016	CI-9-70-WL-032116				6.18	9.57
	CI-MW-1-60	8/2/2010	CI-MW-1-60-WL-080210	16.31	-33.69 to -43.69	50 to 60	7.70	8.61
	CI-MW-1-60	10/25/2010	CI-MW-1-60-WL-102510				7.81	8.50
	CI-MW-1-60	1/28/2011	CI-MW-1-60-WL-012811				6.50	9.81
	CI-MW-1-60	8/1/2011	CI-MW-1-60-WL-080111				7.35	8.96
	CI-MW-1-60	2/3/2012	CI-MW-1-60-WL-020312				7.06	9.25
	CI-MW-1-60	4/23/2012	CI-MW-1-60-WL-042312				9.46	6.85
	CI-MW-1-60	3/12/2013	CI-MW-1-60-WL-031213				NM	NM
	CI-MW-1-60	3/10/2014	CI-MW-1-60-WL-031014				6.91	9.40
	CI-MW-1-60	9/22/2014	CI-MW-1-60-WL-092214				7.96	8.35
	CI-MW-1-60	3/13/2015	CI-MW-1-60-WL-031315				7.33	8.98
	CI-MW-1-60	9/21/2015	CI-MW-1-60-WL-092115				7.94	8.37
	CI-MW-1-60	3/21/2016	CI-MW-1-60-WL-032116				5.95	10.36
Blaser Die Casting	BDC-10-60	5/18/2009	BDC-10-60 WL	18.24	-32.11 to -42.11	50.35 to 60.35	9.07	9.17
	BDC-10-60	06/02/2009	BDC-10-60				9.16	9.08
	BDC-10-60	8/4/2009	BDC-10-60 WL				9.73	8.51
	BDC-10-60	10/23/2009	BDC-10-60 WL				9.87	8.37
	BDC-10-60	11/17/2009	BDC-10-60				9.45	8.79
	BDC-10-60	2/5/2010	BDC-10-60 WL				8.41	9.83
	BDC-10-60	5/10/2010	BDC-10-60 WL				8.54	9.70
	BDC-10-60	8/2/2010	BDC-10-60 WL				9.15	9.09
	BDC-10-60	10/25/2010	BDC-10-60 WL				9.32	8.92
	BDC-10-60	1/28/2011	BDC-10-60 WL				7.86	10.38
	BDC-10-60	3/1/2011	BDC-10-60				7.90	10.34
	BDC-10-60	5/6/2011	BDC-10-60				7.90	10.34
	BDC-10-60	8/1/2011	BDC-10-60				8.65	9.59
	BDC-10-60	10/24/2011	BDC-10-60				9.40	8.84
	BDC-10-60	2/3/2012	BDC-10-60				8.64	9.60
	BDC-11-60	5/18/2009	BDC-11-60 WL	19.1	-31.3 to -41.3	50.4 to 60.4	10.80	8.30
	BDC-11-60	6/3/2009	BDC-11-60				10.93	8.17
	BDC-11-60	8/4/2009	BDC-11-60 WL				11.48	7.62
	BDC-11-60	8/18/2009	BDC-11-60				11.58	7.52
	BDC-11-60	10/23/2009	BDC-11-60 WL				11.39	7.71
	BDC-11-60	11/17/2009	BDC-11-60				10.80	8.30
	BDC-11-60	2/5/2010	BDC-11-60 WL				10.10	9.00
	BDC-11-60	2/24/2010	BDC-11-60				10.08	9.02
	BDC-11-60	5/10/2010	BDC-11-60 WL				10.39	8.71
	BDC-11-60	8/2/2010	BDC-11-60 WL				11.00	8.10
	BDC-11-60	10/25/2010	BDC-11-60 WL				10.92	8.18
	BDC-11-60	1/28/2011	BDC-11-60 WL				9.65	9.45
	BDC-11-60	3/2/2011	BDC-11-60				9.64	9.46
	BDC-11-60	5/6/2011	BDC-11-60				9.84	9.26
	BDC-11-60	8/1/2011	BDC-11-60				10.63	8.47
	BDC-11-60	10/24/2011	BDC-11-60				11.12	7.98
	BDC-11-60	2/3/2012	BDC-11-60				10.20	8.90
	BDC-3-60	5/18/2009	BDC-3-60 WL	15.14	-35.27 to -45.27	50.41 to 60.41	6.34	8.80
	BDC-3-60	6/2/2009	BDC-3-60				6.45	8.69
	BDC-3-60	8/4/2009	BDC-3-60 WL				7.04	8.10
	BDC-3-60	8/18/2009	BDC-3-60				7.09	8.05
	BDC-3-60	10/23/2009	BDC-3-60 WL				7.07	8.07
	BDC-3-60	11/16/2009	BDC-3-60				6.60	8.54
	BDC-3-60	2/5/2010	BDC-3-60 WL				5.64	9.50
	BDC-3-60	2/24/2010	BDC-3-60				5.59	9.55
	BDC-3-60	5/10/2010	BDC-3-60 WL				5.86	9.28
	BDC-3-60	8/2/2010	BDC-3-60 WL				6.40	8.74
	BDC-3-60	10/25/2010	BDC-3-60 WL				6.47	8.67
	BDC-3-60	1/28/2011	BDC-3-60 WL				5.20	9.94
	BDC-3-60	3/1/2011	BDC-3-60				5.19	9.95
	BDC-3-60	5/6/2011	BDC-3-60				5.25	9.89
	BDC-3-60	8/1/2011	BDC-3-60				6.03	9.11
	BDC-3-60	10/24/2011	BDC-3-60				6.61	8.53
	BDC-3-60	2/3/2012	BDC-3-60				5.80	9.34
	BDC-6-60	5/18/2009	BDC-6-60 WL	18.2	-32.2 to -42.2	50.4 to 60.4	9.68	8.52
	BDC-6-60	6/2/2009	BDC-6-60				9.81	8.39
	BDC-6-60	8/4/2009	BDC-6-60 WL				10.45	7.75
	BDC-6-60	8/18/2009	BDC-6-60				10.37	7.83
	BDC-6-60	10/23/2009	BDC-6-60 WL				10.33	7.87
	BDC-6-60	11/16/2009	BDC-6-60				9.86	8.34
	BDC-6-60	2/5/2010	BDC-6-60 WL				8.97	9.23
	BDC-6-60	2/24/2010	BDC-6-60				8.94	9.26
	BDC-6-60	5/10/2010	BDC-6-60 WL				9.23	8.97
	BDC-6-60	8/2/2010	BDC-6-60 WL				9.82	8.38
	BDC-6-60	10/25/2010	BDC-6-60 WL				9.81	8.39
	BDC-6-60	1/28/2011	BDC-6-60 WL				8.52	9.68
	BDC-6-60	3/1/2011	BDC-6-60				8.53	9.67
	BDC-6-60	5/6/2011	BDC-6-60				8.66	9.54
	BDC-6-60	8/1/2011	BDC-6-60				9.42	8.78
	BDC-6-60	10/24/2011	BDC-6-60				9.95	8.25
	BDC-6-60	2/3/2012	BDC-6-60				9.11	9.09

Table 1
Summary of Groundwater Elevations
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Intermediate Zone								
Blaser Die Casting (continued)	CI-MW-1-60	5/18/2009	CI-MW-1-60 WL	16.31	-34.09 to -44.09	50.4 to 60.4	7.63	8.68
	CI-MW-1-60	6/3/2009	CI-MW-1-60				7.74	8.57
	CI-MW-1-60	8/4/2009	CI-MW-1-60 WL				8.30	8.01
	CI-MW-1-60	10/23/2009	CI-MW-1-60 WL				8.34	7.97
	CI-MW-1-60	11/16/2009	CI-MW-1-60				7.88	8.43
	CI-MW-1-60	2/5/2010	CI-MW-1-60 WL				8.95	7.36
	CI-MW-1-60	5/10/2010	CI-MW-1-60 WL				7.15	9.16
	CI-MW-1-60	8/2/2010	CI-MW-1-60 WL				7.61	8.70
	CI-MW-1-60	10/25/2010	CI-MW-1-60 WL				7.83	8.48
	CI-MW-1-60	1/28/2011	CI-MW-1-60 WL				6.47	9.84
	CI-MW-1-60	5/6/2011	CI-MW-1-60 WL				6.57	9.74
	CI-MW-1-60	8/1/2011	CI-MW-1-60 WL				7.36	8.95
	CI-MW-1-60	10/24/2011	CI-MW-1-60 WL				7.93	8.38
	CI-MW-1-60	2/3/2012	CI-MW-1-60				7.05	9.26
Art Brass Plating	AB-CG-140-70	5/10/2010	AB-CG-140-70-WL-051010	15.33	-44.18 to -54.18	60 to 70	8.62	6.71
	AB-CG-140-70	8/2/2010	AB-CG-140-70-WL-080210				8.95	6.38
	AB-CG-140-70	10/25/2010	AB-CG-140-70-WL-102510				8.65	6.68
	AB-CG-140-70	1/28/2011	AB-CG-140-70-WL-012811				8.01	7.32
	AB-CG-140-70	5/6/2011	AB-CG-140-70-WL-050611				7.99	7.34
	AB-CG-140-70	8/1/2011	AB-CG-140-70-WL-080111				8.52	6.81
	AB-CG-140-70	10/24/2011	AB-CG-140-70-WL-102411				9.12	6.21
	AB-CG-140-70	2/3/2012	AB-CG-140-70-WL-020312				8.14	7.19
	AB-CG-142-70	12/15/2008	AB-CG-142-70-WL-121508	16.53	-42.95 to -52.95	60 to 70	9.11	7.42
	AB-CG-142-70	3/23/2009	AB-CG-142-70-WL-032309				8.83	7.70
	AB-CG-142-70	5/18/2009	AB-CG-142-70-WL-051809				8.70	7.83
	AB-CG-142-70	8/4/2009	AB-CG-142-70-WL-080409				9.36	7.17
	AB-CG-142-70	10/23/2009	AB-CG-142-70-WL-102309				9.17	7.36
	AB-CG-142-70	2/5/2010	AB-CG-142-70-WL-020510				7.85	8.68
	AB-CG-142-70	5/10/2010	AB-CG-142-70-WL-051010				8.40	8.13
	AB-CG-142-70	8/2/2010	AB-CG-142-70-WL-080210				8.95	7.58
	AB-CG-142-70	10/25/2010	AB-CG-142-70-WL-102510				8.81	7.72
	AB-CG-142-70	1/28/2011	AB-CG-142-70-WL-012811				7.59	8.94
	AB-CG-142-70	5/6/2011	AB-CG-142-70-WL-050611				7.89	8.64
	AB-CG-142-70	8/1/2011	AB-CG-142-70-WL-080111				8.62	7.91
	AB-CG-142-70	10/24/2011	AB-CG-142-70-WL-102411				9.12	7.41
	AB-CG-142-70	2/3/2012	AB-CG-142-70-WL-020312				8.08	8.45
	MW-16-75	3/23/2009	MW-16-75-WL-032309	16.52	-47.99 to -57.99	65 to 75	8.08	8.44
	MW-16-75	5/18/2009	MW-16-75-WL-051809				7.94	8.58
	MW-16-75	8/4/2009	MW-16-75-WL-080409				8.72	7.80
	MW-16-75	10/23/2009	MW-16-75-WL-102309				8.69	7.83
	MW-16-75	2/5/2010	MW-16-75-WL-020510				7.29	9.23
	MW-16-75	5/10/2010	MW-16-75-WL-051010				7.41	9.11
	MW-16-75	8/2/2010	MW-16-75-WL-080210				8.18	8.34
	MW-16-75	10/25/2010	MW-16-75-WL-102510				8.43	8.09
	MW-16-75	1/28/2011	MW-16-75-WL-012811				6.78	9.74
	MW-16-75	5/6/2011	MW-16-75-WL-050611				6.55	9.97
	MW-16-75	8/1/2011	MW-16-75-WL-080111				7.32	9.20
	MW-16-75	10/24/2011	MW-16-75-WL-102411				8.37	8.15
	MW-16-75	2/3/2012	MW-16-75-WL-020312				7.33	9.19
	MW-17-60	3/23/2009	MW-17-60-WL-032309	16.53	-33.03 to -43.03	50 to 60	8.57	7.96
	MW-17-60	5/18/2009	MW-17-60-WL-051809				8.45	8.08
	MW-17-60	8/4/2009	MW-17-60-WL-080409				9.18	7.35
	MW-17-60	10/26/2009	MW-17-60-WL-102609				8.99	7.54
	MW-17-60	2/5/2010	MW-17-60-WL-020510				7.77	8.76
	MW-17-60	5/10/2010	MW-17-60-WL-051010				8.18	8.35
	MW-17-60	8/2/2010	MW-17-60-WL-080210				8.75	7.78
	MW-17-60	10/25/2010	MW-17-60-WL-102510				8.64	7.89
	MW-17-60	1/28/2011	MW-17-60-WL-012811				7.36	9.17
	MW-17-60	5/6/2011	MW-17-60-WL-050611				7.63	8.90
	MW-17-60	8/1/2011	MW-17-60-WL-080111				8.40	8.13
	MW-17-60	10/24/2011	MW-17-60-WL-102411				8.91	7.62
	MW-17-60	2/3/2012	MW-17-60-WL-020312				7.84	8.69
	MW-18-50	3/23/2009	MW-18-50-WL-032309	14.74	-24.74 to -34.74	40 to 50	6.59	8.15
	MW-18-50	5/18/2009	MW-18-50-WL-051809				6.40	8.34
	MW-18-50	8/4/2009	MW-18-50-WL-080409				7.19	7.55
	MW-18-50	10/23/2009	MW-18-50-WL-102309				7.05	7.69
	MW-18-50	2/5/2010	MW-18-50-WL-020510				5.69	9.05
	MW-18-50	5/10/2010	MW-18-50-WL-051010				6.13	8.61
	MW-18-50	8/2/2010	MW-18-50-WL-080210				6.75	7.99
	MW-18-50	10/25/2010	MW-18-50-WL-102510				6.62	8.12
	MW-18-50	1/28/2011	MW-18-50-WL-012811				5.43	9.31
	MW-18-50	5/6/2011	MW-18-50-WL-050611				5.59	9.15
	MW-18-50	8/1/2011	MW-18-50-WL-080111				6.41	8.33
	MW-18-50	10/24/2011	MW-18-50-WL-102411				6.93	7.81
	MW-18-50	2/3/2012	MW-18-50-WL-020312				5.85	8.89
	MW-18-70	3/23/2009	MW-18-70-WL-032309	14.92	-44.68 to -54.68	60 to 70	6.81	8.11
	MW-18-70	5/18/2009	MW-18-70-WL-051809				6.67	8.25
	MW-18-70	8/4/2009	MW-18-70-WL-080409				7.38	7.54
	MW-18-70	10/23/2009	MW-18-70-WL-102309				7.28	7.64
	MW-18-70	2/5/2010	MW-18-70-WL-020510				5.98	8.94
	MW-18-70	5/10/2010	MW-18-70-WL-051010				6.30	8.62
	MW-18-70	8/2/2010	MW-18-70-WL-080210				6.95	7.97
	MW-18-70	10/25/2010	MW-18-70-WL-102510				6.80	8.12
	MW-18-70	1/28/2011	MW-18-70-WL-012811				5.58	9.34
	MW-18-70	5/6/2011	MW-18-70-WL-050611				5.78	9.14
	MW-18-70	8/1/2011	MW-18-70-WL-080111				6.59	8.33
	MW-18-70	10/24/2011	MW-18-70-WL-102411				7.10	7.82
	MW-18-70	2/3/2012	MW-18-70-WL-020312				6.00	8.92

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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Area of Investigation[1]	Sample Location	Sample Date	Sample Identification	TOC Elevation (feet)[2]	Screened Interval Elevation (feet)[2]	Screened Interval Depth (feet)[3]	Depth to Groundwater (feet)[3]	Groundwater Elevation (feet)[2]
Intermediate Zone								
Art Brass Plating (continued)	MW-19-60	3/23/2009	MW-19-60-WL-032309	14.8	-34.77 to -44.77	50 to 60	6.71	8.09
	MW-19-60	5/18/2009	MW-19-60-WL-051809				6.60	8.20
	MW-19-60	8/4/2009	MW-19-60-WL-080409				7.35	7.45
	MW-19-60	10/23/2009	MW-19-60-WL-102309				7.34	7.46
	MW-19-60	2/5/2010	MW-19-60-WL-020510				6.78	8.02
	MW-19-60	5/10/2010	MW-19-60-WL-051010				6.42	8.38
	MW-19-60	8/2/2010	MW-19-60-WL-080210				6.64	8.16
	MW-19-60	10/25/2010	MW-19-60-WL-102510				6.79	8.01
	MW-19-60	1/28/2011	MW-19-60-WL-012811				6.20	8.60
	MW-19-60	5/6/2011	MW-19-60-WL-050611				6.10	8.70
	MW-19-60	8/1/2011	MW-19-60-WL-080111				6.51	8.29
	MW-19-60	10/24/2011	MW-19-60-WL-102411				6.50	8.30
	MW-19-60	2/3/2012	MW-19-60-WL-020312				6.29	8.51
	MW-21-50	5/10/2010	MW-21-50-WL-051010	16.27	-23.38 to -33.38	40 to 50	8.86	7.41
	MW-21-50	8/2/2010	MW-21-50-WL-080210				9.29	6.98
	MW-21-50	10/25/2010	MW-21-50-WL-102510				8.64	7.63
	MW-21-50	1/28/2011	MW-21-50-WL-012811				8.14	8.13
	MW-21-50	5/6/2011	MW-21-50-WL-050611				8.34	7.93
	MW-21-50	8/1/2011	MW-21-50-WL-080111				8.84	7.43
	MW-21-50	10/24/2011	MW-21-50-WL-102411				9.50	6.77
	MW-21-50	2/3/2012	MW-21-50-WL-020312				8.45	7.82
	MW-21-75	5/10/2010	MW-21-75-WL-051010	16.3	-48.41 to -58.41	65 to 75	8.87	7.43
	MW-21-75	8/2/2010	MW-21-75-WL-080210				9.29	7.01
	MW-21-75	10/25/2010	MW-21-75-WL-102510				8.43	7.87
	MW-21-75	1/28/2011	MW-21-75-WL-012811				8.21	8.09
	MW-21-75	5/6/2011	MW-21-75-WL-050611				8.32	7.98
	MW-21-75	8/1/2011	MW-21-75-WL-080111				8.86	7.44
	MW-21-75	10/24/2011	MW-21-75-WL-102411				9.45	6.85
	MW-21-75	2/3/2012	MW-21-75-WL-020312				8.42	7.88
	MW-22-50	5/10/2010	MW-22-50-WL-051010	11.72	-27.66 to -37.66	40 to 50	6.46	5.26
	MW-22-50	8/2/2010	MW-22-50-WL-080210				6.56	5.16
	MW-22-50	10/25/2010	MW-22-50-WL-102510				4.55	7.17
	MW-22-50	1/28/2011	MW-22-50-WL-012811				5.46	6.26
	MW-22-50	5/6/2011	MW-22-50-WL-050611				5.48	6.24
	MW-22-50	8/1/2011	MW-22-50-WL-080111				4.71	7.01
	MW-22-50	10/24/2011	MW-22-50-WL-102411				7.93	3.79
	MW-22-50	2/3/2012	MW-22-50-WL-020312				5.25	6.47
	MW-23-50	5/10/2010	MW-23-50-WL-051010	13.48	-26.21 to -36.21	40 to 50	7.85	5.63
	MW-23-50	8/2/2010	MW-23-50-WL-080210				8.47	5.01
	MW-23-50	10/25/2010	MW-23-50-WL-102510				7.74	5.74
	MW-23-50	1/28/2011	MW-23-50-WL-012811				7.87	5.61
	MW-23-50	5/6/2011	MW-23-50-WL-050611				7.25	6.23
	MW-23-50	8/1/2011	MW-23-50-WL-080111				9.25	4.23
	MW-23-50	10/24/2011	MW-23-50-WL102411				10.18	3.30
	MW-23-50	2/3/2012	MW-23-50-WL-020312				7.03	6.45
	MW-24-50	5/10/2010	MW-24-50-WL-051010	12.56	-27 to -37	40 to 50	7.40	5.16
	MW-24-50	8/2/2010	MW-24-50-WL-080210				7.00	5.56
	MW-24-50	10/25/2010	MW-24-50-WL-102510				5.87	6.69
	MW-24-50	1/28/2011	MW-24-50-WL-012811				6.10	6.46
	MW-24-50	5/6/2011	MW-24-50-WL-050611				6.01	6.55
	MW-24-50	8/1/2011	MW-24-50-WL-080111				6.96	5.60
	MW-24-50	10/24/2011	MW-24-50-WL-102411				7.89	4.67
	MW-24-50	2/3/2012	MW-24-50-WL-020312				5.98	6.58
	MW-8-70	12/15/2008	MW-8-70-WL-121508	14.96	-44.76 to -54.76	60 to 70	6.39	8.57
	MW-8-70	3/23/2009	MW-8-70-WL-032309				5.98	8.98
	MW-8-70	5/18/2009	MW-8-70-WL-051809				5.87	9.09
	MW-8-70	8/4/2009	MW-8-70-WL-080409				6.60	8.36
	MW-8-70	10/23/2009	MW-8-70-WL-102309				6.59	8.37
	MW-8-70	2/5/2010	MW-8-70-WL-020510				5.45	9.51
	MW-8-70	5/10/2010	MW-8-70-WL-051010				5.27	9.69
	MW-8-70	8/2/2010	MW-8-70-WL-080210				5.97	8.99
	MW-8-70	10/25/2010	MW-8-70-WL-102510				6.27	8.69
	MW-8-70	1/28/2011	MW-8-70-WL-012811				4.97	9.99
	MW-8-70	5/6/2011	MW-8-70-WL-050611				4.87	10.09
	MW-8-70	8/1/2011	MW-8-70-WL-080111				5.50	9.46
	MW-8-70	10/24/2011	MW-8-70-WL-102411				6.05	8.91
	MW-8-70	2/3/2012	MW-8-70-WL-020312				5.28	9.68
	PSC-CG-138-70	12/15/2008	PSC-CG-138-70-WL-121508	16.65	-43.35 to -53.35	60 to 70	8.55	8.10
	PSC-CG-138-70	3/23/2009	PSC-CG-138-70-WL-032309				8.05	8.60
	PSC-CG-138-70	5/18/2009	PSC-CG-138-70-WL-051809				7.94	8.71
	PSC-CG-138-70	8/4/2009	PSC-CG-138-70-WL-080409				8.75	7.90
	PSC-CG-138-70	10/23/2009	PSC-CG-138-70-WL-102309				8.67	7.98
	PSC-CG-138-70	2/5/2010	PSC-CG-138-70-WL-020510				7.27	9.38
	PSC-CG-138-70	5/10/2010	PSC-CG-138-70-WL-051010				7.58	9.07
	PSC-CG-138-70	8/2/2010	PSC-CG-138-70-WL-080210				8.19	8.46
	PSC-CG-138-70	10/25/2010	PSC-CG-138-70-WL-102510				8.19	8.46
	PSC-CG-138-70	1/28/2011	PSC-CG-138-70-WL-012811				7.00	9.65
	PSC-CG-138-70	5/6/2011	PSC-CG-138-70-WL-050611				6.94	9.71
	PSC-CG-138-70	8/1/2011	PSC-CG-138-70-WL-080111				7.82	8.83
	PSC-CG-138-70	10/24/2011	PSC-CG-138-70-WL-102411				8.42	8.23

NOTES:

[1]Areas where the potentially liable parties have conducted their respective remedial investigations in accordance with their respective Agreed/Enforcement orders.

[2]Vertical Datum is NAVD88.

[3]Depth in feet below ground surface.

Intermediate Zone = Groundwater collected from 40 to 70 feet below ground surface.
NM = not measured
Shallow Zone = Groundwater collected from 20 to 40 feet below ground surface.
TOC = top of casing
Water Table Zone = Groundwater collected from the first encountered groundwater to 20 feet below ground surface.

Table 2
Summary of Natural Attenuation and Water Quality Parameters
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Water Table Zone																
CG-137-WT	3/15/2013	0.85	0.14	11	4800	2.4	95	< 0.1	8.5	< 0.50	< 0.50	5.64	16.02	0.107	141.7	2.0
	8/8/2013	0.41	< 0.050	13	3500	1.6	84	< 0.1	6.5	< 0.50	< 0.50	6.89	17.56	0.173	67.1	2.4
	3/13/2014	3.19	< 0.050	49	7300	0.2	250	< 0.1	17	< 1.5	< 1.5	6.47	16.25	0.258	-20.4	3.1
	9/24/2014	0.52	1.2	54	8600	0.4	300	< 0.1	16	< 1.0	< 1.0	6.6	18.06	0.313	-27.2	3.7
	3/18/2015	0.23	< 0.050	18	7200	0.6	180	< 0.1	6.8	< 0.50	< 0.50	6.52	16.75	0.191	22.9	3.8
	9/24/2015	0.46	< 0.050	26	5900	4.2	190	< 0.1	15	< 1.0	0.57	5.70	18.88	0.203	IE	3.7
	3/23/2016	2.89	< 0.050	13	3800	2.0	130	< 0.1	94	< 2.2	0.56	6.46	16.19	0.152	-24.5	3.1
CI-10-WT	3/14/2013	0.4	0.78	23	3000	1	56	< 0.1	2.6	< 0.50	< 0.50	6.17	14.95	0.165	9.7	4.5
	8/7/2013	0.41	1.1	45	3200	1.2	120	< 0.1	9.5	< 0.50	< 0.50	6.30	18.88	0.47	176.2	5.9
	3/13/2014	8.13	2.1	32	1600	0.4	110	< 0.1	2.3	< 0.50	< 0.50	6.22	15.61	0.262	109.6	4.7
	9/24/2014	0.38	0.74	39	2400	0.5	420	< 0.1	17	1.7	< 1.0	6.40	19.31	0.291	-23	4.5
	3/18/2015	8.77	0.23	37	1500	< 0.2	140	< 0.1	5	0.61	< 0.50	6.21	15.14	0.276	50.6	4.6
	9/22/2015	0.65	0.33	53	2000	< 0.2	490	< 0.1	8.9	< 0.50	< 0.50	6.12	20.23	0.32	-26.8	4.4
	3/24/2016	0.75	4.2	33	550	< 0.2	110	< 0.1	3.8	< 0.50	< 0.50	6.15	14.93	0.269	112.0	4.5
CI-11-WT	3/13/2013	0.6	NA	NA	NA	1.4	NA	< 0.1	NA	NA	NA	6.47	13.48	0.521	-15.7	NA
	3/12/2014	5.18	NA	NA	NA	1.4	NA	< 0.1	NA	NA	NA	6.42	14.17	1.413	-40.2	NA
	3/23/2016	0.31	NA	NA	NA	1.5	NA	< 0.1	NA	NA	NA	6.42	15.25	0.505	-115.4	NA
CI-12-WT	3/14/2013	0.96	0.06	120	4800	1	120	< 0.1	73	8.5	< 6.0	6.23	15.15	0.438	35.4	3.3
	3/11/2014	5.62	< 0.050	380	5200	0.6	500	< 0.1	< 0.50	< 0.50	< 0.50	7.36	11.11	0.834	-7.1	2.2
	3/17/2015	0.17	0.31	350	6200	0.8	240	< 0.1	29	< 0.50	< 0.50	6.26	13.69	1.01	42.3	2.6
CI-13-WT	3/13/2013	0.66	NA	NA	NA	0.6	NA	< 0.1	NA	NA	NA	6.45	13.51	0.726	56.4	NA
	8/6/2013	0.76	0.21	150	< 56	0.6	36	< 0.1	< 1.0	< 0.50	< 0.50	6.49	15.3	0.965	116.9	2.6
	11/5/2014	1.31	2.9	170	820	NA	30	NA	0.74	< 0.50	< 0.50	5.65	17.53	0.718	40	2.9
	9/23/2015	2.5	3	95	200	< 0.2	< 10	< 0.1	< 0.50	< 0.50	< 0.50	6.17	15.77	0.529	IE	2.4

Table 2
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Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Location	Sample Date	Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
		Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Water Table Zone																
CI-14-WT	3/14/2013	1.15	8.5	47	500	0.4	120	< 0.1	< 1.0	< 0.50	< 0.50	5.96	16.53	0.42	90	3.5
	8/6/2013	0.2	9.8	40	< 56	0.4	120	< 0.1	< 1.0	< 0.50	< 0.50	6.19	19.89	0.702	127.3	3.2
	3/12/2014	5.34	0.33	33	1700	1	200	< 0.1	81	10	< 5.0	6.29	16.45	0.287	47	5.3
	9/24/2014	0.62	1.3	31	160	0.2	62	< 0.1	24	< 2.0	< 2.0	6.45	18.27	0.257	133	4.2
	3/17/2015	0.72	0.074	23	540	0.4	93	< 0.1	77	1.4	< 0.50	6.17	15.72	0.235	90	4.6
	9/22/2015	0.96	5.2	32	85	< 0.2	66	< 0.1	6.1	< 0.50	< 0.50	5.52	20.90	0.307	IE	3.8
	3/23/2016	2.17	3.6	31	290	0.20	63	< 0.1	3.5	< 0.50	< 0.50	6.22	14.68	0.270	-7.7	4.3
CI-16-WT	3/15/2013	0.7	NA	NA	NA	1.8	NA	< 0.1	NA	NA	NA	6.51	16.09	0.547	-117	NA
	3/12/2014	7.36	NA	NA	NA	1.6	NA	< 0.1	NA	NA	NA	6.39	13.47	0.497	-52.6	NA
	3/23/2016	8.69	NA	NA	NA	2.3	NA	< 0.1	NA	NA	NA	5.71	14.85	0.564	-85.9	NA
CI-17-WT	3/13/2013	0.08	< 0.050	42	9500	2	330	< 0.1	2400	< 250	< 250	6.77	13.09	2.62	18.2	2.7
	8/6/2013	0.22	< 0.050	26	8700	1.2	290	< 0.1	680	< 50	< 50	6.85	18.69	1.915	36.7	2.7
	3/11/2014	1.88	3.5	110	3600	1.8	190	< 0.1	190	< 25	< 25	6.65	12.32	1.394	0.2	2.4
	11/5/2014	1.23	< 0.050	40	7700	NA	320	NA	550	< 50	< 50	5.81	19.46	1.24	8	3
	3/17/2015	0.82	0.29	97	13000	2	730	< 0.1	690	< 0.50	< 0.50	6.39	14.51	3.727	-6.4	3.3
	9/23/2015	0.69	0.11	48	12000	4.6	340	< 0.1	260	< 0.50	< 0.50	6.50	18.11	2.691	IE	3.3
	3/22/2016	7.33	< 0.050	86	4300	1.75	310	< 0.1	270	< 250	< 0.68	6.58	13.27	1.835	-93.3	2.9
CI-18-WT	3/13/2013	1.06	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.67	11.8	0.955	100.6	NA
	3/11/2014	2.53	NA	NA	NA	0.2	NA	< 0.1	NA	NA	NA	6.56	12.82	0.561	31.2	NA
	3/22/2016	3.34	NA	NA	NA	< 0.2	NA	< 0.1	NA	NA	NA	6.05	12.62	0.584	-87.6	NA
CI-19-WT	3/14/2013	1.35	NA	NA	NA	0.2	NA	< 0.1	NA	NA	NA	6.66	11.46	7.24	-282	NA
	3/11/2014	1.85	NA	NA	NA	0.1	NA	< 0.1	NA	NA	NA	6.81	12.4	8.68	-242	NA
	3/22/2016	0.19	NA	NA	NA	0.3	NA	< 0.1	NA	NA	NA	6.47	13.08	12.11	-280.6	NA

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Seattle, Washington
Farallon PN: 457-010

Sample Location	Sample Date	Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
		Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Water Table Zone																
CI-9-WT	3/13/2013	0.57	1.6	36	4900	1	110	< 0.1	2.6	< 0.50	< 0.50	5.87	13.93	0.256	71.6	2.6
	8/7/2013	0.36	0.52	30	1900	0.8	100	< 0.1	4.3	< 0.50	< 0.50	6.42	17.88	0.406	128.2	3.2
	3/12/2014	0.75	3.8	25	1900	0.6	130	< 0.1	1.2	< 0.50	< 0.50	6.13	14.62	0.341	155.1	3.6
	9/23/2014	0.38	11	39	4500	0.4	180	< 0.1	0.82	< 0.50	< 0.50	6.19	19.9	0.473	13	4.5
	3/17/2015	8.7	1.1	31	760	< 0.2	130	< 0.1	4.8	< 0.50	< 0.50	5.99	15	0.283	17.2	3.4
	9/23/2015	1.22	2.5	33	420	< 0.2	120	< 0.1	9.1	< 0.50	< 0.50	6.07	18.16	0.303	9.4	2.7
	3/23/2016	0.07	2.8	29	1300	< 0.2	140	< 0.1	24	< 0.74	< 0.50	6.03	14.29	0.317	40.8	2.8
MW-2	3/19/2015	0.72	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.5	17.56	0.16	-3.3	NA
	9/24/2015	IE	NA	NA	NA	0.8	NA	< 0.1	NA	NA	NA	5.91	18.61	0.131	IE	NA
	3/23/2016	0.86	NA	NA	NA	3.0	NA	< 0.1	NA	NA	NA	6.27	17.29	0.242	-19.3	NA
MW-3	3/18/2015	1.17	< 0.050	30	13000	< 0.2	270	< 0.1	48	1.3	< 0.50	5.97	15.3	0.31	7.6	6.4
	3/23/2016	1.12	0.085	40	13000	0.20	230	< 0.1	42	3.6	< 0.50	6.27	14.79	0.341	-65.3	5.7
MW-4	3/13/2013	1.58	2.2	60	1100	0.6	840	< 0.1	7.9	1.1	< 0.50	6.09	13.53	0.361	45.9	4.6
	8/8/2013	0.18	1.4	84	340	1	610	< 0.1	7.1	1.7	< 0.50	6.46	19.03	0.79	107.1	5.5
	3/13/2014	2.48	2.6	63	1100	0.8	770	< 0.1	1	< 0.50	< 0.50	6.25	14.49	0.414	266.8	4.7
	9/24/2014	0.31	0.72	99	140	0.2	450	< 0.1	41	4.1	< 2.5	6.4	19.53	0.546	11	6.7
	3/17/2015	8.74	5.3	71	860	< 0.2	990	< 0.1	< 0.50	< 0.50	< 0.50	5.97	15.86	0.452	66.7	4.8
	9/23/2015	0.24	0.51	71	280	< 0.2	570	< 0.1	6.1	< 0.50	< 0.50	6.25	18.94	0.473	7.1	6.1
	3/24/2016	4.12	2.1	41	670	< 0.2	560	< 0.1	1.3	< 0.50	< 0.50	5.90	13.37	0.324	75.3	3.6
MW-5	3/18/2015	0.81	< 0.050	49	8100	NA	540	NA	53	3	< 0.50	6.01	15.69	0.429	4.8	5.8
	9/23/2015	1.41	< 0.050	54	7700	5	480	< 0.1	29	< 2.0	< 0.50	6.05	18.67	0.392	-19.3	5.6
	3/22/2016	2.20	< 0.050	35	5700	2.0	510	< 0.1	96	5.2	< 0.50	6.28	15.12	0.395	33.7	5.7

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Seattle, Washington
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		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Water Table Zone																
MW-6	3/19/2015	0.67	NA	NA	NA	0.2	NA	< 0.1	NA	NA	NA	5.94	15.85	0.396	83.5	NA
	3/22/2016	0.38	NA	NA	NA	1.0	NA	< 0.1	NA	NA	NA	5.98	16.05	0.295	85.2	NA
MW-7	3/13/2013	2.06	0.92	21	3300	2	44	< 0.1	2.8	1.2	< 0.50	6.13	13.21	0.128	25.5	2
	8/8/2013	0.38	2.9	48	16000	1.6	320	< 0.1	7.5	1.4	< 0.50	6.59	16.8	0.543	62.9	2.8
	3/12/2014	1.38	8.2	51	7300	1.2	240	< 0.1	21	3.8	< 1.5	6.16	14.55	0.369	141.4	2.4
	9/23/2014	0.62	2.7	60	8700	2.6	250	< 0.1	20	3.2	< 1.0	6.37	18.73	0.386	-73	3.1
	3/17/2015	IE	1.1	46	8700	< 0.2	250	< 0.1	59	8.7	< 0.50	5.90	15.11	0.317	81.1	3.7
	9/23/2015	0.69	4.1	34	NA	3	NA	< 0.1	220	30	< 0.50	6.15	18.52	0.366	-22	3.8
	3/22/2016	2.94	2.1	36	8000	1.0	68	< 0.1	9.2	0.99	< 0.50	5.92	13.81	0.260	74.4	2.8
MW-8	3/14/2013	0.47	1	98	1600	1	190	< 0.1	< 1.0	< 0.50	< 0.50	5.48	13.87	0.411	31.1	2.3
	3/13/2014	2.25	2.3	74	3300	1	210	< 0.1	< 0.50	< 0.50	< 0.50	5.90	14.22	0.462	255.5	2.6
	9/23/2014	0.49	0.71	59	930	0.8	160	< 0.1	< 0.50	< 0.50	< 0.50	6.17	19.8	0.365	23	2.6
	3/18/2015	1.94	2.5	90	570	< 0.2	110	< 0.1	< 0.50	< 0.50	< 0.50	5.69	14.62	0.498	63	3.3
	9/23/2015	0.67	0.51	71	970	NA	220	< 0.1	3.0	< 0.50	< 0.50	5.65	17.86	0.406	49.6	2.7
	3/22/2016	0.61	3.4	88	490	< 0.2	150	< 0.1	1.4	< 0.50	< 0.50	5.89	14.08	0.503	66.1	3.2
Shallow Zone																
CG-137-40	3/14/2013	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.96	15.12	0.471	-92.2	NA
	3/15/2013	0.34	< 0.050	< 5.0	7600	2.8	560	< 0.1	1600	< 250	< 250	7.15	15.64	0.35	-116.3	3.8
	8/8/2013	0.36	< 0.050	< 5.0	9500	3.2	570	< 0.1	2500	< 500	< 500	6.72	15.92	0.607	39.2	4.2
	3/13/2014	1.94	< 0.050	< 5.0	6900	1.4	550	< 0.1	2100	< 250	< 250	6.52	15.79	0.387	-38.7	3.9
	9/24/2014	1.87	0.087	< 5.0	9700	0.2	660	< 0.1	1600	< 250	< 250	6.57	16.36	0.37	-40.8	4.4
	3/18/2015	5.02	< 0.050	< 5.0	7900	0.4	590	< 0.1	1700	60	32	6.51	15.89	0.381	-16.6	4.5
	9/24/2015	0.72	< 0.050	< 5.0	8200	3.2	520	< 0.1	900	< 50	22	5.48	17.11	0.379	IE	4.2
	3/23/2016	3.72	< 0.050	< 5.0	6700	2.0	500	< 0.1	1700	250	18	6.51	15.96	0.363	-48.1	4.6

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Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Shallow Zone																
CG-141-40	3/14/2013	6.76	< 0.050	63	23000	3.2	930	< 0.1	10000	< 500	300	6.00	15.81	0.462	-49	3.3
	8/7/2013	0.64	< 0.050	67	21000	2	870	< 0.1	8900	< 500	< 500	6.64	14.16	0.68	99	3.4
	3/13/2014	4.08	0.18	58	21000	0.4	860	< 0.1	4900	< 500	< 500	6.34	13.05	0.458	-50.5	3.7
	9/23/2014	0.54	0.069	56	21000	0.2	870	< 0.1	10000	< 500	< 500	6.35	14.36	0.432	-47.6	3.8
	3/18/2015	0.28	0.060	46	23000	0.6	920	< 0.1	8500	20	200	6.39	13.78	0.45	-25.2	3.8
	9/23/2015	0.77	0.19	47	23000	1.8	850	< 0.1	7200	< 250	350	5.36	14.24	0.442	IE	4.3
	3/24/2016	9.05	< 0.050	53	17000	2.0	850	< 0.1	2300	< 20	17	5.97	13.27	0.385	-29.4	3.8
CI-10-35	3/14/2013	0.69	NA	NA	NA	2.8	NA	0.1	NA	NA	NA	6.05	15	0.265	-32.4	NA
	8/7/2013	0.22	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.56	17.89	0.461	33	NA
	3/13/2014	2.6	NA	NA	NA	4.2	NA	< 0.1	NA	NA	NA	6.33	16.23	0.297	-33.5	NA
	9/24/2014	0.92	NA	NA	NA	3	NA	< 0.1	NA	NA	NA	6.51	18.08	0.294	-114	NA
	3/17/2015	9.61	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.12	16.22	0.286	-33	NA
	9/22/2015	0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.27	19.23	0.267	-67.8	NA
	3/24/2016	0.65	NA	NA	NA	5.0	NA	< 0.1	NA	NA	NA	6.30	15.74	0.279	-17.8	NA
CI-11-30	3/13/2013	0.38	0.15	< 25	38000	1.6	910	< 0.1	7300	< 500	< 500	6.10	13.78	0.529	-55.3	5.0
	8/6/2013	0.35	0.46	< 25	33000	2	780	< 0.1	5400	< 500	< 500	6.73	12.37	0.704	-35	5.2
	3/12/2014	1.26	0.29	< 25	27000	1.6	860	< 0.1	5400	< 500	< 500	6.46	15.28	0.537	-70.6	5.5
	9/23/2014	0.71	0.086	< 25	43000	< 0.2	850	< 0.1	5400	< 500	< 500	6.69	17.3	0.492	-95.8	5.0
	3/19/2015	1.08	0.40	< 25	61000	0.6	1100	< 0.1	6600	< 10	< 3.0	6.33	15.2	0.585	-108.2	6.7
	9/22/2015	0.80	< 0.050	< 25	36000	2.0	810	< 0.1	5300	< 250	< 0.50	5.84	18.7	0.465	270.6	5.1
	3/23/2016	7.90	< 0.050	< 25	46000	1.8	840	< 0.1	7400	< 100	< 12	6.40	14.95	0.514	-124.3	5.3

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		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Shallow Zone																
CI-12-30	3/14/2013	0.381	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.06	15.6	0.381	-34	NA
	8/6/2013	0.43	NA	NA	NA	1.2	NA	< 0.1	NA	NA	NA	6.48	15.56	0.592	54.3	NA
	3/11/2014	4.01	NA	NA	NA	2	NA	< 0.1	NA	NA	NA	6.40	13.2	0.479	-2.8	NA
	9/23/2014	1.24	NA	NA	NA	0.2	NA	< 0.1	NA	NA	NA	6.63	15.87	0.482	-35.2	NA
	3/17/2015	0.13	0.11	42	19000	2.2	470	< 0.1	240	2.2	< 0.50	6.16	14.32	0.419	8.6	4.6
	9/22/2015	9.04	< 0.050	34	14000	2.0	330	< 0.1	210	< 15	< 0.50	5.62	15.93	0.363	IE	4.9
	3/22/2016	0.11	0.063	83	13000	3.0	390	< 0.1	220	< 50	< 0.50	6.47	13.15	0.370	-225.6	4.3
CI-13-30	3/13/2013	0.28	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.62	13.91	0.698	55.5	NA
	3/11/2014	3.01	NA	NA	NA	0.8	NA	< 0.1	NA	NA	NA	6.53	14.8	0.428	-10.9	NA
	3/17/2015	4.11	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.26	14.91	0.41	37.5	NA
	3/22/2016	8.07	NA	NA	NA	< 0.2	NA	< 0.1	NA	NA	NA	6.35	14.66	0.366	-120.1	NA
CI-14-35	3/14/2013	1.68	< 0.050	29	18000	2	360	< 0.1	120	12	< 10	6.06	17.51	0.309	-40	3.2
	8/6/2013	0.35	< 0.050	30	17000	1.8	340	< 0.1	95	< 10	< 10	6.53	18.87	0.453	39.3	3.3
	3/12/2014	7.11	< 0.050	39	18000	0.8	370	< 0.1	93	12	< 5.0	6.37	16.01	0.32	-1.3	3.3
	9/24/2014	0.7	0.055	31	19000	0.4	350	< 0.1	47	5.8	< 5.0	6.53	17.29	0.289	-38.2	3.6
	3/17/2015	2.22	0.15	32	23000	0.4	400	< 0.1	120	7.9	< 0.50	6.31	15.22	0.315	-16.7	3.7
	9/22/2015	1.33	0.47	31	18000	1.6	360	< 0.1	56	7.9	< 0.50	5.19	18.58	0.299	IE	3.5
	3/23/2016	0.48	1.1	31	19000	3.0	390	< 0.1	110	9	< 0.50	6.36	15.32	0.315	-76.4	3.7
CI-15-40	3/15/2013	0.79	NA	NA	NA	0.6	NA	< 0.1	NA	NA	NA	7.09	13.25	0.107	-351.7	NA
	8/7/2013	0.61	NA	NA	NA	1.6	NA	< 0.1	NA	NA	NA	6.72	15.12	0.32	99.7	NA
	3/13/2014	2.98	NA	NA	NA	0.6	NA	< 0.1	NA	NA	NA	6.33	12.7	0.351	-35.7	NA
	9/23/2014	0.96	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.4	15.3	0.362	-26.1	NA
	3/18/2015	1.74	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.21	13.93	0.422	-9.7	NA
	9/23/2015	1.02	NA	NA	NA	0.80	NA	< 0.1	NA	NA	NA	5.65	15.20	0.400	IE	NA
	3/24/2016	0.10	NA	NA	NA	4.0	NA	< 0.1	NA	NA	NA	6.17	13.90	0.370	-36.9	NA

Table 2
Summary of Natural Attenuation and Water Quality Parameters
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Location	Sample Date	Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters 1				Available Organic Carbon
		Dissolved Oxygen 1 (mg/l)	Nitrate2 (mg/l)	Sulfate3 (mg/l)	Total Iron (µg/L)	Ferrous Iron4 (mg/l)	Total Manganese (µg/L)	Manganese (II)4 (mg/l)	Methane 5 (µg/l)	Ethane 5 (µg/l)	Ethene 5 (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC6 (mg/l)
Shallow Zone																
CI-16-30	3/15/2013	2.07	NA	NA	NA	1.4	NA	< 0.1	NA	NA	NA	6.69	17.13	0.535	-121	NA
	3/12/2014	4.12	NA	NA	NA	1.2	NA	< 0.1	NA	NA	NA	6.44	14.07	0.778	-57.6	NA
	3/23/2016	0.29	NA	NA	NA	2.5	NA	< 0.1	NA	NA	NA	6.35	14.76	0.614	-108.5	NA
CI-17-30	3/13/2013	6.68	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.90	13.6	1.213	-70.5	NA
	3/11/2014	6.68	NA	NA	NA	1	NA	< 0.1	NA	NA	NA	6.90	14.01	0.594	-112.9	NA
	3/22/2016	4.37	NA	NA	NA	2.0	NA	< 0.1	NA	NA	NA	6.62	14.69	0.600	-135.3	NA
CI-18-30	3/13/2013	0.18	< 0.050	63	4100	1	120	< 0.1	1600	< 250	< 250	6.63	13.28	0.856	71.3	2.4
	8/6/2013	0.36	< 0.050	37	4200	1.2	140	< 0.1	1100	< 75	< 75	6.56	15.83	0.73	94.6	3.3
	3/11/2014	0.81	0.056	12	4600	0.8	160	< 0.1	4200	< 500	< 500	6.51	13.4	0.426	-7.1	3.7
	11/5/2014	1.44	0.23	40	5500	< 0.2	140	< 0.1	4600	< 500	< 500	4.97	17.19	0.453	78	3.5
	3/17/2015	0.58	< 0.050	80	5100	1.2	180	< 0.1	3800	< 10	< 0.50	6.17	13.9	0.572	12.2	2.6
	9/23/2015	0.77	0.30	68	3200	3.8	160	< 0.1	1300	< 50	< 0.50	5.88	15.68	0.537	IE	3.1
	3/22/2016	0.26	< 0.050	85	2600	1.5	140	< 0.1	59	< 5.0	< 0.50	6.25	13.54	0.569	-121.3	2.4
CI-19-30	3/14/2013	1.08	< 0.050	44	3100	1.4	480	< 0.1	350	< 50	< 50	6.45	15.4	6.648	-201	5.5
	8/6/2013	0.49	< 0.050	63	3000	1.4	510	< 0.1	740	< 50	< 50	6.53	15.59	0.935	56	NA
	3/11/2014	7.98	< 0.050	< 5.0	3300	1.2	380	< 0.1	1200	< 100	< 100	6.63	13.21	0.511	-92.2	4.6
	9/23/2014	1.81	< 0.050	19	3400	0.4	350	< 0.1	330	< 50	< 50	6.72	15.46	0.472	-94.8	5.2
	3/18/2015	7.94	< 0.050	28	2400	0.4	400	< 0.1	1500	1.1	< 0.50	6.55	13.82	0.555	-27.1	6.0
	9/22/2015	0.90	< 0.050	17	1900	< 0.2	270	< 0.1	390	< 25	< 0.50	6.01	15.46	0.495	IE	5.8
	3/22/2016	1.53	< 0.050	30	2000	1.5	310	< 0.1	1200	< 130	< 2.1	6.15	13.85	0.578	-177.8	6.6

Table 2
Summary of Natural Attenuation and Water Quality Parameters
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	**Sample Date**	**Dissolved Oxygen [1] (mg/l)**	**Nitrate[2] (mg/l)**	**Sulfate[3] (mg/l)**	**Total Iron (µg/L)**	**Ferrous Iron[4] (mg/l)**	**Total Manganese (µg/L)**	**Manganese (II)[4] (mg/l)**	**Methane [5] (µg/l)**	**Ethane [5] (µg/l)**	**Ethene [5] (µg/l)**	**pH**	**Temperature (°Celsius)**	**Conductivity (mS/cm)**	**ORP (mV)**	**TOC[6] (mg/l)**
Intermediate Zone																
CI-7-40	3/13/2013	0.24	NA	NA	NA	4.2	NA	< 0.1	NA	NA	NA	6.46	13.82	0.429	-49.9	NA
	8/8/2013	0.82	NA	NA	NA	2	NA	< 0.1	NA	NA	NA	6.77	17.42	0.789	42.5	NA
	3/12/2014	0.31	NA	NA	NA	0.6	NA	0.2	NA	NA	NA	6.47	15.33	0.359	-7.4	NA
	9/23/2014	0.93	NA	NA	NA	3	NA	< 0.1	NA	NA	NA	6.65	18.72	0.521	-112	NA
	3/17/2015	9.47	NA	NA	NA	< 0.2	NA	< 0.1	NA	NA	NA	6.28	15.6	0.412	-43.2	NA
	9/23/2015	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.33	16.49	0.473	-71.8	NA
	3/22/2016	IE	NA	NA	NA	5.0	NA	< 0.1	NA	NA	NA	6.47	14.51	0.459	-50.4	NA
CI-8-40	3/14/2013	0.28	0.095	< 25	19000	3.6	960	< 0.1	3600	380	< 250	6.23	14.13	0.526	-58.9	4.6
	8/8/2013	0.28	0.10	< 15	18000	1.2	910	< 0.1	5500	< 500	< 500	6.78	15.68	0.91	25.4	5.4
	3/13/2014	2.83	0.059	33	22000	2.3	870	< 0.1	3900	< 500	< 500	6.48	14.13	0.549	-61.4	5.0
	9/23/2014	0.82	0.071	< 20	16000	< 0.2	910	< 0.1	3800	380	< 250	6.74	18.59	0.583	-134	5.1
	3/18/2015	0.85	2.7	25	22000	< 0.2	930	< 0.1	6200	180	4.6	6.28	15.55	0.552	-58.8	5.2
	9/24/2015	1.77	0.57	< 10	17000	1.2	870	< 0.1	3700	< 250	< 1.0	6.33	16.26	0.588	IE	5.1
	3/22/2016	0.21	< 0.050	< 25	21000	2.0	900	< 0.1	4100	480	2	6.43	14.37	0.568	-56.2	5.7
CI-9-40	3/13/2013	0.39	0.10	31	17000	3.6	510	< 0.1	330	< 25	< 25	6.30	13.88	0.343	-44	3.1
	8/7/2013	0.33	< 0.050	31	17000	2.6	520	< 0.1	460	< 50	< 50	6.65	17.59	0.594	26	3.5
	3/12/2014	1.2	< 0.050	< 5.0	12000	2.6	430	< 0.1	230	< 15	< 15	6.44	14.56	0.325	-49.1	4.4
	9/23/2014	0.67	0.091	< 10	13000	1.6	430	< 0.1	630	< 50	< 50	6.64	18.98	0.329	-118	3.5
	3/17/2015	8.88	0.072	12	11000	1	400	< 0.1	630	6.2	< 0.50	6.24	15.5	0.29	-26.4	3.2
	9/22/2015	0.58	< 0.050	< 5.0	9100	2.0	330	< 0.1	570	< 50	< 0.50	6.24	16.89	0.242	-94.2	2.8
	3/23/2016	0.85	< 0.050	15	12000	3.5	390	< 0.1	590	< 13	< 1.2	6.34	14.58	0.294	-59.5	2.9

Table 2
Summary of Natural Attenuation and Water Quality Parameters
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Intermediate Zone																
CG-141-50	3/14/2013	3.58	< 0.050	19	690	0.6	110	< 0.1	180	< 10	< 10	6.04	13.75	0.283	159	3.3
	8/7/2013	2.29	< 0.050	48	1500	1.2	300	< 0.1	23	< 1.5	< 1.5	6.44	16.57	0.509	119.6	4.3
	3/13/2014	8.24	0.17	14	190	0.4	27	< 0.1	8.6	< 0.50	< 0.50	6.26	11.74	0.281	17.5	3.0
	9/23/2014	0.8	0.15	41	950	0.2	210	< 0.1	160	< 10	< 10	6.11	16.56	0.318	60.1	4.4
	3/18/2015	0.31	0.15	27	4700	0.4	810	< 0.1	3600	15	190	6.57	13.61	0.495	-25.1	4.9
	9/23/2015	0.66	< 0.050	42	1100	1.2	330	< 0.1	60	< 3.0	0.59	5.82	16.70	0.334	IE	5.1
	3/24/2016	0.62	0.077	28	5500	2.0	860	< 0.1	3700	< 73	290	6.50	13.78	0.496	-85.7	4.0
CI-10-65	3/14/2013	0.23	NA	NA	NA	3.4	NA	< 0.1	NA	NA	NA	6.91	15.02	0.374	-86.6	NA
	3/13/2014	0.13	NA	NA	NA	2.8	NA	< 0.1	NA	NA	NA	6.96	15.93	0.429	-99.5	NA
	3/18/2015	0.85	< 0.050	< 5.0	3000	< 0.2	390	< 0.1	4900	8.3	1.6	6.42	15.54	0.428	-66.7	4.9
	9/22/2015	0.19	< 0.050	< 5.0	3100	3.0	360	< 0.1	4300	< 250	< 0.50	6.94	17.16	0.415	-210	5.2
	3/24/2016	0.09	< 0.050	< 5.0	3200	2.5	380	< 0.1	6700	< 100	< 7.8	6.97	15.00	0.418	-105.0	5.3
CI-11-60	3/13/2013	0.31	0.080	< 5.0	8200	1.2	610	< 0.1	12000	< 1000	< 1000	6.57	13.72	0.528	-35.5	4.2
	3/12/2014	1.18	0.083	< 5.0	8000	1.4	620	< 0.1	8000	< 500	< 500	6.74	15.58	0.727	-74.5	4.7
	3/23/2016	0.20	< 0.050	< 5.0	6700	1.5	480	< 0.1	13000	< 330	< 22	6.84	14.80	0.774	-118.4	6.2
CI-12-60	3/14/2013	0.96	< 0.050	< 5.0	1300	1	170	< 0.1	3600	< 250	< 250	7.22	15.66	0.432	-132	4.0
	3/11/2014	1.65	0.074	< 5.0	750	1.2	180	< 0.1	1500	< 100	< 100	7.46	13.57	0.436	-95.8	4.2
CI-13-60	3/13/2013	0.8	NA	NA	NA	0.6	NA	< 0.1	NA	NA	NA	6.71	12.99	0.582	87.1	NA
	3/11/2014	1.88	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	7.80	13.93	0.549	-107.5	NA
	3/22/2016	0.21	NA	NA	NA	0.5	NA	< 0.1	NA	NA	NA	7.86	14.40	0.599	-174.2	NA
CG-137-50	3/14/2013	NA	< 0.050	< 5.0	3900	2.8	770	< 0.1	3800	< 250	150	NA	NA	NA	NA	3.7
	8/8/2013	0.31	0.10	< 5.0	4400	2.2	720	< 0.1	4100	< 500	< 500	7.26	18.35	0.835	-9.7	4.0
	3/13/2014	2.51	0.48	< 5.0	3300	0.8	740	< 0.1	3100	< 500	< 500	7.06	16.01	0.56	-85.9	4.1
	9/24/2014	0.71	0.061	< 5.0	3700	0.6	790	< 0.1	NA	NA	NA	7.29	16.96	0.525	-95.2	4.4
	3/19/2015	8.57	< 0.050	< 5.0	3200	0.2	840	< 0.1	3600	38	210	6.90	16.2	0.569	-87.7	4.5
	9/24/2015	8.25	0.055	< 5.0	3500	3.0	770	< 0.1	3500	< 250	270	6.85	19.22	0.564	IE	4.4
	3/23/2016	0.24	< 0.050	< 5.0	5200	2.0	830	< 0.1	5000	< 140	190	6.98	15.04	0.560	-91.8	5.0

Table 2
Summary of Natural Attenuation and Water Quality Parameters
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

		Electron Receptors			Total and Dissolved Metals				Metabolic Byproducts			Water Quality Parameters [1]				Available Organic Carbon
Sample Location	Sample Date	Dissolved Oxygen [1] (mg/l)	Nitrate[2] (mg/l)	Sulfate[3] (mg/l)	Total Iron (µg/L)	Ferrous Iron[4] (mg/l)	Total Manganese (µg/L)	Manganese (II)[4] (mg/l)	Methane [5] (µg/l)	Ethane [5] (µg/l)	Ethene [5] (µg/l)	pH	Temperature (°Celsius)	Conductivity (mS/cm)	ORP (mV)	TOC[6] (mg/l)
Intermediate Zone																
CI-14-70	3/15/2013	3.35	NA	NA	NA	2.4	NA	< 0.1	NA	NA	NA	7.07	16.75	0.443	-127	NA
	3/23/2016	0.30	NA	NA	NA	< 0.2	NA	< 0.1	NA	NA	NA	6.98	14.98	0.465	-127.2	NA
CI-15-60	3/14/2013	1.47	0.34	< 5.0	7100	1.6	690	< 0.1	2900	< 250	210	6.56	15.61	0.478	-60	4.2
	8/7/2013	0.29	< 0.050	< 5.0	7200	1.6	690	< 0.1	3500	< 500	< 500	6.91	15.55	0.741	22.4	4.7
	3/13/2014	4.9	< 0.050	< 5.0	6300	0.2	710	< 0.1	730	< 50	66	6.65	12.99	0.489	-60.2	5.2
	9/23/2014	0.57	0.57	< 5.0	7600	< 0.2	720	< 0.1	3400	< 250	260	6.58	15.12	0.46	-58.7	4.7
	3/18/2015	0.4	< 0.050	< 5.0	7100	0.4	770	< 0.1	5200	44	260	6.62	14.3	0.495	-48.2	5.4
	9/23/2015	0.80	0.36	< 5.0	7700	1.6	730	< 0.1	3600	< 250	370	6.20	15.01	0.485	IE	4.7
	3/24/2016	1.44	< 0.050	< 5.0	7100	1.2	720	< 0.1	3500	< 89	330	6.63	13.98	0.498	-89.3	5.2
CI-16-60	3/15/2013	0.78	NA	NA	NA	1.2	NA	< 0.1	NA	NA	NA	7.78	17.92	0.756	-126	NA
	3/12/2014	0.8	NA	NA	NA	1.2	NA	< 0.1	NA	NA	NA	7.68	14.14	0.786	-45.8	NA
	3/23/2016	4.11	NA	NA	NA	2.0	NA	< 0.1	NA	NA	NA	7.74	14.28	0.837	-161.4	NA
CI-20-80	9/24/2015	6.93	NA	NA	NA	0.2	NA	< 0.1	NA	NA	NA	7.22	17.07	0.465	IE	NA
	12/18/2015	0.84	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.81	13.41	0.496	-204.1	NA
	3/23/2016	1.02	NA	NA	NA	1.0	NA	< 0.1	NA	NA	NA	7.29	14.30	0.503	-134.7	NA
	6/28/2016	.76	NA	NA	NA	0.25	NA	< 0.1	NA	NA	NA	7.61	18.36	0.485	-129	NA
CI-7-60	3/13/2013	0.58	0.58	< 5.0	8300	5	680	< 0.1	6200	1400	1500	6.59	13.71	0.516	-58	3.7
	3/12/2014	0.62	< 0.050	< 5.0	8600	1.6	700	0.1	4000	< 500	< 500	6.69	14.65	0.595	-56	4.2
	3/22/2016	1.14	< 0.050	< 5.0	8700	2.0	670	< 0.1	4800	< 250	1	6.63	14.12	0.568	-65.6	4.8
CI-8-60	3/18/2015	0.94	NA	NA	NA	< 0.2	NA	< 0.1	NA	NA	NA	6.76	14.95	0.507	-88.2	NA
	3/22/2016	0.23	NA	NA	NA	2.0	NA	< 0.1	NA	NA	NA	6.97	14.27	0.506	-89.1	NA
CI-9-70	3/13/2013	0.3	NA	NA	NA	3.6	NA	< 0.1	NA	NA	NA	6.53	14.08	0.443	-60.3	NA
	3/12/2014	3.75	NA	NA	NA	0.4	NA	< 0.1	NA	NA	NA	6.60	14.25	0.514	-71.1	NA
	3/23/2016	0.12	NA	NA	NA	2.0	NA	< 0.1	NA	NA	NA	6.42	14.33	0.513	-73.5	NA

NOTES:
< denotes analyte not detected at or exceeding the reporting limit listed.
[1]Collected using a Yellow Springs Instrument multimeter with flow-through cell.
[2]Analyzed by U.S. Environmental Protection Agency (EPA) Method 353.2.
[3]Analyzed by American Society for Testing and Materials Method (ASTM) D516-02
[4]Measured in the field using conventional chemistry parameters by EPA/American Public Health Association (APHA) Methods.
[5]Analyzed by Gas Chromatograph/Flame Ionization Detector Headspace Method RSK 175.
[6]Analyzed by Standard Method 5310B.

electron receptors = compounds that gain electrons and are sources of energy during biodegradation
° = degrees
IE = instrument error
mg/l = milligrams per liter; equivalent to parts per million
mS/cm = milliSiemens per centimeter specific conductance units
mV = millivolt units for measurement of oxidation-reduction potential (ORP)
metabolic byproducts = compounds that result from biodegradation processes
TOC = total organic carbon
µg/l = micrograms per liter
NA= not analyzed

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Water Table Zone							
CG-137-40-031513	CG-137-WT	3/15/2013	< 0.40	**39**	40	7.2	0.49
CG-137-WT-080813	CG-137-WT	8/8/2013	< 0.20	**38**	38	9.2	0.77
CG-137-WT-031314	CG-137-WT	3/13/2014	< 0.20	**31**	48	9.0	0.86
CG-137-WT-092414	CG-137-WT	9/24/2014	< 0.40	**28**	54	9.2	0.73
CG-137-WT-031815	CG-137-WT	3/18/2015	< 0.40	**16**	57	9.0	0.96
CG-137-WT-092415	CG-137-WT	9/24/2015	< 0.40	**14**	60	8.7	0.61
CG-137-WT-032316	CG-137-WT	3/23/2016	< 0.40	**7.2**	86	9.0	**2.3**
CI-10-WT-031413	CI-10-WT	3/14/2013	< 0.40	**56**	21	1.1	< 0.40
CI-10-WT-080713	CI-10-WT	8/7/2013	< 0.40	**50**	25	1.4	< 0.40
CI-10-WT-031314	CI-10-WT	3/13/2014	< 0.20	**38**	12	0.61	< 0.20
CI-10-WT-092414	CI-10-WT	9/24/2014	< 0.40	**38**	51	1.6	< 0.40
CI-10-WT-031815	CI-10-WT	3/18/2015	< 0.40	**46**	57	1.4	< 0.40
CI-10-WT-092215	CI-10-WT	9/22/2015	< 0.40	**40**	72	1.8	< 0.40
CI-10-WT-032416	CI-10-WT	3/24/2016	< 0.20	**23**	12	0.42	< 0.20
CI-11-WT-031313	CI-11-WT	3/13/2013	< 0.20	< 0.20	0.22	< 0.20	0.64
CI-11-WT-031214	CI-11-WT	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-11-WT-032316	CI-11-WT	3/23/2016	< 0.20	< 0.20	0.22	< 0.20	0.61
CI-12-WT-031413	CI-12-WT	3/14/2013	< 0.20	0.31	0.59	< 0.20	**2.9**
CI-12-WT-031114	CI-12-WT	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-12-WT-031715	CI-12-WT	3/17/2015	< 0.20	0.39	0.26	< 0.20	< 0.20
CI-13-WT-031313	CI-13-WT	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-13-WT-080613	CI-13-WT	8/6/2013	< 0.20	< 0.20	1.3	< 0.20	< 0.20
CI-13-WT-110514	CI-13-WT	11/5/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-13-WT-092315	CI-13-WT	9/23/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-14-WT-031413	CI-14-WT	3/14/2013	< 0.20	0.98	0.77	< 0.20	< 0.20
CI-14-WT-080613	CI-14-WT	8/6/2013	< 0.20	1.7	1.2	< 0.20	< 0.20
DUP-1-080613	CI-14-WT	8/6/2013	< 0.20	1.4	0.92	< 0.20	< 0.20
CI-14-WT-031214	CI-14-WT	3/12/2014	< 0.40	3.2	81	0.97	0.61
CI-14-WT-092414	CI-14-WT	9/24/2014	< 0.20	**7.4**	34	0.55	0.25
CI-14-WT-031715	CI-14-WT	3/17/2015	< 0.40	**8.2**	66	0.83	0.78
CI-14-WT-092215	CI-14-WT	9/22/2015	< 0.20	4.8	3.7	< 0.20	< 0.20
CI-14-WT-032316	CI-14-WT	3/23/2016	< 0.20	2.8	4.1	0.21	< 0.20
CI-16-WT-031513	CI-16-WT	3/15/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-WT-031214	CI-16-WT	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-WT-032316	CI-16-WT	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Preliminary Cleanup Levels-Water Table Zone			**29** [2]	**6.9** [3]	**NR** [4]	**559** [3]	**1.3** [3]

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Water Table Zone							
CI-17-WT-031313	CI-17-WT	3/13/2013	2.7	2.3	1.0	< 0.20	0.37
CI-17-WT-080613	CI-17-WT	8/6/2013	1.9	2.0	4.7	< 0.20	0.99
CI-17-WT-031114	CI-17-WT	3/11/2014	9.6	1.7	2.1	< 0.20	0.78
CI-17-WT-110514	CI-17-WT	11/5/2014	7.0	2.6	3.9	< 0.20	**2.6**
CI-17-WT-031715	CI-17-WT	3/17/2015	3.2	3.0	2.5	< 0.20	1.3
CI-17-WT-092315	CI-17-WT	9/23/2015	3.7	2.4	5.8	< 0.20	**3.2**
CI-17-WT-032216	CI-17-WT	3/22/2016	7.1	4.0	2.7	< 0.20	0.95
CI-18-WT-031313	CI-18-WT	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-18-WT-031114	CI-18-WT	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-18-WT-032216	CI-18-WT	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-19-WT-031413	CI-19-WT	3/14/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-19-WT-031114	CI-19-WT	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-19-WT-032216	CI-19-WT	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-9-WT-031313	CI-9-WT	3/13/2013	2.7	**21**	2.3	< 0.20	< 0.20
CI-9-WT-080713	CI-9-WT	8/7/2013	3.9	**22**	2.5	< 0.20	< 0.20
CI-9-WT-031214	CI-9-WT	3/12/2014	3.5	**26**	2.3	< 0.20	< 0.20
CI-9-WT-092314	CI-9-WT	9/23/2014	6.3	**23**	0.96	< 0.20	< 0.20
CI-9-WT-031715	CI-9-WT	3/17/2015	3.8	**22**	2.2	< 0.20	< 0.20
CI-9-WT-092315	CI-9-WT	9/23/2015	4.1	**26**	2.9	< 0.20	< 0.20
CI-9-WT-032316	CI-9-WT	3/23/2016	2.7	**19**	3.0	< 0.20	< 0.20
MW-2-031915	MW-2	3/19/2015	< 0.40	**17**	72	4.4	1.1
MW-2-092415	MW-2	9/24/2015	< 0.40	**7.4**	91	4.7	**1.5**
MW-2-032316	MW-2	3/23/2016	< 1.0	**12**	110	5.9	**1.5**
MW-3-031815	MW-3	3/18/2015	< 0.20	4.3	28	0.40	0.37
MW-3-032316	MW-3	3/23/2016	< 0.20	5.4	22	0.38	0.25
MW-4-031313	MW-4	3/13/2013	< 0.20	1.7	1.1	< 0.20	< 0.20
MW-4-080813	MW-4	8/8/2013	0.22	1.7	1.8	< 0.20	< 0.20
MW-4-031314	MW-4	3/13/2014	< 0.20	1.3	1.1	< 0.20	< 0.20
MW-4-092414	MW-4	9/24/2014	< 0.20	0.90	0.61	< 0.20	< 0.20
MW-4-031715	MW-4	3/17/2015	< 0.20	0.88	0.46	< 0.20	< 0.20
MW-4-092315	MW-4	9/23/2015	< 0.20	1.3	1.3	< 0.20	< 0.20
MW-4-032416	MW-4	3/24/2016	< 0.20	0.97	0.68	< 0.20	< 0.20
MW-5-031815	MW-5	3/18/2015	< 0.40	**50**	32	0.87	**1.4**
MW-5-032216	MW-5	3/22/2016	< 0.40	**45**	24	0.66	0.88
MW-6-031915	MW-6	3/19/2015	6.8	3.2	< 0.20	< 0.20	< 0.20
MW-6-032216	MW-6	3/22/2016	6.1	1.9	< 0.20	< 0.20	< 0.20
Preliminary Cleanup Levels-Water Table Zone			**29** [2]	**6.9** [3]	**NR** [4]	**559** [3]	**1.3** [3]

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Water Table Zone							
MW-7-031313	MW-7	3/13/2013	21	**14**	2.9	< 0.20	< 0.20
MW-7-080813	MW-7	8/8/2013	8.6	4.6	4.7	< 0.20	< 0.20
MW-7-031214	MW-7	3/12/2014	21	**12**	2.8	< 0.20	< 0.20
MW-7-092314	MW-7	9/23/2014	11	5.5	3.3	< 0.20	0.20
MW-7-031715	MW-7	3/17/2015	13	**8.7**	4.3	< 0.20	0.25
MW-7-092315	MW-7	9/23/2015	12	4.6	3.1	< 0.20	0.74
MW-7-032216	MW-7	3/22/2016	**30**	**20**	1.4	< 0.20	< 0.20
Preliminary Cleanup Levels-Water Table Zone			**29** [2]	**6.9** [3]	**NR** [4]	**559** [3]	**1.3** [3]
Shallow Zone							
CG-137-WT-031513	CG-137-40	3/15/2013	< 0.40	< 0.40	< 0.40	< 0.40	**46**
CG-137-40-080813	CG-137-40	8/8/2013	< 0.40	< 0.40	< 0.40	< 0.40	**46**
CG-137-40-031314	CG-137-40	3/13/2014	< 0.20	0.38	0.61	< 0.20	**47**
CG-137-40-092414	CG-137-40	9/24/2014	< 0.40	< 0.40	< 0.40	< 0.40	**49**
CG-137-40-031815	CG-137-40	3/18/2015	< 0.40	< 0.40	< 0.40	< 0.40	**57**
CG-137-40-092415	CG-137-40	9/24/2015	< 0.40	< 0.40	< 0.40	< 0.40	**42**
CG-137-40-032316	CG-137-40	3/23/2016	< 0.40	< 0.40	< 0.40	< 0.40	**50**
CG-141-40-031413	CG-141-40	3/14/2013	< 1.0	< 1.0	< 1.0	< 1.0	**120**
CG-141-40-080713	CG-141-40	8/7/2013	< 1.0	< 1.0	1.0	< 1.0	**170**
CG-141-40-031314	CG-141-40	3/13/2014	< 1.0	< 1.0	1.2	< 1.0	**150**
CI-141-40-092314	CG-141-40	9/23/2014	< 1.0	< 1.0	1.0	< 1.0	**170**
CG-141-40-031815	CG-141-40	3/18/2015	< 1.0	< 1.0	1.3	< 1.0	**160**
CG-141-40-092315	CG-141-40	9/23/2015	< 1.0	< 1.0	1.4	< 1.0	**190**
CG-141-40-032416	CG-141-40	3/24/2016	< 0.20	< 0.20	0.35	< 0.20	**20**
CI-10-35-031413	CI-10-35	3/14/2013	< 0.20	**27**	4.2	0.46	**6.2**
CI-10-35-080713	CI-10-35	8/7/2013	< 0.20	**24**	5.1	0.44	**9.3**
CI-10-35-031314	CI-10-35	3/13/2014	< 0.20	**26**	5.1	0.49	**8.6**
CI-10-35-092414	CI-10-35	9/24/2014	< 0.20	**19**	4.4	0.39	**10**
CI-10-35-031715	CI-10-35	3/17/2015	< 0.20	**21**	6.7	0.49	**10**
CI-10-35-092215	CI-10-35	9/22/2015	< 0.20	**20**	4.9	0.47	**9.8**
CI-10-35-032416	CI-10-35	3/24/2016	< 0.20	**21**	5.4	0.48	**8.0**
CI-11-30-031313	CI-11-30	3/13/2013	< 0.20	< 0.20	0.36	< 0.20	0.93
CI-11-30-031214	CI-11-30	3/12/2014	< 0.20	< 0.20	0.26	< 0.20	0.74
CI-11-30-031915	CI-11-30	3/19/2015	< 0.20	< 0.20	0.46	< 0.20	0.85
CI-11-30-032316	CI-11-30	3/23/2016	< 0.20	< 0.20	0.28	< 0.20	1.0
Preliminary Cleanup Levels-Shallow Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Shallow Zone							
CI-12-30-031413	CI-12-30	3/14/2013	< 0.20	< 0.20	0.69	< 0.20	**7.6**
CI-12-30-080613	CI-12-30	8/6/2013	< 0.20	< 0.20	2.2	< 0.20	**22**
CI-12-30-031114	CI-12-30	3/11/2014	< 0.20	< 0.20	0.47	< 0.20	1.5
DUP-1-031114	CI-12-30	3/11/2014	< 0.20	< 0.20	0.46	< 0.20	1.5
CI-12-30-092314	CI-12-30	9/23/2014	< 0.20	< 0.20	0.54	< 0.20	**3.9**
DUP-1-092314	CI-12-30	9/23/2014	< 0.20	< 0.20	0.48	< 0.20	**3.2**
CI-12-30-031715	CI-12-30	3/17/2015	< 0.20	< 0.20	0.36	< 0.20	1.3
DUP2-031715	CI-12-30	3/17/2015	< 0.20	< 0.20	0.38	< 0.20	1.4
CI-12-30-092215	CI-12-30	9/22/2015	< 0.20	< 0.20	0.53	< 0.20	**1.7**
DUP-1-092215	CI-12-30	9/22/2015	< 0.20	< 0.20	0.50	< 0.20	1.6
CI-12-30-032216	CI-12-30	3/22/2016	< 0.20	< 0.20	0.34	< 0.20	1.3
CI-13-30-031313	CI-13-30	3/13/2013	< 0.20	0.33	33	< 0.20	0.43
CI-13-30-031114	CI-13-30	3/11/2014	< 0.20	1.0	46	0.37	0.75
CI-13-30-031715	CI-13-30	3/17/2015	< 0.40	1.3	57	0.51	0.51
DUP1-031715	CI-13-30	3/17/2015	< 0.40	1.2	54	0.43	0.51
CI-13-30-032216	CI-13-30	3/22/2016	< 0.40	1.4	69	0.49	0.64
DUP-1-032216	CI-13-30	3/22/2016	< 0.40	1.4	68	0.49	0.65
CI-14-35-031413	CI-14-35	3/14/2013	< 0.40	**48**	36	0.68	1.4
CI-14-35-080613	CI-14-35	8/6/2013	< 0.40	**34**	60	0.84	1.3
CI-14-35-031214	CI-14-35	3/12/2014	< 0.40	**42**	58	1.3	0.97
CI-14-35-092414	CI-14-35	9/24/2014	< 0.40	**17**	89	0.77	1.1
CI-14-35-031715	CI-14-35	3/17/2015	< 1.0	**26**	100	1.1	1.3
CI-14-35-092215	CI-14-35	9/22/2015	< 0.40	**8.2**	95	0.97	1.2
CI-14-35-032316	CI-14-35	3/23/2016	< 0.40	**14**	68	1.0	1.2
CI-15-40-031513	CI-15-40	3/15/2013	< 0.20	< 0.20	1.3	< 0.20	0.42
DUP-3-031513	CI-15-40	3/15/2013	< 0.20	< 0.20	1.5	< 0.20	0.42
CI-15-40-080713	CI-15-40	8/7/2013	< 0.20	< 0.20	2.1	< 0.20	0.76
DUP-2-080713	CI-15-40	8/7/2013	< 0.20	< 0.20	2.0	< 0.20	0.75
CI-15-40-031314	CI-15-40	3/13/2014	< 0.20	< 0.20	2.0	< 0.20	1.3
DUP-3-031314	CI-15-40	3/13/2014	< 0.20	< 0.20	2.0	< 0.20	1.3
CI-15-40-092314	CI-15-40	9/23/2014	< 0.20	< 0.20	1.6	< 0.20	1.0
DUP-2-092314	CI-15-40	9/23/2014	< 0.20	< 0.20	1.7	< 0.20	1.2
CI-15-40-031815	CI-15-40	3/18/2015	< 0.20	< 0.20	2.0	< 0.20	1.2
CI-15-40-092315	CI-15-40	9/23/2015	< 0.20	< 0.20	2.9	< 0.20	**2.0**
DUP-2-092315	CI-15-40	9/23/2015	< 0.20	< 0.20	3.0	< 0.20	**1.7**
CI-15-40-032416	CI-15-40	3/24/2016	< 0.20	< 0.20	2.9	< 0.20	0.91
DUP-3-032416	CI-15-40	3/24/2016	< 0.20	< 0.20	2.9	< 0.20	0.96
CI-16-30-031513	CI-16-30	3/15/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-30-031214	CI-16-30	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-30-032316	CI-16-30	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Preliminary Cleanup Levels-Shallow Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Shallow Zone							
CI-17-30-031313	CI-17-30	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	0.23
CI-17-30-031114	CI-17-30	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-17-30-032216	CI-17-30	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	0.38
DUP-2-032216	CI-17-30	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	0.36
CI-18-30-031313	CI-18-30	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-18-30-031114	CI-18-30	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	0.42
CI-18-30-031715	CI-18-30	3/17/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-18-30-032216	CI-18-30	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-19-30-031413	CI-19-30	3/14/2013	< 0.20	< 0.20	1.2	< 0.20	1.2
CI-19-30-080613	CI-19-30	8/6/2013	< 0.20	< 0.20	1.7	< 0.20	1.6
CI-19-30-031114	CI-19-30	3/11/2014	< 0.20	< 0.20	1.7	< 0.20	1.2
CI-19-30-092314	CI-19-30	9/23/2014	< 0.20	< 0.20	1.8	< 0.20	1.4
CI-19-30-031815	CI-19-30	3/18/2015	< 0.20	< 0.20	1.8	< 0.20	**1.7**
CI-19-30-092215	CI-19-30	9/22/2015	< 0.20	< 0.20	2.6	< 0.20	1.6
CI-19-30-032216	CI-19-30	3/22/2016	< 0.20	< 0.20	1.9	< 0.20	1.1
CI-7-40-031313	CI-7-40	3/13/2013	< 0.20	< 0.20	0.78	< 0.20	1.1
CI-7-40-080813	CI-7-40	8/8/2013	0.31	< 0.20	< 0.20	< 0.20	0.80
CI-7-40-031214	CI-7-40	3/12/2014	< 0.20	< 0.20	2.0	< 0.20	1.5
CI-7-40-092314	CI-7-40	9/23/2014	< 0.20	< 0.20	< 0.20	< 0.20	0.46
CI-7-40-031715	CI-7-40	3/17/2015	< 0.20	< 0.20	2.5	< 0.20	**1.7**
CI-7-40-092315	CI-7-40	9/23/2015	< 0.20	< 0.20	< 0.20	< 0.20	0.81
CI-7-40-032216	CI-7-40	3/22/2016	< 0.20	< 0.20	1.2	< 0.20	0.96
CI-8-40-031413	CI-8-40	3/14/2013	< 0.20	< 0.20	15	< 0.20	**10**
CI-8-40-031314	CI-8-40	3/13/2014	< 0.20	< 0.20	25	< 0.20	**13**
CI-8-40-031815	CI-8-40	3/18/2015	< 0.20	< 0.20	24	< 0.20	**12**
CI-8-40-032216	CI-8-40	3/22/2016	< 0.20	< 0.20	20	< 0.20	**10**
CI-9-40-031313	CI-9-40	3/13/2013	< 0.20	< 0.20	4.9	< 0.20	0.88
CI-9-40-031214	CI-9-40	3/12/2014	< 0.20	< 0.20	4.8	< 0.20	0.83
CI-9-40-031715	CI-9-40	3/17/2015	< 0.20	< 0.20	5.5	< 0.20	0.85
CI-9-40-032316	CI-9-40	3/23/2016	< 0.20	< 0.20	5.6	< 0.20	0.55
Preliminary Cleanup Levels-Shallow Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]
Intermediate Zone							
CG-141-50-031413	CG-141-50	3/14/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CG-141-50-080713	CG-141-50	8/7/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CG-141-50-031314	CG-141-50	3/13/2014	< 0.20	< 0.20	< 0.20	< 0.20	0.44
CI-141-50-092314	CG-141-50	9/23/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CG-141-50-031815	CG-141-50	3/18/2015	< 1.0	< 1.0	< 1.0	< 1.0	**140**
CG-141-50-092315	CG-141-50	9/23/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CG-141-50-032416	CG-141-50	3/24/2016	< 1.0	< 1.0	< 1.0	< 1.0	**160**
Preliminary Cleanup Levels-Intermediate Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	**TCE**	**cis-1,2-Dichloroethene**	**trans-1,2-Dichloroethene**	**Vinyl Chloride**
Intermediate Zone							
CI-10-65-031413	CI-10-65	3/14/2013	< 0.20	0.29	0.66	< 0.20	1.2
CI-10-65-031314	CI-10-65	3/13/2014	< 0.20	< 0.20	0.77	< 0.20	1.5
CI-10-65-031815	CI-10-65	3/18/2015	< 0.20	< 0.20	0.89	< 0.20	**1.8**
CI-10-65-032416	CI-10-65	3/24/2016	< 0.20	< 0.20	0.60	< 0.20	**1.9**
CI-11-60-031313	CI-11-60	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	0.77
CI-11-60-031214	CI-11-60	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	0.91
CI-11-60-032316	CI-11-60	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	0.67
CI-12-60-031413	CI-12-60	3/14/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-12-60-031114	CI-12-60	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-13-60-031313	CI-13-60	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
DUP-1-031313	CI-13-60	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-13-60-031114	CI-13-60	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
DUP-2-031114	CI-13-60	3/11/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-13-60-032216	CI-13-60	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CG-137-50-031413	CI-137-50	3/14/2013	< 0.20	< 0.20	< 0.20	< 0.20	**4.1**
CG-137-50-080813	CI-137-50	8/8/2013	< 0.20	< 0.20	< 0.20	< 0.20	**3.9**
CG-137-50-031314	CI-137-50	3/13/2014	< 0.20	< 0.20	< 0.20	< 0.20	**3.1**
CG-137-50-031915	CG-137-50	3/19/2015	< 0.20	< 0.20	< 0.20	< 0.20	**2.0**
CG-137-50-092415	CG-137-50	9/24/2015	< 0.20	< 0.20	< 0.20	< 0.20	**2.5**
CG-137-50-032316	CG-137-50	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	1.6
CI-14-70-031513	CI-14-70	3/15/2013	< 0.20	< 0.20	0.28	< 0.20	0.41
DUP-2-031513	CI-14-70	3/15/2013	< 0.20	< 0.20	0.22	< 0.20	0.44
CI-14-70-032316	CI-14-70	3/23/2016	< 0.20	< 0.20	0.77	< 0.20	0.34
CI-15-60-031413	CI-15-60	3/14/2013	< 1.0	< 1.0	< 1.0	< 1.0	**86**
CI-15-60-080713	CI-15-60	8/7/2013	< 1.0	< 1.0	< 1.0	< 1.0	**110**
CI-15-60-031314	CI-15-60	3/13/2014	< 0.40	< 0.40	< 0.40	< 0.40	**72**
CI-15-60-092314	CI-15-60	9/23/2014	< 1.0	< 1.0	< 1.0	< 1.0	**88**
CI-15-60-031815	CI-15-60	3/18/2015	< 0.40	< 0.40	< 0.40	< 0.40	**93**
DUP3-031815	CI-15-60	3/18/2015	< 0.40	< 0.40	< 0.40	< 0.40	**79**
CI-15-60-092315	CI-15-60	9/23/2015	< 0.40	< 0.40	< 0.40	< 0.40	**96**
CI-15-60-032416	CI-15-60	3/24/2016	< 1.0	< 1.0	< 1.0	< 1.0	**99**
CI-16-60-031513	CI-16-60	3/15/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-60-031214	CI-16-60	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-16-60-032316	CI-16-60	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-20-80-092415	CI-20-80	9/24/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-20-80-121815	CI-20-80	12/18/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-20-80-032316	CI-20-80	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-20-80-062816	CI-20-80	6/28/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-7-60-031313	CI-7-60	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-7-60-031214	CI-7-60	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-7-60-032216	CI-7-60	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Preliminary Cleanup Levels-Intermediate Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]

G:\Projects\457 Capital Indust\457010 West of 4th - Site Unit 2\Reports\Feasibility Study\2016 GW Sampling Tables

Table 3
Summary of Groundwater Analytical Results
Remedial Investigation
Capital Industries, Inc.
Seattle, Washington
Farallon PN: 457-010

Sample Identification	Sample Location	Date	Analytical Results (micrograms per liter)[1]				
			PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Intermediate Zone							
CI-8-60-031815	CI-8-60	3/18/2015	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-8-60-032216	CI-8-60	3/22/2016	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CI-9-70-031313	CI-9-70	3/13/2013	< 0.20	< 0.20	< 0.20	< 0.20	0.28
CI-9-70-031214	CI-9-70	3/12/2014	< 0.20	< 0.20	< 0.20	< 0.20	0.24
CI-9-70-032316	CI-9-70	3/23/2016	< 0.20	< 0.20	< 0.20	< 0.20	0.25
Preliminary Cleanup Levels-Intermediate Zone			**29** [2]	**7** [2]	**NR** [4]	**4,000** [2]	**1.6** [2]

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the laboratory reporting limit listed.

[1]Analyzed by U.S. Environmental Protection Agency Method 8260B.

[2]Various criteria were reviewed in the evaluation of the selected prelimnary cleanup levels, including:
- Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Cleanup Levels and Risk Calculation standard values;
- MTCA Method B Modified values based on Asian Pacific Island (API) Exposure scenarious for the consumption of fish for the groundwater-to-surface water pathway using equation 730-2;
- The U.S. Environmental Protection Agency (EPA) Region 10 Final Feasibility Study for the Lower Duwamish Waterway dated October 31, 2012 and Proposed Plan for the Lower Duwamish Waterway Superfund Site dated February 28, 2013; and
- The Fox Avenue Site Final Cleanup Action Plan completed in 2012.

[3]Groundwater cleanup levels protective of the air pathway for unrestricted land use (residential and commercial sites) and industrial land use were derived using the following equation: Gwcul = Aircul/GIVF.

[4]NR denotes "not researched," which indicates that no regulatory standards or toxicity information are available for the constituent of concern to derive a cleanup level for the medium of potential concern.

PCE = tetrachloroethene

TCE = trichloroethene

µg/l = micrograms per liter

Water Table Zone = Groundwater collected from the first encountered groundwater to 20 feet below ground surface.

Shallow Zone = Groundwater collected from 20 to 40 feet below ground surface.

Intermediate Zone = Groundwater collected from 40 to 70 feet below ground surface.

Table 4. Blaser Die Casting Volatile Organic Compound Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Tetrachloroethene (PCE) *ug/L*	Trichloroethene (TCE) *ug/L*	1,1-Dichloroethene *ug/L*	cis-1,2-Dichloroethene *ug/L*	trans-1,2-Dichloroethene *ug/L*	Vinyl Chloride *ug/L*
BDC-10-40	8/22/2012	0.02U	0.02U	0.32	13	0.058	7.2
BDC-10-40	9/9/2013	0.02U	0.02U	0.23	15	0.048	10J
BDC-10-40	9/5/2014	0.02U	0.02U	0.21	15	0.044	9.7
BDC-10-40	9/15/2015	0.2U	0.2U	0.26	14	0.2U	9.4
BDC-10-60	8/22/2012	0.02U	0.02U	0.02U	1.7	0.02U	3.5
BDC-10-60	9/9/2013	0.02U	0.02U	0.02U	1.5	0.02U	4.4
BDC-10-60	9/5/2014	0.2U	0.2U	0.2U	1.9	0.02U	4.9
BDC-10-60	9/15/2015	0.02U	0.02U	0.02U	2.3	0.023	5.8
BDC-11-40	8/22/2012	0.02U	0.02U	0.12	10	0.05	33
BDC-11-40	9/9/2013	0.02U	0.02U	0.054	6.6	0.022	45J
BDC-11-40	9/5/2014	0.02U	0.02U	0.02	3	0.02U	47
BDC-11-40	9/15/2015	0.02U	0.02U	0.022	3.3	0.02U	35
BDC-11-60	8/22/2012	0.02U	0.02U	0.02U	0.02U	0.02U	1.5
BDC-11-60	9/9/2013	0.02U	0.02U	0.02U	0.02U	0.02U	1.4
BDC-11-60	9/5/2014	0.02U	0.02U	0.2U	0.2U	0.2U	1.4
BDC-11-60	9/15/2015	0.02U	0.02U	0.02U	0.02U	0.02U	1.9
BDC-11-WT	8/22/2012	0.02U	0.044	0.02U	0.18	0.02U	0.02U
BDC-11-WT	3/20/2013	0.02U	0.02U	0.02U	0.15	0.02U	0.02U
BDC-11-WT	9/9/2013	0.02U	0.047	0.02U	0.22	0.02U	0.02U
BDC-11-WT	3/14/2014	0.02U	0.055	0.02U	0.1	0.02U	0.02U
BDC-11-WT	9/5/2014	0.02U	0.2U	0.2U	0.2	0.2U	0.2U
BDC-11-WT	3/12/2015	0.02U	0.042	0.02U	0.1	0.02U	0.02U
BDC-11-WT	9/15/2015	0.02U	0.096	0.02U	0.27	0.02U	0.02U
BDC-13-40	9/15/2015	0.02U	0.02U	0.19	24	0.044	9.7
BDC-1-WT	9/9/2013	0.02U	0.02U	0.02U	0.086	0.02U	0.02U
BDC-1-WT	9/5/2014	0.2U	0.2U	0.2U	0.2U	0.02U	0.02U
BDC-1-WT	9/15/2015	0.02U	0.02U	0.02U	0.12	0.02U	0.02U
BDC-2-WT	8/22/2012	0.02U	39	0.49	12	3.6	0.49
BDC-2-WT	3/20/2013	0.02U	33	0.57	22	2.7	4.9
BDC-2-WT	9/9/2013	0.02U	32	0.28	8.7	2.2	0.2
BDC-2-WT	3/14/2014	0.02U	24	0.27	6.3	1.8	0.18
BDC-2-WT	9/5/2014	0.02U	15	0.11	2.5	0.64	0.17
BDC-2-WT	3/12/2015	0.02U	18	0.17	4.8	1.1	0.23
BDC-2-WT	9/15/2015	0.02U	10	0.088	1.7	0.4	0.028
BDC-3-40	8/22/2012	0.02U	0.02U	0.21	18	0.026	2.6
BDC-3-40	3/20/2013	0.02U	0.02U	0.2	20	0.029	2.9
BDC-3-40	9/9/2013	0.02U	0.02U	0.17	19	0.026	2.7
BDC-3-40	3/14/2014	0.02U	0.02U	0.21	20	0.038	3.5
BDC-3-40	9/5/2014	0.02U	0.02U	0.15	22	0.028	3.9
BDC-3-40	3/12/2015	0.02U	0.02U	0.14	16	0.034	4.4
BDC-3-40	9/15/2015	0.02U	0.028	0.14	16	0.039	5.9
BDC-3-60	8/22/2012	0.02U	0.02U	0.03	4.2	0.02U	4.9
BDC-3-60	3/20/2013	0.02U	0.02U	0.02U	0.94	0.02U	1.3
BDC-3-60	9/9/2013	0.02U	0.02U	0.021	3.4	0.02U	4.9
BDC-3-60	3/14/2014	0.02U	0.02U	0.02U	0.17	0.02U	1.2
BDC-3-60	9/5/2014	0.02U	0.02U	0.02U	2.9	0.02U	5.9
BDC-3-60	3/12/2015	0.02U	0.02U	0.02U	1.6	0.02U	2.2
BDC-3-60	9/15/2015	0.02U	0.02U	0.02U	3.4	0.02U	6.2
BDC-3-WT	8/22/2012	0.02U	28	0.2	17	3.9	0.11
BDC-3-WT	3/20/2013	0.02U	21	0.26	15	2.5	2.4
BDC-3-WT	9/9/2013	0.02U	20	0.12	11	2.5	0.11
BDC-3-WT	3/14/2014	0.02U	21	0.3	22	3.9	4.6
BDC-3-WT	9/5/2014	0.02U	15	0.11	14	2	0.17
BDC-3-WT	3/12/2015	0.02U	17	0.13	17	2.9	0.44
BDC-3-WT	9/15/2015	0.02U	9.6	0.075	9.8	1.4	0.15M
BDC-4-WT	8/22/2012	0.02U	0.02U	0.02U	0.039	0.02U	0.02U
BDC-4-WT	9/9/2013	0.02U	0.02U	0.02U	0.062	0.02U	0.046
BDC-4-WT	3/14/2014	0.02U	0.02U	0.02U	0.023	0.02U	0.03
BDC-4-WT	9/5/2014	0.2U	0.2U	0.02U	0.024	0.02U	0.2U
BDC-4-WT	3/12/2015	0.02U	0.02U	0.02U	0.046	0.02U	0.02U
BDC-4-WT	9/15/2015	0.02U	0.022	0.02U	0.039	0.02U	0.02U
BDC-6-30	8/22/2012	0.02U	3	0.19	6	0.11	0.47

Table 4. Blaser Die Casting Volatile Organic Compound Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Tetrachloroethene (PCE) *ug/L*	Trichloroethene (TCE) *ug/L*	1,1-Dichloroethene *ug/L*	cis-1,2-Dichloroethene *ug/L*	trans-1,2-Dichloroethene *ug/L*	Vinyl Chloride *ug/L*
BDC-6-30	3/20/2013	0.02U	5	0.12	6.7	0.12	1.2
BDC-6-30	9/9/2013	0.02U	3.3	0.13	6.4	0.11	0.49
BDC-6-30	3/14/2014	0.02U	5.4	0.11	5.5	0.12	0.87
BDC-6-30	9/5/2014	0.02U	4.4	0.15	6.5	0.16	1.4
BDC-6-30	3/12/2015	0.02U	4.5	0.077	4.8	0.11	1.7
BDC-6-30	9/15/2015	0.02U	3.1	0.081	4.2	0.11	0.78
BDC-6-60	8/22/2012	0.02U	0.02U	0.02U	0.02U	0.02U	1.3
BDC-6-60	3/20/2013	0.02U	0.02U	0.02U	0.02U	0.02U	1.4
BDC-6-60	9/9/2013	0.02U	0.02U	0.02U	0.02U	0.02U	0.97
BDC-6-60	3/14/2014	0.02U	0.02U	0.02U	0.063	0.02U	1.9
BDC-6-60	9/5/2014	0.2U	0.02U	0.2U	0.2U	0.02U	0.99
BDC-6-60	3/12/2015	0.02U	0.02U	0.02U	0.042	0.02U	0.84
BDC-6-60	9/15/2015	0.02U	0.02U	0.02U	0.02U	0.02U	0.61
BDC-6-WT	8/22/2012	2U	150	2.9	92	6.4	9.2
BDC-6-WT	3/20/2013	0.04U	130	2.6	71	4.9	6.6
BDC-6-WT	9/9/2013	0.02U	120	2	56	5.4	6.7J
BDC-6-WT	3/14/2014	0.02U	110	2.4	59	4.8	4.5
BDC-6-WT	9/5/2014	0.02U	120	1.6	52	3.9	3.2
BDC-6-WT	3/12/2015	0.02U	98	1.4	40	3.6	1.7
BDC-6-WT	9/15/2015	0.02U	76	1.2	24	--	0.56
CG-136-40	9/9/2013	0.02U	0.02U	0.057	9.7	0.02U	4.5
CG-136-40	9/5/2014	0.02U	0.02U	0.056	11	0.02U	5.5
CG-136-40	9/15/2015	0.02U	0.027	0.074	8.9	0.02U	5.4
CG-136-WT	8/22/2012	0.71	9.6	0.062	21	1.7	0.038
CG-136-WT	9/9/2013	0.77	10	0.046	26	0.87	0.03
CG-136-WT	9/5/2014	0.6	9.3	0.042	22	0.72	0.022
CG-136-WT	9/15/2015	0.77	8.3	0.052	20	0.44	0.041M
CI-MW-1-40	9/9/2013	0.02U	0.02U	0.02U	0.02U	0.02U	0.29
CI-MW-1-40	9/5/2014	0.02U	0.02U	0.02U	0.02U	0.02U	0.26
CI-MW-1-40	9/15/2015	0.02U	0.02U	0.02U	0.02U	0.02U	0.27M
CI-MW-1-60	9/26/2012	0.2U	0.2U	--	0.2U	0.2U	0.2U
CI-MW-1-60	9/9/2013	0.02U	0.02U	0.02U	0.02U	0.02U	0.28
CI-MW-1-60	9/5/2014	0.2U	0.2U	0.2U	0.2U	0.02U	0.39
CI-MW-1-60	9/15/2015	0.02U	0.02U	0.02U	0.027	0.02U	0.66M
CI-MW-1-WT	9/9/2013	0.19	5	0.032	7.6	0.14	0.02U
CI-MW-1-WT	9/5/2014	0.29	7.2	0.038	9	0.17	0.024
CI-MW-1-WT	9/15/2015	0.29	5.8	0.045	13	0.23	0.044M

Notes:

U indicated non-detect at reporting limit shown.

J indicates estimated value.

Table 5. Blaser Die Casting Field Parameter Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Depth to water	Oxidation Reduction Potential	pH	Temperature	Specific Conductance (25C)
		feet	*mV*	*std. unit*	*deg. C*	*umhos/cm*
BDC-10-40	8/10/2012	9.08	--	--	--	--
BDC-10-40	8/22/2012	9.2	-58	6.71	14.4	503
BDC-10-40	3/20/2013	8.29	--	--	--	--
BDC-10-40	8/5/2013	9.26	--	--	--	--
BDC-10-40	9/9/2013	9.44	-138	6.8	15.6	510
BDC-10-40	3/14/2014	8.49	--	--	--	--
BDC-10-40	8/5/2014	9.22	--	--	--	--
BDC-10-40	9/5/2014	9.42	-98	6.68	15.1	424
BDC-10-40	9/15/2015	9.65	-58	6.83	14.6	531.8
BDC-10-60	8/10/2012	9.02	--	--	--	--
BDC-10-60	8/22/2012	9.13	--	6.63	15	561
BDC-10-60	3/20/2013	8.25	--	--	--	--
BDC-10-60	8/5/2013	9.24	--	--	--	--
BDC-10-60	9/9/2013	9.39	-116	6.74	16	525
BDC-10-60	3/14/2014	8.46	--	--	--	--
BDC-10-60	8/5/2014	9.16	--	--	--	--
BDC-10-60	9/5/2014	9.36	-81	6.67	15.3	436
BDC-10-60	9/15/2015	9.61	-55	6.74	14.5	540.6
BDC-11-40	8/10/2012	11.15	--	--	--	--
BDC-11-40	8/22/2012	11.29	-84	6.58	15.7	403
BDC-11-40	3/20/2013	10.29	--	--	--	--
BDC-11-40	8/5/2013	11.39	--	--	--	--
BDC-11-40	9/9/2013	11.4	-92	6.67	16.2	446
BDC-11-40	3/14/2014	10.23	--	--	--	--
BDC-11-40	8/5/2014	11.28	--	--	--	--
BDC-11-40	9/5/2014	11.45	-72	6.77	16	374
BDC-11-40	9/15/2015	11.61	-37	6.69	15.4	460.7
BDC-11-60	8/10/2012	10.89	--	--	--	--
BDC-11-60	8/22/2012	11	--	6.98	15.2	579
BDC-11-60	3/20/2013	10.06	--	--	--	--
BDC-11-60	8/5/2013	11.1	--	--	--	--
BDC-11-60	9/9/2013	11.15	-104	7.09	15.7	546
BDC-11-60	3/14/2014	10.02	--	--	--	--
BDC-11-60	8/5/2014	11.02	--	--	--	--
BDC-11-60	9/5/2014	11.29	-93	6.95	16	444
BDC-11-60	9/15/2015	11.35	-57	7.12	15.2	570.4
BDC-11-WT	8/10/2012	11.38	--	--	--	--
BDC-11-WT	8/22/2012	11.51	-32	6.45	14.5	302
BDC-11-WT	3/20/2013	10.5	-42	6.55	14.2	242
BDC-11-WT	3/20/2013	10.5	--	--	--	--
BDC-11-WT	8/5/2013	11.6	--	--	--	--
BDC-11-WT	9/9/2013	11.84	-52	6.52	15.7	280
BDC-11-WT	3/14/2014	10.44	-22	6.33	14.2	326
BDC-11-WT	8/5/2014	11.52	--	--	--	--
BDC-11-WT	9/5/2014	11.68	-21	6.35	15.5	300
BDC-11-WT	3/12/2015	10.91	--	6.44	15.2	333
BDC-11-WT	9/15/2015	11.85	11	6.48	15.5	381.6
BDC-13-40	9/15/2015	7.24	-65	6.64	17.6	392.1
BDC-1-WT	8/10/2012	8.34	--	--	--	--
BDC-1-WT	3/20/2013	7.42	--	--	--	--
BDC-1-WT	8/5/2013	8.59	--	--	--	--

Table 5. Blaser Die Casting Field Parameter Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Depth to water *feet*	Oxidation Reduction Potential *mV*	pH *std. unit*	Temperature *deg. C*	Specific Conductance (25C) *umhos/cm*
BDC-1-WT	9/9/2013	8.65	-48	6.53	16	291
BDC-1-WT	3/14/2014	7.45	--	--	--	--
BDC-1-WT	8/5/2014	8.51	--	--	--	--
BDC-1-WT	9/5/2014	8.69	-15	6.57	14.8	250
BDC-1-WT	9/15/2015	8.92	-2	6.56	15.1	337.1
BDC-2-WT	8/10/2012	7.04	--	--	--	--
BDC-2-WT	8/22/2012	7.2	6	6.49	16.3	344
BDC-2-WT	3/20/2013	6.2	-4	6.57	14.8	385
BDC-2-WT	3/20/2013	6.2	--	--	--	--
BDC-2-WT	8/5/2013	7.18	--	--	--	--
BDC-2-WT	9/9/2013	7.38	-43	6.41	17.8	329
BDC-2-WT	3/14/2014	6.18	-4	6.41	14.4	416
BDC-2-WT	8/5/2014	7.23	--	--	--	--
BDC-2-WT	9/5/2014	7.41	-17	6.59	17.4	229
BDC-2-WT	3/12/2015	6.59	--	6.52	15.6	368
BDC-2-WT	9/15/2015	7.64	4	6.5	18.3	290.2
BDC-3-40	8/10/2012	6.29	--	--	--	--
BDC-3-40	8/22/2012	6.41	--	6.56	16.7	459
BDC-3-40	3/20/2013	5.51	-69	6.51	15.3	421
BDC-3-40	3/20/2013	5.51	--	--	--	--
BDC-3-40	8/5/2013	6.51	--	--	--	--
BDC-3-40	9/9/2013	6.62	-84	6.65	16.9	346
BDC-3-40	3/14/2014	5.49	-82	6.46	15.4	434
BDC-3-40	8/5/2014	6.45	--	--	--	--
BDC-3-40	9/5/2014	6.601	-78	6.59	17.1	347
BDC-3-40	3/12/2015	5.82	--	6.58	16.1	412
BDC-3-40	9/15/2015	6.85	-55	6.7	16.1	425.9
BDC-3-60	8/10/2012	6.36	--	--	--	--
BDC-3-60	8/22/2012	6.49	-56	6.61	16.2	335
BDC-3-60	3/20/2013	5.6	-102	6.76	15.4	506
BDC-3-60	3/20/2013	5.6	--	--	--	--
BDC-3-60	8/5/2013	6.58	--	--	--	--
BDC-3-60	9/9/2013	6.68	-91	6.75	16.9	314
BDC-3-60	3/14/2014	5.59	-123	6.75	15.5	548
BDC-3-60	8/5/2014	6.52	--	--	--	--
BDC-3-60	9/5/2014	6.69	-81	6.68	16.7	294
BDC-3-60	3/12/2015	5.89	--	6.68	15.6	466
BDC-3-60	9/15/2015	6.92	-64	6.74	15.9	379
BDC-3-WT	8/10/2012	6.54	--	--	--	--
BDC-3-WT	8/22/2012	6.67	12	6.4	19	325
BDC-3-WT	3/20/2013	5.68	19	6.59	14.1	309
BDC-3-WT	3/20/2013	5.68	--	--	--	--
BDC-3-WT	8/5/2013	6.75	--	--	--	--
BDC-3-WT	9/9/2013	6.85	-51	6.3	20	305
BDC-3-WT	3/14/2014	5.69	1	6.29	13.8	393
BDC-3-WT	8/5/2014	6.69	--	--	--	--
BDC-3-WT	9/5/2014	6.86	-31	6.36	20.7	247
BDC-3-WT	3/12/2015	6.06	--	6.59	15.3	370
BDC-3-WT	9/15/2015	7.09	-14	6.48	20.4	308.9
BDC-4-WT	8/10/2012	8.82	--	--	--	--
BDC-4-WT	8/22/2012	8.93	40	6.15	14.9	267

Table 5. Blaser Die Casting Field Parameter Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Depth to water	Oxidation Reduction Potential	pH	Temperature	Specific Conductance (25C)
		feet	*mV*	*std. unit*	*deg. C*	*umhos/cm*
BDC-4-WT	3/20/2013	7.92	--	--	--	--
BDC-4-WT	8/5/2013	9.05	--	--	--	--
BDC-4-WT	9/9/2013	9.15	5	6.14	16.3	267
BDC-4-WT	3/14/2014	8.08	103	5.85	13.1	207
BDC-4-WT	8/5/2014	8.98	--	--	--	--
BDC-4-WT	9/5/2014	9.18	35	6.18	16.6	205
BDC-4-WT	3/12/2015	8.32	--	6.29	14.5	184.5
BDC-4-WT	9/15/2015	9.38	39	6.33	16.8	203.4
BDC-6-30	8/10/2012	9.76	--	--	--	--
BDC-6-30	8/22/2012	9.9	--	6.45	16.5	345
BDC-6-30	3/20/2013	8.9	-41	6.43	16.5	292
BDC-6-30	3/20/2013	8.9	--	--	--	--
BDC-6-30	8/5/2013	10	--	--	--	--
BDC-6-30	9/9/2013	10.04	-51	6.36	17.2	345
BDC-6-30	3/14/2014	8.82	-53	6.34	16.5	351
BDC-6-30	8/5/2014	9.89	--	--	--	--
BDC-6-30	9/5/2014	10.08	-42	6.3	17.1	296
BDC-6-30	3/12/2015	9.29	--	6.45	17	330
BDC-6-30	9/15/2015	10.3	-25	6.55	16.9	317.1
BDC-6-60	8/10/2012	9.7	--	--	--	--
BDC-6-60	8/22/2012	9.84	--	6.77	16	509
BDC-6-60	3/20/2013	8.95	-110	6.75	15.9	483
BDC-6-60	3/20/2013	8.95	--	--	--	--
BDC-6-60	8/5/2013	9.94	--	--	--	--
BDC-6-60	9/9/2013	10	-96	6.88	16.7	382
BDC-6-60	3/14/2014	8.89	-102	6.79	15.6	541
BDC-6-60	8/5/2014	9.94	--	--	--	--
BDC-6-60	9/5/2014	10.02	-90	6.66	16.7	403
BDC-6-60	3/12/2015	9.25	--	6.88	16.5	510
BDC-6-60	9/15/2015	10.35	-59	6.85	15.9	493.4
BDC-6-WT	8/10/2012	9.82	--	--	--	--
BDC-6-WT	8/22/2012	9.94	28	6.4	16.3	393
BDC-6-WT	3/20/2013	8.95	17	6.36	16.3	379
BDC-6-WT	3/20/2013	8.95	--	--	--	--
BDC-6-WT	8/5/2013	10.04	--	--	--	--
BDC-6-WT	9/9/2013	10.11	15	6.33	17.8	464
BDC-6-WT	3/14/2014	8.88	-2	6.36	16.8	438
BDC-6-WT	8/5/2014	9.94	--	--	--	--
BDC-6-WT	9/5/2014	10.14	6	6.34	17.8	389
BDC-6-WT	3/12/2015	9.35	--	6.42	17.8	413
BDC-6-WT	9/15/2015	10.2	18	6.53	18.2	371.2
CG-136-40	8/10/2012	5.99	--	--	--	--
CG-136-40	3/20/2013	5.19	--	--	--	--
CG-136-40	8/5/2013	6.21	--	--	--	--
CG-136-40	9/9/2013	6.31	-101	6.49	17.3	412
CG-136-40	8/5/2014	6.09	--	--	--	--
CG-136-40	9/5/2014	6.31	-84	6.66	17.8	339
CG-136-40	9/15/2015	6.54	-54	6.65	16.5	416.4
CG-136-WT	8/10/2012	6.33	--	--	--	--
CG-136-WT	8/22/2012	6.45	--	6.32	17.7	304

Table 5. Blaser Die Casting Field Parameter Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Depth to water *feet*	Oxidation Reduction Potential *mV*	pH *std. unit*	Temperature *deg. C*	Specific Conductance (25C) *umhos/cm*
CG-136-WT	3/20/2013	5.49	--	--	--	--
CG-136-WT	8/5/2013	6.54	--	--	--	--
CG-136-WT	9/9/2013	6.65	-24	6.27	18.4	302
CG-136-WT	8/5/2014	6.49	--	--	--	--
CG-136-WT	9/5/2014	6.65	40	6.36	18.5	275
CG-136-WT	9/15/2015	6.88	81	6.27	19.1	352.5
CI-MW-1-40	8/10/2012	7.48	--	--	--	--
CI-MW-1-40	3/20/2013	6.68	--	--	--	--
CI-MW-1-40	8/5/2013	7.71	--	--	--	--
CI-MW-1-40	9/9/2013	7.72	-102	7.19	17.8	456
CI-MW-1-40	3/14/2014	6.68	--	--	--	--
CI-MW-1-40	8/5/2014	7.64	--	--	--	--
CI-MW-1-40	9/5/2014	7.801	-100	6.89	16.6	496
CI-MW-1-40	9/15/2015	7.98	-70	7.1	16.7	589.1
CI-MW-1-60	8/10/2012	7.65	--	--	--	--
CI-MW-1-60	3/20/2013	6.88	--	--	--	--
CI-MW-1-60	8/5/2013	7.85	--	--	--	--
CI-MW-1-60	9/9/2013	7.95	-85	6.86	17.6	467
CI-MW-1-60	3/14/2014	6.9	--	--	--	--
CI-MW-1-60	8/5/2014	7.78	--	--	--	--
CI-MW-1-60	9/5/2014	7.98	-8.2	6.56	16.8	476
CI-MW-1-60	9/15/2015	8.14	-56	6.74	15.8	591.1
CI-MW-1-WT	8/10/2012	7.89	--	--	--	--
CI-MW-1-WT	3/20/2013	7.08	--	--	--	--
CI-MW-1-WT	8/5/2013	8.12	--	--	--	--
CI-MW-1-WT	9/9/2013	8.2	-23	6.33	17.8	280
CI-MW-1-WT	3/14/2014	7.08	--	--	--	--
CI-MW-1-WT	8/5/2014	8.04	--	--	--	--
CI-MW-1-WT	9/5/2014	8.23	-7	6.24	17.4	298
CI-MW-1-WT	9/15/2015	8.39	16	6.46	17.7	324.1

Table 6. Blaser Die Casting Natural Attenuation Parameter Results

West of Fourth, Site Unit 2, Seattle, Washington

Location	Date	Ethane	Ethene	Alkalinity as CaCO3, Total *mg/L*	Bicarbonate as HCO3 *mg/L*	Carbon, Total Organic *mg/L*	Carbonate as CaCO3 *mg/L*	Iron, Total *mg/L*	Manganese, Total *mg/L*	Methane *mg/L*	Nitrate as N *mg/L*	Nitrate+ Nitrite as N *mg/L*	Nitrite as N *mg/L*	Sulfate *mg/L*
BDC-6-WT	9/9/2013	1.6	1.1U	138	138	10.1	1U	20.8	0.637	52.4	2.91	2.91	0.01U	77.2
BDC-6-30	9/9/2013	25	1.1U	113	113	2.98	1U	14.9	0.282	638	0.05U	0.05U	0.01U	58
BDC-3-60	9/9/2013	91.4	1.3	129	129	5	1U	16.8	0.611	3930	0.05U	0.05U	0.01U	35.3
BDC-3-40	9/9/2013	312	1.1U	156	156	5.86	1U	23	0.622	5190	0.02U	0.02U	0.013	42.4
BDC-2-WT	9/9/2013	1.2U	1.1U	99.9	99.9	4.64	1U	11.8	0.341	24.7	0.01U	0.01U	0.01U	53.7
BDC-3-WT	9/9/2013	1.2U	1.1U	95.5	95.5	3.06	1U	6.13	0.25	23.7	0.02U	0.02U	0.01U	48.1

Notes:

U indicated non-detect at reporting limit shown.

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